



Determination 2011/076

Regarding the code-compliance of an infinity edge and a weir to a swimming pool at 15 Hanene Street, St Heliers, Auckland

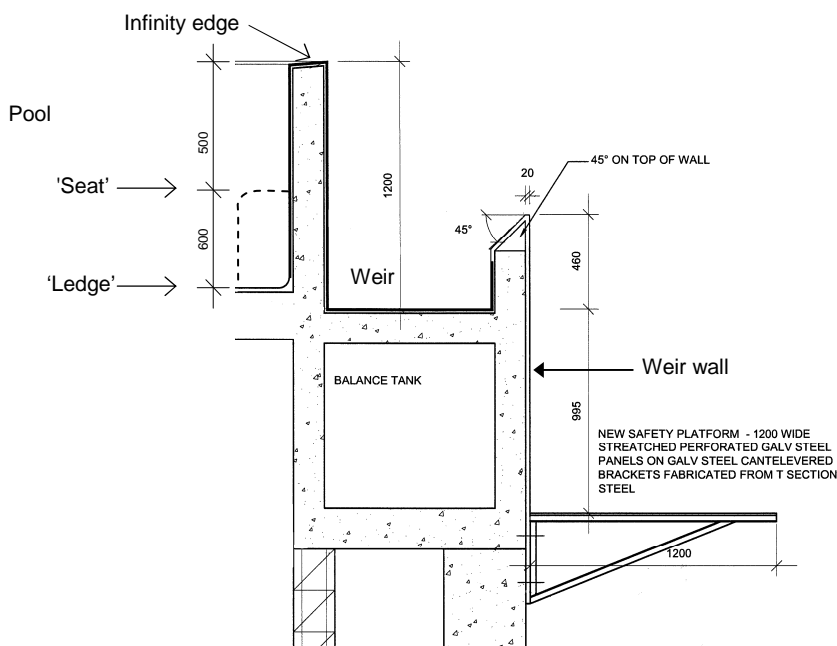


Figure 1 Cross section through north end of pool

1. The matters to be determined

1.1 This is a Determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department.

1.2 The parties to this determination are:

- the owner, Mr T Manson (“the applicant”) acting through the designer for the pool (“the designer”)
- the Auckland Council carrying out its duties and functions as a territorial authority and a building consent authority (“the authority”).

¹ The Building Act 2004, Building Code, compliance documents, past determinations and guidance documents issued by the Department are all available at www.dbh.govt.nz or by contacting the Department on 0800 242 243.

- 1.3 This determination arises from a dispute about whether the revised design of a swimming pool with an infinity-edge meets the requirements of Building Code Clause F4 Safety from falling².
- 1.4 I therefore take the view that the matter to be determined³ is whether the revised design for the north end of the pool complies with Building Code Clause F4 Safety from falling. In deciding this I must also take into account the swimming pool as it is currently constructed.
- 1.5 I am not aware of any dispute or concerns regarding the design of the swimming pool and fencing, with respect to the requirement to restrict the access of children under the age of six to the pool and immediate pool area, and in making my decision I have not considered any other aspects of the Act or of the Building Code. The relevant Clause of the Building Code is set out in Appendix A.
- 1.6 In making my decision, I have considered the submissions of the parties and the other evidence in this matter.

2. The swimming pool

- 2.1 The swimming pool is located on the northern side of the property, adjacent to the existing house which is constructed on a cliff top. The pool is rectangular in shape (17m x 3.8m), and has a maximum depth of 2.2m towards its eastern side and northern end. There is a smaller rectangular spa pool set against the pool's eastern side, separated from the main pool by coping and a slot drain.
- 2.2 The pool and spa are part of a larger complex, which also includes seating and areas of planting in gardens and in pots. Both the pool and the spa pool are "in ground", being set at the same level as the surrounding paved terrace. The pool and spa are constructed above the pool balance tanks, chiller, pump room and pool storage area.
- 2.3 There is a ledge on the inside of the pool, along its western and northern sides. This ledge, which is approximately 1100mm below the top of the pool, creates a shallow rim around the edge of the pool at the pools deeper northern end. Below the infinity edge the ledge is 400mm wide (it is wider down the eastern side). In the north-eastern corner and parts of the eastern side adjacent to the weir a seating area has been built into the pool. This seating is 500mm below the top of the pool.

2.4 The infinity edge and weir gutter

- 2.4.1 The northern end of the pool incorporates an infinity edge. The pool wall at this point is approximately 200mm wide, with a glass tiled top sloping at a 10° angle in towards the pool. The water from the pool runs over this edge into a tiled weir 1200mm below (refer figure 1).

² In this determination, unless otherwise stated, references to sections and clauses are to sections of the Building Act 2004 and clauses of the Building Code respectively.

³ Under section 177(1)(a) of the Act.

- 2.4.2 The weir is cantilevered over the palisade wall and is 790mm wide with a 460mm high x 190mm wide outer wall that has a 45° sloped top. The weir runs in a horseshoe shape around the entire northern end of the pool and partly along the east and west sides of the pool.

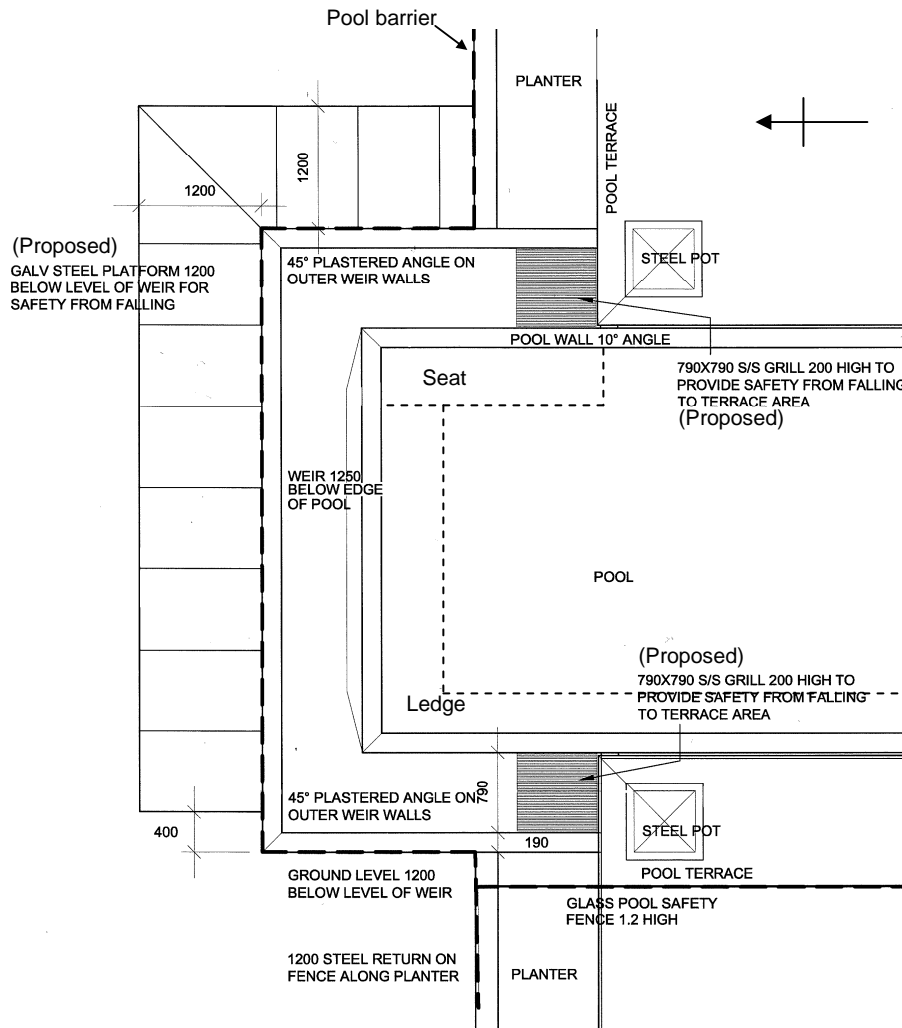


Figure 2 Site plan of north end of pool

- 2.4.3 Below the weir and the northern end of the pool complex area the ground level drops away sharply. This is due both to the natural contours of the land and excavations done as part of construction of the pool complex. The distance from the top of the outside weir wall to the ground below has not been provided. However, from the various plans it appears to range from 1.2m to around 3m.
- 2.4.4 Flanking the weir on both its western and eastern sides, and at the same level as the top of the outside weir wall, is a 1200mm wide planter or garden. This planter extends the width of the northern end of the property (other than the part taken up by the pool and weir) excluding the two short sections where the weir meets the paved pool terrace. The designer advises that the purpose of this planter is to reduce the fall from the pool terrace or lawn area to below 1m.

2.4.5 Access from the planter to the weir is blocked on the western side by the glass pool fence and a steel fence along part of the outside of the planter wall. On the eastern side, access from the planter to the weir has not been blocked. Measurements have not been provided, however the drop from the outside edge of this planter to the ground below appears to be around 1.8m.

2.5 The pool fence

2.5.1 In terms of Clause F4.3.3, the pool complex is fenced by pool safety glass, a wall of the house (containing fixed windows), and the back of a wooden day bed on part of the east side.

2.5.2 The pool fence to the northern end of the pool is indicated on the plans as being the outside wall of the weir and the planter (to the east of the pool). I am not aware of any dispute between the parties as to the adequacy of the fencing in terms of its compliance with the Building Code or the FSOP Act.

2.6 The proposed building work

2.6.1 The designer's revised design retains the 10° slope on the pool wall edge, but includes a 1200mm wide galvanised steel 'safety platform' at 1260mm below the outer edge of the weir. The safety platform would run around the outside wall of the weir, presumably to break the fall of anyone falling off the weir.

2.6.2 The revised design includes the installation of large fixed pots on the terrace, 250mm back from the pool coping, at point where the terrace meets the weir at the northeast and northwest points to restrict access to the weir. Dimensions for the pots have not been given.

2.6.3 The designer also proposed installing a 210mm high and 800mm wide 'mesh tray system' on the bottom of the weir at the points where the weir meets the pool terrace at the northeast and northwest. This was intended to reduce the fall height from the terrace to the weir to 1m.

3. Background

3.1 On 2 December 2008, the applicant applied for a building consent to construct 'a palisade wall to contain the cliff edge and a pool and plant room'.

3.2 The authority altered the plans accompanying the application:

- to increase the angle on the top of the swimming pool wall at its northern end above the weir to 45°
- to include a 'fence – safety from falling' along the northern end of the pool complex, including on top of the outside wall of the pool weir.

3.3 On 9 February 2009, the authority granted the consent (No B/2008/28669), based on the plans as it had altered them.

3.4 This was followed by three further amendment consents. Only the second of these (B/2008/28669/C) is relevant to this determination. This amendment, which was

granted on 5 June 2009, related to ‘alterations to structure of pool, delete waterproofing beneath pool structure’. Approved plans for the amendment consent show the northern pool wall having a 45° angle on its top, and the outside weir wall having a flat top, with a ‘handrail’ fixed to the outside of the weir wall. This handrail extends 900mm above the outside weir wall, and 1200mm above the bottom of the weir. However, the plans include a note stating ‘Refer architect’s drawings for pool setout and dimensions’, and a hand-written note by the authority stating ‘Note: Pool fence is not part of this consent – for conditions refer original’.

- 3.5 The applicant proceeded to construct the pool and pool complex in accordance with the original plans that were submitted with the application for consent, without taking into account the authority’s alterations.
- 3.6 I am not aware of whether the applicant applied for a code compliance certificate.
- 3.7 The designer then wrote to the authority proposing a revised design. This letter is undated, but plans attached to the letter are dated 20 October 2010. The designer wished to retain the 10° top to the swimming pool wall and the 1.2m drop from the top of this wall to the bottom of the weir, and requested that a waiver from the requirements of clause F4 Safety from falling be granted to enable this.
- 3.8 To support the request for a waiver, the designer referred to Determination 2010/85, which had discussed circumstances in which it may be reasonable for an authority to grant a waiver with respect to Clause F4 and referred to the authority’s practice note ‘BLD-148-PN: F4 Safety from falling – infinity pools’, dated April 2009 (refer Appendix A2). The designer also concluded by asserting that a waiver was not actually necessary, as ‘in a technical sense, the pool itself complies with F4’.
- 3.9 The authority has put forward two proposals of its own, which would allow the applicant to retain the current 1.2m drop from the pool wall into the weir: these are increasing the angle of the infinity edge to 45° (in accordance with the advice in its practice note), and installing a mesh tray system over the entire floor of the weir. The designer has not accepted either proposal.
- 3.10 The application for determination was received by the Department on 18 April 2011.

4. The submissions

- 4.1 In a letter dated 4 April 2011 accompanying the application for a determination, the designer requested that the Department should, ‘rule in favour of the current weir edge proposal, allowing the [authority] to safely provide a waiver so that the amendment to the building consent can be granted’. This waiver was to be with respect to the clause F4 Safety from falling conditions as they applied to the pool’s infinity edge.
- 4.2 The designer attached, and referred to, how ‘we propose mitigating the infringement to F4, which in our opinion is only a theoretical infringement as the pool wall is a wall and not a walking surface [and] the level of the bottom of the pool inside complies with the F4 code’.

- 4.3 The designer referred again to the authority's practice note on infinity edge pools and to determination 2010/85, stating that the decision in the determination was the basis for the application for a waiver.
- 4.4 The designer then set out his arguments to support his position, which are (in summary):
- anybody entering the pool area is likely to be more aware of their footing and under closer supervision than they would be outside the pool area
 - the likelihood of anyone venturing onto the pool wall above the weir 'is minimal as it is covered in water and will be inherently slippery' and 'it is not a place someone would walk onto'
 - access onto the weir and weir edge is further restricted by the large pots fixed at the edge of the pool coping
 - the drop from the pool wall into the weir is only 200mm more than 'a complying solution' and 'the likelihood of someone hurting themselves were they to fall the extra 200 is no greater than if they fell 1m'
 - Clause F4 'requires the likelihood of an accident causing considerable injury to be reduced', and 'we consider that there is minimal 'probability' that someone could fall [from a weir edge], and that it is 'unlikely to happen''
 - it is 'quite normal' for landscape retaining walls of over 1m to have 'restricted access along a narrow ledge', and inconsistent not to allow this in a 'pool situation'
 - people are more likely to take a risk with, and fall from, the adjacent cliff edge than from the weir wall, yet there is no requirement that it be fenced
 - the authority 'has created a set of guidelines around something they need not take responsibility for, the fact is the weir edge is a wall and [the authority] does not need to protect themselves against people climbing on walls and falling off'.
- 4.5 The designer also enclosed with his submission:
- photos of the pool, its surrounds and weir
 - a copy of his October 2010 letter to the authority requesting a waiver
 - a copy of the authority's April 2009 practice note.
- 4.6 On 12 May 2011, the Department wrote to the parties requesting further information on certain points.
- 4.7 The authority responded in a letter dated 16 May 2011, stating that it had 'marked the infinity edge (45°) in the original consent to meet compliance with safety from falling'. It referred to its revised practice note on 'F4 Safety from falling – Infinity pools', dated 22 February 2011 (refer Appendix A2). This practice note is essentially the same as the authority's earlier note, except that an additional sentence has been added to the end of point 1 to the effect that consideration could be given where the pool [fence] is 1.2m high and the fall is onto a forgiving surface such as grass or planting.

- 4.8 The authority further noted that the eastern and western edges of the pool above the water weir also required ‘an infinity edge of 45 degree to comply with safety from falling’, as the drop from the top of the wall to the water weir is 1200mm. It recognised that ‘[t]he proposed ... pots...on each side of the pool are intended to protect users from 1200mm fall [from the terrace], but the issue raised by [the authority] is the extended area of the pool on North where the water weir is constructed over the balance tanks’.
- 4.9 The authority acknowledged the designer’s proposed solution of adding a 200mm high steel grill in the part of the water weir immediately below the pool terrace. In response, the authority suggested that if this grill ‘is provided to cover all of the water weir reducing the fall to less than 1000mm on all sides’, it could be accepted as an ‘alternative solution’.
- 4.10 The authority enclosed with its letter copies of:
- its revised practice note dated 22 February 2011
 - the original building consent and amendment consents
 - plans for the original building consent (B/2008/28669) and amendment consent B/2008/28669/C
 - plans for the designer’s proposed solution.
- 4.11 Further email correspondence subsequently passed between the Department and the parties. In this correspondence, the authority clarified that, from its point of view,:
- The question here is falling from the top of the pool wall to the weir where the fall is 1200mm. If the infinity edge is not possible, than [sic] the drop needs to be reduced to less than 1000mm to comply with F4/AS1.
- The designer made the following points:
- the weir ‘is not a space that is generally accessible for pool uses, it has the leaf baskets etc and cleaning points for the pool servicing’
 - the planter below the pool terrace on the eastern side of the pool ‘has already been built and has been solidly planted with mature hedge so that this planter is inaccessible’
 - ‘in the past the safety from falling was taken from the inside pool floor not the top of the narrow wall, if anyone ventures onto the narrow wall where there is a fall, they take there [sic] own safety into their own hands, using their own judgement’.
- 4.12 The draft determination was issued to the parties for comment on 18 July 2011.
- 4.13 The designer accepted the draft on behalf of the applicants and made no comment. The authority accepted the draft without comment in a response received on 25 August 2011.

5. Discussion

5.1 General

- 5.1.1 The objective of Clause F4 (to safeguard people from injury caused by falling) is an important one. It is reflected in the purposes provisions of the Act (section 3), where the first purpose of the Act is listed as ensuring that ‘people who use buildings can do so safely and without endangering their health ...’.
- 5.1.2 This emphasis is reinforced in Clause F4.2, which requires buildings to be constructed to reduce the likelihood of accidental fall. Clause F4.2 does not require people to be absolutely protected from falling, only that the risk of accidental fall is reduced. However, an accidental fall is just that – an accident; and even with the best care and intentions people can suffer accidents.
- 5.1.3 The performance requirement in Clause F4.3.1 requires a barrier where people could fall 1m or more. A person falling greater than this height is likely to suffer considerable injuries, and where a fall is significantly greater than 1m the consequence may be very serious injury or death. Clause F4.2 requires the likelihood of such accidents to be reduced.
- 5.1.4 The ‘likelihood of accidental fall’ referred to in Clause F4.2 relates to the chance of falling. Likely and likelihood are not defined in either the Building Act 2004 or the Building Code. However, the word likely in section 64 of the Building Act 1991 has been considered in two separate court cases, where it was held that:

“Likely” does not mean probable, as that puts the test too high. On the other hand, a mere possibility is not enough. What is required is “a reasonable consequence or [something which] could well happen”.⁴

“Likely” means that there is a reasonable probability, or that having regard to the circumstances of the case it could well happen.⁵

5.2 The infinity edge

- 5.2.1 With respect to the pool’s infinity edge, the designer has asserted that the likelihood of anyone venturing onto it is minimal, and that given its width (approximately 200mm) and glass tiles it would be very difficult to walk upon as it would be ‘inherently slippery’.
- 5.2.2 While I accept that the wall’s width may be a deterrent to some, I consider that it is possible for people to walk or stand upon it, especially given its low gradient of 10°, and note that the designer has stood on it during construction when the wall was dry. In my opinion, this is exactly the type of challenge that may appeal to children or teenagers playing in the pool.
- 5.2.3 I consider that there is a greater likelihood (and risk) of pool users using the infinity edge as a seat. This is particularly the case in the north-eastern corner and along the eastern side of the pool above the weir where the in-pool seat is only 500mm below the infinity edge; a child using the seat has easy access to the infinity edge and a person can easily sit on the infinity edge while keeping their feet on the in-pool seat.

⁴ Auckland City Council v Weldon Properties Ltd 8/8/96, Judge Bashier, DC Auckland NP2627/95; upheld on appeal in Weldon Properties Ltd v Auckland City Council 21/8/97, Salmon J, HC Auckland HC 26/97. b

⁵ Rotorua DC v Rua Developments Limited 17/12/99, Judge McGuire, DC Rotorua NP1327/97.

- 5.2.4 It is also considered likely, given that the water level is designed to come right to the top of the infinity edge, that pool users using floatation devices or playing boisterously, could roll over and fall from the infinity edge.
- 5.2.5 The designer argued that the lesser angle of 10° on his pool's infinity edge was in fact safer for someone on a floatation device, as 'with a shallow angle the floatation device [sic] can 'beach' on this edge', but with a 45° angle there was no chance of this happening.
- 5.2.6 I do not accept the designer's view that a person on a floatation device is more likely to 'beach' on the wall than on one with a greater angle. While a floatation device may be beached, the top of the wall has no feature that will prevent someone sliding or rolling over it. The designer has referred to the tiles being inherently slippery.
- 5.2.7 I consider the infinity edge is readily accessible by people wishing to climb into it, walk along, sit on, dive from, or reach while on a floatation device. For these reasons, as I consider that it is likely that someone could fall from the infinity edge, and that, because the distance from the top of the pool edge to the weir below is greater than 1m, the infinity edge does not comply with Clause F4.3.1 of the Building Code.
- 5.2.8 I note that the mesh trays proposed in the revised design at the terrace junction would reduce the fall height to 1m (refer paragraph 5.3.1). The authority has submitted that if the mesh trays were 'provided to cover all of water weir [thereby] reducing the fall to less than 1000mm on all sides' and that it would be accepted as an alternative solution.

5.3 The fall from the terrace onto the weir

- 5.3.1 The revised design contains two components to reduce the fall height from the terrace on either side of the pool and restrict access to the weir from those points. The first is two mesh trays that would be installed on the floor of the weir adjacent to the terrace on the east and west side. The second is the installation of a large fixed pots on the terrace, 250mm back from the pool coping, at point where the terrace meets the weir at the northeast and northwest points.
- 5.3.2 The mesh trays would reduce the fall height at that point to 1m. However, I note that the trays are only 800mm wide and I consider that insufficient in terms of a safe landing platform. I do not consider the provision of the trays provide a code-compliant solution to avoid the likelihood of injury arising from a fall from the terrace onto the weir.
- 5.3.3 The revised design includes the installation of large fixed pots on the terrace, 250mm back from the pool coping, at point where the terrace meets the weir at the northeast and northwest points to restrict access to the weir (refer also paragraph 5.3.1).
- 5.3.4 The pots may be sufficiently large to effectively block access to the weirs but details of the pots will need to be provided to the authority in order to confirm this.

5.4 The fall from the weir

- 5.4.1 The designer has stated that the weir 'is not a space that is generally accessible for pool uses'. However, I note that the weir can be accessed from the gardens on either

side of it (which in turn are at a drop of 1m from the pool terrace) or by climbing over the top of the pool wall (a drop of 1.2m). I consider it likely that people other than those servicing the pool will at some point access the weir.

- 5.4.2 As discussed in paragraph 5.3, I consider that the details for the revised design including the installation of the fixed pots on the terrace to restrict access to the weir will need to be provided to the authority.
- 5.4.3 The wall to outside of the weir is 460mm high, with a 45° top. The revised design also includes a 1200mm wide steel ‘safety platform’ to be installed 1260mm below the outer edge of the weir. The designer has stated that this is to provide ‘safety from falling’.
- 5.4.4 However, the fall height is still over the 1m allowed by Clause F4.3.1, and as discussed in section 5.5.4, I consider the 260mm difference in fall height to be material, especially when falling onto a hard surface. I consider that with respect to the weir the revised design, with the inclusion of the ‘safety platform’ at 1260mm below the outer edge of the weir, does not comply with Clause F4.
- 5.4.5 It is not clear whether the authority has turned its mind to the requirements of Clause F4.3.1 with respect to the fall from the planter at the northern edge of the pool terrace (to the east of the pool). The designer has stated, which the authority appears to have accepted, that the barrier in this case is being formed by the planter below the terrace. This planter is 1200mm wide and has apparently already been planted with a ‘mature hedge’ making it ‘inaccessible’.

5.5 Is it reasonable to issue a waiver?

- 5.5.1 As discussed in paragraphs 3.7 to 3.8, the designer has proposed a revised design to allay some of the authority’s concerns around compliance with Clause F4, and has asked that these be considered as the basis for a waiver by the authority of the requirements of Clause F4.
- 5.5.2 Under section 67 of the Act, authorities may ‘grant an application for a building consent subject to a waiver or modification of the building code’. However, I consider authorities may only grant waivers or modifications where it would be reasonable to do so.
- 5.5.3 In his submission, the designer has referred to a previous determination (2010/85), which discussed the circumstances where an authority may be considered to be acting reasonably ‘in issuing a waiver to the requirement to provide a barrier to protect people from falling out of the pool’.
- 5.5.4 The designer has also stated that the difference between the 1200mm fall posed by the fall from the pool edge, and the 1m threshold set by Clause F4.3.1, is immaterial, and that ‘the likelihood of someone hurting themselves were they to fall the extra 200 is no greater than if they fell 1m’.
- 5.5.5 The comments in Determination 2010/085 related to ‘the generic case of a freestanding swimming pool where the 1.2m high pool wall forms the safety barrier into the pool’. This is not the case in this situation, where no claim has been made that the wall between the pool edge and the bottom of the weir forms part of the pool

barrier under Clause F4.3.3 (the pool barrier is shown on the plans as being the outer wall of the weir).

- 5.5.6 Determination 2010/085 went on to say that, '[w]hile Clause F4 considers reducing the risk of falling, the consequence of falling must be considered in granting a waiver of the requirement for a barrier'. On the facts of that determination (which also involved an infinity edge pool), the consequences meant that a waiver would not be appropriate. I consider that the same reasoning applies here. The consequences of falling 1.2m into either the weir (from the pool edge) or onto a metal safety platform (from the outside weir edge) mean it would not be appropriate to grant a waiver in this instance.
- 5.5.7 The weir provides hard and unforgiving surface on which to fall. In my opinion, even a person falling from 1m high into the weir could hurt themselves, and any fall in excess of this would increase the risk of injury.
- 5.5.8 Determination 2010/097 considered the risks of injury incurred from a fall from a pool wall. That determination considered possible solutions including restricting access to the pool wall and limiting the fall from the pool wall to 1.2m, but mitigating the potential injury caused by a fall from that height by requiring the surrounding ground to be maintained as a grass or garden area to a distance 1m out from the wall.
- 5.5.9 The designer has also relied in his submissions on the authority's practice note on infinity edge pools. Both versions of this note state that any infinity edge pool with a drop of more than 1m needs to have an inwards sloping top of not less than 45° and that where a pool has a vertical drop of over 2.5m the design needs to incorporate either a barrier, or a horizontal safety net 1m below the pool edge.
- 5.5.10 The designer interpreted the practice note to mean that 'there is an acceptance that a weir wall may be up to 2.5m high without a safety barrier so long as the weir edge is 45°'. I do not accept this interpretation. Although it is not clear where the authority's figure of 2.5m has come from, the note is clearly states that '[e]ach application will also need to be assessed on risk and mitigating features'. The authority is providing guidance in its practice note, but also recognising that pools will have to be assessed individually. It is noted that the practice note refers to guidance that the authority has received from the Department about the placement of a horizontal barrier below the top of the pool wall.
- 5.5.11 Given my finding that the revised design does not comply with Clause F4, and the fact that there are no, or minimal, mitigating factors in the design to offset any increase in risk it creates, I consider it would not be reasonable for the authority to grant such a waiver.

5.6 The authority's amendment of the consent documents

- 5.6.1 The authority received the application for a building consent in December 2008. Without referring the consent back to the applicant, it made two material changes to the plans attached to the consent, namely altering the angle of the top of the infinity edge pool wall to 45°, and adding a safety barrier to the outside of the weir wall. It then issued the building consent on this basis.

5.6.2 I have considered the issue of an authority making unilateral changes to building consent plans in a previous determination (2011/029). In that determination I found that, in doing so:

The authority has effectively applied conditions to the consent without advising the applicant or architect, and has also adopted the role of designer by unilaterally making changes to construction details. I consider that these actions are not proper practice for a building consent authority.

5.6.3 This finding applies equally to the current determination. The authority should not have altered the plans attached to the building consent, and should not have issued a building consent based on the altered plans. Instead, it should have referred the plans back to the applicant. However, equally, the applicant should not have completed work that did not comply with the consented plans.

6. What is to be done?

6.1 Although I consider that the authority was incorrect in its actions in making an amendment to the building consent plans, the pool as constructed does not comply with Clause F4 of the Building Code and as such the authority should now issue a notice to fix requiring the owners to bring the building work into compliance with the Building Code. The notice to fix should identify the areas of non-compliance, namely: the fall height from the northern end of the pool wall, the fall from the terrace to the weir, and the fall from the weir to the ground below.

6.2 In response the applicant could develop a new design for the infinity-edge pool wall and outside weir walls that either complies with Clause F4 of the Building Code, or one that includes sufficient compensatory features to mitigate any aspects of non-compliance with Clause F4 and then apply for a waiver from compliance on this basis. Any new design developed should take into account the matters discussed in this determination.

6.3 It is not for me to say how compliance, or an appropriate alternative solution, is to be achieved. This is for the applicant to propose and for the authority to accept or reject. Once the authority is satisfied that compliance has been achieved, or that a waiver would be reasonable, it can issue an amended building consent.

7. Decision

7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the revised design for the infinity edge and weir to the pool does not comply with Clause F4 of the Building Code with respect to Clause F4 Safety from falling.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 25 August 2011.

John Gardiner
Manager Determinations

APPENDIX

A1. The relevant Clause from the Building Code Clause F4 includes:

CLAUSE F4—SAFETY FROM FALLING

OBJECTIVE

F4.1 The objective of this provision is to safeguard people from injury caused by falling.

FUNCTIONAL REQUIREMENT

F4.2 Buildings shall be constructed to reduce the likelihood of accidental fall.

PERFORMANCE

F4.3.1 Where people could fall 1 metre or more from an opening in the external envelope or floor of a building, or from a sudden change in level within or associated with a building, a barrier shall be provided.

A2. The authority's practice notes include:

BLD-148-PN: F4 Safety from falling – infinity pools. April 2009.

The purpose of this practice note is to provide you with the background for the acceptance of Infinity pools without the requirement for a safety barrier along the pool edge. It is reliant on the Infinity edge meeting specific design criteria in order to prevent people from sitting or walking on the edge of the pool...

our practice needs to recognise that the risk needs to be assessed and balanced against the probability of occurrence and therefore:

1. Any Infinity pool with a drop of more than 1m needs to incorporate an infinity edge with a slope inwards of no less than 45 degrees. This is more than the opinion offered by the Department of Building and Housing but it is council's opinion that 20 degrees will still permit a person to walk on the Infinity edge, especially if the pool edge is 350mm in width.
2. Any pool (and not necessarily one with an Infinity edge) where there is a vertical drop of more than 2.5m, the design needs to incorporate an inwards sloping edge of 45 degrees to prevent the edge to be used for walking or sitting on and either a barrier or a horizontal safety net needs to be incorporated in the design 1m below the pool rim and extend out for no less than 1m. Each application will also need to be assessed on risk and mitigating features.

BLD-148-PN: F4 Safety from falling – infinity pools. 22 February 2011.

1. Any Infinity pool...Consideration can be given in determining this requirement where a pool is 1.200metres in height and the falls is into the water receptor or onto a forgiving surface such as grass or planting 1.200 metres being used as a means of compliance with the FOSPA [Fencing of Swimming Pools Act 1987] and the requirement to meet compliance with the FOSPA and the Compliance documents of the Building code for fencing a pool.