



Determination 2021/024

Regarding the compliance of a proposed pool barrier incorporating an existing boundary fence at 1/92A Upper Harbour Drive, Greenhithe, Auckland



Figure 1: Photograph of existing boundary fence from the proposed pool side

Summary

This determination considers the compliance of an existing boundary fence forming part of a proposed pool barrier, with Building Code Clause F9 *Means of restricting access to residential pools*. The determination discusses whether compliance with Clause F9 can be achieved by way of an alternative solution.

1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 (“the Act”) made under due authorisation by me, Katie Gordon, National Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.¹
- 1.2 The parties to the determination are:
 - J and S Williams, the owners of the property at 1/92A Upper Harbour Drive, Greenhithe, Auckland (“the owners”) who applied for this determination
 - Auckland Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.

¹ The Building Act and Building Code (Schedule 1 of the Building Regulations 1992) are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents and guidance issued by the Ministry, is available at www.building.govt.nz.

- 1.3 This determination arises from the authority's proposed decision to refuse to grant a building consent for a new swimming pool, due to concerns about an existing boundary fence that forms part of the proposed pool barrier. The authority considers that the boundary fence would not comply with Clause F9 of the Building Code.
- 1.4 Under section 177(1)(a) of the Act, the matter to be determined is whether the proposed pool barrier incorporating the existing boundary fence complies with Building Code Clause F9 *Means of restricting access to residential pools*.
- 1.5 The scope of the matter is limited to the compliance of the particular section of the pool barrier formed by the existing boundary fence. I have not considered the compliance of any other part of the barrier or any other aspects of the Act or Building Code.
- 1.6 In considering this matter, I have had regard to the purposes and principles of the Act, as set out in sections 3 and 4, in particular the importance of:
- ensuring people who use buildings can do so safely and without endangering their health (section 3(a)(i))
 - the role that household units play in the lives of the people who use them, and ensuring that household units comply with the Building Code (section 4(2)(a))
 - promoting the accountability of owners and building consent authorities who have responsibilities for ensuring that building work complies with the Building Code and that the necessary building consents are obtained for proposed building work (sections 3(b) and 4(2)(q)(i)).
- 1.7 I have also had regard to the purpose of the special provisions of the Act relating to residential pools. Section 162A provides that the purpose of the provisions is to prevent drowning of, and injury to, young children by restricting unsupervised access to residential pools by children under five years of age.
- 1.8 In making my decision I have considered the information and submissions provided by the parties.
- 1.9 Unless otherwise stated, references in this determination to sections are to sections of the Act, and references to clauses are to clauses of the Building Code.

2. The proposed pool barrier

- 2.1 The property is in a residential area and has an existing house constructed on it. The owners propose to construct a swimming pool on the southeast side of the property, to be surrounded by a pool barrier (see Figure 2).
- 2.2 One side of the pool barrier is proposed to be formed by an existing boundary fence (see photograph in Figure 1). I will refer to this fence as "the fence" unless the context requires a distinction to be made between the boundary fence and the internal fences forming part of the pool barrier, in which case I will refer to it as the "boundary fence". The proposed pool will be constructed approximately 2200-2700 mm away from the fence.

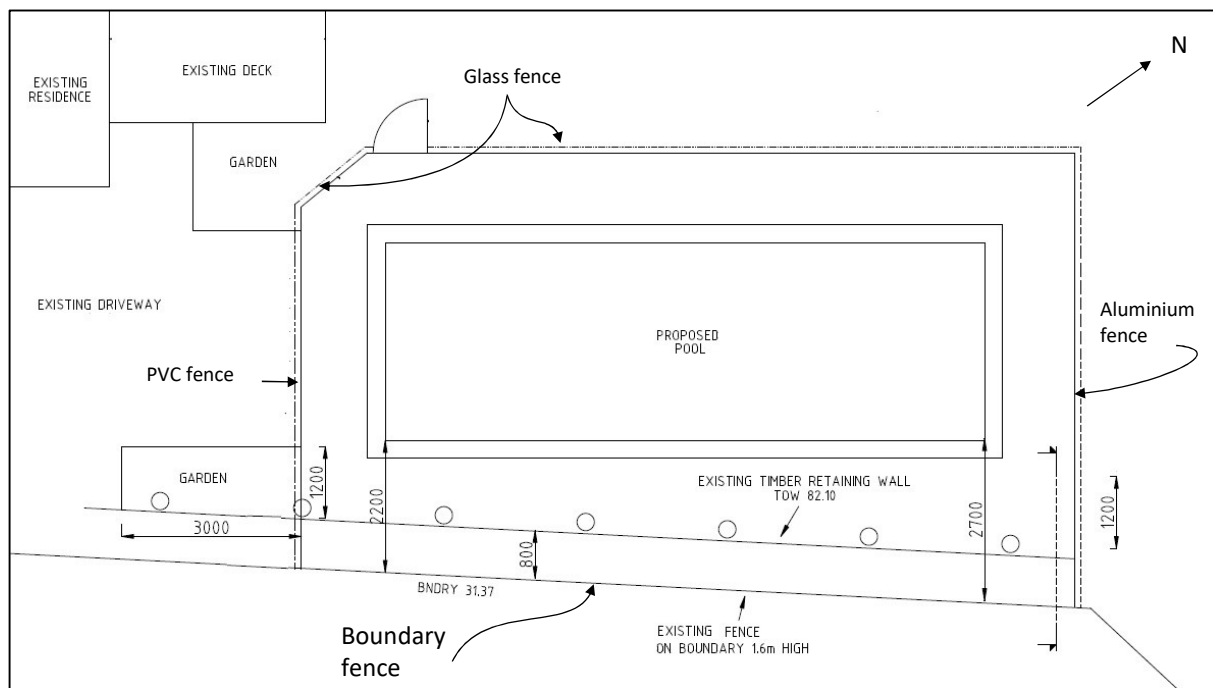


Figure 2: Site plan

2.3 The fence is constructed from a PVC fencing system, designed to resemble a timber fence. From the pool side, the fence is 1705 mm high when measured from ground level to the top of the top rail. The fence is constructed as follows on the pool side (see also Figure 3):

- There is a 160 mm high horizontal rail at the base (“the bottom rail”), which projects from the face of the fence in two small increments, each less than 5 mm. The gap between the ground and the bottom rail is approximately 200 mm.
- Above the bottom rail is an 860 mm sheer face, topped by another projecting (less than 5 mm) horizontal rail (“the middle rail”).
- The middle rail is 160 x 50 mm, and is 860 mm above the bottom horizontal rail (the area occupied by the sheer face). The middle rail is a total of 1380 mm high at its top, measured from the ground.
- The middle rail is topped by a section of detailing, which totals 325 mm in height and comprises:
 - a series of vertical members (measuring 40 x 40 mm square, 240 mm high, and spaced 95 mm apart)
 - an 85 x 50 mm horizontal rail on top of the vertical members, which forms the top of the fence (“the top rail”).

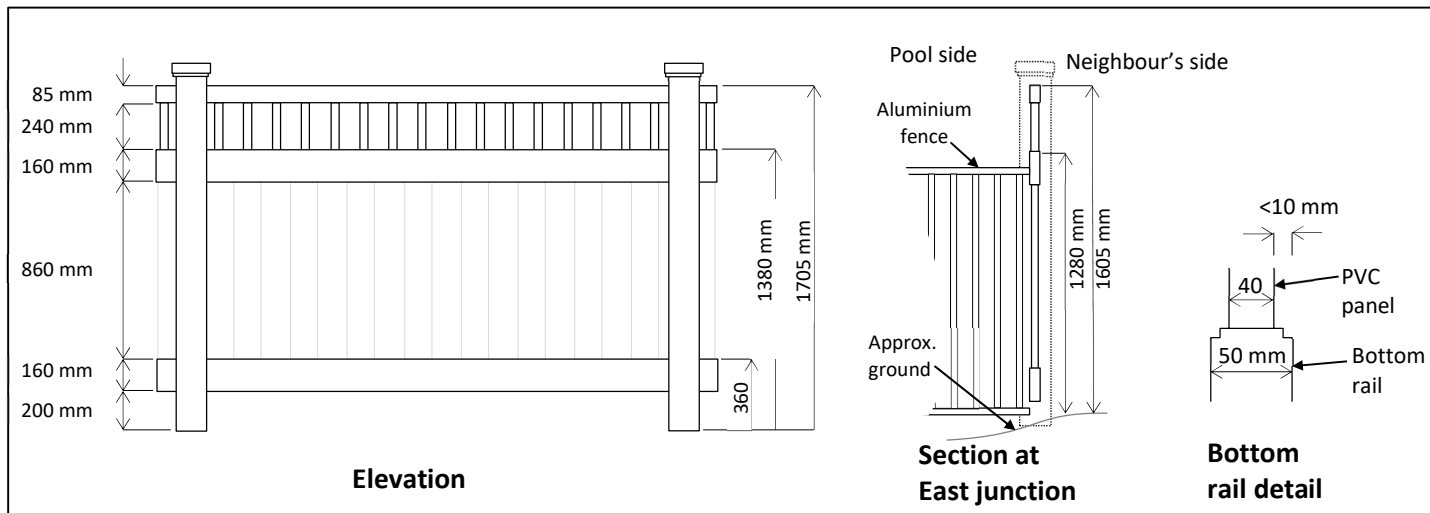


Figure 3: Sketch of boundary fence (not to scale)

- 2.4 On the neighbouring property’s side of the fence (“the neighbour’s side”), the construction of the fence is identical. On this side, the fence measures 1605 mm in height from ground level to the top of the top rail, and the gap at the bottom of the fence is approximately 100 mm. The height from the ground on the neighbour’s side to the top of the middle rail (beneath the vertical members) is 1280 mm.
- 2.5 On the pool side, there is an existing timber retaining wall located 800 mm from the base of the fence (see Figures 2 and 4). The ground slopes upward from the retaining wall to the fence and the neighbour’s side before flattening out. I have not received any information to indicate there are any permanent objects alongside the fence on the neighbour’s side.
- 2.6 Where the fence meets the two internal fences forming other sides of the proposed pool barrier, the junctions are as follows:
- At the east junction, the internal, aluminium, fence will be 1200 mm high, and will continue at this height for 1200 mm horizontally past where the retaining wall “drops off” (see Figure 4). The fence is capped with a 38 x 25 mm rail.
 - At the south junction, the internal, PVC, fence will be the same height as the boundary fence, and will continue at this height for 1200 mm horizontally past the retaining wall.
- 2.7 I have not considered the compliance of the internal fences, other than the junctions with the boundary fence that is the subject of this determination.

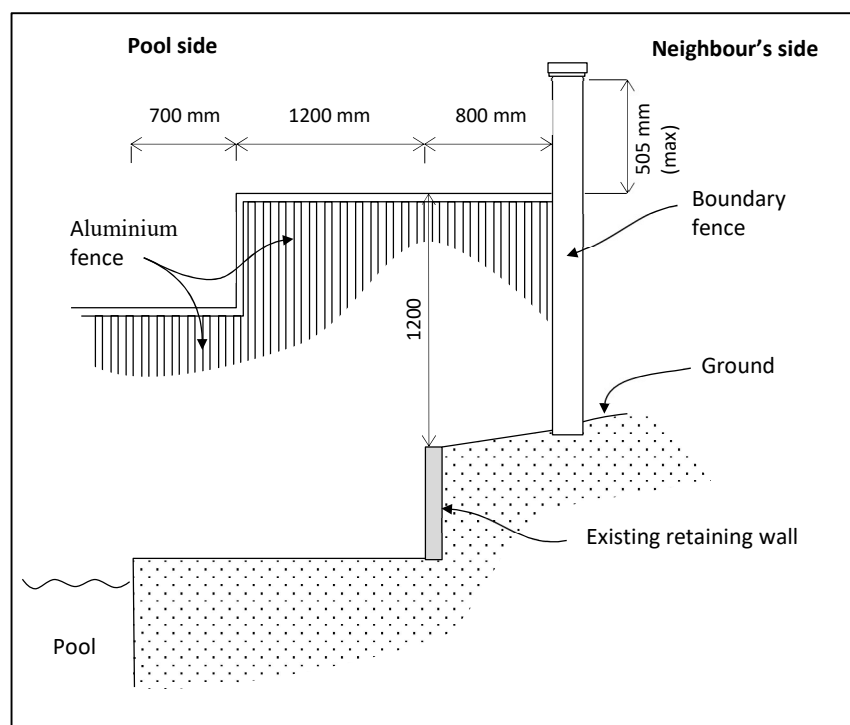


Figure 4: Sketch of east junction (not to scale)

3. Background

- 3.1 On 20 January 2020, the owners applied to the authority for a building consent for a new residential swimming pool (BC 10302149). The application indicated that compliance of the pool barrier was to be achieved via conformance with New Zealand Standard NZS 8500:2006² (“the Standard”), and the owners subsequently confirmed this in their correspondence.
- 3.2 The authority sent out several requests for further information in order to form a view on the compliance of the pool barrier. On 4 February 2020, the authority asked the owners to revise the design and documentation for the proposed pool barrier to demonstrate compliance with Clause F9. The authority’s particular concerns related to:
- the height of the boundary fence (which it noted under the Acceptable Solution for Clause F9³ would need to be 1800 mm)
 - the detailing at the top of the boundary fence (which it considered created a “climbable point”, when the Acceptable Solution requires a “non-climbable zone”)
 - the height of the internal fences (which it considered needed to be the same height as the boundary fence at the junctions where the fences meet to prevent a “climbable point around the corner”)

² NZS 8500:2006 *Safety Barriers Around swimming Pools, Spas and Hot Tubs*.

³ Acceptable Solution F9/AS1 Residential Pool Barriers. Acceptable Solutions are produced by the Ministry and, if followed, must be accepted by a building consent authority as establishing compliance with the Building Code.

- the presence of the retaining wall within 1200 mm of the boundary fence.⁴
- 3.3 The owners maintained their view that the Standard could be used as an alternative solution for demonstrating compliance, and that as it specified that barriers should be at least 1200 mm high, without differentiating between barriers on property boundaries and other barriers, the owners' barrier was compliant.
- 3.4 Throughout February 2020, the parties continued to discuss the compliance of the pool barrier with Clause F9, but could not reach agreement. During these discussions, the building consent was put on hold. The authority indicated on 14 February 2020 that if evidence was not provided to demonstrate the barrier's compliance with Clause F9, it intended to refuse the building consent application. This was not done, as the owners applied for a determination.
- 3.5 The Ministry received the application for a determination on 18 February 2020.

4. Submissions

Owners' submissions

- 4.1 The owners made a submission with their application for determination, the main points from which can be summarised as follows:
- The Standard is a compliance pathway for the pool barrier, and specifically for the boundary fence height. At paragraph 3.3.1, the Standard provides that "the effective barrier/fencing height shall not be less than 1200 mm". The 1600 mm boundary fence is significantly higher than 1200 mm.
 - Determinations 2019/001 and 2018/006⁵ establish that an Acceptable Solution is not the only path to demonstrate compliance with the Building Code.
 - The proposal to use the existing 1600 mm boundary fence as a section of the pool barrier complies with the purpose in Clauses F9.1 and F9.2.
- 4.2 The owners advised in a subsequent email that they consider the fence to have adequate features to prevent climbing by under five-year olds, due to the 1380 mm "effectively solid" face from the ground level to the middle rail.⁶ The owners added that there are no handholds, footholds or obstacles that a young child could use to scale the fence, and that "[if] they could, then a 1.2 metre internal (non-boundary pool barrier) wouldn't be effective given it is nearly 200 mm lower than our boundary fence."

Authority's submissions

- 4.3 The authority made a submission on 18 March 2020, the main points from which can be summarised as follows:
- The boundary section of the pool barrier as designed and the solution in the Standard provide a "lower level of safety" with respect to the

⁴ It is not clear what the authority's particular concern was in relation to this point. The authority did not refer to it in its submission in response to the application for determination.

⁵ Previous determinations can be found on the Ministry's website: <https://www.building.govt.nz/resolving-problems/resolution-options/determinations/determinations-issued/>.

⁶ I note that the measurement to the top of the middle rail is 1380 mm on the pool side, however it is 1280 mm on the neighbour's side due to the change in ground level.

requirements in Clause F9.3.1, when compared to that provided by paragraph 2.2.1(a) of the Acceptable Solution.

- The authority does not accept the owners' view that because the boundary fence section of the proposed barrier complies with the Standard, it therefore complies with Clause F9.
- The owners may have no control over the other side of the fence, "so the height and non-climbable area dimensions in [the Acceptable Solution] provide a guide for other alternative methods".

Draft determination

- 4.4 A draft of this determination was issued to the parties for comment on 30 March 2021.
- 4.5 The authority and the owners accepted the draft with no further comment, on 1 April and 23 April 2021 respectively.

5. Discussion

Legislation

- 5.1 The relevant Building Code Clause that the barrier (and for the purposes of this determination, the boundary fence) must comply with is Clause F9. The objective of Clause F9 is "to prevent injury or death to young children involving residential pools".
- 5.2 The functional requirement of Clause F9, and relevant performance clauses in this case, are as follows:
- F9.2** Residential pools with a maximum depth of water of 400 mm or more that are filled or partly filled with water must have means of restricting access that prevents unsupervised access by a child under 5 years of age.
- F9.3.1** Residential pools must have or be provided with physical barriers that restrict access to the pool or immediate pool area⁷ by unsupervised young children (ie, under 5 years of age).
- F9.3.2** Barriers must either—
- (a) surround the pool (and may enclose the whole or part of the immediate pool area);
- ...
- F9.3.3** A barrier surrounding a *pool* must have no permanent objects or projections on the outside that could assist children in negotiating the barrier.

Compliance by way of the Acceptable Solution

- 5.3 The Acceptable Solution for Clause F9 is F9/AS1. Where a pool barrier conforms to the Acceptable Solution, an authority must accept it as also complying with Clause F9.
- 5.4 In the present case, the owners accept that the boundary fence does not conform to the Acceptable Solution, and are seeking to establish compliance by other means. The Acceptable Solution is not the only means of establishing compliance with

⁷ "Immediate pool area" is defined in section 7 as "the land in or on which the pool is situated and so much of the surrounding area as is used for activities carried out in relation to or involving the pool".

Clause F9. The Building Code is performance based and it is open to a pool owner to demonstrate that their barrier complies by some other means, referred to as an alternative solution. A building consent authority cannot refuse to accept a design solution simply on the basis that it is not in accordance with an Acceptable Solution.

5.5 However, it is still useful to understand the principles behind the criteria provided in the Acceptable Solution as a means to achieve compliance with the performance criteria in Clause F9.

5.6 Where a particular barrier design deviates from these prescriptive criteria, it may be necessary for the design to incorporate some other compensating features that will achieve the same overall result of compliance with the performance criteria in Clause F9.

5.7 The relevant paragraphs of the Acceptable Solution are as follows:

2.1 Pool barriers

2.1.1 A pool barrier can be a fence but may also take other forms of construction, such as a concrete block wall. ...

2.1.2 Pool barriers not on a property boundary shall have a height of not less than 1200 mm from the finished floor or ground level outside the pool barrier.

2.1.3 Pool barriers shall not be angled more than 15° from vertical and may only slope away from the pool. Any rails, rods or wires forming a part of a pool barrier that are not themselves vertical shall be at least 900 mm apart vertically to restrict climbing. There shall be no openings in the pool barrier that a 100 mm diameter sphere could pass through.

...

2.1.7 Any projections or indentions on the outside face of a pool barrier shall not have a horizontal projection from the face of the pool barrier greater than 10 mm unless they are at least 900 mm apart vertically.

2.2 Pool barrier on a property boundary

2.2.1 If a pool barrier is located on a property boundary, it shall:

- a) Be not less than 1800 mm high, measured from the ground level on the pool side, and
- b) Have no openings that a 100 mm diameter sphere could pass through, and
- c) Be located not less than 1000 mm horizontally from the water's edge, and
- d) Have a 900 mm high zone on the pool side of the barrier that begins not more than 150 mm from the top and is constructed as specified in Paragraphs 2.1.3 and 2.1.7, to restrict climbing by children.

Comment:

Should a child gain access to the top of the barrier from the outside, this construction method will prevent them from climbing down into the pool area.

5.8 By specifying that, among other things, a pool barrier located on a boundary must be higher (at 1800 mm) than those sections of the pool barrier located entirely on the pool owner's property (which need only be 1200 mm high), and the non-climbable zone on its pool side, which must begin within 150 mm of the top of the barrier, the Acceptable Solution is acknowledging the difficulty that pool owners face when a pool barrier incorporates a boundary fence. The comment following

paragraph 2.2.1 makes it clear that the intention of the additional criteria in this paragraph are to ensure that if a child did manage to climb to the top of a barrier located on a pool boundary, whether because a neighbour had placed a permanent or impermanent object against it or otherwise, then the construction of the pool-side surface of the barrier will mean it is difficult for the child to climb down into the immediate pool area.

- 5.9 I note here that the owners have suggested the authority was only willing to accept conformance with the Acceptable Solution as a means of establishing compliance. This is not my reading of the authority's position. In its correspondence, the authority has stated that the owners can demonstrate compliance with Clause F9 by way of an alternative solution. However, in the authority's view no evidence demonstrating such compliance had been provided.

Compliance as an alternative solution

- 5.10 The owners are seeking to establish the compliance of the boundary fence by way of an alternative solution. The solution they propose is the Standard (NZS 8500). Their view is that because the fence complies with the height specified in the Standard, it therefore complies with Clause F9 as an alternative solution.
- 5.11 The Standard is not referenced in the Act as a means of compliance with the Building Code that must be accepted by building consent authorities. However, it can be used to inform an alternative solution proposal.
- 5.12 As with any other proposed alternative solution, what must be assessed in this situation is compliance with the performance criteria in Clause F9.

The Standard

- 5.13 The owners point in particular to the provisions in the Standard relating to barrier height. The Standard does not differentiate between the height of internal and boundary barriers in the same way that the Acceptable Solution does, instead specifying a height of 1200 mm for all pool barriers, irrespective of where the barrier is located. The owners point out that the fence in this case, at 1705 mm (or 1605 mm from the neighbour's side), exceeds this measure even if the fence is measured only to the top of the middle rail. I discuss the height of the fence further under the heading 'Other alternative solution'.
- 5.14 The Standard does make specific reference to boundary fences at paragraph 2.5, stating that it is the property owner's responsibility to ensure that where a boundary fence forms part of a pool barrier it continues to comply, and in particular, to "ensure that neighbours do not permanently place climbable objects adjacent to the fence".
- 5.15 This stipulation, if met, would contribute towards a barrier's compliance with the requirement in Clause F9.3.3 that a barrier "must have no permanent objects or projections on the outside that could assist children in negotiating the barrier". However, the Standard is silent on how this is to be achieved when a property owner cannot control what happens on a neighbouring property, and has no ability to prevent a neighbouring property owner from building a permanent structure next to a boundary fence or raising the level of ground of their property, if they so choose.
- 5.16 This is the difficulty that the criteria in paragraph 2.2.1 of the Acceptable Solution are intended to address. The Standard contains no such compensatory provisions.

Accordingly, I do not consider that it is open to the owners in this case to claim that because the fence conforms to the Standard, it necessarily also complies with Clause F9.

Other alternative solution

5.17 However, this does not mean that the fence cannot still comply with the Building Code as an alternative solution. As stated above, what is required is an assessment of the fence against the performance requirements in Clause F9.

5.18 Clause F9.3.3 requires the barrier to have no permanent objects or projections on the outside that could assist children in negotiating the barrier. The term “projections” is not defined in the Building Code or the Act. However, the ordinary meaning of “projection”, is “an object which projects or extends beyond the adjacent surface; a projecting part or thing”.⁸ The High Court considered the meaning of “projections” in *Spiller v Hastings District Council*, where the court stated:⁹

I agree ... that the struts are projections in the way that word is commonly used, as being a part or thing which extends outwards beyond a prevailing line or surface.

5.19 On these broad definitions, the bottom rail along the base of the fence would be considered a projection. However, I consider that, by itself, the bottom rail would provide minimal assistance to a young child wishing to climb the barrier on the neighbour’s side. The projections are in two increments that are each less than 5 mm from the surface of the fence, and have a radius profile that would be difficult to gain purchase on. By comparison, I note that the Acceptable Solution is only concerned (at paragraph 2.1.7) with projections from the face of the pool barrier of greater than 10 mm, for this reason.

5.20 The authority has expressed concern about the area of detailing near the top of the fence, which it considers creates a “climbable point” that young children could use to help them negotiate the fence. The detailing includes the middle rail and the vertical members. While I do not consider that any of these elements could be described as “projections”, I acknowledge the authority’s concerns and agree that these elements’ impact on the assessment of compliance with Clause F9.3.1.

5.21 The similarity of impact can be compared with the Acceptable Solution at paragraph 2.1.7, where the prohibition on projections on the face of the pool barrier of greater than 10 mm is extended to include indentations, and in paragraph 2.2.1(d) which applies to the non-climbable zone on the inside (pool side) of the barrier. Likewise, in considering the outside surface of a pool barrier, paragraph 3.3.3 of the Standard prohibits any combination of projections or indentations that form a horizontal surface with a depth greater than 10 mm, unless:

- they are spaced at least 900 mm apart vertically; and
- any lower projections or indentations are at least 1000 mm below the top of the barrier.

5.22 The underlying principle behind these criteria in the Acceptable Solution and the Standard is that, in order to restrict access to the immediate pool area, the pool

⁸ Definition of “projection”, Oxford English Dictionary, oed.com (25 February 2021) meaning 3(a).

⁹ *Spiller v Hastings District Council* [2013] NZHC 1444 at paragraph [9].

barrier should not have features that provide foot- and hand-holds within a specified zone of the barrier's face that could help a child climb up the outside of the barrier, or down the pool-side of the barrier if it is on the property boundary.

- 5.23 In my view, the area of detailing at the top of the fence provides hand- and foot-holds that will assist a young child to negotiate the barrier. The size of the middle rail (at 50 mm wide) and the spacing between members (95 mm) make the middle rail and the vertical members (at 40 x 40 mm) graspable by a young child.
- 5.24 From the neighbour's side, the height of the fence from the ground to the top of the middle rail is 1280 mm. Although this is above the 1200 mm, which is the height of barriers in the Standard and for barriers other than boundary fences in the Acceptable Solution, it is not significantly higher and will be within reach of a child¹⁰ standing on the neighbour's property.
- 5.25 The vertical members and middle rail would also enable a young child to climb down into the pool area from the top of the barrier. In addition, the east junction of the fence with the 1200 mm high aluminium internal fence could further assist a young child to climb down into the pool area. The top point at which this internal fence meets the boundary fence will be approximately 400-500 mm below the top rail of the boundary fence, and less than 180 mm below the middle rail, providing further foot and hand-holds on a descent into the pool area.

Conclusion and consequences

- 5.26 It is important to note that the compliance requirement for pool barriers in Clause F9.3.1 is to "restrict access" to the pool area by unsupervised young children; it is not to prevent access. In other words, the requirement is not to construct a barrier that will keep all young children out; it is to construct a barrier that most children under the age of five years will be unable to get over, that all will find a challenge to climb, and that will at least slow down or deter the most able.
- 5.27 In my view, taking into account the various features discussed above, the boundary fence in this case does not present such a challenge. In conclusion, I consider the boundary fence will not restrict access of young children to the pool area and therefore does not comply with Clause F9 as an alternative solution.
- 5.28 The owners must now devise a new design for their pool barrier that achieves compliance with Clause F9. They may elect to either modify the existing boundary fence or build a new barrier, which the authority will then assess for compliance.
- 5.29 In either event, the owners will have an ongoing obligation to ensure that their pool barrier remains compliant under section 162C. In Determination 2020/028¹¹ I made some general comments regarding this obligation, which the parties in this case may find useful.

¹⁰ Based on Ministry of Health growth charts <https://www.health.govt.nz/our-work/life-stages/child-health/well-child-tamariki-ora-services/growth-charts> (accessed 15 March 2010).

¹¹ See Determination 2020/028 Regarding the compliance of a pool barrier with Building Code Clause F9 Means of restricting access to residential pools (16 October 2020) at paragraphs 5.16-5.18.

6. Decision

- 6.1 In accordance with section 188 of the Building Act 2004, I determine the proposed pool barrier incorporating the existing boundary fence does not comply with Building Code Clause F9 *Means of restricting access to residential pools*.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 29 October 2021.

Katie Gordon
National Manager, Determinations