

Determination

under the

Building Act 1991

No. 97/005: Building consent for a three-wire bridge

1. The matter to be determined

- 1.1 The matter before the Authority is whether a building consent should be issued for a three-wire bridge on a track in a national park.
- 1.2 The Authority takes the view that it is being asked in effect to determine whether:
 - (a) The proposed bridge will comply with clauses F4 “Safety from falling” and F8 “Signs” of the building code (the First Schedule to the Building Regulations); and if not
 - (b) Whether a waiver or modification of clause F4 should be granted under section 34(4)(a) of the Building Act; and if so
 - (c) What if any conditions should be imposed under that section.
- 1.3 In making its determination, the Authority has not considered whether the proposed bridge will comply with any other provisions of the building code.

2. The parties

- 2.1 The applicant was the territorial authority concerned, the other party was the Department of Conservation (“the Department”).
- 2.2 Neither party requested the Authority to hold a hearing at which they could speak and call evidence.

3. The proposed bridge

- 3.1 The proposed bridge is to be constructed in accordance with the *River Crossings Handbook* originally published by the then New Zealand Forest Service and now the property of the Department of Conservation. That document together with the photographs and other information submitted to the Authority, show that the proposed bridge essentially consists of three wires spanning between supports, in this case trees, on either side of a watercourse. There is a footwire and two handwires. V-shaped metal spreaders are provided at approximately 3.5 m intervals along the length of the bridge, with the point of the

V attached to the footwire and the ends to the handwires. The dimensions of the spreaders are such that the handwires are held 750 mm apart and 1.2 m above the footwire.

- 3.2 For most of the time, the watercourse can be readily forded, but when it is flooded the safest way to cross will be by the bridge.
- 3.3 The type of location in which it is proposed to construct the bridge is described in 5.5 below.

4. The legislation

- 4.1 The proposed bridge raises doubts about compliance not only with clauses F4 and F8 but with various other clauses of the building code, particularly B1 “Structure” and B2 “Durability”. The Authority notes that the territorial authority has addressed those matters and the Department has not disputed its decisions. The Authority was not asked to address anything other than clause F4.
- 4.2 The relevant parts of clause F4 read as follows:

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 of level within or associated with a building, a barrier shall be provided.

Performance F4.3.1 shall not apply where such a barrier would be incompatible with the intended use of an area

F4.3.4 Barriers shall:

- (a) Be continuous and extend for the full extent of the hazard,
- (b) Be of appropriate height,
- (c) Be constructed with adequate rigidity,
- (e) Be constructed to prevent people from falling through them, and
- (f) Restrict the entry of children under 6 years of age, when located in areas likely to be frequented by them.

4.3 The relevant parts of clause F8 read as follows:

OBJECTIVE

F8.1 The objective of this provision is to:

- (a) Safeguard people from injury or illness resulting from inadequate identification of escape routes, or of hazards within or about the building,
- (b) Safeguard people from loss of amenity due to inadequate direction, and

FUNCTIONAL REQUIREMENT

F8.2 Signs shall be provided in and about buildings to identify:

- (a) Escape routes,
- (b) Emergency related safety features,
- (c) Potential hazards, and

PERFORMANCE

F8.3.2 Signs indicating potential hazards shall be provided in sufficient locations to notify people before they encounter the hazard.

F8.3.3 Signs to facilitate escape shall:

- (a) Be provided in sufficient locations to identify escape routes and guide people to a safe place

5. The submissions

5.1 The territorial authority doubted whether the bridge would comply with clause F4 “Safety from falling” of the building code and, if not, whether it should grant a waiver or modification of that clause. It also asked whether specific signs should be placed at each end of the bridge warning of the danger of falling.

5.2 The Department queried whether the proposed bridge was a “building” for the purposes of the Building Act. If it was, then the Department contended that:

- (a) “Barriers on this type of structure would be incompatible with the intended use of the area.”
- (b) “In terms of safety it would be fair to say that to the first time user they are not that appealing. However, in the circumstances and conditions where they are constructed the alternatives often offer less appeal.”
- (c) “Given the relatively low use of these structures the alternative of providing a swing bridge (or similar) is not economically feasible and the other alternative of removing

the structures does not look that attractive given that the initial reason for providing the structure was for safety reasons.”

(d) “The level of skill and the level of expectation of those using the routes that these structures are located is such that . . . complaints of injuries caused by the use of these structures is very low.”

5.3 To explain the circumstances in which such bridges have been constructed, the Department also supplied several of its publications on the general topic of its strategy in respect of visitors to national parks.

5.4 In particular, the Department supplied copies of the publications *Visitor Strategy* (Department of Conservation) and *The New Zealand Recreational Spectrum: Guidelines for Users* (Hillary Commission and Department of Conservation). Those publications give details of the Department’s sophisticated classification of areas within parks on the basis of a “recreation opportunity spectrum”. That classification is based on a continuum of broad types of areas from “urban” through such descriptions as “drive-in back country” and “remote” to “wilderness”. For each type of area the classification takes account of the experience a visitor is seeking, the activities corresponding to the experience, and the setting in which the activity is conducted. Account is also taken of a continuum of types of visitors, from “short stop travellers” through such descriptions as “overnighters” and “back country adventurers” to “thrill seekers”.

5.5 In terms of that classification, the proposed bridge could be described as being on a track in a “back country walk in” or “remote” area where visitors would be “back country adventurers” or “remoteness seekers”. There are no huts on the track, but the track itself is regularly inspected by the Department’s staff.

6. Discussion

6.1 Is the bridge a building?

6.1.1 The Department doubted whether the proposed bridge was a “building for the purposes of the Building Act. The relevant part of the Act’s definition of “building” reads:

. . . the term “building” means any temporary or permanent movable or immovable structure . . . but does not include . . .

6.1.2 The Act does not define the word “structure”. The Authority therefore considers that anything which can properly be described as a “structure”, in the ordinary and natural meaning of that word, is a “building” for the purposes of the Building Act unless it comes within one of the exceptions specified in the Act.

6.1.3 The Authority considers that the proposed bridge is a structure in that sense. Indeed, the Department itself, in its correspondence with the territorial authority and other documents submitted to the Authority, refer to the proposed bridge as a “structure”.

6.1.3 Given that the bridge is a building, is a building consent required for its construction? The Third Schedule to the Building Act lists building work which is exempted from the need for building consent but not from the need to comply with the building code. One of those exemptions is:

- (i) Any platform, bridge, or the like from which it is not possible for a person to fall more than 1 metre even if it collapses.

6.1.4 The Authority does not know how far one could fall from the bridge, but assumes it would be more than 1 m. Even if it were not, the Authority understands that the bridge does not comply with the building code, specifically clause B2. The territorial authority is apparently prepared to grant a waiver in that respect, subject to conditions as to inspection and maintenance, but of course such a waiver may be granted only if a building consent is issued for the bridge.

6.1.5 The bridge is therefore a building, and a building consent is required for its construction.

6.2 *Clause F4 of the building code?*

6.2.1 One of the results of the building code is to ensure that buildings satisfy their users reasonable expectations as to safety and the other objectives of the building code. That reasonable expectation will be different for different buildings and for different parts of buildings. Safety is not an absolute. No-one expects to be as safe from falling when using a stair or a ramp as when using a level floor. Nevertheless, the building code requires in effect that an acceptable level of safety will be provided in all buildings and throughout each building.

6.2.2 In the context of the objective stated in clause F4.1 of safeguarding people from injury by falling, it relevant that the bridge itself is intended as a safety measure in the event of a reasonably foreseeable abnormal conditions, in this case a flood. It is also relevant that anyone intending to use the bridge would be in no doubt that a degree of care would be required.

6.2.3 Considering safety in terms of the degree of care required to use the bridge, it is relevant that the bridge would be used only by people who are capable of walking to it through comparatively difficult country.

6.2.4 Considering the requirements of clause F4 of the building code:

- (a) The safety barriers required by clause F4.3.1 are provided by the handwires and the spreaders.
- (b) The barriers extend the full length of the bridge in compliance with clause F4.3.4(a).
- (c) The appropriate height required by clause F4.3.4(c) is considered to be achieved by the positioning of the handwires as described in 3.1 above.

- (d) Clause F4.3.4(c) requires “adequate rigidity”, where the word “adequate” is defined as meaning adequate to achieve the objectives of the building code”. In this case, the objective, set out in clause F4.1, is to safeguard people from injury caused by falling. The barrier consisting of handwire and spreaders would usually be considered to be flexible as distinct from rigid. It is largely that flexibility which can make the use of the bridge “not that appealing”. Nevertheless, the Authority considers that the flexibility is acceptable in the special circumstances in which such bridges are used by fit and competent adults to avoid the danger of attempting to ford a flooded watercourse.
- (e) The Authority has been given no reason to doubt that the strength of the barrier complies with clause F4.3.4(d).
- (f) Clause F4.3.4(e) requires barriers to be “constructed to prevent people from falling through them”. The spreaders are at such wide intervals that they will do little to prevent people from falling through the barrier. However, people using the bridge will no doubt be grasping one if not both handwires while they do so. It is entirely conceivable that someone might slip and lose their footing while crossing, but it is unlikely that such a slip would result in their falling through the barrier because on slipping they could be expected to retain their hold on, or grab hold of, one if not both handwires. That expectation is, of course, based on the fact that no one will be using the bridge who is not used to tramping on slippery tracks where footing is lost easily and a quick grab for a handhold is a frequent occurrence. Thus it is the handwires rather than the spreaders which will prevent people from falling through the barrier, or at least will enable people to prevent themselves from falling.

6.2.4 The Authority therefore concludes that the bridge complies with clause F4 in that it incorporates safety barriers which are adequate to achieve the objectives of the clause, but which are adequate only because the people who can be expected to use the bridge will be capable of walking to it through comparatively difficult country and can be assumed to be capable of using it safely.

6.3 *Clause F8 of the building code*

6.3.1 The *River Crossings Handbook* requires warning notices stating “Maximum load 1 person” to be attached prominently, one each side of the crossing.

6.3.2 In the context of the relevant objective of clause F8 of safeguarding people “from injury . . . resulting from inadequate identification of hazards . . .”, the Authority considers that the hazard of flood and the hazard of careless use of the bridge are both self-evident. No signs are needed to safeguard those people likely to use the bridge. It is therefore unnecessary to set out a detailed discussion of the specific requirements of clause F8 in that context.

6.4 *Waivers, modifications, and conditions*

6.4.1 As to conditions to be incorporated in the building consent, the Authority observes that no condition may be imposed unless it is authorised by section 34(4), which reads:

(4) The territorial authority may grant a building consent subject to -

- (a) Such waivers or modifications of the building code, or any document for use in establishing compliance with the building code, subject to such conditions as the territorial authority considers appropriate; and
- (b) Such conditions as the territorial authority is authorised to impose under this Act or the regulations in force under this Act.

6.4.2 Although the Authority considers that the bridge will comply with clause F4 without waiver or modification, it will not comply with the relevant document for establishing compliance with the building code, namely Approved Document F4. Under section 34(4)(a), if a waiver is granted then the building consent may be subject to “such conditions as the territorial authority considers appropriate”. Section 20 gives the Authority the same powers as a territorial authority in respect of waivers.

6.4.3 Thus the Authority has the power to impose conditions. The only condition suggested by the parties was the provision of a notice warning of the danger of falling, and the Authority considers that to be unnecessary for the reasons set out in 6.3.2 above. The Authority sees no need for any condition to be placed on the building consent in respect of clauses F4 and F8.

7. Conclusion

7.1 The governing factor in deciding whether the safety barriers incorporated in the bridge comply with clause F4 of the building code is the people who will use it. The location of the bridge will ensure that those people will be “back country adventurers” or “remoteness seekers” capable of walking to the bridge through comparatively difficult country and using it safely. The Authority therefore concludes that a bridge which is -

- (a) Constructed in accordance with the plans and specifications for “walkwires (normal usage)” in the *River Crossings Handbook* mentioned in 3.1 above.
- (a) In an area classified as either “remote” or “wilderness” in accordance with the Department of Conservation publication *The New Zealand Recreation Opportunity Spectrum: Guidelines for Users* mentioned in 5.4 above; and
- (c) On a track classified as being for users who are “back country adventurers” or “remoteness seekers” in accordance with the publication *Visitor Strategy* mentioned in 5.4 above -

will comply with clause F4 of the building code.

7 The Authority's decision

7.1 In accordance with section 20(a) of the Building Act the Authority hereby determines that a building consent is to be granted for the proposed three-wire bridge.

Signed for and on behalf of the Building Industry Authority on this 18th day of June 1997

J H Hunt
Chief Executive