



New Zealand  
**Historic Places Trust** *Pouhere Taonga*

**SUSTAINABLE MANAGEMENT  
OF  
HISTORIC HERITAGE**

**Guide No. 6**

**BUILDING ACT 2004**



3 August 2007

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## **Sustainable Management of Historic Heritage Guidelines**

### **Guide No.6**

### **Building Act 2004**

This guide provides an overview of historic heritage matters in relation to the Building Act 2004. Further information about the Building Act 2004 is available from the Department of Building and Housing's website: [www.dbh.govt.nz](http://www.dbh.govt.nz) or [www.building.govt.nz](http://www.building.govt.nz)

This guidance will be updated on completion of the building code review. The NZHPT acknowledges the assistance of the Department of Building and Housing in developing this guidance.

While the NZHPT acknowledges the contribution of other agencies and organisations, the opinions and views expressed in this guide are those of the NZHPT only.

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## **Introduction**

Providing for the conservation of historic heritage values is an important aspect of building regulation. The sustainable development of buildings requires an approach that provides for matters such as health, safety and efficiency while also respecting historic heritage values.

This guide provides an overview of historic heritage matters in relation to the Building Act 2004. The Building Act 2004 is New Zealand's primary legislation for regulation of all building work. This guide provides a brief outline of the Act and provides information of heritage-related terms in the Building Act such as buildings of significant cultural, historical or heritage value. Project information memorandum and notification procedures are discussed and the process of making changes to heritage buildings. Key heritage-related building code issues are discussed such as natural hazards, biological deterioration, fire safety, safety in use, accessibility, security and energy efficiency.

Further information about the Building Act 2004 is available from the Department of Building and Housing's website: [www.dbh.govt.nz](http://www.dbh.govt.nz) or [www.building.govt.nz](http://www.building.govt.nz)

This guidance will be updated on completion of the building code review.

## **The Building Act 2004**

The Building Act 2004 (the Building Act) regulates all building work in New Zealand and:

- sets performance standards (including the Building Code);
- establishes a licensing regime for building practitioners;
- requires local authorities (and private organisations) to become registered and accredited building consent authorities to carry out building control functions; and
- establishes a new regulatory regime for dam safety.

Territorial authorities have major responsibilities under the Building Act. The functions of territorial authorities, as building consent authorities, include:

- issuing of building consents;
- issuing of project information memoranda;
- issuing of notices to fix (section 164);
- keeping of building consent information and the provision of public access to building information;
- carrying out of building work on default (section 220); and
- inspections and enforcement.

Regional authorities also perform the function of a building consent authority in relation to dams.

In exercising functions under the Building Act, building consent authorities need to achieve the purpose of the Act which is to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings, to ensure that –

- a people who use buildings can do so safely and without endangering their health; and
- b buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them; and
- c people who use a building can escape from the building if it is on fire; and
- d buildings are designed, constructed, and able to be used in ways that promote sustainable development.

Section 4 of the Building Act also contains a number of principles to be applied in performing functions or duties, or exercising powers, under this Act. These principles, which must be taken into account, apply to the Minister responsible for the administration of the Building Act, Chief Executive of the Department of Building and Housing and territorial and regional authorities.<sup>1</sup> The principles cover matters relating to household units, preventing harmful effects, durability, building costs, standards, innovation, fire mitigation and safety, protection of other property, disabled access, efficient use of energy, efficient use of water, and waste reduction. Of particular relevance to historic heritage are:

- (d) the importance of recognising any special traditional and cultural aspects of the intended use of a building.
- (l) the need to facilitate the preservation of buildings of significant cultural, historical, or heritage value.
- (n) the need to facilitate the efficient and sustainable use in buildings of (i) materials (including materials that promote or support human health); and (ii) material conservation.

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<sup>1</sup> The principles only apply to territorial and regional authorities when they are performing functions or duties, or exercising powers, in relation to the grant of waivers or modifications of the building code and the adoption and review of policy on dangerous, earthquake-prone, and insanitary buildings or, as the case may be, dangerous dams (section 4(1), Building Act 2004)

## **Heritage-related terms**

### **Defining buildings of significant cultural, historical or heritage value**

As outlined above, section 4 of the Building Act includes the importance of recognising any special traditional and cultural aspects of the intended use of a building and the need to facilitate the preservation of buildings of significant cultural, historical, or heritage value. These terms are not defined in the Building Act 2004.

Further, the Building Act uses the term ‘heritage buildings’<sup>2</sup> and ‘registered historic place, historic area, wahi tapu and wahi tapu area.’<sup>3</sup>

Buildings of significant cultural, historical, or heritage value is a broad term which would include heritage buildings and buildings registered as a historic place, historic area, wahi tapu and wahi tapu under the Historic Places Act 1993.<sup>4</sup> Other examples of heritage buildings include:

- Buildings listed as historic items in any district or regional plan prepared under the Resource Management Act 1991.
- Heritage buildings or Actively Managed Historic Places listed in a Historic Resources Strategy or Conservation Management Strategy and Conservation Management Plan prepared under the Conservation Act 1987.
- Heritage buildings within a historic reserve or listed in a reserve management plan prepared under the Reserves Act 1977.
- Traditional Maori buildings, including those set aside for historic and cultural purposes under the Te Turi Whenua Maori Land Act 1993 or other legislation and other buildings of importance to tangata whenua.
- Structures or buildings associated with a historic cemetery or memorial.
- Buildings managed for heritage purposes by agencies such as NZHPT, Ministry of Culture and Heritage, the Department of Conservation, and local authorities.
- Buildings that are subject to a heritage order, heritage covenant or other protective covenant.
- Other heritage buildings deemed to have heritage value identified using best practice criteria and research, including buildings identified within national or district heritage inventories or heritage policy.

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<sup>2</sup> Sec 125, sec 131 Building Act 2004

<sup>3</sup> Sec 39, Building Act 2004

<sup>4</sup> For information about registered historic places, historic areas, wahi tapu and wahi tapu areas, contact NZHPT or consult the online register at [www.historic.org.nz](http://www.historic.org.nz)

Many types of buildings may have special traditional or cultural aspects and these buildings may include churches, halls, temples, and traditional Maori buildings.

Traditional Maori buildings include not only wharenuī, but also wharekai, pātaka, and pouhaki. Wharenuī and wharekai are often located in a marae setting. Marae may also be associated with wharekarakia, urupa and papakainga.<sup>5</sup> Traditional Maori buildings, such as wharenuī, are unique to New Zealand/Aotearoa and it is of critical importance that these buildings are preserved for present and future generations.<sup>6</sup>

It is important to note, that a heritage building that has been constructed before 1900 may also be associated with an archaeological site under the Historic Places Act 1993. Under section 2 of the Historic Places Act 1993, an archaeological site is defined as any place in New Zealand that either – was associated with human activity that occurred before 1900; or is the site of the wreck of any vessel where that wreck occurred before 1900; and – is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand. Under section 9(2) of the Historic Places Act 1993, the NZHPT may declare any post-1900 site to be covered by the archaeological site definition in section 2 by notice in the *Gazette*.<sup>7</sup>

Section 10 of the Historic Places Act 1993 directs that an authority is required from the New Zealand Historic Places Trust if there is “reasonable cause” to suspect an archaeological site (recorded or unrecorded), may be modified, damaged or destroyed in the course of any activity. An authority is required for such work whether or not the land on which an archaeological site may be present is designated, or a resource or building consent has been granted, or the activity is permitted in the district plan.

## **Project information memorandum and notification**

A project information memorandum or PIM is a document that is issued by territorial authorities within 20 working days of receiving an application for a building consent. An owner can also apply for a PIM if building work is being considered for which a building consent will be required. Guidance about PIMs is available from the Department of Building and Housing website.<sup>8</sup>

A PIM is an important method to inform prospective developers and builders of the presence of historic features. Under section 35(I)(a) of the Building Act, a PIM must include information likely to be relevant to the proposed building work that identifies the heritage status of the building (if any); and each special feature of the land concerned (if any). Also it must include information likely to be relevant to the proposed building work that, in terms of any other Act, has been notified to the territorial authority by a statutory authority.<sup>9</sup>

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<sup>5</sup> Wharenuī: meeting house; wharekai: dining hall; wharekarakia: church; urupa: burial ground; Papakainga: residential village; pātaka: storehouse; pouhaki: flagpole

<sup>6</sup> NZHPT, ‘Te Tira o Pouhere Taonga, Māori Heritage Services; NZHPT, Mahi Whakaoranga, Taonga Marae, Conserving Marae Buildings.

<sup>7</sup> For example, in 2004 the NZHPT declared the Napier Prison Wall an archaeological site under section 9(2) of the Historic Places Act 1993.

<sup>8</sup> <http://www.dbh.govt.nz/publications-about-the-building-act-2004#international>

<sup>9</sup> Sec 35(I)(b) Building Act 2004

The PIM process should provide a robust process for ensuring heritage buildings and other special features are identified and adequate information is provided to prospective developers and owners. At a minimum, the PIM should identify any buildings of significant cultural, historical or heritage value as defined above. In particular, it should include:

- Any registered historic place, historic area, wahi tapu or wahi tapu area.
- Any building listed as a historic heritage item in any district or regional plan prepared under the RMA.
- Any building that is subject to a heritage order, heritage covenant or other protective covenant.

Updates of the NZHPT register are provided to local authorities on a quarterly basis. These updates will contain all new registrations. It is important to check the recently updated copy of the NZHPT register for registered historic places, historic areas, wahi tapu or wahi tapu area. The NZHPT should be contacted if a local authority is in any doubt about the status of the registration information.

It is also imperative that the PIM contains any archaeological sites recorded by the New Zealand Archaeological Association (NZAA). The NZAA file keepers should be contacted about recorded archaeological sites.<sup>10</sup>

The PIM can also provide information about the possibility of unrecorded archaeological sites, including buildings that pre-date 1900 that may be considered archaeological sites for the purpose of the Historic Places Act 1993. This matter should be discussed with the NZHPT.

Under section 39 of the Building Act, if an application affects a registered historic place, historic area, wahi tapu or wahi tapu area (and a PIM has not been previously issued for the building work to which the application applies), territorial authorities must advise the NZHPT within 5 working days after receiving an application for a PIM.

If the territorial authority considers that notification to the NZHPT is likely to be required under section 35(I)(f) of the Building Act, the PIM must contain a statement alerting the applicant to this notification requirement.

Further, the PIM must contain confirmation that building work may be carried out subject to the requirements of a building consent (issued under the Building Act), but also subject to all other necessary authorisations being obtained. For example, an application to demolish a historic building may also require an archaeological authority under the Historic Places Act 1993.<sup>11</sup>

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<sup>10</sup> <http://www.nzarchaeology.org/>

<sup>11</sup> Sec 35(I)(g)(i) Building Act 2004



Former Diva Bar, Dixon Street, Wellington. Photo, R McClean, June 2005

## **NZHPT Notification Contact Details**

### **Northland Area Office** - *Office for Northland Region*

62 Kerikeri Road (above ANZ Bank)  
PO Box 836, KERIKERI  
Ph: 09 407 4443; Fax: 09 407 3454  
Email: [spark@historic.org.nz](mailto:spark@historic.org.nz)

### **Mid-Northern Office** - *Office for Auckland Region, including Thames-Coromandel and Hauraki*

Premier Buildings, 2 Durham Street East  
Private Bag 105-291, AUCKLAND  
Phone 09 307-8896, Fax 09 303-4428  
Email: [infonorthern@historic.org.nz](mailto:infonorthern@historic.org.nz)

### **Lower Northern Area Office** - *Office for Gisborne, Waikato (excluding Thames-Coromandel and Hauraki) and Bay of Plenty regions*

28 Wharf Street  
PO Box 13339, TAURANGA  
Ph: 07 5781219; Fax: 07 5781141  
Email: [infolowernorthern@historic.org.nz](mailto:infolowernorthern@historic.org.nz)

### **Central Region Office** - *Office for Taranaki, Hawkes Bay, Manawatu-Wanganui, Wellington regions and Marlborough, Nelson and Tasman districts*

Tadix House,  
Level 1, 1 Blair Street  
P O Box 19173  
Wellington  
Ph: 04 801 5088, Fax 04 802 5180  
Email: [infocentral@historic.org.nz](mailto:infocentral@historic.org.nz)

### **Canterbury/West Coast office** - *Office for Canterbury and West Coast regions, including Kaikoura district*

1<sup>st</sup> Floor Gough House, 90 Hereford Street  
PO Box 4403, CHRISTCHURCH  
Phone 03 377 3968, Fax 03 374 2433  
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### **Dunedin Area Office** – *Office for Otago and Southland regions*

Level 4109 Princes Street PO Box 5467, DUNEDIN  
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## **Building Consents<sup>12</sup>**

Applications for building consent should have sufficient information to demonstrate heritage-related issues have been identified and taken into account in the design process. A building consent authority can require further information in respect of an application under section 48(2) of the Building Act. This further information may relate to heritage matters. It may be possible that the absence of critical information within an application concerning heritage could be grounds for refusal.

A building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.<sup>13</sup>

The building code is contained in Schedule 1 of the Building Act 1991. Although the Building Act 2004 repealed the Building Act 1991, Schedule 1 remains in force under regulation 8(2)(a) of the Building (Forms) Regulation 2004.

Compliance with the building code may be established by compliance with regulations issued under section 20 of the Building Act 2004, provisions of a compliance document, any determination issued by the Chief Executive of the Department of Building and Housing, current product certificates, and any compliance required by regulations under the Electricity Act 1992 or the Gas Act 1992.<sup>14</sup> Basically, the building code sets performance standards of construction for all new structures and buildings.

The building code, in addition, applies to existing buildings in terms of provisions for change of use, extension of life, or subdivision of buildings. Generally, change of use proposals involving the incorporation in the building of one or more new household units must comply, as nearly as is reasonably practicable, with the building code in all respects.<sup>15</sup> In other cases, the territorial authority must be satisfied, on reasonable grounds, that the building in its new use will comply as is reasonably practicable and to the same extent as if it were a new building, with the provisions of the building code that relate to fire safety, sanitary facilities, structural performance, and access and facilities for persons with disabilities.<sup>16</sup>

In terms of public buildings, provisions require access, parking provisions, and sanitary facilities be made for persons with disabilities who may be expected to visit or work in the building and carry out normal activities and processes in the building.<sup>17</sup> With regard to this requirement, a waiver or modification of the building code can only be issued by the Chief Executive of the Department of Building and Housing and cannot be issued by a territorial authority.<sup>18</sup>

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<sup>12</sup> This section will be updated on completion of the Building Code Review

<sup>13</sup> Sec 49(1) Building Act 2004

<sup>14</sup> Sec 19(1), Building Act 2004

<sup>15</sup> Sec 115, Building Act 2004

<sup>16</sup> Sec 115(b) Building Act 2004

<sup>17</sup> Sec 118, Building Act 2004

<sup>18</sup> Sec 69, Building Act 2004

Generally, the Department of Building and Housing may issue compliance documents (which are acceptable solutions and/or verification methods). Compliance documents provide a way of complying with the building code that must be accepted by a territorial authority.<sup>19</sup>

In addition to acceptable solutions, any other solution may comply as an 'alternative solution'. An alternative solution can be verified by calculations, tests and other specifications as complying with the code.

To allow a work that does not adhere to the code (i.e. is not an acceptable solution or a verification method), territorial authorities may issue waivers or modifications for alterations, change of use, extension of life, or subdivision of buildings provisions.<sup>20</sup> In issuing a waiver for existing buildings, the territorial authority must be satisfied that the alteration will result in improvements to means of escape from fire, or access and facilities for persons with disabilities.<sup>21</sup>

The Chief Executive of the Department of Building and Housing may issue waivers or modifications with respect to disabled access requirements to public buildings. In issuing waivers or modifications, the decision maker must take into account the principles outlined in section 4 of the Act.

The building code does not provide any acceptable solution guidance with respect to heritage buildings. As a consequence, proposals for heritage buildings that depart from the standards contained in compliance documents must be provided for as an alternative solution or waiver.

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<sup>19</sup> BIA, *The New Zealand Building Code Handbook*, Wellington, 2004, sec 22(2)

<sup>20</sup> Sec 67, Building Act 2004

<sup>21</sup> Sec 112(2)(b) Building Act 2004

## **Making changes to heritage buildings**

In assessing all proposed building work, including alterations, 'change of use', extension of life and subdivision of buildings, heritage-related matters should be taken into account.

With careful design, health, safety, access and efficiency outcomes can be achieved while also respecting historic heritage values.

All changes to heritage buildings should be guided by the conservation principles of the International Council on Monuments and Sites (ICOMOS) NZ Charter.<sup>22</sup> The NZHPT is also promoting a set of principles and assessment criteria in relation to inappropriate subdivision, use and development (see Discussion Papers of this series No.1 Principles and Issues and No. 2 Assessing Effects). The assessment criterion in Discussion Paper No.2 provides guidance for repairs and maintenance, alterations and additions, relocation, partial demolition and demolition of heritage buildings.

Additional guidance is provided by the NZHPT in *Guidelines for Altering Heritage Buildings*.<sup>23</sup> This guidance promotes the principles of:

- Carrying out regular maintenance and repair.
- Repair rather than replace.
- Repair in compatible materials.
- Restore with care.
- Keep change to the minimum.
- Find a compatible use.
- Make new work reversible.
- Respect alterations.
- Distinguish new from old.
- Document changes.
- Respect the patina of age.
- Respect the contents and setting.

Further, in relation to heritage buildings managed or owned by government departments, the principles outlined in the Policy for Government's Departments' Management of Historic Heritage 2004 will be relevant. Government departments are expected to assess development proposals according to this policy.

There is also a range of international standards and guidance in relation to the adaptive reuse and rehabilitation of heritage buildings. One of the most well known standards is the US Secretary for the Interior, *Standards for the Treatment of Historic Properties*.<sup>24</sup> This publication provides guidance in relation to preservation, rehabilitation, restoration and reconstruction work. Parks Canada has also published *Standards and Guidelines for the*

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<sup>22</sup> ICOMOS NZ, *Charter for the Conservation of Places of Cultural Heritage Value*, 1992

<sup>23</sup> Chris Cochran, *Guidelines for Altering Heritage Buildings*, NZHPT 2000

<sup>24</sup> US Secretary for the Interior, *Standards for the Treatment of Historic Properties*, US National Parks Service, 1995

*Conservation of Historic Places in Canada.*<sup>25</sup> The International Code Council also published a *Uniform Code for Building Conservation* in 1997. This code has now been updated to become the *Guidelines for Rehabilitation of Existing Buildings.*<sup>26</sup> This guidance provides technical code-related information on matters such as fire safety, minimum provisions for change of occupancy, accessibility, and energy conservation.

It is important to consider historic heritage matters at the early conceptual planning stage in any building project. Guidance should be obtained from the NZHPT or qualified heritage professional. Ideally, all heritage buildings should be subject to a conservation plan, including a maintenance plan.

## **Earthquake engineering**

The risk to people and buildings caused by earthquakes is a very real threat in New Zealand. Managing earthquake risk is a important issue in terms of both preventing the loss of human lives and preventing widespread damage to heritage buildings.

Regulations relating to managing earthquake-related threats must be carefully designed to avoid unnecessary damage or demolition of heritage buildings. In addition, the structural strengthening works should be designed as to minimise the loss of any historic fabric.

The NZHPT has published guidelines for earthquake strengthening of heritage buildings<sup>27</sup> and further guidance is available from the US National Park Service, and international codes, especially the *2001 California Historical Building Code* and the International Code Council (ICC), *Guidelines for Seismic Retrofit of Existing Buildings.*

The International Code Council, *Guidelines for Seismic Retrofit of Existing Buildings* addresses the upgrading of structural systems of older buildings and maintaining use of heritage buildings. The guideline covers earthquake hazard management in existing reinforced concrete and reinforced masonry buildings, timber-framed residential buildings, and also seismic strengthening provisions for un-reinforced masonry structures.

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<sup>25</sup> Parks Canada, *Standards and Guidelines for the conservation of historic places in Canada*, 2003

<sup>26</sup> ICC, *Guidelines for the Rehabilitation of Existing Buildings*, 2000

<sup>27</sup> Lou Robinson and Ian Bowman, *Guidelines for Earthquake Strengthening*, NZHPT, 2000

### **Earthquake engineering guidance**

NZSEE, *Assessment and Improvement of the Structural Performance of Buildings in Earthquakes*, New Zealand Society for Earthquake Engineering, Recommendations, June 2006

Lou Robinson and Ian Bowman, *Guidelines for Earthquake Strengthening*, NZHPT, 2000

Technical Preservation Services, *The Seismic Retrofit of Historic Buildings* (Preservation Brief, No.41), US National Parks Service, 1997

*2001 California Historical Building Code*, Chapter 8-7, Alternative Structural Regulations

International Code Council *Guidelines for Seismic Retrofit of Existing Buildings*, Whittier, California, July 2001

International Code Council, *Temporary Shoring and Stabilisation of Earthquake Damaged Historic Buildings*, Santa Barbara, 1998

International Code Council, *International Existing Building Code*, 2006

## **Natural hazards: snow, wind, landslides, tsunami, coastal erosion, volcanic eruption, wild fire, and flooding**

Snow, wind, landslides, tsunami, coastal erosion, and volcanic eruptions have the potential to adversely affect heritage buildings and cultural and archaeological sites. Erosion is perhaps the most significant threat to archaeological and cultural sites in the marine and coastal environment.

The threat of wildfire is an important issue in both urban and rural environments. In Australia and the USA, wildfires have posed a particular threat to heritage buildings. In New Zealand, many heritage properties, especially in the rural environment, contain physical historic structures in a setting often occupied by both formal gardens and indigenous/exotic forests. The bush and garden setting is often a particularly important value associated with rural heritage buildings.

It is important that the heritage implications of any wildfire control measures, such as the removal of vegetation around buildings, is carefully considered. Such consideration should be informed by international standards in wildfire management especially a requirement for an evaluation by a professional historic landscape architect. Clause 12.12.3 of the US National Fire Protection Association 909 *Code for the Protection of Cultural Resource Properties* states:

Where the landscape is historic and either a contributing element to the property's historic designation or designated itself, the governing body or responsible party shall obtain the evaluation and recommendation of a professional historic landscape architect for reducing fire loading that could threaten either the cultural resource property or the historic landscape.<sup>28</sup>

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<sup>28</sup> Clause 12.12.3 NFPA 909 *Code for the Protection of Cultural Resource Properties*, 2005 Edition

Flooding is becoming an increasingly serious issue for heritage buildings as settlements are affected by extreme weather patterns influenced by global climate warming. Flooding can cause substantial damage to heritage buildings and design solutions need to be carefully developed to mitigate any adverse effects on historic heritage values.

Internationally, flood resistant design and construction standards have been established by the International Code Council for the construction of new buildings in flood hazard areas and repair or alterations to non-historic buildings.<sup>29</sup>

#### **Disaster planning guidance**

US Federal Emergency Management Agency (FEMA), *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning*, FEMA 386-6/May 2005<sup>30</sup>

Minnesota Historical Society, *Thinking About the Unthinkable: A Disaster Plan for Historic Properties in Minnesota* [undated]

Missouri Department of Natural Resources, *Natural Disaster Recovery for Historic Buildings*, Fact Sheet, 2006

National Fire Protection Association, 1144, *Standard for Protection of Life and Property from Wildfire*, 2002 Edition

International Code Council, *International Wildland-Urban Interface Code*, 2006 Edition

English Heritage, *Flooding and Historic Buildings, Technical Advice Note*, 2004

Tim Hutton, *Flood Damage in Historic Buildings*, The Building Conservation Directory, 2002

US National Parks Service, *After the Flood: Emergency Stabilisation and Conservation Measures*, January 1995

US National Trust for Historic Preservation, *Treatment of Flood-Damaged Older and Historic Buildings*, Information Booklet No.82, 1993

Florida Department of State, *General Guidelines for Historic Properties in Recovery*.

Missouri Department of Natural Resources, *Natural Disaster Recovery for Historic Buildings*, Fact Sheet, 2006

National Fire Protection Association, 909, *Code for the Fire Protection of Cultural Resource Properties*, 2005 Edition [includes procedures for managing the salvage of water-damaged materials]

International Code Council, *Flood Resistant Design and Construction*, ASCE/SEI 24-05, 2005

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<sup>29</sup> ICC, *Flood Resistant Design and Construction*, ASCE/SEI 24-05

<sup>30</sup> <http://www.fema.gov/plan/ehp/hp/fema386-6.shtm>

## Corrosion, moisture and biological deterioration

Corrosion or the decay of structural components is a particularly serious issue with regard to historic steel, iron or concrete buildings. Without proper repair or remedial works, corrosion may result in the deterioration and collapse of a heritage building or structure. In New Zealand, the use of corrugated steel was, and continues to be, of importance as an exterior cladding material for both roofs and walls. The repair and replacement of rusted corrugated steel is a major conservation issue for many heritage buildings and structures.<sup>31</sup>

Uncontrolled moisture entry can affect the structural integrity of heritage buildings. Moisture is often caused by rising damp which occurs as a result of capillary action of moisture from the ground into porous masonry building materials such as stone, brick, earth, timber and mortar. Many heritage buildings do not have foundations, walls, or roofs that have damp-proof course barriers and the absence of this protection can lead to erosion, corrosion, rot and ultimately the loss of structural components. Solutions to manage and control moisture within heritage buildings must be carefully designed to ensure there is minimal loss of heritage fabric.

Biological deterioration is a significant issue that affects both timber-framed and stone heritage buildings. Biological deterioration in timber buildings may involve fungal decay and damage caused by wood boring insects such as the common house borer (*Anobium punctatum*). The growth of mosses, algae and lichens may exude oxalic acid or organic acids which may cause the biological deterioration of historic stone structures. The NZHPT has developed guidelines to manage biological deterioration in both historic timber-framed and stone structures.<sup>32</sup> The Department of Conservation's guideline relating to historic concrete structures also deals with aspects relating to biological deterioration.<sup>33</sup>

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<sup>31</sup> Geoff Chapple, *Corrugated iron in New Zealand*, Wellington: Reed, 1983; Nick Thomson and Phil Banfill, 'Corrugated-iron buildings : an endangered resource within the built heritage' *Journal of Architectural Conservation*, no.1, March 2005; Nigel Isaacs, 'Corrugated iron – practical and decorative' *Build*, August/September 2006, p 118

<sup>32</sup> Chris Cochran, *Historic Timber Structures*, Conservation Bulletin 1, 1992; Ian Bowman, *Historic Stone Structures*, Conservation Bulletin 3, 1992

<sup>33</sup> Salmond Architects, *Historic Concrete Structures, A Maintenance and Management Handbook for New Zealand*, DOC, February 2000

### **Corrosion, moisture and biological deterioration guidance**

Salmond Architects, *Historic Concrete Structures, A Maintenance and Management Handbook for New Zealand*, DOC, February 2000

Technical Preservation Services, *Roofing for Historic Buildings* (Preservation Brief, No.4), US National Parks Service, 1997

Chris Cochran, *Historic Timber Structures*, Conservation Bulletin 1, NZHPT, 1992

Ian Bowman, *Historic Stone Structures*, Conservation Bulletin 3, NZHPT, 1992

NSW Heritage Office, *Rising Damp*, Information Sheet, 2.1 [undated]

Technical Preservation Services, *Holding the Line Controlling Unwanted Moisture in Historic Buildings* (Preservation Brief, No.39), US National Parks Service, 1996

Dr Jagjit Singh, 'Fungal Problems in Historic Buildings' *Journal of Architectural Conservation*, [www.ebssurvey.co.uk](http://www.ebssurvey.co.uk)

## **Fire safety**

Damage caused by fire is the greatest worldwide threat to heritage buildings. In New Zealand about 15 heritage buildings are destroyed each year as a result of fires.<sup>34</sup>

Fire safety measures should ensure the preservation of heritage buildings for future generations. Such regulation must be carefully designed to provide for both human safety and the preservation of heritage values. Potential issues for fire safety and heritage buildings include:

- Fire damage resulting from arson, electrical causes, or work related to repairs and maintenance.<sup>35</sup>
- Potential damage to significant heritage fabric as a result of means of escape requirements, including egress requirements for people with disabilities.
- The installation of handrails and other items required for means of escape that may be inappropriate with regard to significant heritage fabric and spaces.
- Potential damage to the surroundings associated with a heritage building as a result of paths and refuge areas for means of escape.
- The removal and/or installation of doors (or upgrading of door panels) in relation to escape route provisions and FRR (fire resistance ratings).<sup>36</sup>

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<sup>34</sup> NZ Fire Service and NZHPT, *Protecting and Preserving what we Value*, February 2005

<sup>35</sup> Jonathan Taylor, 'Fire Fire!' *Historic Churches*, 2003, [www.buildingconservation.com](http://www.buildingconservation.com)

<sup>36</sup> English Heritage, *The use of intumescent products in historic buildings*, Guidance Note, May 1997

- The installation of lighting for emergencies which may be inappropriate with regard to significant heritage fabric or spaces.<sup>37</sup>
- The installation of inappropriately designed signage.
- Poor fire resistance rating (FRR) in relation to primary building elements, material (including interior surface finishes and collections) and insulation requiring the removal of significant heritage fabric.<sup>38</sup>
- Potential damage to the surroundings associated with a heritage building as a requirement to achieve Fire Service Vehicular Access.
- Risks associated with open fires and the removal of open fireplaces of heritage value.
- Appropriate design and installation of fire suppression systems, including automatic fire sprinkler systems.

It is recommended that fire safety plans are prepared for heritage buildings by specialist professional conservation and fire safety advisers. The plans should ensure that the fire safety design and safety requirements are achieved in a manner that safeguards historic heritage values.

#### **Fire safety guidance**

Carol Caldwell and Hamish MacLennan, *Guidelines for Fire Safety*, NZHPT, 2000

NSW Heritage Office, *Fire and Heritage, Guidelines on Fire Safety in Heritage Buildings*, Information Sheet, 8.1, 1995

Australian Council of National Trusts, *Principles and Guidelines, Fire Risk Management for Natural and Cultural Heritage Properties*, September 1998

National Fire Protection Association 909 *Code for the Protection of Cultural Resource Properties*, 2005 Edition

National Fire Protection Association 914, *Code for Fire Protection of Historic Structures*, 2001 Edition

National Fire Protection Association 1144, *Standard for Protection of Life and Property from Wildfire*, 2002 Edition

<sup>37</sup> Robin Wright, *Emergency Lighting*, The Building Conservation Directory, Cathedral Communications, 2002

<sup>38</sup> NSW Heritage Council, *The Fire Resistance of Ceiling/Floor Systems Commonly Found in Heritage Buildings*, Technical Information Sheet, 2002

## Safety in use

People should be safeguarded in the use of buildings, from hazards such as slipping, contact with hazardous substances, excessive noise, and trapping in confined spaces. Design solutions to provide for safety in use should consider historic heritage values as appropriate.

Barriers are an important provision to restrict incidents of falling. In many instances, barriers, handrails and balustrades in heritage buildings may not comply with performance requirements under the building code and any changes or the construction of new barriers may damage heritage fabric. Generally, alternative solutions can be achieved by the design of barriers to provide for both safety from falling and retention of historic heritage values. Wayfinding lighting and signs also need to be carefully designed to ensure historic heritage values are not compromised.

### Safety in use guidance

Queensland Environmental Protection Agency and Queensland Parks and Wildlife Service, *Safety and Security in Historic Buildings, A Guideline*, Queensland Government, 2006

## Health

It is important that buildings are designed and maintained to ensure that the health of people using the buildings is not endangered. Generally, most heritage buildings are also healthy buildings and few code compliance issues arise. However, on occasion, health-related standards may conflict with existing facilities for sanitation, air quality and temperature, and excessive moisture.

The provision for personal hygiene facilities such as showers, basins and toilets in buildings is a relatively modern development. They may be absent from some heritage buildings or be located in an 'outhouse'. In addition, some heritage buildings may contain bathrooms that are not code compliant in terms of standards of access, surfaces, fittings and material.<sup>39</sup>

As with other aspects of the building code, there is a need to consider the retention and repair of sanitation facilities of heritage value and minimising damage caused from the installation of new sanitation facilities.

In many heritage buildings, controlling indoor air quality is generally achieved without mechanical means with a reliance on the use of doors, windows, insulation and heating units.

The prevention of draughts can be an issue for many existing buildings, but any prevention measures need to be implemented without compromising heritage values, especially in relation to windows and doors.

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<sup>39</sup> Jonathan Taylor, 'Bathroom Fittings for Historic Houses' *The Building Conservation Directory*, Cathedral Communications, 1996; Heritage Victoria, 'Now for the Good Loos...' Technical Note, 2006

### **Health guidance**

Technical Preservation Services, *Heating, Ventilating and Cooling Historic Buildings* (Preservation Brief, No.37), US National Parks Service, 1991

## **Accessibility**

Buildings should be accessible to all people and accessibility is a critical aspect of building design. The concept of accessibility applies to heritage buildings. As outlined by the Australian Heritage Commission:

Heritage places should be accessible to everyone, including people with mobility or sensory impairments, the elderly, parents with small children and anyone who is temporarily disabled as a result of illness or injury. Owners and managers of heritage properties should commit themselves to creating a situation in which this can be achieved. The word 'access' is widely interpreted to include access to and within any building or site, access to all facilities and services and to any information. The objective is to provide a barrier free environment for all visitors.<sup>40</sup>

In making provision for accessibility, the aim should be 'to provide the greatest level of accessibility without compromising or destroying the parts of the building that make an important contribution to its heritage significance.'<sup>41</sup> Particular problems for achieving accessibility in heritage buildings primarily involve the need for access to the front of the building and the need for internal access between levels. The installation of access ramps, disabled toilets and other access structures can damage heritage values with regard to main entrances and heritage fabric, both externally and internally. Also other associated fittings such as handrails could also be inappropriate with regard to highly significant features such as large stairways. Significant features such as historic door handles should not be removed to be replaced with 'universal design' features.

The surroundings associated with heritage places may also be adversely affected by accessibility requirements. For example, the construction of car parking facilities and paths may damage historic garden space. Additionally, accessibility signage may be inappropriate or poorly designed in respect of heritage values.

It is recommended that specialist conservation advice is obtained to ensure accessibility requirements are achieved in a manner that retains historic heritage values.

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<sup>40</sup> Eric Martin, *Improving Access to Heritage Buildings, A practical guide to meeting the needs of people with disabilities*, Australian Heritage Commission, 1999

<sup>41</sup> *ibid*, p 1

### **Accessibility guidance**

Julia Gatley, *Guidelines for Making Heritage Buildings Accessible*, NZHPT, Wellington, 2000

Eric Martin, *Improving Access to Heritage Buildings, A practical guide to meeting the needs of people with disabilities*, Australian Heritage Commission, 1999

Queensland EPA and Queensland Parks and Wildlife Service, *Ramps, Lifts and Access*, Queensland Government, 2006

English Heritage, *Easy Access to Historic Buildings*, London, 2004

## **Security**

Security is becoming an increasingly important buildings issue. It is also an important issue for heritage buildings as places are ‘hardened’ (a ‘fortress society’) to increase personal safety but ‘without destroying those very qualities that make buildings significant to our society’s values.’<sup>42</sup> The threat of terrorism is also influencing changes to the layout and design of many existing and new public and governmental buildings worldwide.<sup>43</sup>

It is important that security barriers and design solutions do not compromise heritage values. Internationally, substantial guidance is available from the International Code Council who have recently published *Building Security: Handbook for Architectural Planning and Design*. This guideline is a comprehensive compendium dealing with terrorism, natural disasters, crime and violence, and includes historic preservation security guidelines. In New Zealand, the Ministry of Justice has published guidance on reducing crime through environmental design.<sup>44</sup>

### **Security guidance**

Queensland EPA and Queensland Parks and Wildlife Service, *Safety and Security in Historic Buildings, A Guideline*, Queensland Government, 2006

International Code Council, *Building Security, Handbook for Architectural Planning and Design* [undated]

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<sup>42</sup> Sharon C. Park and Claire S Mastroberardino, ‘Guidance for Security Enhancements to Historic Buildings’ *APT Bulletin*, Vol 35(1) 2004, pp 3 - 11

<sup>43</sup> Stephen Ward, ‘Standing up to Terrorism’ *The Building Conservation Directory*, 2004, Cathedral Communications Ltd, 2005; Stewart Kidd, ‘Security for Heritage Buildings’, *The Building Conservation Directory*, Cathedral Communications, 2000

<sup>44</sup> Ministry of Justice, *Crime Prevention through Environmental Design in New Zealand* (CPTED), Wellington, 2006

## Energy efficiency

Improving the comfort, health and energy efficiency of historic houses is a significant challenge for New Zealand. The large majority of historic houses were designed according to styles influenced by the villa, arts and crafts, bungalow, art deco and moderne movements. They are largely (but not exclusively) timber-framed structures with painted corrugated iron roofs, timber weatherboards, timber windows, and timber foundations. The main heating source is usually an open-fire. There is no reason why New Zealand's historic homes should not be reasonably efficient, comfortable and healthy.

While the renovation of many early residential houses has improved their condition and comfort, significant challenges remain overall to improve levels of condition, comfort and energy efficiency. A common problem for many houses is inadequate sub-floor ventilation and ground clearance. The BRANZ 2005 survey found that more than 40% of houses with timber-framed floors have poor or seriously deficient ventilation of sub-floor spaces. This problem is not limited to older houses, but is associated with houses up until the 1980s.<sup>45</sup>

Neglecting maintenance work results in building decay and poor environmental outcomes which may include demolition and loss of embodied energy. Embodied energy refers to the sum total of energy necessary to construct and maintain a building. This includes the energy of raw material extraction, transportation, manufacturing, assembly, installation and other capital costs.<sup>46</sup> The majority of heritage buildings are constructed of low-energy consumptive materials such as brick, concrete and timber as measured in kilowatt-hours per kilogram (see table below). For example, embodied energy of the historic Felician Sisters Covenant in Ohio was calculated to be 'equivalent to five gallons of gasoline per square foot or 15 years of energy use.'<sup>47</sup>

By ensuring regular maintenance, embodied energy is conserved over the lifecycle of the building. Neglecting maintenance will result in higher capital construction costs in the long term, higher energy inputs to achieve re-use or adaptation purposes, and low energy efficiency ratings.

Promotion of both energy efficiency and historic conservation has founded an international 'green historic building movement'<sup>48</sup> and led to initiatives such as the US Green Building Council's Leadership in Energy and Environmental Design (LEED), Green Building Rating System.<sup>49</sup> The LEED Rating System has recognised the contribution of existing buildings and heritage conservation towards efficient energy and environmental design.<sup>50</sup> Other award systems have also recognised projects that have achieved both energy efficiency and historic conservation. For example, the UK Royal Institute of Chartered Surveyors recently awarded the Old Bank Building in Dunedin a building conservation award on the basis of a renovation project that adopted energy efficiency and conservation principles and workmanship.

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<sup>45</sup> BRANZ, *New Zealand 2005 House Condition Survey*, Study Report No. 142, 2005, p 66

<sup>46</sup> Cliff Moughtin and Peter Shirley, *Urban Design: Green Dimensions*, Elsevier, New York, 2005

<sup>47</sup> Charles L. Rosenblum, 'Green' *Preservation* Sept-Oct, 2006, p 38

<sup>48</sup> Nancy B. Solomon, 'Tapping the Synergies of Green Building and Historic Preservation' *Green Source, The Magazine of Sustainable Design*, [www.archrecord.construction.com](http://www.archrecord.construction.com)

<sup>49</sup> US Green Building Council: <http://www.usgbc.org/DisplayPage.aspx?CategoryID=1>

<sup>50</sup> Green Building Services, 'Using LEED on Historic Projects' [www.greenbuildingservices.com](http://www.greenbuildingservices.com); Charles L. Rosenblum, 'Green' *Preservation* Sept-Oct, 2006, p 37

Energy Content of materials<sup>51</sup>

Material	Energy content (kWh kg)
<b><i>Low-energy materials</i></b>	
Sand, gravel	0.01
Wood	0.1
Concrete	0.2
Sand-lime brickwork	0.4
Lightweight concrete	0.5
<b><i>Medium-energy materials</i></b>	
Plasterboard	1.0
Brickwork	1.2
Lime	1.5
Cement	2.2
Mineral fibre insulation	3.9
Glass	6.0
Porcelain	6.1
<b><i>High-energy materials</i></b>	
Plastics	10.0
Steel	10.0
Lead	14.0
Zinc	15.0
Copper	16.0
Aluminum	56.0

Heating remains a challenge for many historic houses. For most older homes, open fires were the main source of heating. Many open fires are now being removed or sealed, and replaced with increasing use of portable electric heaters or gas heaters. Wood-burning fires, however, produce low or neutral carbon emissions since the emission is offset by the growth of the trees.<sup>52</sup> The removal of open fires may have a significant impact upon heritage values associated with historic homes.

Generally, adequate ceiling, floor and wall insulation has been absent in historic homes and the quality and coverage of insulation deteriorates with the age of the building.<sup>53</sup> There is a need, in particular, to improve wall and ceiling insulation of older homes. This needs to be achieved, however, while also retaining important historic building fabric. The NZHPT is aware of a number of instances when historic wall material (including historic wallpaper) has been removed and destroyed in order to install insulation material. In addition, rare historic windows have also been removed to achieve double-glazing, and the need to improve the thermal rating of windows or doors may result in inappropriate fabric removal and incompatible alterations.<sup>54</sup> Other issues may include damage to heritage fabric caused by the

<sup>51</sup> Adapted from Cliff Moughtin and Peter Shirley, *Urban Design: Green Dimensions*, Elsevier, New York, 2005, p 32

<sup>52</sup> BRANZ, *Being a Climate-Friendly Kiwi, At Home and at the Office*, May 2004, p 7

<sup>53</sup> BRANZ, *New Zealand 2005 House Condition Survey*, Study Report No. 142, 2005, p 49; UK Dept of Communities and Local Government, *Review of Sustainability of Existing Buildings*, November 2006, p 5

<sup>54</sup> Jonathan Taylor, 'The Conservation and Thermal Improvement of Timber Windows', *The Building Conservation Directory*, 1996, Cathedral Communications Ltd, 2005; English Heritage, *Draught proofing and Secondary Glazing*, Guidance Note, June 1994; Energy Saving Trust UK, *Energy efficient historic homes – case studies*, 2005

installation of solar water heating units and ducting. It is important, therefore that measures to promote energy efficiency and comfort do not compromise historic heritage values.

There is a range of guidance available internationally on improving energy efficiency of older homes while respecting historic heritage values.<sup>55</sup> Generally, all interventions for energy conservation should be guided by good conservation practice as outlined in the ICOMOS NZ *Charter for the Conservation of Places of Cultural Heritage Value*. This means that energy conservation works must ensure that the significance of a building is well understood to avoid damage and there is minimum disturbance to the existing fabric. Work should be reversible and, in some cases, parts of a building will be so significant, that any changes will be unacceptable.<sup>56</sup> This will require some creative energy and heritage solutions to be adopted in relation to older homes. It is important that home owners obtain professional conservation advice in designing energy efficiency works for historic houses.

Generally, floors and roofs space in historic houses present few barriers to the installation of new interior insulation. Often new insulation can be installed in association with repiling and under floor works. With regards to walls, it is possible to inject insulating foam into cavities without damaging heritage values. This method however, needs to be carried out in a way that does not result in water entry into the building. Another method is to insulate the walls from inside the building using the 'dry line' method. This involves a separate structure being built with a ventilated cavity between the insulating wall and the original fabric. This could be a breathable natural insulating wall.<sup>57</sup> Any proposed wall installation method, however, needs to be carefully considered and informed by professional conservation advice.<sup>58</sup>

Windows are often a critical part of the significance of a historic home and should be repaired and retained. Timber windows have been found to have a number of advantages over other materials such as aluminium. Research by BRANZ indicates that timber windows can still operate effectively after 80-100 years.<sup>59</sup> Timber window framing also has high thermal insulation properties. Draught proofing should be a first step in improving the energy efficiency rating of historic windows and this method may be accompanied by secondary glazing.<sup>60</sup> Draught proofing of double hung sash windows will require the 'replacement of the parting bead with a new component incorporating rubber blades to maintain a seal at the sides, and compression seals to the meeting rail, window head and sill.'<sup>61</sup>

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<sup>55</sup> Energy Saving Trust UK, *Energy efficient historic homes – case studies*, 2005

<sup>56</sup> See, English Heritage, Building Regulations and Historic Buildings, *Balancing the needs for energy conservation with those of building conservation: an Interim Guidance Note on the application of Part L*, 2004, pp 6-7

<sup>57</sup> Natural Building Tech Ltd, 'Energy efficiency and ecology in the renovation of vernacular buildings' [www.natural-building.co.uk](http://www.natural-building.co.uk)

<sup>58</sup> Baird M. Smith, *Conserving energy in historic buildings*, US National Parks Service, Preservation Briefs, No. 3, 1978

<sup>59</sup> BRANZ, *Timber Windows*, Issue 481, Bulletin, 2007

<sup>60</sup> English Heritage, *Draughtproofing and secondary glazing*, June 1994; Jonathan Taylor, *The Conservation and Thermal Improvement of Timber Windows*, The Building Conservation Directory 1996, [www.buildingconservation.com](http://www.buildingconservation.com)

<sup>61</sup> Jonathan Taylor, *The Conservation and Thermal Improvement of Timber Windows*, The Building Conservation Directory 1996, [www.buildingconservation.com](http://www.buildingconservation.com), p 3

Secondary glazing (or storm windows) is a sympathetic alternative to the installation of sealed double-glazed window units by the installation of an additional and removable glass barrier on the interior of the existing window.

**Energy efficiency guidance**

English Heritage, *Building Regulations and Historic Buildings, Balancing the needs for energy conservation with those of building conservation: an Interim Guidance Note on the application of Part L*, 2004

UK Energy Saving Trust, *Energy efficient historic homes – case studies*, CE138, 2005

Technical Preservation Services, *Conserving Energy in Historic Buildings* (Preservation Brief, No.3), US National Parks Service, 1978

International Code Council, *International Energy Conservation Code*, 2006

## Making changes to Traditional Maori Buildings

Traditional Maori buildings present many unique challenges in relation to heritage and building safety. However, as with other heritage buildings, careful design can achieve health, safety, access and efficiency outcomes while also respecting historic and cultural heritage values.

Fire is a particular hazard for many traditional Maori buildings and protecting buildings such as marae from fire is of primary importance.<sup>62</sup> In 2004, BRANZ, NZHPT and the NZ Fire Service prepared a significant research report which investigates fire protection of New Zealand's traditional Maori buildings.<sup>63</sup> This report highlighted both the cultural importance of marae wharehenui and fire risk issues:

The highly decorative marae wharehenui constructed from traditional materials are not only important within the Maori community, but also form a significant part of New Zealand's cultural heritage.

The full-scale test demonstrated the traditional Maori building construction is highly susceptible to fire and there is a very real potential that in the event of a fire it could threaten the safety of the occupants. The fire development was rapid resulting in the total loss of the tukutuku panels and toetoe in the ceiling and causing considerable damage to the larger timber members that would typically be intricately carved. This damage occurred within five minutes of ignition of the fire. It is therefore unrealistic to rely on Fire Service intervention to prevent or minimize this damage.<sup>64</sup>

Following the 2004 study, the NZ Fire Service and Opus International Consultants Ltd have published a fire safety manual for owners of marae buildings. This manual includes guidance for fire prevention, preparation, response and recovery.<sup>65</sup>

Access to traditional Maori buildings, especially marae, is a significant issue for users who have a disability. The Ministry for Health and the Office for Disability Issues promote improved access to Marae without compromising tikanga and kawa. Accessibility regulations can also raise particular issues for traditional Maori buildings. There have been instances when traditional paepae carvings have been damaged and removed to comply with disabled access requirements. This incidence is unacceptable considering that moveable ramps could be adopted as the need arises without damaging any heritage fabric.

Local authorities can also obtain access waivers in respect to impacts on wahi tapu and other places of significance to Maori. For example, the Chief Executive of the Department of Building and Housing issued a determination that granted a waiver in respect to providing disabled access to the summit of Mt Victoria/Matairangi, Wellington. In addition to the

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<sup>62</sup> NZ Fire Service, NZHPT, Ministry of Consumer Affairs, *Protecting Marae from Fire Nga whakatupato ahi mo te marae*, 2005

<sup>63</sup> BRANZ, NZHPT, NZ Fire Service, *Fire Protection of New Zealand's Traditional Maori Buildings*, Study Report, No. SR128, 2004

<sup>64</sup> *ibid*, pp 85-86

<sup>65</sup> NZ Fire Service and Opus International Consultants Ltd, *Fire Safety Owners of Marae Buildings*, 2006

excessive capital cost, it was considered that accessible ramped access would have a very significant effect on the landscape of the summit, including its cultural heritage values.<sup>66</sup>

Traditional Maori buildings were often very energy efficient structures. They were built low to the ground and retained heat by natural and locally-sourced building materials. Further they could accommodate a large number of people with shared services that provided natural sources of warmth and service efficiencies. Te Kūwaha, NIWA, has undertaken climate research and a number of renewable energy feasibility studies involving marae. For example, with the assistance of Te Kūwaha, solar panels have been installed at Tapeka Marae, Waihi.<sup>67</sup> As with access issues, achieving energy efficient traditional Maori buildings in a manner that respects heritage and cultural values requires further guidance information.

**Traditional Maori buildings guidance**

NZHPT, 'Te Tira o Pouhere Taonga, Māori Heritage Services;

NZHPT, Mahi Whakaoranga, Taonga Marae, Conserving Marae Buildings.

NZ Fire Service, NZHPT, Ministry of Consumer Affairs, *Protecting Marae from Fire Nga whakatupato ahi mo te marae*, 2005

BRANZ, NZHPT, NZ Fire Service, *Fire Protection of New Zealand's Traditional Maori Buildings*, Study Report, No. SR128, 2004

For further information about the conservation of traditional Maori buildings. Contact: Dean Whiting, Maori Heritage Manager (Central/Southern), NZHPT, phone 04 494 8043

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<sup>66</sup> Determination 2006/104, *Codewords*, January 2007, Issue 017, pp 12-13

<sup>67</sup> Guy Penny, 'Energy in rural Maori communities', NIWA Science

## **Dangerous, earthquake-prone, insanitary buildings and dangerous dams**

The Building Act, in subparts 6 and 7, contains a range of special provisions to manage dangerous, earthquake-prone and insanitary buildings, and dangerous dams. The implementation of these provisions at the local level is guided by policies prepared under section 131 and 161 of the Building Act.

Territorial authorities have powers to manage dangerous, earthquake-prone and insanitary buildings by erecting hoarding or fences to prevent people approaching a building, attaching prominent warning notices, and issuing notices (section 124(1)(c)) requiring remedial work to reduce or remove the danger or prevent the building from remaining insanitary. The powers can also include carrying out works to the building by a territorial authority.

In addition to the policy provisions prepared by each local authority, the Building Act requires that a copy of a notice, issued under section 125(2)(f), be provided to the NZHPT if the building is a heritage building. A similar notification provision applies to any notices issued under section 155(2)(f) in respect of dangerous dams.

The NZHPT has prepared guidance on heritage provisions in dangerous, earthquake-prone and insanitary buildings, and dangerous dams policies.<sup>68</sup> This guidance also contains ideas for managing dangerous dams. As outlined in this guidance, it is important that local authorities manage dangerous buildings and dams with due regard to historic heritage values. This may involve:

- Restricting public access and erecting warning notices as appropriate.
- Consulting the owners and NZHPT in relation to any dangerous heritage building or heritage dam issue.
- Consulting the owners and NZHPT in relation to any proposed written notice requiring work to a dangerous heritage building or heritage dam.
- Providing extended timeframes for heritage buildings and heritage dams in relation to written notices requiring work.
- Ensuring that written notices requiring work provide options to repair the building or dam as appropriate.
- Examining options for Council to repair buildings under section 126, including considering waiving costs as appropriate.

In relation to any issue regarding a potentially dangerous heritage building or heritage dam, contact the nearest office of the NZHPT (contact details at text box, page 10).

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<sup>68</sup> NZHPT, Sustainable Management of Historic Heritage Guidance Series, Guide No.9, *Heritage Provisions, Dangerous, Earthquake Prone, Insanitary Buildings, and Dangerous Dams, Building Act 2004*, 3 August 2007

## Appendix

<b>Summary of Historic Heritage Provisions Building Act 2004</b>	
<b>Part or Section</b>	<b>Provision</b>
3	<p><u>Purpose and Principles.</u> Purpose of this Act is to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings, to ensure that –</p> <ul style="list-style-type: none"> <li>(a) people who use buildings can do so safely and without endangering their health; and</li> <li>(b) buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them; and</li> <li>(c) people who use a building can escape from the building if it is on fire; and</li> <li>(d) buildings are designed, constructed, and able to used in ways that promote sustainable development.</li> </ul>
4(2)	<p><u>Principles to be applied in performing functions or duties, or exercising powers, under this Act</u> (applies only to Minister, chief executive, and local authorities to the extent they are performing functions or duties, or exercising powers, in relation to the grant of waivers or modifications of the building code and the adoption or review of policy on dangerous, earthquake-prone, and insanitary buildings or, as the case may be, dangerous dams). In achieving the purpose of this Act, a person to whom this section applies must take into account the following principles that are relevant to the performance of functions or duties imposed, or the exercise of powers conferred, on that person by this Act:</p> <ul style="list-style-type: none"> <li>(d) the importance of recognising any special traditional and cultural aspects of the intended use of a building: <ul style="list-style-type: none"> <li>(l) the need to facilitate the preservation of buildings of significant cultural, historical, or heritage value.</li> </ul> </li> </ul>
Subpart 2	<u>Interpretation</u>
7	<p><u>Building work</u> (a) means work – (i) for, or in connection with, the construction, alteration, demolition, or removal of a building; and (ii) on an allotment that is likely to affect the extent to which an existing building on that allotment complies with the building code; and (b) including...(sitework, design work, supervision, see Building Amendment Act 2005).</p>
	<p>Construct, in relation to a building, includes to design, build, erect, prefabricate, and relocate the building.</p>
35	<p><u>Content of Project Information Memorandum</u> A project information memorandum must include –</p> <ul style="list-style-type: none"> <li>(a) information likely to be relevant to the proposed building work that identifies –</li> </ul>

	<p>(i) the heritage status of the building (if any); and</p> <p>(ii) each special feature of the land concerned (if any); and</p> <p>(b) information likely to be relevant to the proposed building work that, in terms of any other Act, has been notified to the territorial authority by a statutory authority.</p> <p>(f) if the territorial authority considers that notification to the New Zealand Historic Places Trust is likely to be required under section 39, a statement to that effect.</p>
39	<p><u>Territorial authority must advise New Zealand Historic Places Trust in certain circumstances</u></p> <p>(1) If the conditions set out in subsection (2) apply, a territorial authority must advise the New Zealand Historic Places Trust within 5 days after receiving an application for a project information memorandum.</p> <p>(2) The conditions are –</p> <p>(a) that the application affects a registered historic place, historic area, wahi tapu, or wahi tapu area; and</p> <p>(b) that the territorial authority has not previously issued a project information memorandum for the building work to which the application applies.</p>
121/122/123	<p><u>Definitions of dangerous, earthquake-prone, and insanitary buildings</u></p>
125	<p><u>Requirements for notice given under section 124 (Powers of territorial authorities in respect of dangerous earthquake-prone, or insanitary buildings)</u></p> <p>(2) A copy of the notice must be given to –</p> <p>(e) any statutory authority, if the land or building has been classified; and</p> <p>(f) the New Zealand Historic Places Trust, if the building is a heritage building.</p>
131	<p><u>Policy on dangerous, earthquake-prone, and insanitary buildings</u></p> <p>(1) A territorial authority must, within 18 months after the commencement of this section, adopt a policy on dangerous, earthquake-prone, and insanitary buildings within its district.</p> <p>(2) The policy must state-</p> <p>(a) the approach that the territorial authority will take in performing its functions under this Part; and</p> <p>(b) the territorial authority's priorities in performing those functions; and</p> <p>(c) how the policy will apply to heritage buildings.</p>
155	<p><u>Dangerous Dams</u></p> <p><u>Requirements for notice given under section 154 (Powers of regional authorities in respect of dangerous dams)</u></p> <p>(2) A copy of the notice must be given to –</p> <p>(e) any statutory authority, if the land or dam has been classified; and</p> <p>(f) the New Zealand Historic Places Trust, if the dam is a heritage dam</p>
161	<p><u>Policy on dangerous dams</u></p> <p><u>Regional authority must adopt policy on dangerous dams</u></p>

	<p>(1) A regional authority must, within 18 months after the commencement of this Part, adopt a policy on dangerous dams within its district.</p> <p>(2) The policy must state-</p> <p>(d) the approach that the regional authority will take in performing its functions under this Part; and</p> <p>(e) the regional authority's priorities in performing those functions; and</p> <p>(f) how the policy will apply to heritage dams.</p>
172(2)	<p><u>Appointment of building advisory panel</u>  (Appointments must take into account need for members of the panel to have among them a breadth of experience and expertise, and knowledge of, or experience in, matters that come within the panel's function (including, without limitation, matters that relate to consumer, cultural, disability, energy efficiency, health and safety, heritage or sustainable development issues).</p>