

**BEFORE THE CHRISTCHURCH REPLACEMENT DISTRICT PLAN
HEARINGS PANEL**

IN THE MATTER of the Resource Management Act 1991 and the Canterbury
Earthquake (Christchurch Replacement District Plan) Order
2014

AND the Christchurch Replacement District Plan

**STATEMENT OF EVIDENCE OF BRUCE TREVOR KLEIN
ON BEHALF OF THE CROWN**

PROPOSAL 14 (RESIDENTIAL)

Life-stage and energy and water efficiency standards and consenting issues

Dated the 20th day of March 2015

BUDDLEFINDLAY
NEW ZEALAND LAWYERS

Barristers and Solicitors
Christchurch

Solicitor Acting: **Cedric Carranceja/Jenna Silcock**
Email: cedric.carranceja@buddlefindlay.com / jenna.silcock@buddlefindlay.com
Tel 64 3 3791 747 Fax 64 3 3795 659 PO Box 322 DX WX11135 Christchurch 8140

Counsel Acting: **Paul Radich QC**
Tel 64 4 974 5951 Fax 64 4 974 5955 PO Box 10731 Wellington 6143

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1. INTRODUCTION

- 1.1 My name is Bruce Trevor Klein. I hold the position of Team Leader, Compliance Solutions, Building System Performance Branch, at the Ministry of Business, Innovation and Employment ("**MBIE**"). I have been in this position since 3 June 2014.
- 1.2 I hold the following qualifications:
- (a) a Bachelor of Science Degree from Massey University Palmerston North;
 - (b) a New Zealand Certificate in Engineering, Heating, Ventilating and Air Conditioning option from the Central Institute of Technology, Trentham; and
 - (c) a Graduate Diploma in Building Management from Victoria University of Wellington.
- 1.3 I am also a member of the Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand Incorporated (member number 993). Full details of my qualifications and relevant past experience are at Appendix **BTK1** to this evidence.
- 1.4 I have been engaged by the Crown (through the Canterbury Earthquake Recovery Authority ("**CERA**")) to provide evidence in relation to the Crown's submission on Proposal 14 (Residential) ("**Proposal 14**") of the Christchurch Replacement District Plan ("**Replacement Plan**") regarding built form standards for life-stage inclusive and adaptable building design and for energy and water efficiency.
- 1.5 I provided advice and input into the Crown's submission on these standards, particularly with respect to the interface between Building Act 2004 ("**Building Act**") and Resource Management Act 1991 ("**RMA**") processes and the practical implications of pursuing compliance with such building standards in the district plan context.

2. CODE OF CONDUCT

- 2.1 I confirm that I have read the code of conduct for expert witnesses as contained in the Environment Court's Practice Note 2014. I have complied

with the practice note when preparing my written statement of evidence, and will do so when I give oral evidence before the hearings panel.

- 2.2 The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in the evidence to follow.
- 2.3 Unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

3. SCOPE

3.1 My evidence discusses issues associated with the Christchurch City Council's ("**Council**") notified version of Proposal 14 which included built form standards prescribing matters of life-stage adaptability and water and energy efficiency in building design. My evidence will cover:

- (a) The role and priorities of MBIE in regard to building systems and the Building Act.
- (b) Consenting processes in Christchurch.
- (c) The Lifemark and Homestar sustainable building initiatives and the associated costs.
- (d) The appropriateness of using the Replacement Plan to regulate sustainable building standards, including practical and administrative implications.
- (e) Alternative means of achieving sustainable building outcomes.

3.2 The key documents I used in forming my view are:

- (a) The relevant parts of Proposal 14 including:
 - (i) Policy 14.1.5.4 – Best practice for health, building sustainability energy and water.
 - (ii) Rules 14.2.3.11, 14.3.3.10, 14.4.3.7, and 14.5.3.6 - Life-stage and adaptive design for new residential units.
 - (iii) Rules 14.2.3.12, 14.3.3.11, 14.4.3.8, and 14.5.3.7 Energy and water efficiency standards for new residential units.

- (b) The Council's section 32 Report on Proposal 14 (Residential).
- (c) The relevant parts of the Crown's submission on Proposal 14 (Residential).
- (d) The submission by the Council (#310) on Proposal 14 (Residential).
- (e) The Lifemark website - www.lifemark.co.nz.
- (f) The Homestar website - www.homestar.org.nz.
- (g) The Council's revised version of Proposal 14 (Residential) dated 9 March 2015.
- (h) Statement of evidence of Graeme Robert McIndoe on behalf of the Christchurch City Council, dated 11 March 2015.

4. EXECUTIVE SUMMARY

- 4.1 MBIE administers the Building Act, the Building Code¹, oversees the building consent process and publishes Acceptable Solutions and Verification Methods. The Building Code sets the minimum performance standards buildings must achieve. One of the fundamental principles of the Building Act is that no one can be made to achieve performance criteria that are additional to, or more restrictive than, the performance criteria in the Building Code.
- 4.2 The life-stage, energy efficiency and water efficiency standards in Proposal 14:
 - (a) do not appear to have been subject to proper cost-benefit analysis and are incompatible with the Government's objectives to reduce red-tape and compliance costs that increase the cost of housing;
 - (b) are also problematic from a practical perspective. The Council has been under immense pressure in performing its functions as a building consent authority through having to manage the increased numbers of building consents generated by earthquake repair and rebuilding work. Imposing a greater burden on the building control team at this time would make this pressure worse; and

¹ The Building Code is contained in Schedule 1 of the Building Regulations 1992.

(c) relate to building work and exceed the requirements set out in the Building Code. In my view it is not appropriate or practical for Proposal 14 to include building requirements that should be, and are, dealt with under the Building Act.

4.3 While I support the objectives of life-stage and energy efficiency standards, including better sustainability, better energy and water efficiency and accessibility, I consider that the promotion of the advantages of these standards is a more appropriate tool for the Council to adopt than incorporation of standards in the Replacement Plan.

4.4 I therefore support the deletion of the life-stage and energy efficiency standards in their entirety from the Council's revised version of Proposal 14 (Residential) dated 9 March 2015.

5. MBIE'S ROLE IN BUILDING SYSTEMS AND BUILDING REGULATION UNDER THE BUILDING ACT

5.1 MBIE's roles which relate to my evidence include:

- (a) administering the Building Act and the Building Code;
- (b) issuing and undertaking reviews of Acceptable Solutions and Verification Methods;
- (c) issuing guidance information to assist territorial authorities, building consent authorities ("**BCAs**"), owners and persons carrying out building work to comply with the Building Act;
- (d) appointing a building consent accreditation body to accredit building consent authorities; and
- (e) maintaining a register of BCAs.

5.2 MBIE also has a general role in monitoring trends in the building industry and recommending amendments to the Building Act and regulations (including the Building Code) to keep the regulatory system up to date and relevant to changing conditions.

5.3 The purposes of the Building Act include providing for the regulation of building work and the setting of performance standards for buildings, which are contained in the Building Code, to ensure that people who use buildings can do so safely.

- 5.4 The national performance-based Building Code sets the minimum performance a building must achieve, rather than specifying how buildings are to be constructed. It is a regulatory regime that is flexible and facilitates innovation. The introduction of a performance based code in the Building Act was a conscious move away from a prescriptive system which was seen as overly complex (particularly because each Council applied different standards) and stifling progress in building design, materials and techniques.
- 5.5 MBIE has appointed International Accreditation New Zealand ("IANZ") to accredit BCAs that comply with the Building (Accreditation of Building Consent Authorities) Regulations 2006. Accreditation includes ensuring a BCA has and observes the required policies, procedures and systems to perform building control functions, and is able to access competent employees and contractors. BCA accreditation is designed to achieve national conformity across all BCAs.
- 5.6 MBIE maintains a register of BCAs and undertakes technical reviews of territorial authorities, including BCA functions, and provides education and support to BCAs as required.

6. SUSTAINABLE BUILDING INITIATIVES – LIFEMARK AND HOMESTAR

- 6.1 The Residential Proposal includes rules requiring compliance with the following sustainable building initiatives:
- (a) Lifemark, which is described on its website as *"an independent seal of approval awarded to homes that have been well designed and when built are easy and safe to live in - for a lifetime"*.² The goal of Lifemark is to foster and promote design standards that work for people right across life's ages and abilities - from young families to older and disabled people. The Lifemark seal of approval is endorsed by Lifetime Design Limited, a registered charity established by CCS Disability Action with assistance from the Ministry of Social Development.
- (b) Homestar, which is described on its website as *"New Zealand's environmental and energy efficiency rating for both new and existing homes"*.³ The Homestar website provides an online rating system for homes, letting users work out how healthy and energy efficient a home or prospective home is. Homestar also provides users with advice and

² <http://www.lifemark.co.nz/>

³ <http://www.homestar.org.nz/what-homestar%E2%84%A2>

information on how they can improve comfort, reduce operating costs and achieve a warmer, drier, healthier home. Homestar is independently administered by the New Zealand Green Building Council, a not for profit, industry owned association.

- 6.2 The costs associated with the Lifemark and Homestar certification schemes include additional design costs and certification costs and the increase in construction cost above the minimum Building Code requirements. As an example of increased construction costs arising from Proposal 14, thermally broken double glazing window frames⁴ are approximately twice as expensive to buy as those frames that are not thermally broken. Thermally broken double glazed window frames have not been demonstrated to provide a greater cost effectiveness over its life when compared to thermally backed drapes (noting that standard double glazing would normally be required in Christchurch). Undoubtedly there will be additional cost to the home owner without careful analysis of what cost-of-life returns there will be for these changes.
- 6.3 I consider the inclusion of the Lifemark and Homestar provisions within the Replacement Plan to be incompatible with the Government's objectives to reduce red-tape and compliance costs that increase the cost of housing. Furthermore, I consider that there are some serious practical difficulties inherent in administering these provisions, including:
- (a) added pressure to already stretched building consent processes in Christchurch (discussed further in section 7); and
 - (b) the issues with managing and enforcing these provisions through an RMA process (discussed further in section 8).
- 6.4 While I support the ideals behind these initiatives, I do not support these initiatives being included in standards in Proposal 14 (especially without a robust cost/benefit analysis). The performance-based Building Code system allows home owners to include these and other features for their homes, but they should not be mandatory (as further discussed below).
- 6.5 I therefore support the deletion of the life-stage and energy efficiency standards from the Council's revised version of Proposal 14 (Residential) dated 9 March 2015.

⁴ A thermally broken double glazed window frame is achieved by using either polyamide insulating thermal strips or an insulating polymer in association with double glazing to provide an insulating barrier within the frame minimising the transfer of energy (heat or cold) via the frame.

7. BUILDING CONSENT PROCESSES IN CHRISTCHURCH

- 7.1 I understand that the Council had intended that compliance with the life-stage, energy efficiency and water efficiency standards would be assessed by building control officers at the time of processing a building consent application.
- 7.2 In my opinion, administration of these provisions would add an unnecessary and unreasonable layer of complexity, delay and uncertainty to the process of obtaining building consents for work vital to Christchurch's housing market recovery.
- 7.3 The Council has been under immense pressure in performing the functions of a BCA since the Canterbury earthquakes in 2010 and 2011. Additional work has included initially checking if buildings were safe to occupy and subsequently processing the vastly increased numbers of building consents required for the rebuild.
- 7.4 The Council's BCA accreditation was revoked by IANZ in July 2013. The Council's BCA has worked through the issues identified by IANZ and its accreditation was reinstated in December 2014. The Council is now processing almost all building consent applications within the statutory time frame of 20 working days.
- 7.5 The life-stage, energy efficiency and water efficiency standards would impose a significant additional work burden on a building control team already under significant pressure through having to manage the increased numbers of building consents generated by earthquake repair and rebuilding work.
- 7.6 I also note that, to help deal with the current workload, the Council's BCA has acquired personnel from other BCAs throughout New Zealand and overseas and has contracts with other BCAs and building consultants to complete their regulatory functions. It would be unreasonable to expect a contracted building control officer based, for example, in Auckland to have sufficient familiarity with Proposal 14 to carry out checks for breaches of detailed district plan standards.

8. USE OF DISTRICT PLAN REGULATION TO IMPOSE SUSTAINABLE BUILDING STANDARDS

- 8.1 The Building Act states what building work is and that it must comply with the Building Code. It also provides in section 18 that no one is required to comply with performance criteria additional to or more restrictive than the performance criteria contained in the Building Code, unless there is an express provision to the contrary in any Act. The RMA has such a provision in section 76(2A) in relation to protecting other property from the effects of surface water.
- 8.2 The requirements of the Lifemark and Homestar initiatives go over and above the performance criteria of the Building Code. Both of the initiatives are prescriptive. This does not preclude them from being used as a means of complying with the Building Code as an alternative solution, but it does mean that a BCA would be unable to demand the use of these schemes in an application for a building consent.
- 8.3 However, rule 14.2.3.11 (Life-stage inclusive and adaptive design for new residential units) applies to all residential units in the Residential Suburban Zone and Residential Suburban Transition Zone. It prescribes Lifemark requirements in respect of cooking facilities, laundries, showers and toilets and adequate spaces for certain activities. The Building Code already contains standards for the provision of cooking facilities, laundries, showers and toilets, but Lifemark is more prescriptive with its standards, reducing flexibility for owners and designers. An example of a Lifemark requirement is to have the toilet, shower and at least bedroom on the primary living level dwelling. Lifemark also reduces flexibility by specifying minimum room sizes for homes to cater for disabilities. Such minimum room sizes are not required by the Building Code (but the Code does require adequate activity spaces in Old People's Homes in G5.5.3).
- 8.4 In my opinion there are also practical problems with dealing with building matters by way of RMA processes. For example:
- (a) Including building design and construction requirements in the Replacement Plan is a recipe for confusion. As noted above at paragraph 7.1, I understand that compliance would have been checked by building consent officers, who are qualified to check building work. However, they are not accredited under the Building Act to assess

compliance with district plans. Resource consent officers are, but they are not qualified to check building work.

- (b) Builders, designers and other practitioners involved in building work look to find information on how to comply with the Building Code from Acceptable Solutions, Verification Methods, Standards and MBIE guidance and are not accustomed to searching district plans for building requirements. MBIE promotes the document framework for complying with the Building Code to Licensed Building Practitioners and the wider building sector.
- (c) One of the reasons the national performance based Building Code was introduced was to avoid having different prescriptive building standards for each Council. Some regional differences already exist within the Building Code. However, these have been carefully considered and relate to specific environmental differences such as wind zones, sea spray zones, snow loadings and earthquake resilience. Using Proposal 14 as notified will re-introduce another layer of regional building standards on top of the Building Act requirements. It may open the door for widely disparate variations to occur between regions without central oversight to ensure reasoned modifications.
- (d) There will be inefficient time delays involved in the transfer of consent applications between the building consent and resource consent teams impinging on prescribed time to process building consent applications. This inefficiency would be amplified because of the vast number of consents that are being processed in Christchurch.
- (e) Including prescriptive building solutions in Proposal 14 will hinder innovation and improvement.
- (f) As the Lifemark and Homestar requirements will change over time it will be difficult to identify the relevant version of these requirements to be applied to building work under Proposal 14.
- (g) Including a specific proportion of units, say 10%, in a multi-unit development to include life-stage inclusive and adaptive design, as proposed by Mr McIndoe on behalf of the Council,⁵ is not a workable solution because it is unclear how the Council will choose which units need to have these additional features.

⁵ Evidence of Graeme McIndoe on behalf of the Council, paragraph 6.4.

8.5 The section 32 analysis provided by the Council to justify including these standards demonstrates there is a philosophical difference between the Building Code and the Replacement Plan. The Building Code is regulatory and hence is a minimum performance standard. The Replacement Plan has Objective 14.1.5 (High quality residential environments) and Policy 14.1.5.4 (Best practice for health, building sustainability, energy and water efficiency). Best practice is a higher standard which the homeowner may choose to adopt, but requiring compliance with these standards is not necessary in every case and will increase the cost of construction.

9. ALTERNATIVE MEANS FOR ACHIEVING SUSTAINABLE BUILDING DESIGN

9.1 My preferred option is for Lifemark and Homestar to promote their services without being specifically referenced in Proposal 14. There are also other non-regulatory methods available for the promotion of life-stage and energy/water efficiency issues. For example, guidance documents can be prepared and issued to promote sustainable building. MBIE issues guidance on a range of technical matters including the document "Repairing and rebuilding houses affected by the Canterbury earthquakes". This guidance is extensively used in Canterbury, even though it does not have the status of a Verification Method or Acceptable Solution. MBIE has also published guidance on sustainable building such as "Solar water heaters – Guidance for suppliers, installers and building consent authorities".

9.2 The Energy Efficiency and Conservation Authority ("**EECA**") also uses non-regulatory methods to promote sustainable building design. The EECA was set up by the government to encourage, support and promote energy efficiency, energy conservation, and the use of renewable sources of energy. Amongst other things, the EECA provides information and advice to homeowners through the [ENERGYWISE website](http://www.energywise.govt.nz/)⁶, and provides some funding and financial assistance to help homeowners invest in more efficient products or systems, or switch to renewable energy.

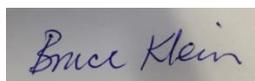
9.3 I am working with the Office for Disability Issues ("**ODI**")⁷ to investigate the feasibility of researching and producing guidance material on Universal Design. Universal Design is the design of the built environment and public

⁶ <http://www.energywise.govt.nz/>

⁷ The Office for Disability Issues is the focal point within government on disability issues. The Office promotes and monitors implementation of the New Zealand Disability Strategy and the UN Convention on the Rights of Persons with Disabilities. The Office reports to the Minister for Disability Issues and support the Ministerial Committee on Disability Issues.

spaces in the wider environment so that they can be used by everyone, including people with disabilities. This differs from current practice of designing buildings and adding features for people with disabilities. MBIE has more interest in the built environment aspects of Universal Design, while ODI has a wider interest that extends to public spaces and public transport.

9.4 MBIE supports initiatives that aim to achieve sustainable energy efficiency and beneficial design improvements in household units should the homeowner choose to do so. In my opinion, the Council's efforts should be directed to promoting the Lifemark and Homestar standards and providing information on possible options that suit the individual and are relevant to their environmental and personal circumstances.

A rectangular box containing a handwritten signature in blue ink that reads "Bruce Klein".

Bruce Trevor Klein

20 March 2015

APPENDIX BTK1 Qualifications



Employment History

Ministry of Business, Innovation and Employment	2012 to present
The Department of Building and Housing	2004 to 2012
The Building Industry Authority	1993 to 2004

Team Leader, Senior Advisor and Technical Advisor

- Managing and leading working groups to evaluate and resolve Building Code issues
- Developing and presenting at speaking engagements on subjects pertaining to Building Act
- Project managing reviews and amendments to the Building Code, Acceptable Solutions and Verification Methods
- Drafting technical papers for presentation on various aspects of Building Act and Building Code
- Serving on standards committees for Standards cited in the Acceptable Solutions and Verification Methods

Self Employed – Consultant / Contractor 1991 – 1993

- Contracted to the Building Service Sector of the Construction Industry

Pryde Homebuilders (Manawatu) Ltd – Manager 1989 – 1991

- Managed a group housing construction franchise