

Canterbury

District Health Board

Te Poari Hauora o Waitaha

Submission on Building Code Update 2021

To: Ministry for Business Innovation and Employment

Submitter: Canterbury District Health Board

Attn: Sandy Brinsdon
Community and Public Health
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SUBMISSION ON BUILDING CODE UPDATE 2021

Details of submitter

1. Canterbury District Health Board (CDHB).
2. The submitter is responsible for promoting the reduction of adverse environmental effects on the health of people and communities and to improve, promote and protect their health pursuant to the New Zealand Public Health and Disability Act 2000 and the Health Act 1956. These statutory obligations are the responsibility of the Ministry of Health and, in the Canterbury District, are carried out under contract by Community and Public Health under Crown funding agreements on behalf of the Canterbury District Health Board.

Details of submission

3. We welcome the opportunity to comment on the Building Code Update 2021. The future health of our populations is not just reliant on healthcare services, but on a responsive environment where all sectors work collaboratively.
4. While health services are an important determinant of health, health is also influenced by a wide range of factors beyond the health sector. These influences can be described as the conditions in which people are born, grow, live, work and age, and are impacted by environmental, social and behavioural factors. They are often referred to as the 'social determinants of health'¹.
5. The most effective way to maximise people's wellbeing is to take these factors into account as early as possible during decision making and strategy development.

General Comments

6. Housing is an important determinant of health and the CDHB is pleased to see references to health in several places.
7. We support MBIE's priorities in the building and construction sector to continue supporting the construction of quality medium and higher density housing; reducing

¹ Public Health Advisory Committee. 2004. *The Health of People and Communities. A Way Forward: Public Policy and the Economic Determinants of Health*. Public Health Advisory Committee: Wellington.

carbon emissions in the sector; and improving the ability of buildings to withstand the future effects of climate change.

8. We agree that the investment in quality building will provide ongoing savings and health benefits for our community. Warm, dry, well insulated homes will reduce fuel poverty, improve health outcomes, reduce absence from work and education. As the lifespan of a house covers many years the improvement in the Building Code has the ability to improve the health of Whānau for many generations.
9. In addition to considering the quality and thermal efficiency of homes, the CDHB encourages MBIE to take a bigger-picture approach that will ensure the creation of health-promoting, accessible and well-connected neighbourhoods.
10. The CDHB has a number of comments and recommendations for consideration to further improve health outcomes for the community.

Specific comments

Proposal 1. Energy efficiency for housing and small buildings

11. The CDHB supports the Building for Climate Change (BfCC) and Higher Density 8 (HD8) programmes of work with the goal to support higher-density housing while ensuring they are safe, healthy and durable homes that people want to live in. The CDHB recommends that that steps are taken to ensure that housing development in New Zealand creates health-promoting, accessible and connected neighbourhoods.
12. Under 1.3.1 Performance level, the CDHB supports Option 3 of the proposals to increase minimum insulation levels for roof, windows, walls and floors for new housing and small buildings in the Building Code. Unfortunately, most builders and developers only build to the minimum code. We therefore recommend making the build code the very best that we can as this will improve the health and wellbeing of our families and reduce the cost to heat and cool homes for future generations, not just the first owner. *Option 3. Going further than international standards* is the greatest level of increase proposed. This would put New Zealand's minimum insulation levels ahead of other parts of the world with similar climates. It would have the greatest impact on current construction requirements and the biggest reductions in energy use.

13. We recommend the changes under Option 3 are phased in over a 24 month period. The additional cost of increasing the minimum requirements will largely be borne by those investing in new housing and will impact the wellbeing of those people who own it after. The reduction in energy use supports the goals of lowering carbon emission and will have the added benefit of reducing energy hardship.
14. Under 1.3.2. Climate zones, the CDHB supports the expansion of the number of climate zones from 3 to 6 to allow insulation requirements to better reflect the different temperatures experienced in each zone, with West Coast in Zone 4 and Canterbury in Zone 5. CDHB also recommends any insulation standards should at least meet International Standards
15. The CDHB notes that there is no mention of Volatile organic compounds (VOCs), which are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Organic chemicals are widely used as ingredients in household products². The CDHB recommends that MBIE consider including steps to mitigate the risk of VOC exposure to occupants by prohibiting high-emitting building products.

Proposal 2: Energy efficiency in large buildings >300m²

16. **Option 2 increasing insulation to international levels** is a big step change from the current Building Code, particularly for Zone 5. This option gives a 20% decrease on energy consumption compared to the status quo with Option 3 only gaining another 5%. The costs to go to Option 3 would be greater due to the change in building design and construction technology to incorporate thicker insulation. The CDHB would therefore advocate for Option 2.
17. In response to question 2-2 regarding timeframes for change, large buildings are several years in the making with budgets made during the initial stages. The CDHB

² https://apps.who.int/iris/bitstream/handle/10665/66537/WHO_SDE_OEH_00.02-eng.pdf?sequence=18&isAllowed=y

would therefore suggest Option 1 (12 months) would be problematic for some projects and Option 2 (24 months) would be a reasonable compromise.

Proposal 3. Energy efficiency for HVAC systems in commercial buildings

18. The CDHB notes that although healthcare buildings are mentioned in Option 2 as having high energy demands they are not included in the definition of a commercial building for Option 3.
19. On page 37 of the consultation document, energy modelling options were discussed with Option 4 recommended as a simplified verification method for HVAC system energy use. Option 3 energy modelling was not considered due to skills shortages in designers and building consent authorities to undertake and review this type of modelling. The CDHB recommends that Option 3 be pursued for large buildings over 10,000 m² as this would provide energy and plant savings and build up the skill base in New Zealand. The CDHB was not able to undertake this modelling for the 62,500 m² Waipapa building and have only recently managed to get this to occur for the Hillmorton Hospital redevelopment through the expensive green star process.
20. On page 196, energy meters and energy recording wording leaves room for confusion with 12.2.1.1 and 12.2.1.2. The CDHB recommends that buildings over 2,500m² should have the metering requirements of both.
21. On page 197 regarding maintenance access in H1/VM3, the CDHB supports this being considered but it is unclear how the comment regarding reference to the UK Construction Industry Research Information Association publication is useful as this detail needs to be easily accessible.
22. On page 188 relating to pipework insulation, the temperature range in table 7.2.1.2b would be more practical if it provided additional temperature ranges to include steam and gave thicknesses of the most commonly used insulation (fibreglass) with k values stated along the lines of the ASHRAE standard 90. Christchurch hospital's new energy centre tendered design specification went out with H1 insulation thickness despite the CDHB's own specification being greater for steam. This was

not picked up until the design was almost complete and robust debate was needed before a compromise could be reached.

Proposal 4. Natural light for higher density housing

23. Natural light is important for mental health and wellbeing, as it helps boost energy and the immune system and helps us sleep at night as it balances the bodies hormones³. Sunlight is a natural antiseptic and will reduce production of bacteria.


24. The CDHB recommends that access to sunlight is equitable as we move to intensified housing and not just available for those in more expensive urban apartments. It is important that all people in apartments have clear glazing within a visual awareness zone.

Conclusion

25. The CDHB does not wish to be heard in support of this submission.

26. Thank you for the opportunity to submit on Building Code Update 2021.

Person making the submission



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Date: 28/05/2021

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³ <https://sustainability.ncsu.edu/blog/changeyourstate/benefits-of-natural-light/>

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