



## DEPARTMENT OF BUILDING & HOUSING

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### Alternative solutions

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An alternative solution is a building design, of all or part of a building, that demonstrates compliance with the **Building Code**. It can include a material, component or construction method that differs completely or partially from those described in the **Compliance Documents**. It can be a minor variation from a Compliance Document, or a radically different design and construction approach.

Not everyone wants a 'one size fits all' building solution. A building owner may want something that looks different or performs better, is more cost effective, or to overcome a specific site problem. Also, there may not be a Compliance Document for the proposed construction, for example, a document covering onsite effluent disposal. Whatever the reason, a non-generic approach to building design and construction is often desired or required.

The Building Code, by being a performance-based code, allows for innovation and uniqueness. It enables designers the freedom to come up with a proposal for an **innovative solution** that provides the best outcome for the project. For example, in the pre-1991 building bylaws days, it wouldn't have been possible to build a house of blocks made from recycled plastic waste (with an added-value factor of captured air providing the insulation) other than by changing the bylaws.

Designers and building consent authorities have important roles to play in the use of alternative solutions. Discussion early in the design process will clarify expectations. The designer needs to know what information and evidence the building consent authority will expect, and the building consent authority needs a clear understanding of what the building consent applicant is trying to achieve.



## Submitting a building consent application to have an alternative solution approved

To obtain a building consent for an alternative solution, a building consent applicant must demonstrate to the building consent authority that a proposed alternative solution will comply with the requirements of the Building Code. Only then will a building consent be issued.

The building owner (or the owner's agent, such as an architect, engineer or builder) needs to provide sufficient evidence that the proposal will meet the provisions of the Building Code.

Here's the process to follow.

### 1. Scope the project

Determine which parts of the project are not covered by a Compliance Document. These parts will require an alternative solution.

### 2. Identify the Building Code Clauses, including the specific Performances, that are relevant

### 3. Provide evidence

The documentation for the proposed alternative solutions must contain sufficient evidence to show that the identified performance criteria of all relevant clauses will be met. The amount of evidence may be significant. The building consent applicant's word that it will work will usually not be sufficient.

A range of tools exists to establish compliance (that is, to provide the quantitative or qualitative measures that will verify compliance). Depending on circumstances these may include:

**Calculation or test method.** These are calculations, test results, models, simulations that are not contained in the Compliance Documents.



**Comparison with a Compliance Document.** Compliance Documents are one set of instructions that lead to compliance. Deviation from some of the steps is possible to accommodate, for example different materials or detailing provided that deviation is compensated for or otherwise justified. In many cases, Compliance Documents provide an excellent guidance mechanism for assessing the robustness of an alternative solution.

**Comparison with a product** previously accepted by a building consent authority. For example, some building methods not covered by Compliance Documents may have been previously accepted by a building consent authority on a comparable building.

**Comparison with a determination** issued by the Department. Is there a determination on a similar proposal? Although determinations are case-specific and therefore have a very limited application, they do provide sound guidance on interpretation of the Building Act and Building Code at a particular point in time.

**Trade literature.** Is it a proprietary product? The manufacturer's literature may contain technical data that supports the proposal.

**Appraisal.** Is there a current appraisal certificate that describes how compliance with the Building Code is achieved?

**In-service history.** Is there proof that arises from in-service history? For example, has the proposed material been used in a similar application on a similar site? Overseas evidence can be used, but be mindful of New Zealand conditions, such as seismic activity, ultra violet light, and exposure to salt-laden winds and wind-driven rain.

**Assessment of actual conditions on site.** Is there proof that arises from local environmental conditions? For example, a very sheltered site that is supported by meteorological or horticultural evidence.



**Expert evidence.** Is there collaborative expert support? This could be peer review of the proposed solution or opinions obtained from credible organisations.

#### **4. Present your evidence**

Provide a strongly argued case to the building consent authority by including as many of the above tools as possible. Be sure to state exactly what Building Code clauses and performances are being addressed. The clearer the supporting documentation, the easier the evaluation of it will be.

#### **5. A building consent application is accepted when compliance is clearly established**

All of the evidence, as described above, is assessed. Note that outside help may be sought by the building consent authority in assessing all, or specific aspects, of a proposed alternative solution.

Alternative solutions have been accepted for entire projects or parts of a building and have included composting toilets, handrails, barriers, fire escape plans, water supplies, effluent disposal, ecohouses and rammed-earth houses.