

# **Christchurch BASE Tool Review**

## **Christchurch CBD Recovery Plan: BASE tool for sustainable buildings**

### **Paper Background**

This paper is intended to explore the aspects of the draft Christchurch CBD Recovery Plan which relates requiring sustainable / green building through the BASE (Building a Sustainable Environment) tool application. The paper will research the methodology and decision making process for the creation of the relevant objectives, policies and rules and the application of the BASE tool. A summary of findings will be made, including lessons learned and an application of recommendations for the future Auckland Unitary Plan.

### **Introduction**

The draft Christchurch CBD Recovery Plan, informally known as the draft Christchurch Centre Plan (dCCP) has been developed in response to a high velocity earthquake in February 2011 which destroyed a large proportion of buildings in Christchurch Central. The Plan seeks to leave a lasting legacy on the city, one of which is to employ 'green' design and technologies which will improve the energy efficiency, indoor environmental quality and waste streams of most new buildings in Christchurch Centre (within the four avenues).

### **The framework of the draft Christchurch Centre Plan**

The dCCP was required and written under the auspice of the Canterbury Earthquake Recovery Act 2011 (CERAct). The Act sets out that the plan be directed by the responsible Minister and prepared by the Christchurch City Council within nine months of the Act coming into force.

The formulation of the Plan under this Act is a notable departure from the usual formulation of plans under the Resource Management Act 1991 (RMA). Section 19 of the CERAct expressly states that nothing in section 32 or Schedule 1 of the RMA applies to the development or consideration of the Plan. Therefore no study was required to identify alternatives, benefits and costs as required by a section 32 of the RMA and neither was one produced that fits a similar model.

The Plan was formulated after 'idea gatherings' from the community and subsequently it was delivered to the Minister for Earthquake Recovery on 21 December 2011 for consideration. At the same time, comments from the public were welcomed until closing on 3 February 2012. It is expected that the Minister will make a decision in early to mid 2012 at which time it will be presented to the House of Representatives before being Gazetted when it will become 'operative'.

Subsequent to the Minister's approval, the dCCP would be inserted into the Christchurch City District Plan. The draft changes have been prepared by council.

It is important to note that despite the preparation of the Plan under the CERAct, any subsequent resource consent application will be processed under the RMA like any other.

It is possible that all or any part of the Plan including the BASE rating tool may not be supported by the Minister of Earthquake Recovery. It is generally felt within Christchurch City Council that if this were to happen, a council plan change at a latter date could be used to enact the BASE tool requirement 'city wide'. Alternatively, the tool could become a voluntary scheme which is supported by design advisors and financial or other incentives. Moreover, if the Minister does support the BASE tool then a latter plan change could also require that the tool be applicable across the rest of the city's jurisdiction. Any plan change would need to be subject to the usual process (rather than in accordance with CERAct), namely in accordance with section 32 and Schedule 1 of the RMA.

### **Objectives, Policies and Methods for 'sustainable buildings' and BASE**

Additional to the dCCP document is the “Changes to the Christchurch City District Plan and global stormwater consent”<sup>1</sup> document which sets out objectives, policies and methods to be inserted into the District Plan. A copy of these are contained within appendix A of this paper.

The objective and policies assert that the plan will:

- ‘Encourage’ sustainable design features and construction methods, and;
- Require new buildings (over a certain size and of particular uses) to be certified against the BASE tool.

The latter policy direction is clear in application. However the Plan does not indicate how it will ‘encourage’ sustainable development (such as through advertising, advice and financial incentives). It is considered that any such encouragement would normally be external to the district plan / regulatory process.

Inconsistency is noted in the methodology as the BASE tool assessment is required (by rule) for residential buildings three stories or more are required to be assessed against the rating tool. For example a three storey building with three units would require assessment against the rating tool, whereas a 50 unit development with a maximum height of two stories would not. Council staff did not believe that this distinction would disincentivise greater density development as the ratings tool has been designed to ensure that initial development costs should be the same or only marginally more cost prohibitive. It is yet to be seen how this will transpire.

Council staff considered that the BASE tool is more of a checklist to get designers to think about issues that will reduce energy use or waste rather than requiring best practice. It was asserted that a checklist can create efficiencies.

Christchurch City Council did explore the option of lobbying to improve the building code to improve the environmental credentials of buildings. After initial investigation the process to do this was seen to be fraught with many issues, namely, time constraints and ultimately a lack of central government appetite for change in this area.

### **The BASE tool**

The BASE<sup>2</sup> tool was mostly created by the New Zealand Green Building Council (NZGBC) in partnership with its stakeholders and is generally a simplified version of its Green Star rating system. The tool has been designed to ensure that it is ‘achievable, simple and cost effective.’ The standards required by the tool would be an improvement on the present Building Code by requiring greater environmental performance during and after construction.

The tool is a document prepared by an external organisation to council and would therefore be incorporated into the District Plan under Part 3 of the First Schedule of the RMA. For the avoidance of doubt, any changes to the BASE tool would necessitate a plan change to the District Plan to amend the version reference.

Generally speaking, the BASE tool is a checklist system linked to technical standards (i.e. insulation quality) or incorporations (i.e. cycle facilities, energy generation) with some requirements in its basic application (developments with a floor area less than 300m<sup>2</sup>) and optional points for larger developments. A minimum ten points scored out of a possible 20 points. It is the choice of the developer / building designer which ones they wish to meet. The standards are grouped into five main categories: site, service, comfort, facilities and materials.<sup>3</sup>

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<sup>1</sup> Christchurch City Council (2011). *Sustainable buildings* In “Changes to the Christchurch City District Plan and global stormwater consent”. pp 160 – 166.  
<http://resources.ccc.govt.nz/files/CentralCityDecember2011/ChangeToTheOperativeDistrictPlan/ChangeToTheChristchurchCityDistrictPlanandGlobalStormwaterConsents.pdf>

<sup>2</sup> The BASE tool in its earlier stage was termed ‘Build Green Christchurch.’

<sup>3</sup> Specific technical requirements can be found on the NZGBC website:  
[http://www.nzgbc.org.nz/images/stories/BASE\\_pilot\\_technical\\_requirements.pdf](http://www.nzgbc.org.nz/images/stories/BASE_pilot_technical_requirements.pdf)

The scope of this paper does not intend to review the technical requirements of the plan, however such an exercise would be justifiable given that no evidence of an external / peer review has been undertaken. NZGBC has acknowledged that the tool has been created hastily and thus has resulted in a lack of engagement at industry level. NZGBC has found that while support for the general concept is present there is (as of September 2011) a negative view of the tool by the market.<sup>4</sup>

It is noted that the New Zealand Property Council after initial reservations now 'strongly supports' a green rating methodology, "on behalf of the bulk of inner city commercial property owners, investor and developers".

The BASE tool does not take into consideration the entire lifecycle of the buildings it certifies such as all issues associated with the ongoing operation of buildings, maintenance, and subsequent upgrades / retrofits to the building. The tool has not been designed for the assessment of retrofitted buildings. Neither does it consider the anticipated life of the building and adaption for future uses or its possible demolition (particularly relevant if the building has a short design-life). This will have ramifications on the success of Christchurch City of achieving its 'green' aspirations.

In discussion with council staff, the BASE tool is generally seen as a tool which is to gently 'change the market', rather than requiring 'best practice'.

#### **Application process of the BASE tool**

The process for ensuring that the BASE tool is appropriately applied will mostly follow the existing process and existing council processing procedures. The default process will be aligned to the building consent process and specialist advice input from the NZGBC, although this will not be compulsory. Alternatively the process may be processed as a resource consent without NZGBC involvement where this is elected by the applicant. The processes is detailed by a flow chart in appendix B.

The process for obtaining BASE certification is as follows, assuming that an application passes each stage of the process:

1. An applicant shall submit at least preliminary building plans for building consent or for a Project Information Memorandum (PIM). The applicant may if applicable indicate which credits from the BASE tool they intend to achieve.

Alternatively the applicant may engage an assessor and seek certification from the NZGBC prior to submitting for building consent (this is not clearly shown in the process flow chart, see appendix A). At building consent stage the applicant would need to submit the detailed designs with certification and details to ensure a pass is achieved. Alternatively to achieving BASE tool certification, the applicant may pass NZGBC's Green Star level 4, 5 or 6.

2. Council would check the application against the permitted performance standards and determine if BASE tool assessment is required or not. Where assessment is required council would indicate whether only 'required' elements need to be demonstrated (for buildings less than 300 square metres) or if points also need to be achieved. It is for the applicant to determine which points they wish to apply for.
3. The PIM will document the above and refer them to the NZGBC for assessment of the development against the BASE tool (or Green Star assessment process where elected by the applicant) or alternatively apply for resource consent.

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<sup>4</sup> New Zealand Green Building Council (Sep 2011). *Submission on the draft Christchurch Central City Plan*.

[http://www.nzgbc.org.nz/images/stories/downloads/public/Initiatives/NZGBC\\_Chch\\_submission\\_Central\\_City\\_Plan.pdf](http://www.nzgbc.org.nz/images/stories/downloads/public/Initiatives/NZGBC_Chch_submission_Central_City_Plan.pdf)

4. The BASE tool would be assessed by a NZGBC accredited assessor. The applicant may choose which individual assessor to engage. Subsequently council would be given details of the assessment and check that it has been appropriately obtained, after which building consent may be obtained.

Alternatively the applicant may elect to apply to council for restricted discretionary activity resource consent where the BASE tool would be assessed by a council staff member. Alternatively the applicant may apply for an exemption from BASE assessment where they believe its application would be too onerous (also determined by resource consent). Building consent would be obtained after receiving resource consent for either process.

5. After construction of the building is complete the applicant may apply for BASE certification with building 'code compliance certificate'.

Alternatively BASE certification would not be receivable where resource consent has been granted on the grounds that the application of the BASE tool would be too onerous.

### **Extra-application process**

Discussion about the BASE tool implementation process with Christchurch City Council staff raised the concept of adding 'green tape', a counter movement to the old adage 'red tape'. Green tape is seen to make the application process smoother with the help of appropriately skilled staff (such as eco-design advisors, and resource / building consent staff) and aligned / tailored processes.

The NZGBC also stresses in their submission<sup>5</sup> on the dCCP the need to have appropriately trained assessors and others who can support the tool as well as having incentives in place to encourage greater accreditation, presumably their Green Star and Home Star programmes. Two incentives which are discussed are increased development contribution credits, and bonus floor level and volume for improved environmental performance. The NZGBC acknowledges that this would be inconsistent with the height aspect of Christchurch's vision of a compact low rise city. In response the NZGBC recommends that this incentive and height issue be 'decoupled' to allow for greater heights where bonuses are given. The NZGBC also recommends that CCC should work closely with itself to develop tools and incentives and specifically look at new initiatives such as a tool to assess the sustainability of new neighbourhoods / precincts (i.e. such as the LEED for neighbourhood development tool used in the USA).

### **Support and recommendations for the sustainable / green buildings initiative**

Community consultation / 'idea gathering' identified strong support for more sustainable buildings. This informed the creation of the BASE tool to measure the environmental impacts of new buildings within Christchurch's Central.

Community support for 'green buildings' was positive amongst participants of the *Wellbeing and Sustainability Assessment*.<sup>6</sup> The assessment was designed to judge the perceived future effectiveness of the dCCP in achieving the guiding principals set by elected officials. The participants consisted of 21 members who were selected for having "appropriate knowledge and skills about Christchurch including a good understanding of economic, health, environmental, social and cultural issues and trends." Participants scored on a scale how they thought the plan would perform in providing and encouraging green buildings. They found that the plan set targets for improved performance, but were not convinced that the plan implementation would be sufficient due to a lack of incentives and council leadership. They felt that council should be more proactive in this field, as well as in other parts of the plan where they believed incentives could play a key role.

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<sup>5</sup> Ibid. Page 4

<sup>6</sup> Robert Quigley & Martin Ward (2011). *Integrated wellbeing and sustainability assessment of the draft Central City Plan* In "Central City Plan technical appendices" 2. pp 474 – 523.  
<http://resources.ccc.govt.nz/files/CentralCityDecember2011/CentralCityTechnicalAppendices/CentralCityPlanTechnicalAppendicesE-P01.pdf>

In respect to the incentives for green / sustainable buildings the participants identified a number of recommendations. These were:

- *Improve incentives for building to 5/6 star levels. It is recommended that dedicated capital arrangements are made available for loans to cover the additional costs associated with building to a 5/6 star rating. Repayment of loans could be spread over a specified period, 8 to 10 years for example, from the savings incurred from the reduced energy costs.*
- *Include incentives (preferably) or rules about water storage to reduce stormwater outputs.*
- *Incentives and perhaps regulations, that require a minimum level of green performance, should be considered for residential buildings.*

Other relevant recommendations were also:

- *The Council work with the Green Building Council to build mutual trust in the ratings, for example via partnership or audit. Alternatively, Council should investigate leading a green rating system themselves and involve the Universities, central government or a partnership of all.*
- *Green credentials should include whole of life costs for a building – including the intended life time of the building itself.*
- *The Council work with the Green Building Council to build mutual trust in the ratings, for example via partnership or audit. Alternatively, Council should investigate leading a green rating system themselves and involve the Universities, central government or a partnership of all. Green credentials should include whole of life costs for a building – including the intended life time of the building itself.*

In terms of fostering business development in relation to sustainable buildings, the participants made the following recommendation:

- *Apply green building tools more widely to go beyond the commercial core and fringe, and to apply to existing buildings.*

The author of the *Wellbeing and Sustainability Assessment* identified weaknesses in the methodology of the paper. The workshop for the assessment was conducted in one day, usually held over several, and would normally have been informed by other work such as an assessment of environmental effects, health and social impact assessment, and cost benefit analysis. It is implied that these shortcomings were as a result of time restraints given that the dCCP was written in about eight months. In terms of this paper, the lack of research makes the assessment of the BASE tool and its associated regulation difficult.

In discussion with council staff, the dCCP is seen as a bold document, and the green rating tool is a part of this.

### **Legal Status**

Christchurch City Council sought legal advice on the legality of imposing additional requirements above and beyond the Building Code. Generally the advice found that it is possible for council to require additional certification. For example many district plans in New Zealand have acoustic standards which require certification from an appropriately qualified and experienced acoustic engineer. An applicant would be able to choose which independent and accredited BASE / NZGBC assessor they would wish to employ, likewise as would an applicant deciding on which certified acoustic engineer to choose as long as he or she is accredited with their relevant professional body.

The legal advice to Christchurch City Council made the distinction that a district plan can not have a permitted activity status where discretion is maintained. Decision making for permitted activity status should be a clear yes / no decision. Council can require certification as a means of making otherwise more prescriptive decisions if it means that obtaining such would avoid the need to apply for resource consent.

Carter Holt Harvey (CHH) made a submission to the dCCP and challenged the legality of requiring applicants to receive certification from one certification supplier being the NZGBC. As described above, the ability for the applicant to choose an assessor negates this concern.

### **Recommendations for the Auckland Unitary Plan**

A number of recommendations to apply to the future unitary plan can be drawn from the dCCP to date. Before looking at recommendations it is important to consider differences that make direct translations / translations difficult, including:

- The dCCP has been drafted under a different act to which the unitary plan is being prepared under
- The timeframes for consultation with the public and stakeholders was very short, it took approximately nine months to prepare the draft
- The Minister for Earthquake Recovery will make the final decision rather than a board of councillors
- The plan is out of response to a natural disaster where an ambitious reconstruction is required rather than an amalgamation of eight councils

The differences between the two processes above can be viewed as strengths for the unitary plan such as a longer drafting time frame and improved democratic accord in Auckland's favour.

Key recommendations from the BASE ratings tool of the dCCP are discussed below:

- Council should investigate a sustainable buildings ratings tool to improve the sustainability of Auckland's buildings. A tool would achieve this whilst allowing for design flexibility based on the developers and designers preference and site constraints. Adopting a tool would bring Auckland up to speed with international nations and cities which have already developed and tested ratings schemes
- Auckland Council has the strength to develop its own rating tool, or at least lead in the development of one and should investigate this in collaboration with external parties such as a university, other interested councils and the NZGBC. It is stressed that to do this a significant amount of time will be required and a suitable budget assigned
- Consult with large stakeholders (such as banks and the NZ Property Council) about the creation and implementation of a tool
- Need a tool which considers the whole lifecycle of a building rather than the construction and implementation phase
- Any tool needs the support of incentives (financial or otherwise) and support in the form of advice and constructive processes. These would need to be investigated
- Instruct solicitors to provide legal advice about the legality of implementing a ratings tool in respect to council's role and improvements above the Building Code.
- Further to the above statements the following should also be considered to broaden the scope beyond only new buildings:
  - Consider developing a tool for measuring the performance of retrofitted buildings triggered by a building consent. Need to investigate the legality of this and what possible level of redevelopment would trigger this requirement
  - At the least investigate a voluntary rating tool which is created by or endorsed by council
  - Council may wish to lobby central government to push for a national ratings tool to measure the existing and new building stock, potentially triggered at time of sale or when renting / leasing

Overall, the BASE tool for sustainable buildings in Christchurch is yet to be proven successful. Other mandatory and voluntary tools internationally have demonstrated benefits not only in sustainability but also in as reduced cost outgoings, and increased rents / property values. The main priority for any tool should be to reduce energy use and waste streams and improve indoor environment quality for the health of the environment and the building's occupants.

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## **Appendix A: Sustainable buildings: Objectives, policies and methods**

The objective of the plan for sustainable buildings is:

*To encourage and promote the efficient use of natural and physical resources through improved sustainable design, construction and operation of buildings within the Central City.*

Policies — Sustainable Building Development:

*1. To encourage new building developments to incorporate sustainable design features and construction methods, such as the conservation of energy and water, renewable energy, waste minimisation, quality landscaping and environmental management systems.*

*2. Any new building to be constructed in the Central City for office and retail purposes, and new apartment buildings that are 3 storeys or higher, or any mix of these buildings, shall be designed and constructed to achieve certification under the BASE (Building A Sustainable Environment) tool operated by the New Zealand Green Building Council.*

Methods:

### *15.1 Development Standard*

*Any part of any new building to be constructed for office or retail purposes, or any apartment building which is 3 storeys in height or over, or any combination of these building types or uses, in all zones within the Central City, shall achieve certification from the New Zealand Green Building Council under its BASE (Building A Sustainable Environment) building rating tool (identified version December 2011).*

*Any building with a total floor area of 300m<sup>2</sup> or less only needs to achieve the “Required” credits contained within the BASE tool to receive certification. Any building that achieves a rating of 4, 5 or 6 Green Stars from the New Zealand Green Building Council will be deemed to have achieved a BASE Certification.*

*For the purposes of this rule, “retail” includes all shops, department stores, supermarkets, malls and food and beverage outlets such as bars, restaurants and cafes. “Apartment” includes buildings of 3 storeys in height or greater, that are designed for residential activities and travellers accommodation (excluding hotels), such as residential units, back packers, bed and breakfasts and motels.*

*This rule shall not apply in the following circumstances:*

- i. to additions or alterations to existing buildings, or changes of use (to office, retail or apartment uses) within existing buildings.*
- ii. to buildings constructed for temporary purposes or where the building uses identified in (a) are ancillary to the main use of the building and the main use of the building is not office, retail or apartment purposes. Any building subject to this rule that does not achieve BASE Certification from the New Zealand Green Building Council shall be a restricted discretionary activity with the Council’s discretion limited to the environmental sustainability of the building as outlined in the assessment matters below.*

## 15.2 Assessment Matters:

*In general, it is expected that all new office, retail or apartment buildings, or any combination of these, in Central City will achieve BASE Certification. In circumstances where a building has not achieved BASE Certification the following assessment matters will be considered by the Christchurch City Council:*

- a. the extent to which the building development has met the criteria contained within the BASE tool; and*
- b. the extent to which the outcomes sought by the BASE tool have been met, such as energy efficiency, renewable energy, water conservation, waste minimisation, amenity and landscape enhancement, transport efficiency and indoor air quality; and*
- c. whether there are any site specific considerations or unique building design or operational requirements that make achievement of the criteria contained within the BASE tool onerous.*

The full context of the wording that would be inserted into the District Plan can be found in the document below including an introduction, reasons for rule, BASE certification process and requirements.

Christchurch City Council (2011). *Sustainable Buildings* in Changes to the Christchurch City District Plan and Global Stormwater Consent. pp 160 – 166.  
<http://resources.ccc.govt.nz/files/CentralCityDecember2011/ChangestotheOperativeDistrictPlan/ChangestotheChristchurchCityDistrictPlanandGlobalStormwaterConsents.pdf>

### **Abbreviations:**

BASE – Building A Sustainable Environment

NZGBC – New Zealand Green Building Council

dCCP – Draft Christchurch Centre Plan

RMA – Resource Management Act 1991

CERAct – Canterbury Earthquake Recovery Act 2011

CHH – Carter Holt Harvey

### **People spoken to:**

Adam Forte, Senior Planner, Strategy and Planning Group, Christchurch City Council

Tony Moore, Sustainability Advisor, Strategy and Planning Group, Christchurch City Council

### **References and websites:**

Christchurch City Council (2011). *Sustainable Buildings* in “Changes to the Christchurch City District Plan and Global Stormwater Consent”. pp 160 – 166. Access:  
<http://resources.ccc.govt.nz/files/CentralCityDecember2011/ChangestotheOperativeDistrictPlan/ChangestotheChristchurchCityDistrictPlanandGlobalStormwaterConsents.pdf>

Carter Holt Harvey (15 September 2011). Submission on draft Central City Plan – August 2011. [Internal Access:](#) \\aklc.govt.nz\shared\CPO\RLP\AAA FC\LAND USE AND PLANNING LUP\(\Unitary Plan - 2011)\RESEARCH AND ANALYSIS 0145\Sustainable Design and

Development\001 Green Buildings\Submission of CHCHCentrePlan - GreenRatingTool - Carter Holt Harvey.pdf

New Zealand Green Building Council: Base Tool Overview

[http://www.nzgbc.org.nz/index.php?option=com\\_content&view=article&id=219&Itemid=319](http://www.nzgbc.org.nz/index.php?option=com_content&view=article&id=219&Itemid=319)

Christchurch City Council: draft Centre Plan Documents

<http://www.ccc.govt.nz/homeliving/civildefence/chcheearthquake/centralcityplan.aspx>

