

NEW ZEALAND LOCAL GOVERNMENT INITIATIVES AND INCENTIVES for SUSTAINABLE DESIGN IN COMMERCIAL BUILDINGS

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Abstract

Concern for all aspects of environmental sustainability is advancing rapidly as the evidence of potentially devastating climate change mounts. One response to this concern is for local governments responsible for enforcement of building controls to encourage environmentally sustainable commercial building design via various initiatives and incentives. In this research an international literature review was undertaken to identify what initiatives and incentives have been trialled in different countries. This was followed by survey to gauge the degree to which these incentives and initiatives have been implemented in the New Zealand local government context. All territorial authorities were invited to respond and a response rate of 46% was achieved. A low degree of implementation was reported by the respondents that contrasted with a high level of interest and willingness to try more initiatives and incentives. A number of reasons are proposed for this low implementation rate. These include; a lack of both financial and human resources to effect implementation, as well as a lack of clear long-term goals and an integrated set of sustainability policies across the different levels of government.

Introduction

Sustainability has been a topic of inherent concern since life first formed on the planet. However, in recent decades it has been one of ever increasing importance as the world's population has exploded in sync with our industrial capacity. While no one person or event can be attributed with bringing environmental issues into wide public discussion, the publication of Rachel Carson's *Silent Spring* in 1962 created a huge response in Western culture. It focussed debate on the uncontrolled use of pesticides and their impact on the wider environment. After decades of widening environmental discourse, in 1983 the United Nations established the World Commission on the Environment and Development (WCED) to advise on international strategies for achieving sustainable development. The WCED later became known as the Brundtland Commission after its chairman Gro Brundtland and produced the seminal report *Our Common Future* which was received by the United Nations General Assembly on the 4th of August 1987. It is in this report that the most widely recognised definition of sustainable development is found "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs."

It was this commission that then went on to organise the 1992 summit on the environment in Rio de Janeiro and produced *Agenda 21* that sets out a structure for addressing the issues concerned with development and a sustainable environment.

For local governments chapter 28 of *Agenda 21* is most important. It is entitled *Local Authorities Activities in Support of Agenda 21* and sets out not only why local government action is so important to the objectives of sustainable development, but makes a direct call to local authorities to create their *Local Agenda 21* plans in consultation with their local communities (Strong & Dowdeswell 1996). This built on earlier work by the United Nations which had convened a World Congress of Local Governments in New York during 1990 and from which the International Council for Local Environmental Initiatives was born. This subsequently morphed into Local Governments for Sustainability (ICLEI) during 2003 and took on a broader role in supporting local governments to plan for a sustainable future.

The New Zealand Situation

The New Zealand government has, over many years, enacted internationally progressive sustainability legislation (Johnson, 1997 2008, Suzuki & Boyd 2008). Notable amongst these have been the Resource Management Act 1991, the Building Act 2004 and the Local Government Act 2002.

The Resource Management Act 1991 (RMA) provides the overarching legislation that makes environmental sustainability a key consideration for all development while the Building Act 2004 (BA) is much more specific in this regard for the built environment. Both have been amended a number of times still remain New Zealand's key legislation for regulating land use and addressing the related issues of sustaining that land use. The Local Government Act 2002 (LGA) in turn devolves much of the responsibility for implementing sustainable development policies to local authorities, and for assessing their impact (Department of Internal Affairs, 2008).

2005 was the Year of the Built Environment and the Hon Marion Hobbs as the then Minister of the Environment said "The year forms an important part of the government's Sustainable Development Programme of Action and Urban Affairs portfolio. It reflects the government's commitment to work towards ensuring quality built environments throughout New Zealand" (Hobbs, 2005). The then Labour Government continued to implement various policies through modifications to the Building Act 2004, as well as all government departments being directed to meet certain targets.

In November 2008 a National Party led government ousted the incumbent Labour Party led government which had been in power for the previous nine years. A key election pledge was to reform the RMA and to this end the National government passed the Resource Management (Simplifying and Streamlining) Amendment Bill in 2009. The New Zealand Parliamentary Counsel Office said "This bill represents the first of two phases of the reform of the Resource Management Act 1991. Phase one seeks to improve processes under the principal Act that have been found to be burdensome and costly. It would also establish a new entity, the Environmental Protection Authority" (New Zealand Parliamentary Counsel Office

2009). It is beyond the scope of this paper to examine the new legislation in detail but it is noted that one of the key aims of the legislation is to streamline the resource consent process for matters of national significance. While no individual commercial building is likely to fall into this category, the agenda underlying the new legislation will be important in setting a national tone for sustainable development.

Research Aims and Objectives

The RMA has been on the statute books for nearly 20 years, but some in the commercial property arena have been concerned at the lack of practical application of the principles espoused therein. The usual focus of the RMA is resource use regulation, but it has been a matter of interpretation as to what, if any, incentives or initiatives local government should undertake in order to help fulfil their responsibilities under the RMA.

Given this scenario the objective of this study was to try and ascertain what initiatives to promote sustainable design of commercial buildings have either been undertaken, are being considered, or have been considered and rejected, by the various local authorities within New Zealand. If an initiative was being, or had been considered, then an indication of the likelihood of its implementation was sought.

International Initiatives and Incentives Identified

Expediting permits and resource consents.

One way to encourage commercial developers to “green” their buildings is to reduce the time to process resource and/or building consents. Time is crucial to the overall cost of a project and getting the project to the market, so if the time taken to obtain the appropriate resource consent and/or building permit is significantly reduced this reduces the cost to the developer. Where this is linked to environmentally sustainable design, it is a strong incentive for these features to be incorporated (Knox & Smith, 2006, Oberle & Sloboda, 2010; Popovec, 2006).

Bevege reports that at least six US cities have recently introduced this approach but also notes that no evaluations were available at the time of writing (Bevege, 2007). The San Francisco City Planning Department in 2006 adopted criteria for priority planning processing for Green Buildings. Here the criteria were: “Building construction projects that meet or exceed a Gold Rating using the LEED Building Rating System ... ” (Macris 2006).

Allowing density bonuses for incorporating certain sustainability features.

If a greater density of development is allowed on a particular site then it generally becomes more profitable as the land cost is reduced per unit. Some local authorities have allowed developers to increase the density of their projects in return for incorporating certain ESD features (Bevege, 2007, Popovec, 2006). Many council’s tie the bonus to an overall “green” rating of some description (Phillips, 2007). This type of incentive has found favour as it has no direct costs to the local council involved and may in fact increase the property land tax (rates) from the development for those local authorities that have a capital value tax base. Others however have expressed the view that “good planning is good planning” (Bevege 2007) and that concessions on height or site coverage should not compromise these principles.

Waiving part of the development levy to recognise lesser use of infrastructure.

Buildings that incorporate sustainable design features often use less infrastructure such as storm water, sewage, and roading which are usually provided by the local body and partly funded by development contributions (Crabbe, 1997). This is the case in New Zealand but there is not always a clear relationship between the levy and its use (Knox & Smith 2006). This has led to litigation and the law associated with this issue is expanding as developers and territorial authorities seek clarity on the relationships (Davidson 2009, Oberle & Sloboda 2010).

Providing property tax relief in return for particular ESD features

The use of local government tax relief has been well received by certain sectors of the commercial development sector (Oberle & Sloboda 2010). These vary from Cities like Cincinnati providing a 75 percent exemption on the improved value of the project for 15 years (Phillips 2007) to Rockville, Maryland, allowing US\$2M in tax credit and fee rebates to Tower Company on their nine floor office development, or Becker & Becker receiving a US\$4M tax credit from New York State on their US\$4M investment in energy conserving technology. How well the property tax relief works is problematic. Unless the developer is a long term owner-occupier, the benefit of property tax relief may accrue to the post development owner and/or their tenants as the tax relief is applied year by year. A variation has been used in both Berkley and Annapolis whereby the local council provides a low interest loan to finance the upfront costs of energy efficiency upgrades and the interest payable on the loan is placed on the rates bill. In this way if the property is sold the loan moves with the property (Meinzen 2008).

Another issue restricting the use of tax relief is that it is usually unattractive from a local body's perspective in that they are nearly always searching for cash to balance immediate community demands while the reduced infrastructure costs are a long term saving (City of San Francisco CA, 2008, Dicken 2008, Greene 2006, U.S. Conference of Mayors Climate Protection Agreement 2009b). It can represent loading up other sectors of the economy or creating deficits in the municipal income tax balance" (Braun 2007).

Joint ventures with private enterprise and academic institutions to demonstrate sustainability features.

Many environmentally sustainable design concepts involve either relatively new technology, or technology that has fallen into disuse as modern design forms have paid little heed to natural systems. As one of their promotional initiatives some local councils have engaged with private enterprise and/or academic institutions to research and demonstrate possible innovative solutions (Bevege 2007, City of Chicago IL 2008, Skett & McDonald 2007). As an example the Greater Vancouver Regional District engaged Simon Fraser University (SFU) to produce The Economics of Green Buildings. Similarly the City of Greater Bendigo partnered with the Australian Industry Group and Coliban Water to launch a business network that has achieved "...significant reductions in water and energy use..." (Skett & McDonald 2007).

Working to modernise building codes to cope with innovative sustainable design.

Many local governments have little flexibility in what they may approve in terms of building practice. A new technology or material may not have been through the time consuming and expensive process required to be incorporated into the relevant building code. This is

particularly true in New Zealand given problems with leaky buildings that followed code changes in the 1990's. Subsequent code amendments resulted in much less flexibility in materials and design features. This has been exacerbated by local governments' fear of litigation as a significant consequence of the leaky building problem. (Davis 2005, Kibert 2008, McLennan 2008) Even so, some local authorities have teamed up with other institutions to examine how building codes might need alteration to allow sustainable, design technology. Examples include reports produced for Clark County and Vancouver City WA, by the Cascadia Region Green Building Council (Cascadia Region Green Building Council 2008 2009, Lahav & Euler 2008).

Giving awards or special recognition to high quality sustainable buildings.

This is a small and low cost initiative but certainly one that gets the attention of the private sector developers and builds on ESD's social capital (Beatley & Newman, 2009).

Providing technical assistance.

This initiative is similar in philosophy to modernising building codes. It involves the local body recognising the newness of the concepts and taking a leadership role to educate the commercial sector. However, resourcing issues have been found to be a major constraint in councils' ability to implement such ESD policies (Greene 2006, Oberle & Sloboda 2010, Rutherford 2006). In examining the barriers to sustainable construction in the Netherlands Bueren and Priemus argue that apart from providing financial instruments to stimulate sustainable construction that the other key stimulus comes from "...communicative instruments (model projects and covenants)" (Bueren & Priemus 2002). In New Zealand eight Councils have appointed an Eco Design Advisor to provide free and independent advice on sustainable building practices when building or renovating a home.

Education courses for council staff on sustainable design

If the local authority is to act as an exemplar to private enterprise then the relevant council staff need to be engaged and knowledgeable in environmentally sustainable design (ESD). To some degree the provision of ESD education is a prerequisite to local authorities setting in place other initiatives (City of Austin TX 2007, U.S. Conference of Mayors Climate Protection agreement 2009a). This is recognised in the New Zealand context in the interagency discussion document as one of the many barriers to sustainable development. In the Executive Summary of this document the very first barrier identified is "capacity and capability issues in all levels of government..." (Sustainable Urban Development Unit 2008).

Act as a clearing house/network centre for sustainability concepts.

Acting as a clearing house or networking centre is being tried by various local governments. However as noted earlier, resourcing is an issue both from a financial perspective and an expertise perspective. In countries where the central government has provided funding to local government for sustainability initiatives networking and clearing houses have been established. But once the funding is terminated the local body often cannot afford to keep resourcing the program. Those that have continued have tended to be the larger metropolitan governments that have the tax base to support such a program (Beatley & Newman 2009, Bueren & Priemus 2002, Cole, Miller, & Schroeder 2007, Davis 2005).

Public education & workshops on sustainable design

Public education is a subset of the initiatives above but may require a smaller resourcing commitment. Sometimes the education is aimed at the general public but at other times it is to facilitate highly technical discussion amongst design professionals (Cole et al. 2007). An example is provided by the Greater Vancouver Regional Council which partnered Simon Fraser University to host a series of four public lectures and workshops entitled The Economics of Green Buildings (Cameron 2004).

Green collar job training courses.

Green collar job training is one of the major planks of the American Recovery and Reinvestment Act (ARRA) enacted by the Obama administration as policy to help their economy recover from the GFC. "Green collar jobs are blue collar jobs in green businesses - that is, manual labour jobs in businesses whose products and services directly improve environmental quality" (Pinderhughes 2007). However, even before the GFC Oakland California saw it as a method of fulfilling a number of their policy requirements across a variety of policy areas (City of Oakland CA 2009). The Oakland scheme was set up as a joint venture with private enterprise to target those hard to employ. It attempts to teach hard and soft skills necessary to hold down a job and give work experience in an expanding job sector. Hard skills taught include installing insulation, erecting solar cells, and waste recycling on construction sites. Providing such training builds expertise that is required to expand a workforce capable of constructing a sustainable built environment.

Local government making a certain level of sustainability compulsory for their own new buildings or when retrofitting existing buildings.

Many central governments have put in place ESD requirements on all new government leases and new buildings built for their use. Some local governments have done the same. By instigating such policy measures it sends a clear message about local government's leadership in this field, as well as providing the opportunity to engage productively in some of the initiatives mentioned above in a relatively new and quickly changing field (City of San Francisco CA 2008a, City of Vancouver BC 2009, Cole et al. 2007, Environment News Service (ENS) 2008).

Effectiveness and Uptake of ESD incentives and Policies

The question of how effective these policies and incentives have been in promoting ESD as a long term feature in the commercial property sector is still very much open to debate. A number of authors have tried to distil out the essential criteria for the policies to be effective (Blakely 2007, Fidelis & Pires 2009, Pini 2009, Russell 2007). However, quantifying the effect of a particular policy, or set of policies, is problematic. Some have offered somewhat cynical conclusions similar to "Thus far, few policies or policy instruments aimed at the building and construction sector have stimulated progress beyond the level achieved by building regulations" (Rovers 2003). Others have been much more positive in their conclusions. From a local government perspective, one reason that stands out in the literature for the disappointing progress in bringing ESD into everyday practice is the lack of resources they have to fund or staff new incentives and initiatives.

A first step in measuring New Zealand local governments' success in facilitating the move to a more sustainable commercial built environment is scoping the extent of existing practices. This study does that by surveying local government in NZ to gauge the extent of their consideration of, and involvement in the incentives and initiatives reviewed above.

Methodology

Based upon the initiatives and incentives for ESD identified above, a survey was constructed to investigate the extent to which sub-national government bodies in New Zealand are providing these, or others, in the commercial built environment.

The literature search did not reveal any surveys of a similar nature which could be used as a starting point for this study however, a number of sources did explore various possible incentives and initiatives that have been, or are being, tried and from these a list was begun. Archives of media releases also revealed a number of very proactive local governments internationally whose websites provided information on other initiatives. Attending a number of conferences and seminars, primarily in North America, also provided the opportunity to discuss with other participants and presenters what was being trialled internationally. These opportunities included the three day "Gaining Ground – Resilient Cities" conference during October 2009 in Vancouver, Canada, the *Implementing Green Building Policies in Local Government* seminar facilitated by Barbara Batshalom of Boston Massachusetts held in March 2009, and a 2009 *Transformational Lecture Series* hosted by Cascadia, the green building council for Oregon, Washington, British Columbia, and Alaska. The Sustainable Building 2010 (SB10) conference held in Wellington, NZ, during May 2010 was also informative with regard to New Zealand.

In considering the various methods of sampling local government activity, focus groups, structured or semi-structured interviews, or a survey, were considered. It was important that the sample coverage was as wide as possible. It was also important to recognise that the knowledge of what was actually taking place was unlikely to be held by any one group of people given the independent nature of each local government body. Therefore an electronic survey using the *Formsite* platform was selected as an appropriate method of data gathering. The advantages of this type of survey include:

- i) As a survey on sustainability it seemed inappropriate to use a paper based survey.
- ii) An electronic format allowed the survey to be easily transmitted to the local government bodies and then passed around within those bodies for potential respondents to decide if they were an appropriate person to respond.
- iii) Return of the survey was instantaneous once the respondent hit the "submit" button and there was no cost to the respondent.
- iv) The platform allowed multi-choice questions to be collated into a MS Excel table and then downloaded to a computer for manipulation, analysis, and graphing.
- v) The functionality of the platform had been confirmed by use in previous Lincoln University research

A key disadvantage with such a survey is that one cannot ask individual questions of the respondents to clarify and flesh out their answers. Another disadvantage is that the options offered to answer each question need to be limited and consistent in order to be able to analyse the results as well as not confusing the respondents with too many options. This was partially overcome by providing space for a qualitative response of up to 1,000 characters after each question. The survey is available from the authors on request..

To obtain a complete list of all regional councils, city councils, district councils, and unitary authorities the list was downloaded from the web site maintained by the Department of Internal Affairs. This site also provides a number of other key pieces of information including; the population and area covered by each council, geographic information on the physical location of each council, an electronic link to each council's web site for further information and an electronic link to a general information email address for the council. The information on the population, area, population density, and location were used to subdivide the councils into categories for statistical analysis of their responses.

The next step was to identify and contact the appropriate person within each council to answer the survey. This was not a straightforward process but by a sustained and iterative process it was eventually possible to forward a standard covering email along with a link to the survey to a fairly complete list of 73 potential respondents. The standard email also asked the addressee to please pass the email on to whomever they felt might be a better respondent, if they were not the appropriate person. For the remaining councils an email was sent to the general information address again with a further request that it, and the embedded link to the survey, be passed on to an appropriate person in the planning or building departments.

Results

Table 1 Respondent by Local Authority Type

	Total possible	responses	Percentage of possible
District councils	57	24	42%
City councils	16	8	50%
Regional councils	12	5	42%
Unitary authorities	4	2	50%
Totals	85	39	46%

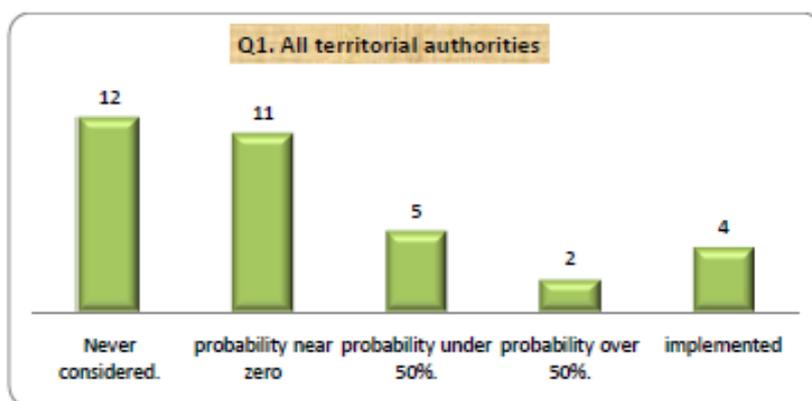
On a population basis the local authorities responding represented 60.87% of the total population of New Zealand of 4.2 million reflecting the fact that the councils for the largest population centres were among the respondents.

This results presented in this paper focus solely on local authorities rather than regional councils and unitary authorities. The latter have a different role to play and many of the questions in the survey were not so relevant to regional councils as they are not performing tasks such as issuing resource consents or building consents for commercial buildings.

Various breakdowns of the results between predominantly urban city councils and mixed and predominantly rural district councils as well as on the basis of local authority absolute population and population density were also carried out, but these aspects will be examined in a separate paper.

The first incentive addressed was;

Building Consents or Resource Consents are expedited where the design meets certain predetermined sustainable design targets?



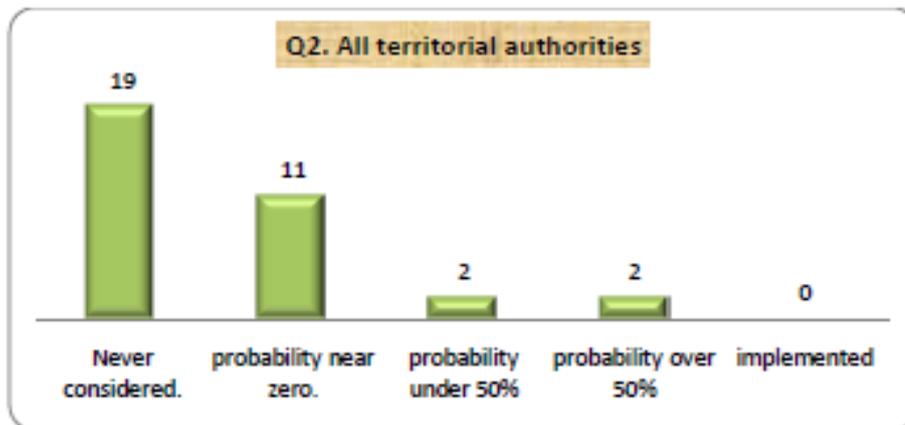
From the above it is apparent that while some local authorities have given thought to this possible incentive, those estimating a greater than 50% probability of implementation is quite low with only 18% of territorial authorities placing themselves in either of the last two categories.

The comments supplied by respondents tended to revolve around two themes. Firstly the councils' lack of resources to consider the detailed policy issues that would be required to give

effect to such a policy. Secondly it was energy and water that were most frequently mentioned as areas where an incentive had been considered. A typical comment was “Matters around expediting and reducing the cost of consents for micro generation (photovoltaics, wind, etc) has been considered. To this point no action taken.”

The next incentive examined was:

Offering a development density bonus for incorporating certain sustainability features?

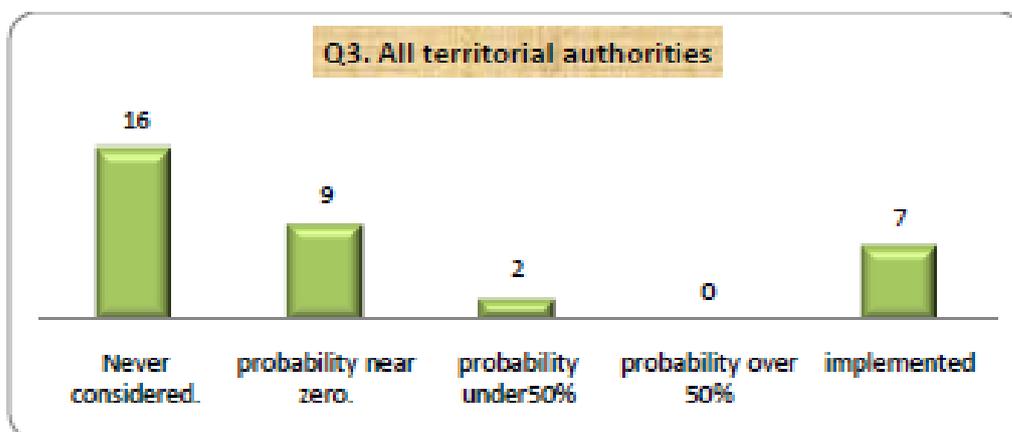


This was the incentive that had least likelihood of being implemented of all those examined and the only one that had not been implemented by any local authority.

The relatively low density and low land costs of development in New Zealand generally could be an explanation. Many central city sites are not developed to the maximum density permissible in any case and similar density bonuses for heritage building retention have met with little success.

A third incentive considered was:

Waiving part of the development levy to recognise lesser use of infrastructure by sustainable developments?

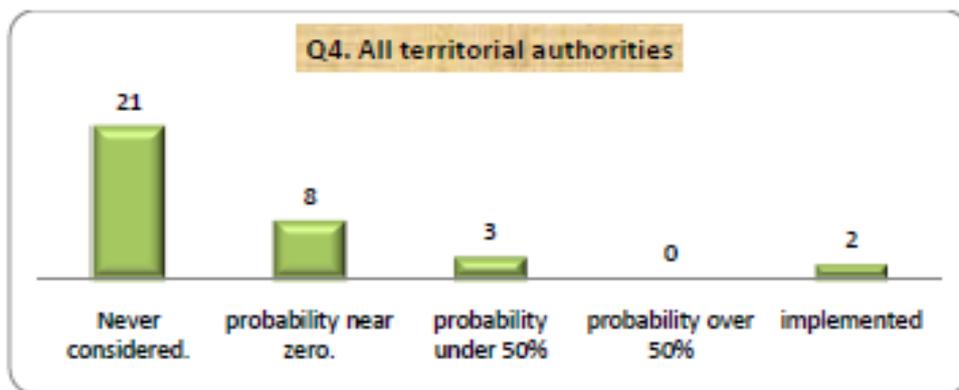


The distinctive feature of the responses to this question is that while 21% of the respondents have implemented this incentive there are no other councils looking likely to implement it.

The comments indicate that it is most often implemented in relation to storm water or sewage development solutions and on a case by case basis as one would expect given that each situation is going to be unique. Typical would be “ If storm water is dealt with on site then levy is reduced or waived in relation to portion of levy allocated to storm water.”

Question 4 was as follows:

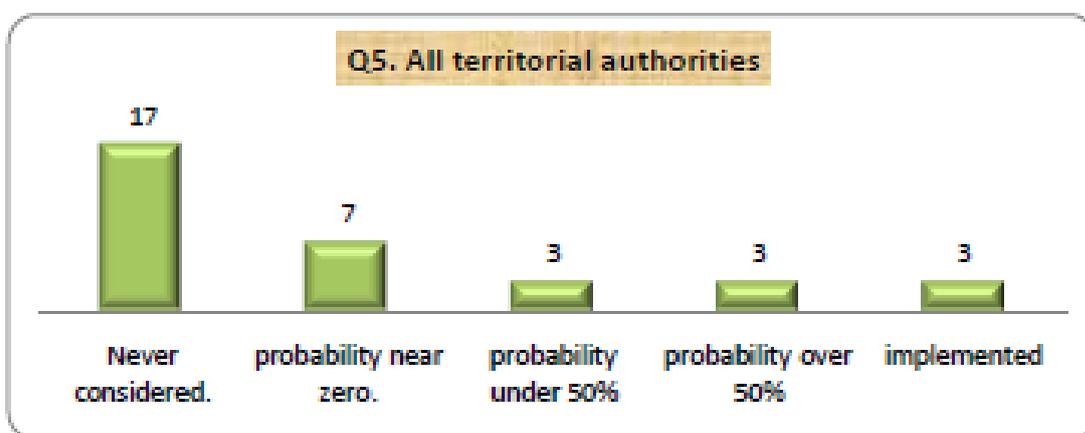
Providing property tax (rates) relief in return for particular sustainable design features?



This is a similar response pattern to Q3 in that while there are two councils that have implemented the incentive there are none indicating a high probability of it being implemented and the great majority (85%) indicating it has never been considered, or if it has then there is a near zero probability of implementation. There were also very few written responses and of those, two respondents specifically mentioned protection of green spaces as a feature for which property tax relief may be given.

Question 5 asked if local authorities considered:

Undertaking joint venture(s) with private enterprise to demonstrate sustainability features?

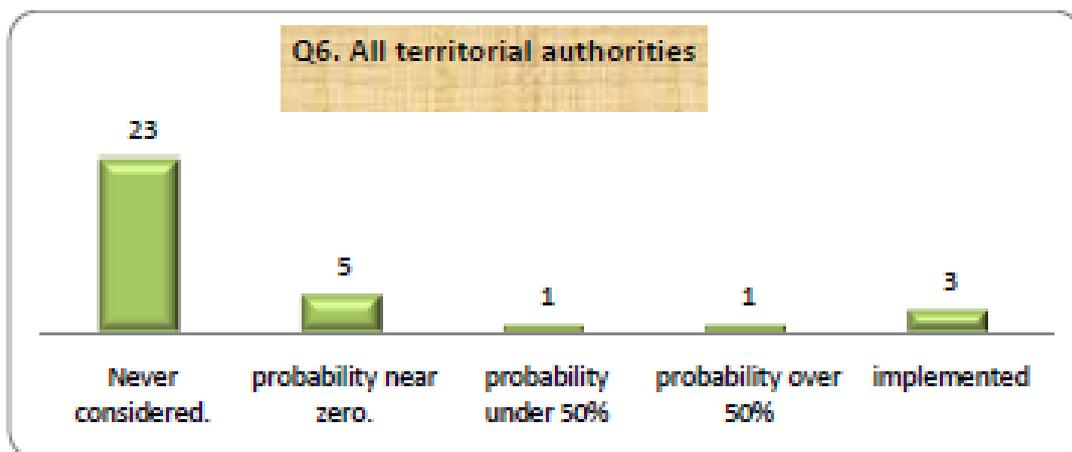


In response there were three written comments saying that it was not for a council to be seen to be promoting a particular private enterprise with a comment like “not appropriate for a regulatory authority to be involved with promotion of any one commercial entity.”

Where specific initiatives were mentioned it was in relation to storm water or sewage as in the previous question.

Question 6 was somewhat similar and asked if local authorities considered:

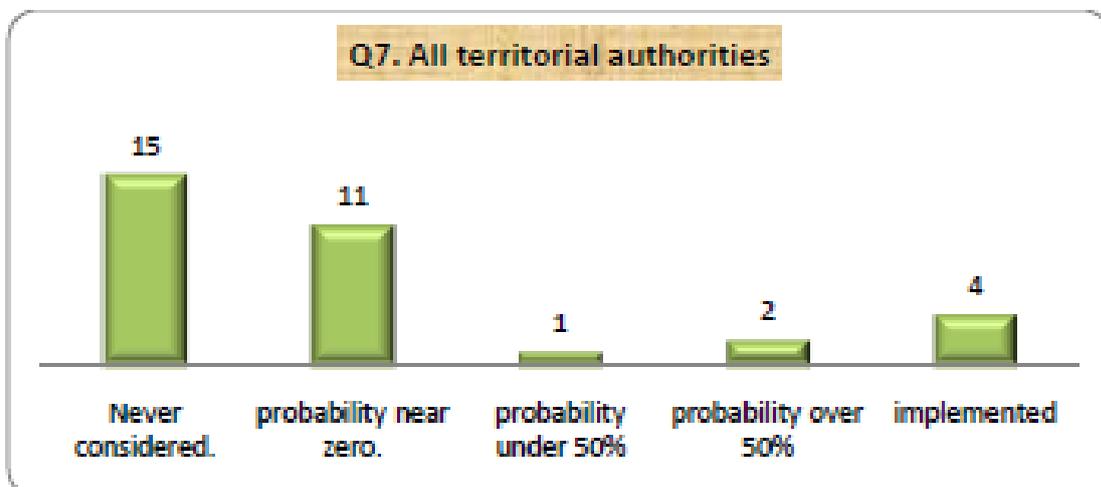
Undertaking joint venture(s) with academic institutions to demonstrate sustainability features?



While one respondent gave an example of such cooperation, most respondents appeared to never have considered such a possibility, perhaps indicating a lack of awareness of the extensive academic research in this area.

The next question focussed more on the regulatory approach and if local authorities were in the process of:

Working with private enterprise and/or academic institutions to modernise building codes and other regulations to cope with new and innovative sustainable design features?

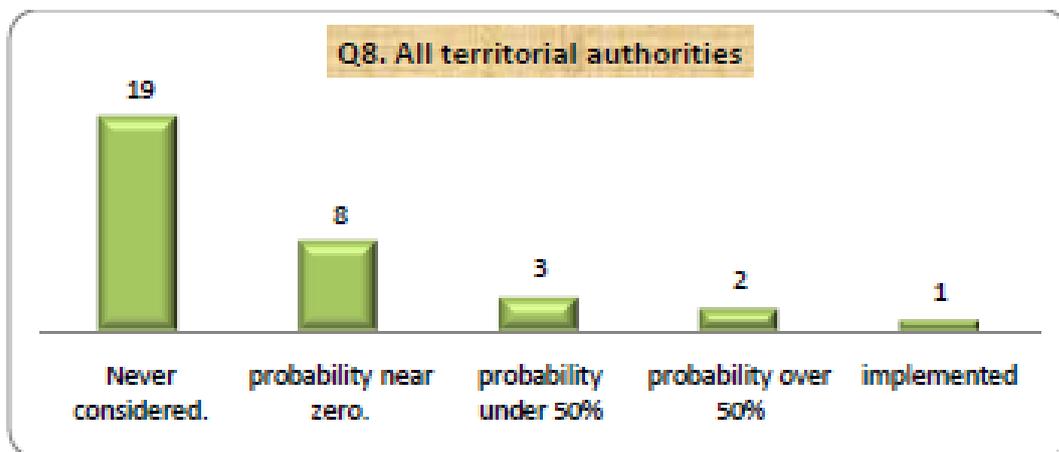


It is interesting to note that, though uptake is still low, local authorities appear more comfortable with this approach.

The comments provide an explanation of this low uptake in that many pointed out that it was not for territorial authorities to make the building codes but to implement them, although some did see their ability to make submissions on any review of the codes as something they could do. The question was intended to encompass more than just the building codes but as this part of the question came before the wider "...and other regulations..." it seems to be what was focused on.

The next question asked if local authorities were involved in:

Giving awards or special recognition to commercial buildings with high levels of sustainable design?



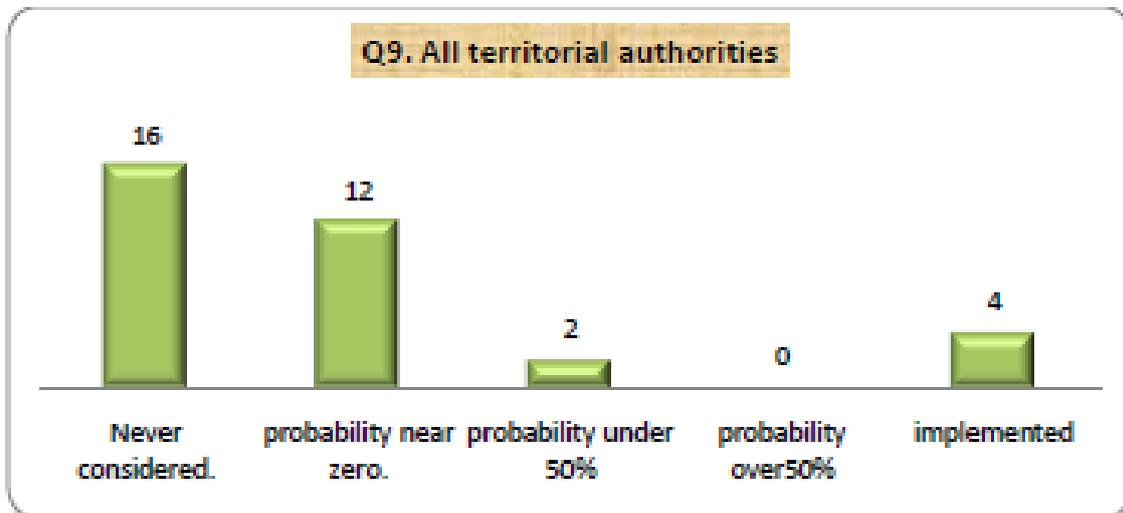
It had been anticipated that this initiative may have been quite widely implemented as it costs virtually nothing and requires very few other resources - which are the two most commonly mentioned barriers to implementation across all the questions asked.

However as can be seen above it has been implemented by only one local authority and there appears to be little chance of its wide uptake by other councils.

Part of the answer to this was indicated by two of the comments which state that sustainability awards are already being given by national bodies such as the Property Council of New Zealand.

Question 9 asked if respondents considered:

Providing technical assistance in sustainability to private enterprise design teams?

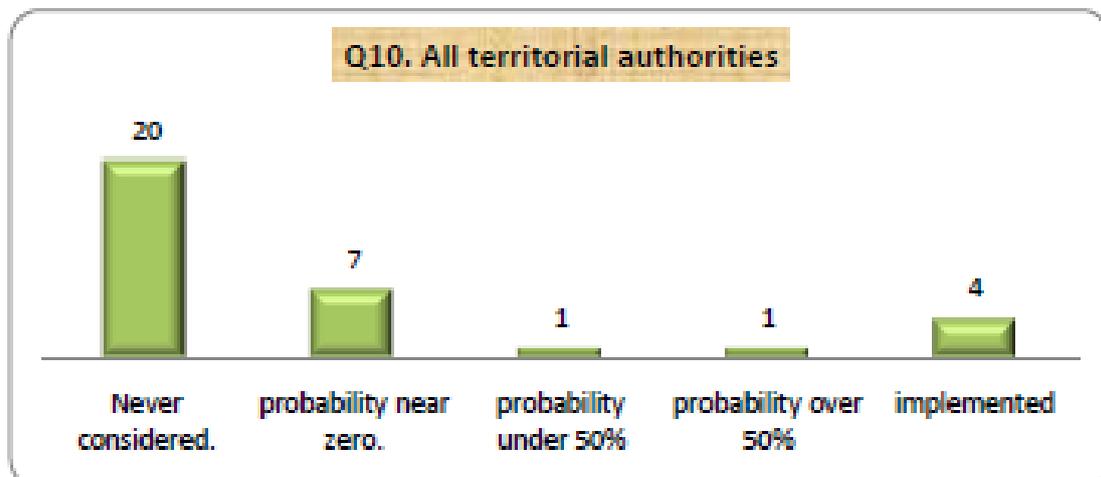


While 12% of respondent councils have implemented this initiative the great majority have not and are unlikely to do so.

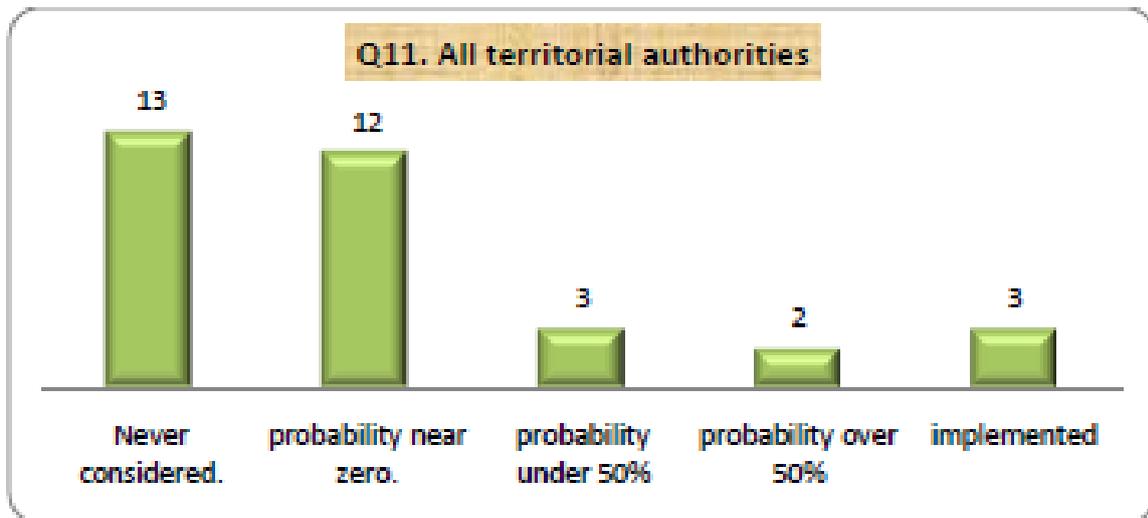
The clearly dominant reason for this from written responses to the question was that many of the councils do not have the resources or the expertise to do so. A typical comment was "The size of our council means that if the technical expertise was available within staff, workload would preclude much of this advice".

Questions 10 to 12 were somewhat similar to that above and the results are considered as a group below – did local authorities consider:

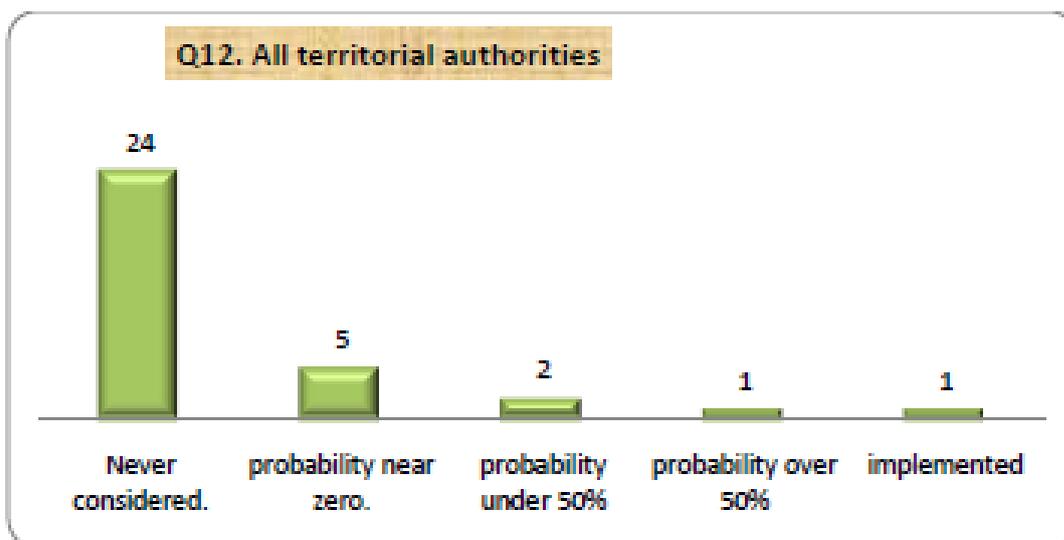
Acting as a clearing house or network centre for sustainability concepts?



Providing public education on sustainable design of commercial buildings?



Facilitating public workshops on sustainable design of commercial buildings

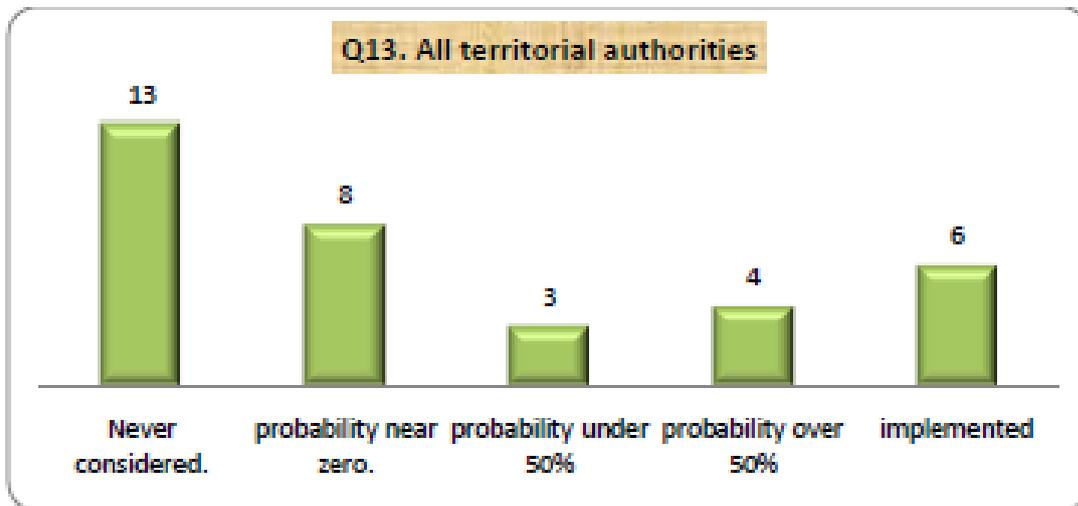


These three questions drew very similar responses to the previous questions with only a few local authorities implementing such initiatives.

Again the predominant comments were along the lines that it is not the councils' responsibility to offer such a service and "we are not a consultancy". Other common comments focused on the council's lack of resources. The one council that specified how it was being delivered said it was via general design advice notes.

Question 13 focussed on internal up-skilling in asking if local authorities considered;

Providing education courses for staff within your organisation on sustainable design features?

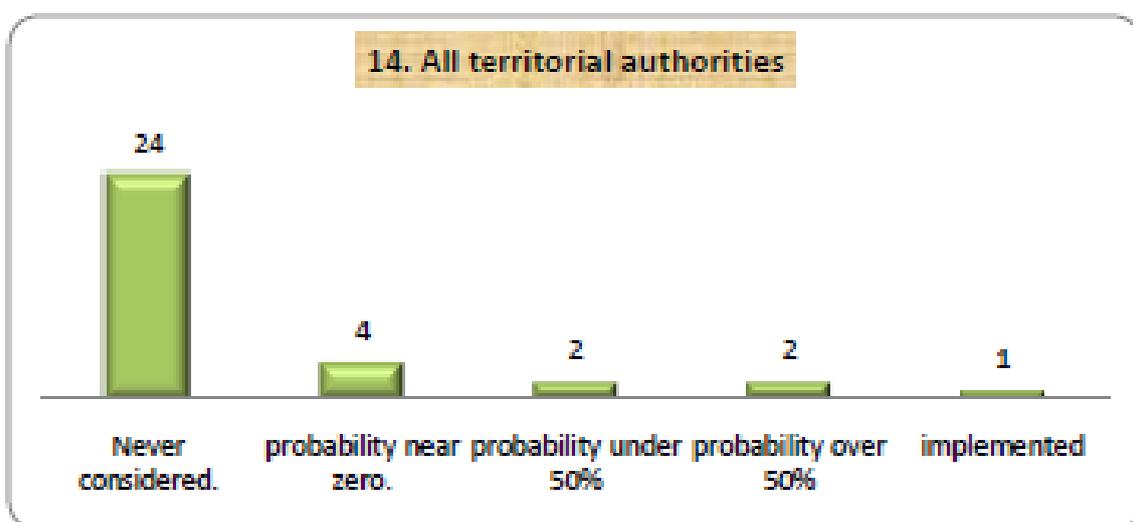


While the adoption rate is still not high amongst all of the councils, it is a much more positive result than for the public education initiatives, with almost a third of respondents likely to, or implementing such a programme.

The comments were also generally positive in terms of expressing a likelihood that more will be done for staff in the future. Most courses were provided by an external organisation and were an infrequent event or mentioned as part of a qualification that the council supported the individual in attaining.

Question 14 asked if local authorities had considered;

Supporting green collar job training courses.



Green collar jobs are those that aim to preserve or restore environmental quality, for example, training in land restoration techniques, the correct method of installing solar heating panels, retrofitting waterless urinals, correct installation of insulation, etc.

Once again a very low implementation rate was evident with only one city council having implemented such a scheme and two indicating it as a realistic possibility. The comments followed the same general theme as for most of the other questions; that is it was not their responsibility or that there simply was not the resources to attempt such schemes.

Question 15 asked:

Does your territorial authority make a certain level of sustainability compulsory for its own new or retrofitted buildings?



The answers to this question show that councils are more aware of sustainable building issues than one might first think given the low implementation rate of most of the other initiatives queried. In light of this response and that of question 13, it appears councils are more likely to adopt an initiative if it has internal benefits rather than encouraging uptake of sustainability practices by the private sector. Also, in contrast to other initiatives, councils of all sizes have considered and implemented sustainability initiatives for their own buildings.

The final question in the survey asked an open ended question:

Are there any other incentives or initiatives that you are aware of being considered or tried in the commercial built environment?

There were no initiatives or incentives mentioned that had not already been queried in the above questions. This indicates that the wide canvassing of possible incentives prior to devising the questionnaire was effective.

There were however, a few comments of a general nature. These ranged from personal notes wishing good luck with the dissertation through to expressions of their council's future intentions like, "We are at the beginning of a journey with a new urban design team in place" or "Council is beginning to explore the possibilities of implementing many of the above desires and responsibilities over the coming years."

Summary of Findings

In terms of answering the research aims and objectives **Table 2** below summarises the results.

All Territorial Authorities											
	Never considered.	%	probability near zero.	%	probability under 50%	%	probability over 50%	%	implemented	%	Total No. Answers
Q1	12	35.3%	11	32.4%	5	14.7%	2	5.9%	4	11.8%	34
Q2	19	55.9%	11	32.4%	2	5.9%	2	5.9%	0	0.0%	34
Q3	16	47.1%	9	26.5%	2	5.9%	0	0.0%	7	20.6%	34
Q4	21	61.8%	8	23.5%	3	8.8%	0	0.0%	2	5.9%	34
Q5	17	51.5%	7	21.2%	3	9.1%	3	9.1%	3	9.1%	33
Q6	23	69.7%	5	15.2%	1	3.0%	1	3.0%	3	9.1%	33
Q7	15	45.5%	11	33.3%	1	3.0%	2	6.1%	4	12.1%	33
Q8	19	57.6%	8	24.2%	3	9.1%	2	6.1%	1	3.0%	33
Q9	16	47.1%	12	35.3%	2	5.9%	0	0.0%	4	11.8%	34
Q10	20	60.6%	7	21.2%	1	3.0%	1	3.0%	4	12.1%	33
Q11	13	39.4%	12	36.4%	3	9.1%	2	6.1%	3	9.1%	33
Q12	24	72.7%	5	15.2%	2	6.1%	1	3.0%	1	3.0%	33
Q13	13	38.2%	8	23.5%	3	8.8%	4	11.8%	6	17.6%	34
Q14	24	72.7%	4	12.1%	2	6.1%	2	6.1%	1	3.0%	33
Total	252	53.8%	118	25.2%	33	7.1%	22	4.7%	43	9.2%	468
Q15	13	39.4%	4	12.1%	5	15.2%	2	6.1%	9	27.3%	33
Total all	265	52.9%	122	24.4%	38	7.6%	24	4.8%	52	10.4%	501

Question 15 is separated out from the rest of the results as this is not an initiative available to building owners or the development community.

It can be seen that all but one of the initiatives, "Offering a development density bonus for incorporating certain sustainability features" has been implemented somewhere within New Zealand. This indicates that New Zealand local authorities are searching far and wide in considering their options. However there were only 43 "implemented" replies from a total possible 476 responses (34 local authorities x 14 questions) indicating that the degree of implementation is low. Further, one local authority stood out as having implemented 10 of the 14 initiatives. Twenty-one of the local authorities had no implements at all while the second most active local authority had implemented three initiatives.

Excluding the most pro-active local authority from the results means there were 33 "implemented" replies from the remaining 33 local authorities or an average of one implementation per authority. If those that indicated a likelihood of implementation being greater than 50% are added to this result (22 responses) this lifts the average of the two categories combined to still less than two per local authority.

Discussion and Conclusions

As discussed earlier, finding ways to make human activities sustainable has taken on greater and greater importance in recent years. Consequently a variety of pan-government organisations such as the United Nations (UN), the Organisation for Economic Development and Co-Operation (OECD), and the European Union (EU) have spawned institutions to guide national and sub-national governments to more sustainable practices. Notable amongst these with regard to local government is the ICLEI – Local Governments for Sustainability.

Although New Zealand scores highly in the international literature in terms of sustainability legislation, this survey found the actual implementation of sustainability initiatives by local authorities in NZ to be low.

The reasons identified for this follow those identified in the international literature with the standout amongst these being lack of resources. This is not just financial resources but also human resources with the appropriate expertise.

The follow on question is why haven't the necessary resources been allocated to put the expressed sustainability rhetoric into action?

A number of reasons are offered in the literature and also apply to New Zealand.

It is clear that, as one territorial authority accounted for 23% of the sustainability initiatives implemented, progress in this regard often comes down to individuals with vision and commitment within a particular organisation.

Another factor may be that the momentum of the established economic paradigm, where growth is portrayed as the solution to humanities problems by increasing material wealth, works against ESD change. Local authorities can be more concerned with the implementation of

traditional economic development and the promotion of social cohesion rather than sustainable development (Baker & Eckerberg 2008).

A major cause of lack of implementation identified by the survey is lack of clarity about who is responsible for precisely what. Related to that situation is the fact that sustainable design still has widely different interpretations. In the New Zealand context this is reflected in the gap between the Resource Management Act and the Building Code where local authorities have been given wide general sustainability objectives under the Resource Management Act but have little influence over the Building Code which they are required to administer (Howell & Birchfield 2010).

That the survey supports these contentions is revealed in a number of different ways. First the administration staff in NZ local government bodies often had trouble deciding who to send the survey questionnaire to. Secondly 23 potential respondents who were sent the questionnaire declined to answer any questions after opening it and completing Section A. Further evidence is given by the fact that only one respondent had any mention of sustainability in their position title. This last point is also a reflection of the lack of resources reported by many of the local authorities in that one person often has multiple roles to fulfil and it is only the largest local authorities that can afford to make a more specialist appointment.

The future sustainability direction of New Zealand government bodies is very much in question. The current National party led government has implemented an ETS ahead of most of its major trading partners but it has also initiated a review of the Resource Management Act which has the potential to override environmental sustainability concerns in the name of the national good.

Given the difficulties in implementing ESD in the commercial built environment many argue that mandatory controls must be an important part of the mix. That is a carrot and stick approach. Such an approach is increasingly common internationally. While the survey results reported here showed a great deal of good will towards the many initiatives and incentives possible to promote environmentally sustainable design in the commercial built environment, local governments are heavily reliant on national political commitment before they can bridge the gaps between overarching policy and implementation at the individual building level.

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