The Eco Design Advisor Programme: Supporting the Transformation of New Zealand's Housing Stock

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ABSTRACT

The Eco Design Advisor Programme has been running in eight local Council areas, since September 2007. The programme provides free, independent, face to face advice on sustainable building options to homeowners, designers, community organisations, building contractors and developers of new homes and in relation to renovations.

The programme was set up to address a significant problem in the lack of independent and robust information available to these key market segments and has recently been evaluated in relation to its objectives. This evaluation looked at both the extent and type of interventions, and the incremental effect on the knowledge base on sustainable building within the wider community.

This paper will present the programme and the findings from the evaluation to assess the effectiveness of the programme. The paper also discusses the future role of the Eco Design Advisor Programme, its role within Local Government and the ways in which its positive impact on New Zealand's housing stock can be increased.

INTRODUCTION

The Eco Design Advisor service was initiated as a result of research undertaken by BRANZ (Christie and Stoecklein, 2005) which indicated that there was a need to provide factual, independent advice on a face to face basis to a wide range of stakeholders on sustainable design and construction in the residential built environment. In particular, this research identified that there were three key obstacles to sustainable residential design which needed to be addressed:

- that there is no stage at which the home owner is directly prompted to make decisions regarding sustainability;
- that there is lack of specific technical information and advice; and
- that there is a lack of industry expertise combined with a general reluctance to implement sustainability features.

Findings from background research also identified that people are more influenced by personal and first-hand sources (for example, from their own experience or friends/neighbours) compared to other marketing sources (Christie, Jaques, Stoecklein and Mathews, 2007). This is one of the tenets of what is now referred to as community based social marketing.

Parallel and independent research undertaken by Beacon Pathway (Easton, Mead, Trenouth, Fullbrook and Arnold, 2006; Trenouth and Mead, 2007) has drawn similar conclusions around influencing factors, as well as supporting a number of key components included in the Eco Design Advisor programme. These supported components included:

- Provision of dedicated staff support for sustainable building to provide advice and information;
- Free design review for sustainable buildings;
- Provision of education/information on sustainable building including funding opportunities;
- Active promotion of sustainable building rating tools
- Active promotion to building and resource consent applicants, via a simple checklist of ways to make their homes more sustainable.

The principles of an Eco Design Advisor role were a direct response to address the previously mentioned three key obstacles to sustainable residential design. Specifically, the role was intended to:

- Be free, primarily a face to face service
- Be independent (i.e. not promote particular products or suppliers)
- Provide robust, New Zealand-specific advice based on sound building/social science – mainly supplied via BRANZ
- Be part of a national network so that issues and solutions could be shared and discussed
- Target a range of particular stakeholders in the residential new build and renovation sector
- Provide home visits as part of its core function – for new houses, existing homes and renovations
- Provide short phone and email advice as a minor role
- Include an education and presentation role for the wider building sector elements
- Participate in events such as Eco Days and Home Shows
- Contribute as an advocate to and promoter of sustainable design via various media outlets, including local and national newspapers, radio, national and international conferences etc.

The research outlined in this paper looks at the first three years of the implementation of the programme, in eight Councils across New Zealand. In particular it focuses on the efficacy of the programme and the value of its expansion to other Councils across New Zealand.

IMPLEMENTATION OF THE PROGRAMME

The Eco Design Advisor programme was first implemented by way of piloting in three Councils – Waitakere City, Hamilton City and Kapiti Coast District. This initiative was the subject of a BRANZ research programme as reported in a range of research papers and a BRANZ Study report (see Christie, Stoecklein and Jaques, 2007; Christie, Jaques, Stoecklein and Mathews, 2007, and Christie, Jaques, Mathews and Stoecklein, 2007).

The majority of the research design for these reports was based on a case control method so that changes caused directly by the EDA could be assessed. That is, designers who did not have contact with an EDA were also surveyed, acting as the control group for designers who did see their EDA. The same applied for the homeowner sample. The target population were New Zealand homeowners and designers who were either considering building new or renovating their existing house, or who were involved with residential housing. After 12 months the research indicated that the

programme was having a number of very positive impacts, and that its expansion was warranted.

Following the success of the pilot programme, the service was expanded to a further six local councils between 2007 and 2009: Auckland City, Wellington City, Nelson City, Queenstown Lakes District, Western Bay of Plenty and Tauranga City. The Western Bay of Plenty District/Tauranga City position is one Eco Design Advisor providing a part-time service for both councils while the Queenstown district service was split between two advisors, based in Queenstown and Wanaka respectively.

After one year the Wellington Eco Design Advisor resigned from her role and the Wellington City Council decided to disestablish the position. In 2010 the Queenstown Lakes District Council decided to cease funding the programme, while Hutt City Council has recently (in mid 2010) joined with a part time advisor position. A number of other Councils are also investigating employing Eco Design Advisors, although at the time of preparation of this paper, no other positions were confirmed.

EVALUATION OF THE PROGRAMME

Pilot Scheme Evaluation

The pilot scheme was evaluated after the first 10 months of the programme and a number of research papers and a BRANZ study report were developed around this.

There were two key components to the evaluation. The first of these related to the physical design changes between the initial evaluation by the Eco Design Advisor of the house design in relation to the cut down BRANZ Green Home Scheme and a followup evaluation undertaken by BRANZ (Christie, Jaques, Stoecklein and Mathews, 2007). The second component focused on the impact of the programme on the values and long-term behaviours of the homeowners and designers who had accessed the programme**.**

The research programme evaluating the pilot had a number of key findings stemming from these two components.

Table 1 below summarises some key findings resulting from the second component – i.e. the values and long term behaviour aspect In this case, 'behaviour' was measured as the propensity to incorporate a wide variety of environmentally smart design features and technologies in the house. Example of this are: higher insulation levels, energy, water, and spatial efficiency, good waste management etc. The behaviour comparison was carried out by examining those who had seen an EDA with those who had not.

Table 1 Key Value and Behavioural related Findings From Pilot Scheme Evaluation

Findings
■ 67% of designers and 75% of homeowners surveyed who had had EDA consultations thought the EDA was effective in increasing their knowledge of environmental opportunities
■ After their EDA consultation 71% of participant homeowners surveyed believed that incorporating eco design practices into their home was worthwhile; 69% believe it will benefit their lifestyle; 56% believed it is easier to include sustainable features than they had previously thought; and 49% believed that eco design features will increase the value of their house
■ After their EDA consultation: 64% of designers believed eco design practices are more important than prior to meeting the EDA; 54% believed it would benefit their career more; 54% believed that eco design features would be more attractive to clients; 53% believed it was a more essential component of design; 46% realised eco design features were easier to include than they had previously thought.
■ Where designers had seen an EDA 43% of their environmental behaviours were attributed to seeing the EDA; and where homeowners had seen an EDA an 18% improvement in incorporating environmental technologies in the house was observed.
■ The longer the amount of time the EDA spent with a designer, the more significant the behaviour change which occurred
■ Longer home visits (greater than 2 hours) didn't result in any significant increase in the behaviour change of the homeowners.
■ Over 90% of homeowners and over 80% of designers said they would recommend the scheme to others.

Pilot Scheme Key Conclusions

As a result of the findings of the evaluation, it was concluded that the programme was performing to a high degree of success, and that expansion to a greater number of Councils was warranted. In particular it was concluded that:

- There was a very high degree of satisfaction from participant homeowners and designers with the service offered;
- The service was having a significant impact on the values and long-term behaviours of the participant homeowners and designers;
- The service was resulting in significant improvements to the designs and performance of the dwellings which had been the subject of in-depth consultations; and
- The method of delivery of the service (free consultations including in-home visits) was an effective method of achieving these outcomes.

2008 Evaluation

BRANZ continued to collect data through the post pilot phase – November 2007 to June 2008. This unpublished information has been made available to Beacon and is reported below. The year two follow up survey aimed to extend on the encouraging Year 1 results to investigate how the scheme can be more effective in targeting a wider audience – and not just those already inclined towards sustainable housing. Specifically, its aim was to:

- establish how the EDA scheme can target different audiences/market segments;
- gain an understanding of the type of people who are visiting an EDA and their motivations for visiting;
- gain feedback on the effectiveness of the service (for example, marketing, and information provision);

- gain an understanding of the perceived value of the service.

2008 Findings

The survey found that, in relation to participant's values and perceptions of housing and sustainability, reducing energy use and achieving suitable heating and warmth benefits were consistently the main concerns.

The personal one-to-one nature of the meetings and the opportunity for on-site meetings was identified as the key factor in the success of the scheme. In light of this it is considered that one-to-one discussions should continue to be an important feature of this scheme. While there are a prevalence of websites available to New Zealand residents for information on eco-design, the EDA programme is unique in that it provides free, one-to-one in-home independent advice.

The survey also found that the material being covered by the EDAs appears to be on-track with what the public are wanting, although it was mentioned that further information on trusted suppliers and installers is still needed. The desire for information on trusted suppliers and installers has also been identified by Beacon research (Trotman, Frederickson, Smith and Greenaway, 2007). A tension exists however in providing independent advice versus specifying certain products and suppliers. The large majority (74%) of respondents reported that they were satisfied with the information they received, and this gives reasonable grounds for not extending the programme into supplier and installer recommendations.

Of the survey respondents who had already seen an EDA, 90% said they would use the service again. Further, 95% of respondents said they would recommend this service to others.

2009 Evaluation

This section outlines the evaluation undertaken of the expanded scheme by Beacon Pathway during December 2009. This is based on unpublished information collected by BRANZ. The second part of the evaluation looks at the overall programme and considers how well it has met the objectives identified in its inception. It considers information which has been collected by the Eco Design Advisors through the life of the programme, and also the overall picture in terms of the BRANZ data.

The evaluation undertaken to look specifically at the performance of the programme in relation to the key outcomes sought, as defined in the funding applications to central and local government agencies and identified in supporting documentation for these. Table 2 identifies the outcomes which were able to evaluated as part of this study. The evaluation of the other outcomes sought from the programme will require the implementation of a planned follow up survey with participants, and will be the subject of future reporting.

Table 2 Key Outcomes Looked at in 2009 Evaluation and Source of Information Used to Evaluate These

Outcome Sought	*Source of Information*
1) Better streamlined consent process for sustainability options within the council consent process	EDA records of improvements made
2) Improved and strengthened network within the design and building industry around sustainable design	Records of Media Articles, Presentations and Networking Events

Outcome Sought	*Source of Information*
3) A representative number of EDAs trained in all areas of well targeted, practical, achievable eco design concepts and implementation	Training records
4) Each Eco Design Advisor undertaking an annual quota of 450 "events" – a combination of full consultations, short consultations and presentations to groups of stakeholders	EDA records of consultations

CURRENT STATUS

Improved/Streamlined Consent Processes

A number of initiatives to improve or streamline consent processes have been undertaken within the participant Councils for more sustainable options. Primarily these have focussed around more sustainable hot water systems, and in particular solar hot water systems. One reason for this, and one of the benefits of the programme nature of the Eco Design Advisor Role, is that streamlined processes developed in one Council have been able to be picked up and adapted for use in other EDA participant Councils creating efficiencies for such projects.

Improved/Strengthened industry network

A wide range of industry events and presentations have been undertaken by the Eco Design Advisors with a total of approximately 1300 networking events and approximately 900 presentations undertaken over the 2007-2009 period. While each Eco Design Advisor is not capturing the information in an identical fashion, it is clear that networking and presentations on sustainable building are a critical part of the role being undertaken by the EDAs.

Over 40 media articles and presence on at least 59 websites have been identified over the 2007-2009 period about the programme. Over time and as the reach of the programme has increased, media coverage has extended. As a generalisation, media coverage is generated by proactive measures by the EDA (e.g. issuing a press release or even drafting an article) whereas website coverage is generated as a response to market awareness of the programme.

Representation and Training

The network of Eco Design Advisors has an uneven geographic spread with a strong presence in the North Island, but less so in the South Island. Currently about a quarter of New Zealand's population is covered by the programme. Significant gaps in the service have been identified in particular in the major Christchurch and Dunedin population centres, and in the eastern and western mid North Island areas. While currently the Auckland subpopulations of Manukau, North Shore, Papakura, Rodney and Franklin do not have access to an EDA programme, with the creation of the Auckland Council, in theory this will become available to them. In practice however, given the large number of consultations already undertaken by the two Eco Design Advisors within the Auckland Region, it seems likely that waiting lists could arise for the programme in the new Super City if it is not further resourced.

Training activities have been a core part of the central administration of the Eco Design Advisor programme by BRANZ. Conferences for the programme, with intensive workshops and training are held twice a year. In addition fortnightly conference call discussions, and an online forum enables the EDAs to network with each other, keep up to date with new initiatives, and pass on technical information of use to the wider group.

DISCUSSION

Area of Focus

Through discussions with BRANZ, the Eco Design Advisors and their managers through the development of this evaluation, it is clear that the programme as originally set up, has had a strong focus on energy efficiency. This is also reflected in the mix of researcher funders for the early stages of the project. Energy and energy efficiency are not however areas of primary responsibility of local government, and some Councils report a perceived mis-match in funding, that they are being asked to support a service which delivers on central government, rather than local government, responsibilities.

This is not an issue with all of the EDA programme councils, however. For Kapiti Coast District, Tauranga City and Waitakere City, water efficiency in particular is a core focus of the programme, reflecting both the local community issue, and the responsibility of local government for water supply and wastewater disposal. Alongside this construction waste reduction is also a focus area which resonates strongly with local government responsibilities, and some EDAs also place a strong emphasis on the programme.

The issue for the programme therefore is how to reflect both the local concerns and needs of their local Council funder and local community within the wider ambit of the programme. This should not be a significant issue, as sustainable building encompasses a wide range of aspects, not just water and waste, which are primary responsibilities for local government. It may however be that a greater range of support resources need to be developed for the programme on these key focus areas. Beacon Pathway has been undertaking a significant programme of water research over the last three years and this information could be developed to better support the EDA programme, supplementing the BRANZ work in this area which has not had the same level of resources assigned to it.

Ongoing Training and Support

It is clear that one of the strengths of the programme is its national brand and linkages. Significant benefit in terms of skills and strength of recommendations is gained from the national networking which occurs through regular conference calls, the website and biannual conferences held.

Geographic/Demographic Gaps in Coverage

There are several notable demographic gaps in coverage of the programme, but in particular the South Island is poorly represented. This is ironic given the original energy efficiency focus – as South Island homes are likely to deliver significant benefits in terms of energy efficiency if retrofitted or built to higher performance standards. Christchurch City Council has proposed to appoint an EDA, and the establishment of a Christchurch EDA is strongly endorsed.

Linkages with Other Sustainable Building Programmes

- Links with Sustainable Living, the Home Energy Advice Centres, and several tertiary environmental building courses have already made.
- BRANZ and Beacon are both providing technical support to ensure a high speed of information transfer on latest sustainable building research findings.
- The New Zealand Residential Rating Tool (recently branded **homestar***) creates a new opportunity and potential link for the EDAs. EDAs are in a very good position to become accredited assessors for the scheme, as it is very well aligned with their core role.

Given the training in assessment and advice that homestar* assessors will have, the EDA's will be in a considerably better position to provide in-depth advice. Homestar* could also potentially afford a small funding stream for EDAs perhaps even a cost recovery service.

CONCLUSIONS

The EDA is a highly recommended sustainable building program that seems to be resulting in actual behavioural change and demonstrating a need for independent building advice on a wide range of environmental issues. However, the extent of its impact cannot be easily gauged at this time, as it would require specific research to analyse both the records collected by the EDA's and follow up visits to previous consultations. Ideally, further investigations should determine the extent to which consultations have driven homeowners/builders/designers to modify their building and renovation work to incorporate the modifications that the EDA's suggested. The scheme also needs to be extended to cover areas in New Zealand which are under-represented currently, especially in the South Island. With the release of the environmental rating tool homestar* in late 2010, the demand for the EDA service is likely to be considerably higher, given the independent nature and higher skill-set of the EDA's, compared to 'standard' homestar* assessors.

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