

Article

How a Sustainable Renovation Influenced the Environmental Values of Those Involved

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Abstract

Renovation projects are complex and multi-layered as they often deal with architectural, cultural, and social values, as well as aspects of energy efficiency and finance. This article discusses the impact that engaging in a sustainable retrofit had on the environmental values of those involved. The project was the renovation of an existing log cabin structure located on the Ōtātara heritage site at the Eastern Institute of Technology campus, New Zealand. The aim was to make the existing structure as near-zero energy as possible, so it would act as a demonstration facility for sustainable building and living practices and inspire the local community to adopt pro-environmental practices. The completed project is being used by the Eastern Institute of Technology as home to a nature-based education facility where the cultural and creative connections to land, sustainable use of resources, restoration of ecology, and biodiversity management are communicated. The article explains why people chose to be involved with the various stages of renovating and using a sustainable building and their attitudes towards behaving sustainably. The research approach is explorative, making use of qualitative data analysis methods. The study argues that getting involved in a sustainable building can potentially change the values of people through active, systemic, and successive learning, both in the building and operation phases. The key finding shows that involvement only increased as the project gained momentum as people could see that taking part would produce something tangible.

Keywords

environmental values; New Zealand; renovation; sustainable buildings; zero energy

Issue

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1. Roadmap

This article describes the effect of making a sustainable building on those involved in both its making and current use. The first part of the article (Sections 2 and 3) briefly describes the project and who was involved with its design. Because the building sits within a tertiary education facility, this gave the opportunity to investigate the values held by those engaging with the project and whether there was a change in these because of the engagement. The second part of this article (Section 4) deals with the investigation into values, and the article

ends with a discussion of the results, noting the changes that have happened since the building was completed and how these relate back to both environmental and local cultural values.

2. Background

2.1. Renovation of Existing Buildings

In recent decades, energy efficiency has become a common focus in the building sector, particularly when it comes to the renovation of the existing building stock

(Hamilton & Rapf, 2020; Ministry of Business, Innovation & Employment, 2015). Annually, in both New Zealand and the EU, the existing building stock far exceeds newly constructed buildings (Easton, 2007; European Commission, 2010; Stats NZ, 2020). Hence, renovating the existing building stock towards sustainability is critical (Thuvander et al., 2012). In many cases, this requires developing techniques to maintain, refurbish, and adapt new technologies to fit existing buildings so these meet new requirements. In fact, the bulk of residential buildings in New Zealand pre-date the emergence of modern high-level sustainability standards (Easton, 2007). Renovation processes can be complex and there is the potential to misjudge architectural, cultural, and social values in favour of measures that improve a building's environmental performance. Hence, a systematic approach to making a building sustainable should concern the links between its history and the components, materials, and functions of the building (Brand, 1994, p. 94; Cole & Lafreniere, 1997).

2.2. Zero-Energy Buildings

Annually, buildings use over 40% of the total global primary energy and so are significant contributors to greenhouse gas emissions, particularly CO₂ (Crawley et al., 2009; International Energy Agency, 2009, p. 2; Seiferlein, 2007). Consequently, the concept of a zero-energy building (ZEB) has developed as a realisable target for building design (Marszal et al., 2011). Essentially, a ZEB is one with reduced energy requirements for building materials, services, and operation, with the objective of meeting all energy requirements "from low-cost, locally available, nonpolluting, renewable sources" (Torcellini et al., 2006, p. 2).

In New Zealand, Jaques (2013, p. 74), from the Building Research Association of New Zealand, pointed to the fact there is no agreed common definition of a ZEB, but stated: "Conceptually, it is a building that can generate enough electricity from renewable sources to balance its energy demand over an average year." He went on to suggest that a net ZEB is one connected to energy infrastructure, so that "the energy taken from and supplied to the grid over the year is balanced. The building uses the grid as a battery" (Jaques, 2013, p. 74). As this research concerns the renovation of an existing building, it seemed appropriate to attempt to achieve net ZEB. This meant the building would be connected to the grid but using renewable resources would annually produce as much energy as taken from the grid.

2.3. Affecting Environmental and Cultural Values

Pro-environmental behaviour consciously seeks to minimise the negative impact of people's actions on the natural and built world (Kollmuss & Agyeman, 2002). This entails initiating shifts in attitudes towards environmental knowledge and sustainable actions. However,

there is no simple linear relationship between knowledge, awareness, attitude, and environmental behaviour (Kaiser et al., 1999; Wals et al., 2014). Additionally, social and cultural factors shape the development of an individual's values, which in turn guide the development of a belief system and worldview (Gifford, 2011; Stern et al., 1995). Hence, it is important for those bringing their own value system to building renovation to understand the interactions between cultural traditions, the significance of place (or landscape), and natural biodiversity in terms of identity, ecological knowledge, religion, aesthetics, and social status (Loomis, 2000). According to Stephenson (2008), *place identity* is closely connected with self and group identity through events and moments of history associated with a particular tangible site.

The project in question is located within the heritage site of Ōtātara *pā* (village), a place that contains the history and *mana* (power, influence) of indigenous Māori and their links through genealogy to people and places in New Zealand (Department of Conservation, 2017b; Matthews & Johnston, 2015); this had a major influence on those involved in the project. Unlike the European concept of land ownership, for Māori, the traditional connection to land comes from *kaitiakitanga* (guardianship), a role based on deep kinship between humans and the natural world. With this comes the idea of holding responsibility and caring for the land (Henwood & Henwood, 2011; Royal, 2007), by looking after it in an interconnected way for both the extended family and future generations, thus echoing ideas behind modern sustainability. Accordingly, place and space are often seen as interconnected within *Te Ao Māori* (the Māori world). This meant the log cabin (LC) project had the potential to affect sustainability values through its focus on being a ZEB, which in turn linked to the local cultural values of caring for a site of significance to the local Māori.

2.4. The Log Cabin Project

The design of the LC to meet its ZEB target has been described in detail elsewhere (Bahho & Vale, 2020). Figure 1 shows the building before renovation.

As the building is part of the Eastern Institute of Technology (EIT) campus and the aim was for it to be a teaching tool for EIT students and the community, it was agreed that the renovation design concept would be generated and developed by EIT design students. Consideration was given to writing the project brief criteria so that these would fit with the teaching curriculum. A group of six out of a possible 13 students chose to engage in designing the renovation as part of their bachelor of design studies. The other students opted to work on other projects for various reasons (Bahho & Vale, 2020).

The educational aim was to adopt a reflective teaching method that would enable meaningful learning

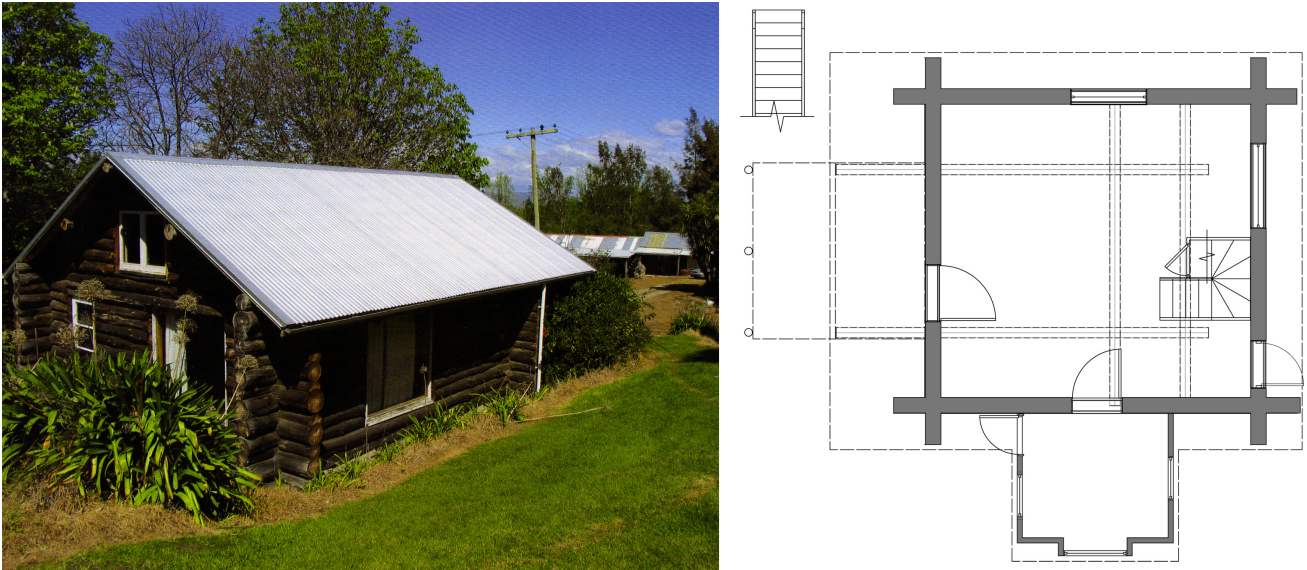


Figure 1. The LC before renovations: A view from the northwest (left) and the ground floor plan (right).

(Schön, 1987; Smith et al., 2009). In addition to discussions focusing on the need for pro-environmental attitudes to manifest the context of sustainability and ecology through design, the students were asked to be mindful of the particular history of the place and site, as well as to fully utilize what existed of the remaining building. The class reflected on the history and charac-

teristics of the Ōtātara *pā*, recognizing its qualities in providing shelter, protection, and clothing for its past inhabitants, as well as being a viable source of food and water. Hence, for Māori, it was considered a sustainable place long before the concept became widely held in the developed world. Figures 2 and 3 show the students' design concepts.

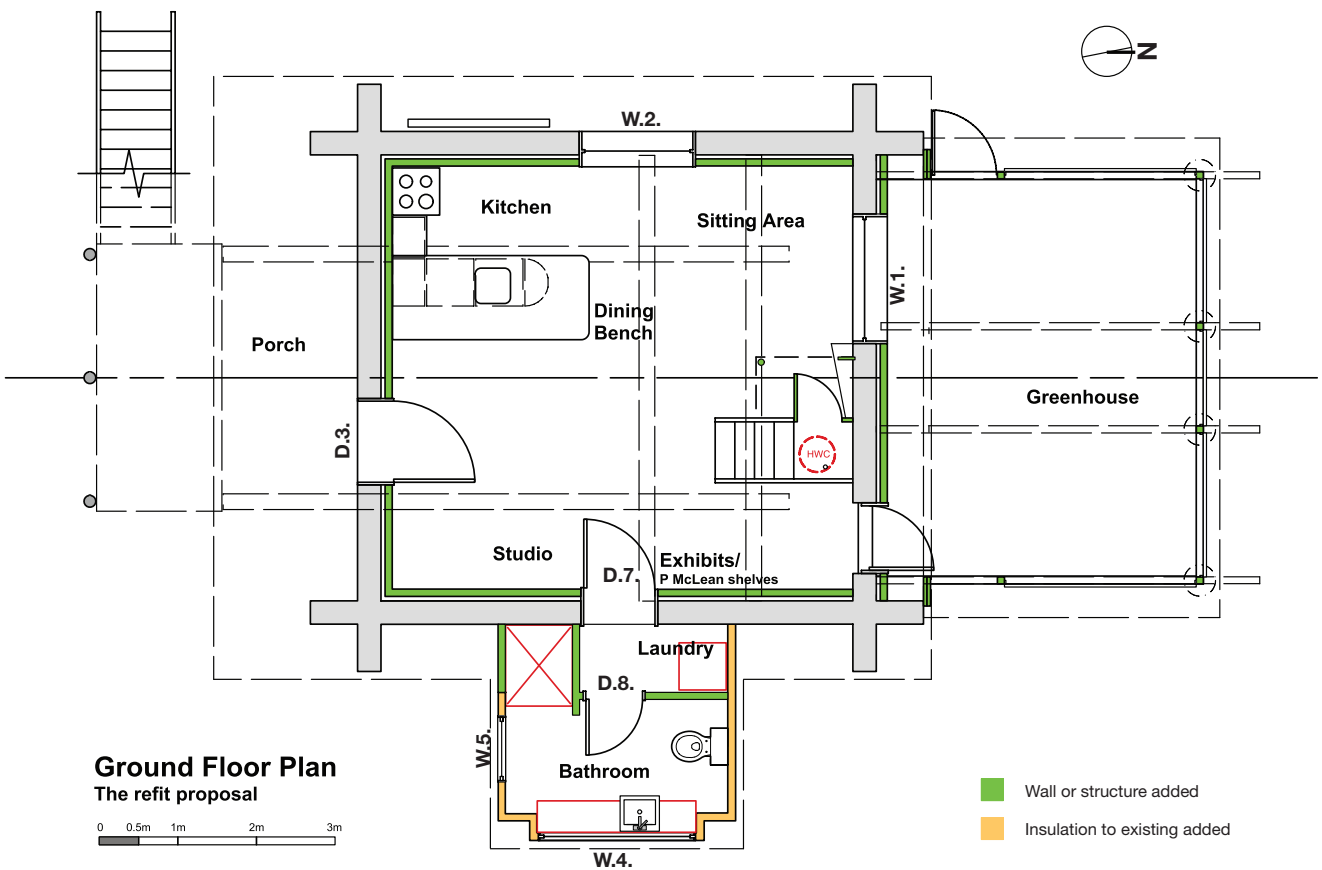


Figure 2. The students' renovation concept: Ground floor plan.

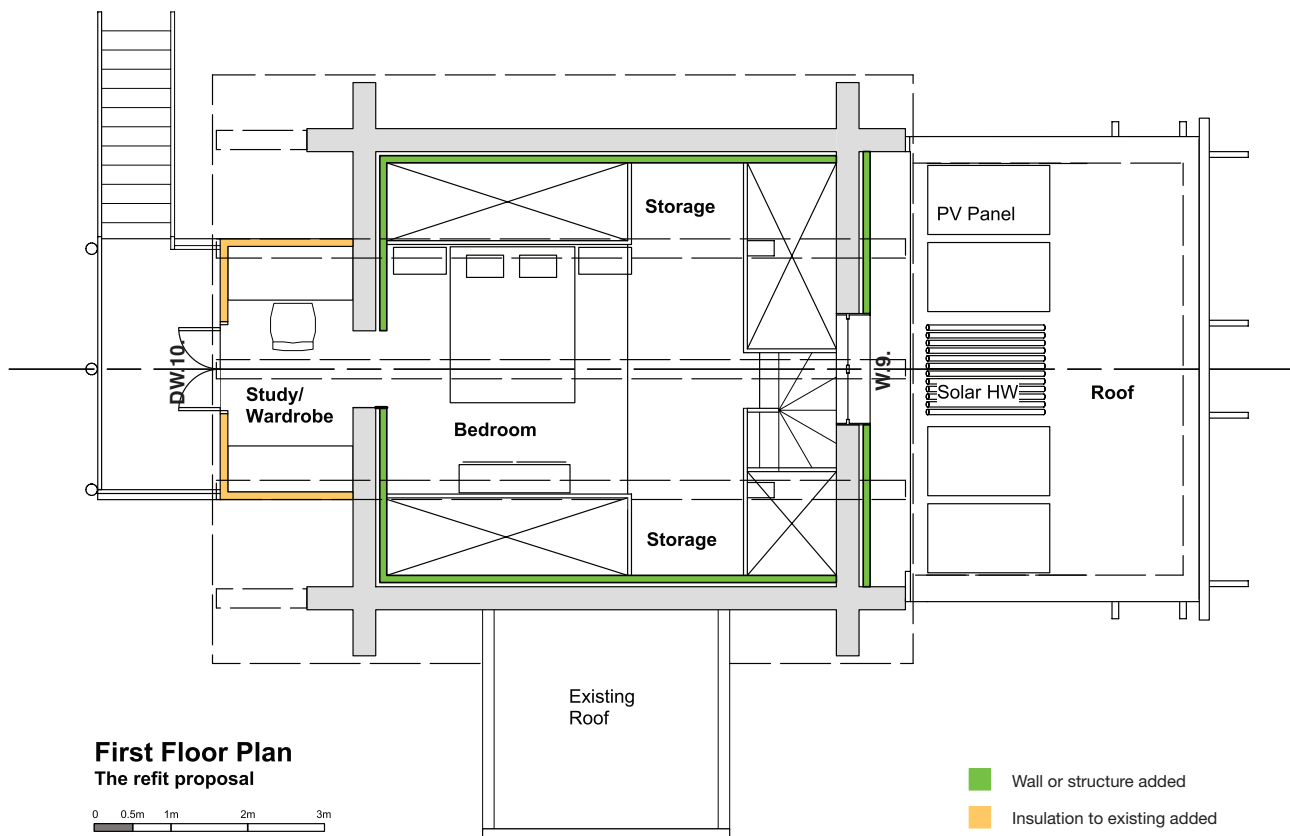


Figure 3. The students' renovation concept: First floor plan.

3. Method and Results

The decision was made to investigate the environmental values of the students involved in the design to see if there was a change after their involvement with the project. The hypothesis was that being involved in making a sustainable building would enhance the environmental values of those involved. This part of the article explains the methods used to investigate the values of those involved, together with the results of the investigation.

Focus group discussions were conducted pre- and post-engagement with the student designers in order to understand why certain individuals decided to take part in the design of the renovation, their attitudes towards behaving sustainably, and how this might affect the level of their future activities. Focus groups were preferred over individual interviews as the students had worked in groups on design tasks and so were used to group discussions and ensuring that each individual had a voice.

3.1. Pre-Engagement Focus Group Analysis

The aim of the first focus group discussion was to establish a benchmark regarding the understandings of and concerns for environmental issues of the six design students before engaging in the project. The focus group session took place in a lecture room at the EIT campus. An hour was set aside for discussion. The first author,

Mazin Bahho, was the only non-participant present, and the discussion was recorded. The student participants contributed to the discussion in varying degrees. The focus group used a number of pre-established questions as noted below.

3.1.1. Questions

The discussions explored responses to a two-part question: (a) How concerned are you about the harm that humans are causing to the environment? (b) Looking ahead to the year 2050, are you concerned about the consequences of environmental problems in relation to each of the following clusters: the biosphere, yourself, and other people? The second question was based on Schultz's (2001) three clusters of environmental attitudes related to environmental concerns. These are egoistic (me, my health, my lifestyle, and my future), altruistic (all people, children, my children, and people in New Zealand), and biospheric (plants, marine life, animals, and birds). This type of question has been used before in New Zealand, so, at some point, the results could be compared to other studies (Milfont, 2007, pp. 32–34).

3.1.2. Method of Analysis

Analysis of the data to identify recurrent themes was based on the thematic analysis guidelines (Braun & Clarke, 2006). The recorded data was first transcribed.

Quotes were then extracted and each was referenced to the time the comment was made during the focus group.

After becoming familiarized with the data, an initial list of codes was generated from the various topics brought up by the students. This was done across the data set, rather than for each question individually, in order to identify commonalities running through the data. Working from the perspective of environmental attitudes, the aim was to find out why individuals chose to be involved in the project as part of their education at EIT.

To achieve this, repeated rounds of reading and categorising the data led to the emergence of broad themes, and specific sub-themes within these, all derived from the data (Boyatzis, 1998; Braun & Clarke, 2006). An *initial* thematic map was prepared. The themes identified were the most basic segment or element of the raw data or information that can be assessed in a meaningful way regarding the phenomenon (Boyatzis, 1998, p. 63). These were then reviewed and refined through repeated investigation both of pattern and commonality to create a *developed* thematic map (Braun & Clarke, 2006). Direct quotes from the transcripts were grouped under similar thematic headings to provide a clear illustration of each theme in the participants' own words. From this, a *final* thematic map emerged. While frequency is not necessarily a measure of significance, it offered a sense of the extent to which a particular experience was common across responses, and so the extent to which it might represent a shared understanding or agreement with others.

3.2. Pre-Engagement Results

Consequent to review and refinement, three main themes emerged (Figure 4). These are discussed individually below.

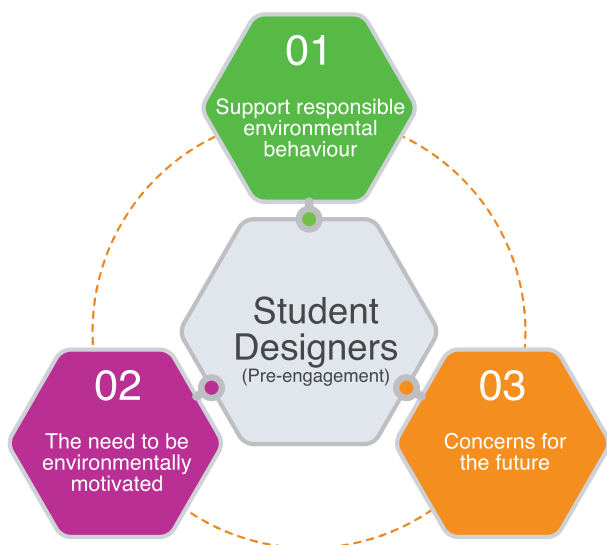


Figure 4. Final thematic map from the student designer pre-engagement focus group themes.

3.1.3.1. Support for Responsible Environmental Behaviour

The students stressed the importance of living sustainably with an emphasis on valuing sustainable living patterns and being in an ecological and organic living environment. They also stressed the importance of preserving the character of the LC, especially in their material choices. There was a notable call for nurturing responsible environmental attitudes in the community through inspiring the behaviour of others, supporting environmental actions, and being passionate about animals and ecosystems. Concerns for environmental behaviour ranged from concerns for self (health and nutrition) to taking a wider view that could still incorporate self (concern for an organic living environment).

3.1.3.2. The Need to Be Environmentally Motivated

The students highlighted the importance of environmental motivation through discussion and practice at the various levels of self, family, and community. They were motivated to maintain elements of the building that have traditional value through preservation, recycling, and reuse. There was also emphasis on the need to acquire in-depth environmental knowledge. They saw involvement with the LC project as an opportunity to focus beyond basic ecological knowledge and issue awareness. Communicating information, including the role of the media, was also stressed.

3.1.3.3. Concerns About the Future as a Result of Human Activities

All participants shared a sense of concern and a degree of pessimism when it came to envisioning the future of the world, due to general concerns about rapid population expansion and increasing demand for materials placing stress on space and resources. Students felt this could result in adverse consequences and environmental problems for the future of the planet and its ecosystems. The importance of preserving natural capital for current and future generations was also emphasised.

3.2.1. Discussion of Pre-Engagement Results

For a qualitative analysis, the group of six participants is small; however, the level and type of information extracted were focused, rich, and diverse. The open-ended questions allowed participants to communicate their own experiences in their own words. As such, the themes identified reflected the spontaneous use of common terms, awareness of the significance of the site, and offered powerful evidence of shared ideas of what it means to be sustainable in New Zealand today. Moreover, observations of commonly experienced reactions to unsustainable practices suggested the participants had strong passion, motivation, and intention to

be sustainable, and some wanted to try to influence others to behave sustainably and be ecologically responsible. It also offered an insight into why this group of individuals became involved in the project. Reactions to the two-part question showed the need for in-depth knowledge about sustainable topics and practices so the students could feel confident in taking ownership of environmental issues, and later using this knowledge to empower others into holding sustainable values and having knowledge of environmental action strategies. The analysis offered qualitative evidence for a basic understanding of self, others, and the biosphere in relation to social, environmental, and economic platforms, and that the students had the knowledge and intention to act sustainably.

3.3. Post-Engagement Procedure and Analysis

The plan was for post-engagement focus group discussion with the same students six months after their involvement with the LC project to compare data and look for any effects that might be linked to having been involved in the LC concept design, and whether involvement had any influence on their environmental attitudes or level of future involvement with sustainability. In the event, there were only five focus groups participants. Having moved to another town, the sixth student was not available, although an interview using the same questions was arranged at a later date and the thematic analysis uses data from both the focus group and the interview.

3.3.1. Questions

Both sessions aimed to explore responses to the same questions posed in the first focus group along with this additional question: Did the experience of being involved in the design of the LC project affect the way you acted recently in relation to sustainability?

3.3.2. Analysis Method and Results

Thematic analysis was again used to identify recurrent themes in the data (Braun & Clarke, 2006). The process adopted was similar to that explained above. Upon arriving at a satisfactory thematic map of the data, the dominant themes were organised (Braun & Clarke, 2006; Figure 5). This produced three main themes, which are discussed below.

3.2.2.1. Willingness to Enable Environmental Practices

The students stressed the importance of using energy and other natural resources responsibly and were motivated to an extent to choose sustainable options. They displayed responsible views regarding heritage awareness, and this was also apparent in their concept design. The participants were also keen to acquire in-depth knowledge of the effects of environmentally harmful

food growing processing practices (the design incorporated a greenhouse for growing food).

3.2.2.2. Having the Motivation to Support Environmental Actions

Post involvement in the LC project, a number of students tried to convince friends and family to act in an environmentally responsive way, especially regarding building energy choices. The students showed willingness to support others in making environmentally sound decisions and assisting them in changing their environmental behaviour, thus demonstrating ownership and empowerment qualities. As evidence of this, students highlighted the importance of supporting and educating others to act sustainably, being self-motivated in pursuing environmental initiatives, and encouraging others to adopt sustainable practices, in both material choices and operation.

3.2.2.3. Seeking In-Depth and Ongoing Knowledge of Environmental Issues

The students asserted the significance of continuously pursuing knowledge about matters related to ecology and the environment. This included the ability to define the characteristics of a sustainable practice, the ability to recognize the need to extend personal knowledge of environmental issues, and the hope their knowledge could be applied in new and emerging job opportunities related to sustainability. They highlighted the significance of conservationist living patterns, sharing a sense of concern and a degree of pessimism when it came to envisioning the future of the world due to rapid population expansion and increasing demand for materials leading to a diminishing of natural capital, landscape identity, and character of place.

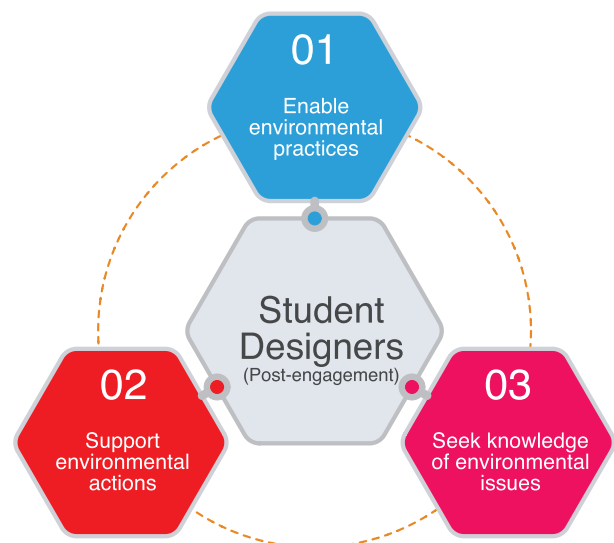


Figure 5. Final thematic map from the student designer pre-engagement focus group themes.

3.3.3. Post-Engagement Discussion

The second interview with the students involved in designing the LC project highlighted the significance of living sustainably, valuing ecological and organic living practices, stressing the importance of using energy and other natural resources responsibly, and being motivated to choose sustainable options in spite of the cost, at least at times. The participants were keen to acquire in-depth knowledge about environmental matters, particularly focusing on the effects of non-environmentally harmful food growing and processing practices. Participants also saw the cultural, historic, and guardianship (*kaitiaki*) dimensions of the Ōtātara site as a significant element of influence on the project's renovation concept and an important reason for taking part in the project.

Subsequent to their involvement in designing the LC, the students' passion for supporting and educating others to act sustainably was observed. They were self-motivated to pursue environmental initiatives and realised the significance of encouraging others to make environmental investments. The discussion revealed a number of instances where they demonstrated active pro-environmental behaviour, such as convincing a close friend to invest in purchasing photovoltaic technology for a lower electricity bill in the face of reduced income and more time at home after retirement. Another student offered to help friends establish a social media network page to exchange information on environmental and health interests, demonstrating ascription of responsibility beliefs (Schultz, 2001).

During the discussion, a number of participants appeared to be inspired by sustainable ways of living, feeling passionate about ecological living practices with a particular focus on ZEBs and water conservation. Planning to build a new home, one participant revealed a responsible environmental attitude by wanting to create a living environment that "will have a sustainable lifestyle like an autonomous place."

Equally important, and as the project work gained momentum, it became more acceptable for people to come forward and become involved. Looking at the numbers, the acceptance threshold or tipping point came when there was enough physical reality emerging from the renovation work and people could see that becoming involved would produce something tangible. Table 1 compares the pre- and post-engagement themes and sub-themes.

4. The Log Cabin Today

4.1. The Ōtātara Outdoor Learning Centre

When the renovation of the LC was completed at the end of 2018, the site became home to the Ōtātara Outdoor Learning Centre, a nature-based education space established on the Ōtātara site at the EIT Campus

(Figure 6). This came about as a focus on the future, including sustainability, has recently become a core principle in the New Zealand school curriculum (Department of Conservation, 2017a; Shephard, 2020, pp. 41–58). The Ōtātara Centre is a community education space where cultural and creative connection to the land, sustainable use of resources, and the restoration of ecology and biodiversity management are taught, using the outdoor environment as a context for learning (Passey, 2021). The project is a regional collaboration including the Department of Conservation, local Māori institutions, the Regional Council, Enviroschools, and EIT.

Among the Centre's objectives is the promotion of *nature literacy* across the New Zealand education curriculum, thus encouraging learners to spend more time outside, as well as supporting schools and community groups to use the environment as a context for learning. The LC has become an integrated part of the Centre and further renovations were made to its interior space to open it and make it suitable as an indoor teaching space, thus continuing its heritage of teaching, learning, and outreach dating from the time of the early Ōtātara Arts Centre. In addition, new facilities were added to the Ōtātara site such as an outdoor shelter and an eco-toilet block, as well as a significant improvement to the outdoor space as the whole area has been landscaped with native plants in order to encourage birds and insects.

These new developments saw EIT staff and students reconnect to Ōtātara through the embodied outdoor and landscape experiences that are deeply entangled with that place. Whilst it is clear that these connections differ from person to person, one common connection is passion for the history of the site and respect for those who previously worked on it (Passey, 2021).

4.2. Project Manager Discussion

An interview with the project manager in charge of the operation of the Centre emphasised its impact as a place of natural landscape, distinct building quality, and immersed social history. The importance of developing connections with various regional institutions and community organisations was highlighted within an environment of learning about nature and ecology as well as about culture, society, and heritage. The manager affirmed that the Centre is justifying its purpose of inspiring future behaviour through enabling and promoting environmental education and ecology in different school curricula as well as between disciplines within a sustainability context, hence developing environmental knowledge and capability.

In terms of connecting with nature, the manager stated that the Centre has inspired a number of groups at EIT to become involved in sustainable activities. A number of staff and students developed a plan to regenerate and transform the site (Figure 7), including reviving native species used for Māori traditional crafts (Riley, 2004). The landscape design paid close attention to

Table 1. Comparisons of themes from student designers pre- and post-engagement.

Common Themes	Pre-Engagement Student Designers	Post-Engagement Student Designers
1. Support environmental behaviour and actions	Support for responsible environmental behaviour. Sub-themes: <ul style="list-style-type: none"> • Living sustainably and promoting it; • Valuing tradition; • Living in an ecologically valuable environment. 	Having the motivation to support environmental action. Sub-themes: <ul style="list-style-type: none"> • Further environmental knowledge; • Encourage and support others to take sustainable actions; • Being motivated to pursue environmental initiatives.
2. Need to be environmentally motivated	The need to be environmentally motivated. Sub-themes: <ul style="list-style-type: none"> • Motivation through environmental actions; • Role of the media. 	Willingness to enable environmental practice. Sub-themes: <ul style="list-style-type: none"> • The intent to use resources responsibly; • Tendency to opt for sustainable options, sometimes despite the cost; • Seeking knowledge of environmentally harmful practices.
Different Themes	Pre-Engagement Student Designers	Post-Engagement Student Designers
3. Concerns about the future of the planet	Concerns about the future as a result of human activities. Sub-themes: <ul style="list-style-type: none"> • Sustaining natural capital for future generations; • Stopping promulgation of consumerist attitudes in the media. 	
4. Seeking in-depth knowledge of environmental issues		Seeking in-depth and ongoing knowledge of environmental issues. Sub-themes: <ul style="list-style-type: none"> • Define sustainable knowledge needs; • New and emerging job opportunities; • Knowledge of conserving living patterns.



Figure 6. The LC after the renovation.



Figure 7. A new network of recreational paths at Ōtātara (left) and a group of volunteers planting new areas (right).

preserving limited resources, reducing waste, and preventing air, water, and soil pollution.

The LC now has a role as a learning space integrated with its natural surroundings that provides a venue for teaching and professional development for those wishing to use nature as a context for student learning. The interior space is also utilised for the teaching of both primary and mental health treatment programmes (Figure 8).

5. Conclusions

This article discusses how the LC project was set up and the reflective process of establishing a ZEB as part of a framework for renovating the building to become a

demonstration project for sustainable construction and a facility that would inspire responsible environmental behaviour. It describes the involvement of a group of students at EIT and their creation of a brief and design concepts for the building. This provided the opportunity for an investigation into whether this engagement influenced their environmental values.

The research used the process of designing and renovating a sustainable project to investigate the values held by those who did elect to become involved in the process. As might be expected people chose to be involved with the LC project for various reasons. However, pre-engagement studies showed that those who became involved tended to have at least a heightened awareness of sustainability issues and, for some,



Figure 8. Utilising the LC as a teaching space: A primary health teaching session (left) and improving mental health in action (right).

values and attitudes that reflected this interest. The latter included a willingness to adopt sustainable practices, appreciate ecological and organic living methods, and support the responsible use of natural resources. As student designers, the participating group demonstrated high levels of organisation and responsibility in carrying out the requirements of the brief. They were emotionally attached to the project and tackled the work with confidence. The participants were also open to new experiences, reflected in the topics discussed in the studio, and were creative in their design proposals. As a result, the student designers seem to have been affected by their experience of and knowledge gained through the LC project design by being quick in taking steps towards acquiring and adopting environmental values with passion. The students took ownership of the project and worked enthusiastically with developing awareness of sustainable building methods and concern for ecological living practices. Post engagement interviews demonstrated an evolving responsible environmental behaviour in valuing ecological and organic living practices (Kollmuss & Agyeman, 2002), stressing the sensible use of energy and other natural resources, and often opting for sustainable choices despite the cost.

Individually, students also appeared to have developed skills for investigating and evaluating environmental options, particularly living and building energy options, as well as using new media platforms for communication. Consequent to their involvement in the design of the LC concept, student designers demonstrated the intention to take sustainable actions. Armed with environmental knowledge, the students were motivated to pursue ecologically inspired initiatives, both at a personal level and in empowering others to adopt sustainable actions.

Outside the studio, the student group seemed to be motivated to advance and support environmental action in their community. The group was particularly keen on educating others and furthering their environmental knowledge about ecological practices, sustainable living, and healthy diets, and encouraging those around them to make pro-environmental decisions. The student designers were also keen to influence others and the wider community to adopt responsible and sustainable living practices. They considered environmental education paramount in advancing sustainable values, either through schools or via the media, hence demonstrating environmental activism attitudes (Kaiser et al., 1999).

The project's context of converting a near-derelict existing building to being sustainable was also important in inspiring others apart from the student designers to do something tangible and beneficial for both sustainability and the local community. As the project progressed more people were drawn in, initially to help in its construction and since its completion to make both the building and the landscape a place for teaching about sustainability and the environment. It seems that having a sustainable building has inspired the extension of sustainability values into the landscape. This suggests the

importance of tangible examples of sustainability in raising interest and awareness of the issues.

The currently operating Ōtātara Outdoor Learning Centre, including the LC, emphasises the multiple layers of social and cultural history that connect with the past together with the ecological and sustainability dimensions that look into the future (Stephenson, 2008). Staff and students who come in contact with it have attached different meanings and levels of importance and engagement with these common entities based on their own individual framing of them. According to the project manager, undertaking learning experiences at Ōtātara has created a sense of meaningful ownership and belonging, as both staff and students transform themselves through guardianship and the physical and emotional care of the place. The renovation of the LC and the development of the Ōtātara Outdoor Learning Centre associated with it are valued by many, however, obviously, those who did not participate in the project could still have the same degree of passion towards sustainability. Additionally, and as an effect of this project, the significance of Ōtātara to EIT and to its employees has increased. Ongoing respect and acknowledgement for this remarkable place are critical because this project on this site has made and continues to make a significant contribution to shaping the attitudes of individuals and the community.

Finally, it is important to note that motivation to engage in a sustainable building project increased after a threshold of engagement was reached. As the project works gained momentum and became psychologically closer (i.e., physically present, with its completion and benefits temporally closer and more certain), it became more acceptable for people to be involved in it. At the early stages of the build, the reality of the renovated building was temporally distant and uncertain resulting in passivity or non-action. The renovation process then made the project visually present, certain, and temporally near to those involved, reducing psychological distance, promoting active action, and increasing voluntary engagement. This shows the importance of all visible actions towards sustainability since these may well inspire others to act.

Conflict of Interests

The authors declare no conflict of interests.

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