SUSTAINABLE URBANISM AND COHOUSING IN AOTEAROA NEW ZEALAND

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A thesis submitted in partial fulfilment of the degree of Master of Planning, University of Otago, Dunedin, New Zealand

November 2018
The Building Research Association of New Zealand (BRANZ) supported this research. It is with this generous support the thesis could be completed.
Abstract

This research investigates whether the principles and practices of cohousing can be successful in Aotearoa New Zealand, and if the model provides a sustainable alternative to standard housing. Previous research recognises that there are many social, environmental and economic issues associated with the current housing stock in Aotearoa New Zealand. Examples include how residents interact and issues of connectedness, the quality of the buildings and affordability for all demographics. Overseas, the adoption of cohousing has increased as a form of urban housing that addresses these challenges. This study endeavours to understand how cohousing functions in Aotearoa New Zealand, and if there are challenges present in current planning practices that limit the materialisation of communities. The purpose of this research is to discover aspects of sustainable living within existing and developing cohousing examples and to explore how the existing planning system operates to enable or constrain their development. Two case studies have been selected for this study. The first is Earthsong Eco-Neighbourhood (referred to as Earthsong) in Ranui, Auckland. This cohousing development was established in the early 2000s and therefore provides the opportunity to understand the lived experience of residents. While the second case study is the High Street Cohousing Project in Dunedin, which is still awaiting construction. This study will provide value in understanding the choices of stakeholders and also provide a contrast to Auckland.

The findings suggest residents at the Earthsong Eco-Neighbourhood feel cohousing provides them with a lifestyle which is environmentally-friendly and enables them to interact with their neighbours with ease. The residents of the High Street Cohousing Project were able to express the challenges they have overcome and the significant design choices that contribute to the success of cohousing communities. Kathryn McCamant and Charles Durrett developed the cohousing model, after they had positive experiences in Denmark, this study has found that cohousing can be adapted to a range of contexts and Aotearoa New Zealand is no exception.
Acknowledgements

I would like to thank the following people for all their support and kindness in the preparation and completion of my thesis...

Firstly, I would to extend my gratitude to my supervisor Sophie Bond, thank you for your endless advice and patience in preparing my thesis. Thank you for your continued support over my years of study it is greatly appreciated.

To my parents, Pam and David, thank you for all of the support you have provided me with over the years is so crucial in enabling me to complete my Masters and all my other achievements! Thank you for your love, advice and encouragement. Also to my big sister, Aleisha, thanks for constantly being my cheerleader, for your little chats and laughs when it was needed.

To my friends, particularly for my flatmates, who were willing to make me laugh on the tough days. But the biggest thanks to the Master of Planning friends I have made over the last two years. Thank you for being the best bunch to help get me through! I’ll treasure the memories made with you all.

I would also like to extend a big thank you to all of the participants who were willing to share their experiences with cohousing in Aotearoa New Zealand. Your time and knowledge was greatly valued.

And thank you to BRANZ for supporting this thesis and enabling to produce this thesis. I appreciate your shared interest in the research of cohousing as a more common housing model in Aotearoa New Zealand.
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Society is constantly changing and this is evident in the housing choices people make. Cohousing and eco-villages have become a modern way of enhancing sustainability and addressing issues of urban sprawl and the increase in housing prices. Kathryn McCamant and Charles Durrett were two American architects that are credited for the origins of cohousing (Williams, 2005). Cohousing is a style of living that provides residents with the opportunity to be part of a community, have shared responsibilities and make wise decisions about their housing choice. The model has been adapted from the Danish bofolleskabers style of living, which translates to “living communities,” and the intention was to create accommodation that operates as a community rather than an individual household (McCamant and Durett, 1994). The purpose of this thesis is to determine if cohousing would be a suitable alternative to conventional housing arrangements in Aotearoa New Zealand. Cohousing has become increasingly popular as people view it as a form of ‘utopia’ or preferable to typical urban areas (Sargisson, 2012). This new form of tenure is a combination of private and collective ownership and enables residents to have the affordability of a community-shared complex, with the benefits of individual proprietorship (Sargisson, 2012). The residents in cohousing projects typically have common values and intentions to create a harmonious space to accommodate all of the residents in the complex (Holtzman, 2014). Modern times have seen people want to shape unique lifestyles, and technology can enable them to do so, however these uncommon developments also face challenges (Holtzman, 2014).

This chapter will provide an introduction into the conception of cohousing and how it can more easily adopted in Aotearoa New Zealand. It is crucial to understand the current issues of housing, in order to determine ifcohousing has the potential to address the contentions. This study will explore the sustainable attributes of cohousing communities, and how the residents within experience different dimensions of sustainability. The following section will identify key aspects of the study and present an explanation of the sustainability issues in Aotearoa New Zealand.
and the guiding principles of cohousing. The chapter will conclude by providing an outline of the structure of the thesis.

1.1.1 Issues of Sustainability in New Zealand

Sustainability is often associated with ‘sustainable development,’ which came into common use in the early 1990s (Toman, 2006). In 1987, The World Commission on the Environment and Development Report (or the Brundtland Report) defined sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” (Tosics, 2004, p.1). Therefore, a significant component of sustainability is protecting resources for the sake of the future (Toman, 2006). There has been a change in perspectives on sustainability since the 1990s, the focus has shifted to have a greater awareness of development in the environment (Gibson, 2006). It has become important in recent years to make more ‘sustainable’ choices as it has become evident that the current condition of the environment is at risk (Howarth, 1997). The current rate of development is not sustainable and it has been recognised there is a need to change the behaviour of people and their lifestyles, particularly in regard to housing choices (Johnson, 2001).

While sustainability has a range of meanings and is often interpreted in a range of ways, for this thesis it will be reviewed in the sense of the built environment and the social relations within residential communities. Winston and Pareja Eastaway (2008) recognise healthy homes are vital for contributing to a greater quality of life, and have a significant impact on sustainable development, as it can reduce the impact on the environment and improve the well-being of residents. The quality of homes can also have an economic impact for the residents; developing homes that are energy efficient and well insulated can greatly reduce the running costs of a household (Hill and Bowen, 1997). Winston and Pareja Eastaway (2008) recognise that the ‘best practice’ characteristics of sustainable housing include the following qualities, “sustainable land-use planning; resisting scattered settlements; housing close to employment and public transport; higher residential densities; sustainable construction; high standard of energy efficiency in use of dwellings; housing availability, affordability and quality; access to green space, and a high quality residential environment,” (Winston and Pareja Eastaway, 2008, p. 213). Cohousing has the potential to address most, if
not all of these issues. For this research, sustainability will be treated as making wise
decisions that have led to social and physical practices that have a minimal
detrimental effect on the environment and those that occupy it.

1.1.2 The potential for cohousing in Aotearoa New Zealand

Cohousing offers members a collaborative lifestyle that often enables them to arrange
shared childcare services, common dinners and other social activities. Building
positive relationships within the communities permits residents to cooperate and
address the vital needs of the complexes. Typically, cohousing communities have
self-sufficient private dwellings and also contain substantial shared facilities. These
communal facilities usually contain a large kitchen, halls or dining rooms, and play
spaces, office spaces and laundry facilities with additional services to precisely cater
for the needs of particular cohousing developments (McCamant and Durrett, 2011).
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which in turn evokes a sense of belonging and feelings of safety (McCamant and
Durrett, 2011). The six core principles of cohousing have been recognised as being:

1. **Participatory Processes:** Members are engaged in organising and participating
   in the planning and design process for the cohousing development.

2. **Intentional Neighbourhood Design:** The physical environment and design of
   the communities contributes to the feelings of belonging, and while preserving
   privacy for residents, the design encourages spontaneous social contact.

3. **Common Facilities:** All households on site have self-sufficient units,
   additionally they also have access to the common areas and facilities, which
   are unique to cohousing neighbourhoods and supplement the private homes
   and encourage further interaction among residents.

4. **Resident Management:** The residents are responsible for managing the
development and decision-making processes rely on all members being
included and engaging in the participatory processes.
5. **Non-hierarchical Structure and Decision-Making:** Within cohousing communities there may be leadership roles, but everyone must be involved in decision-making processes. No person may dominate or make other members feel disempowered.

6. **Separate Income Sources:** All households have their own income and finances and the community is not a source of income. Common costs are often covered by the annual membership of the members.

The principles are thought to have contributed to the success of cohousing communities as residents feel engaged with all aspects of their living circumstances and many groups have a secondary ambition of reducing their impact on the environment (Williams, 2008). Cohousing communities have become more prominent in Europe, the United States, Canada and Australia (Fenster, 1999), however there are currently only two examples in Aotearoa New Zealand.

Aotearoa New Zealand cities currently face issues of high housing prices within inner cities, urban sprawl, and feelings of social isolation (Holt-Lunstad et al., 2015); cohousing has the potential to address these issues. It is evident that the current housing stock in Aotearoa New Zealand is inadequate for the future development of the country (Sargisson, 2012). As the population continues to increase, and housing quality continues to decline, there is a greater need to encourage developing a housing model that will adequately meet the needs of residents and improve their quality of life (Rydin et al., 2012). This research will provide insight into the current issues associated with housing in Aotearoa New Zealand and then explore how the sustainability of urban neighbourhoods can be enhanced through cohousing. In order to do so, the two examples of cohousing in New Zealand are used as case studies for this research. The communities are described in the following The Case Studies

**1.2 The Case Studies**

The first case study is the Earthsong Eco-Neighbourhood based in Ranui, Auckland. This community is the only existing cohousing development in Aotearoa New Zealand and was completed in 2008. The initial conversations for this research started in the late 1990s, residents felt their needs were not being met in conventional neighbourhoods and they also wanted to reduce their ecological footprint. The group
felt cohousing had the capacity to address their social, environmental and economic necessities. There are 32 units on site and up to 70 residents, this was deemed to be large enough to encourage diversity, but small enough for residents to create strong bonds among one another. The Earthsong residents have a secondary aspiration of permaculture; this determined the design of the site, as there was a need to be conscious of agriculture and the productive ecosystems in nature (Earthsong, n.d.). As well as the intentional design, there is also a small orchard on the site with edible landscaping, native bush and water systems to adequately drain the site (Earthsong, n.d.).

The second case study is the High Street Cohousing Project in Mornington, Dunedin. Although this community is not yet constructed, the site will have 22 private homes and a large common building and interactive outdoor spaces. This project is particularly interesting because the houses have been built to a Passive House Standard and therefore will be ‘carbon neutral’ and warmer and drier than regular new houses (McLeod et al., 2013). A member of Earthsong conducted public meetings in Dunedin in 2013 and that is when the initial group of the High Street project formed. The future residents of the High Street project also wanted to improve their sense of community, have consideration for the environmental impact of current housing models and reduce the cost of living.

The two case studies complement one another and address different aspects of the research. Earthsong was vital as the participants were able to share their lived experiences of a cohousing community and the value of being Aotearoa New Zealand’s first cohousing community. In contrast, High Street participants were able to share the enablers and constraints of getting a cohousing project initiated in Aotearoa New Zealand, with the additional benefit of having learnt from Earthsong’s practices.

1.3 Problem Statement

Housing quality in Aotearoa New Zealand is currently an issue that needs to be addressed (Howden-Chapman et al., 2012). There is also a loss in sense of community, which has a detrimental effect on the social welfare of residents in neighbourhoods. It is important to understand what features enable and disable the
materialisation of these housing complexes. This research will determine if current policies are restricting the possibility of establishing unique, sustainable housing approaches. Currently there has been a positive portrayal of cohousing in the media and through literature, however this research will endeavour to understand shortfalls the housing type has and any critiques that are apparent.

### 1.4 Research Aim and Questions

The aim of this research is to investigate the how cohousing communities can enable more sustainable practice in Aotearoa New Zealand and have the potential to be a satisfactory alternative to conventional housing. To address this aim, leading the following research questions have been devised:

1. To what extent is cohousing environmentally, socially and economically sustainable?
2. How do residents experience these dimensions of sustainability in cohousing developments?
3. What enables and constrains the development of cohousing communities in Aotearoa New Zealand?
4. How can cohousing be facilitated in Aotearoa New Zealand?

A realist approach has been adopted for this research and the core issues with the New Zealand housing stock will be acknowledge in order to understand how cohousing could address these challenges. Interviews have been conducted with residents, architects, planning professionals and other industry experts to ensure a range of opinions and experiences are investigated for the research.

### 1.5 Rationale and Scope for research

The potential for cohousing developments is increasing in Aotearoa New Zealand, as people are looking for alternative housing models because conventional neighbourhoods are no longer providing them with a high level of satisfaction (Gruber and Shelton, 1987). The rationale for this project is based on the potential to increase the sustainability of housing arrangements and address the current housing crisis through these practices, but existing policy and planning regimes and infrastructural requirements may hinder their development. It is likely that such
developments require developers to think ‘beyond’ the building code in order to gain benefits that achieve greater standards in sustainability. In addition, there is limited information on how residents perceive living in such communities. This research provides an insight into the advantages and disadvantages of cohousing and the ability it has to address the negative experiences of conventional housing models in Aotearoa New Zealand. This research intends to suggest how the cohousing could provide a solution and improve the conditions of homes in the country, while understanding what has motivated people to engage with the alternative housing model. This research will focus on two cohousing developments that have differences and similarities to provide a broad picture of cohousing developments in Aotearoa New Zealand. These case studies will be utilised to illustrate the benefits and challenges of cohousing developments in the New Zealand context.

1.6 Overview and Study Structure

This chapter has established the context and purpose of the thesis. The following chapter provides a literature review that situates the research in international literature and will help determine the benefits and disadvantages to cohousing are and how they may relate to Aotearoa New Zealand. This chapter will aid in answering the first research question, which enquires into how environmentally, socially and economically sustainable cohousing is. Chapter Three will discuss the methodological approach of the research and explain the methods selected. Following this, Chapter Four provides an insight into how the participants perceive cohousing to be a sustainable practice. Within this chapter the second research question is addressed in regard to how residents experience the dimensions of sustainability. Chapter Five investigates residents’ perspectives of cohousing and identifies the enablers and constraints of cohousing in Aotearoa New Zealand. The final chapter, Chapter Six, assesses the fourth research question regarding if cohousing can be better facilitated in Aotearoa New Zealand. Chapter Six also concludes the thesis and proposes recommendations and an argument for cohousing being facilitated in Aotearoa New Zealand as an alternative housing model.
2 Literature Review

The purpose of this chapter is to situate the current study within existing literature on sustainable urbanism and cohousing. As noted in Chapter One, Kathryn McCamant and Charles Durrett first adopted ‘cohousing’ in the early 1980s. They are American architects who became interested in cohousing after travelling to Denmark and engaging with bofolleskabers, which translates to “living communities,” (McCamant and Durrett, 2011). After witnessing the success of these communities, they became developing similar neighbourhoods in America. The communities have been largely successful in the American context, and have provided a solution to many of the everyday challenges faced by individual households (Garciano, 2011). Consequently, there is the potential for cohousing neighbourhoods to also operate advantageously in Aotearoa New Zealand. Understanding the current housing and sustainability issues occurring in conventional homes in Aotearoa New Zealand will provide the basis for the comparison of cohousing. The chapter will first discuss the environmental, social and economic sustainability challenges, then will proceed to establish how these challenges are present in the current housing stock in Aotearoa New Zealand and finally cohousing as a practice will be examined, highlighting current debates and critiques to gain an understanding of how it poses to be an alternative to conventional suburban housing arrangements.

2.1 Sustainability and Housing in Aotearoa New Zealand

Sustainability is a broad all encompassing term (Tosics, 2004) As such as it is relatively ambiguous and is interpreted differently by individuals and groups around the globe (Gibson, 2006). In 1987, the Brundtland Report (World Commission on the Environment and Development Report) described ‘sustainable development’ as development that achieves current needs without compromising those of future generations (Tosics, 2004). Overtime, the concept of sustainability has altered to have a greater focus on environmental degradation and also to encourage the general population to make more ‘sustainable’ decisions in their daily life (Toman, 2006). Winston and Pareja Eastaway (2008) recognised that sustainability extends to housing
because it has an effect on the physical and mental health of residents. However, they argue that there is currently inadequate attention paid to improving the social and environmental sustainability of residential facilities. Several authors believe there is a need for adequate policies to be developed to maintain sustainable housing practices, as policies and rules provide the guidelines for housing standards (Gibson, 2006; Tosics, 2004; Winston and Pareja Eastaway, 2008). This section will identify the current challenges that relate to housing in the context of environmental, social and economic sustainability, determining how cohousing can contribute to more sustainable housing practices and give effect to sustainable urbanism.

2.1.1 Environmental Sustainability

There are a range of environmental issues associated with housing and the standard suburban neighbourhoods. In the previous section on the social benefits on the high quality of buildings it was evident that having greater insulation and efficient heating systems also has environmental benefits (Keall et al., 2010). Chiu (2004) speculates sustainable development became a ‘buzzword’ in the 1980s and has become more prevalent over time, but recognises there are several forms of sustainability namely; social sustainability, economic sustainability, ecological sustainability and cultural sustainability (Chiu, 2004). There is also a need to address the physical construction process and the choices being made in regard to what materials are used and the environmental cost of current building practice. The location and density of housing also has repercussions that need to be understood. This section will consider the impacts of urban sprawl, current construction practices and the concept of New Urbanism. This will provide a context for the current unsustainable issues associated with conventional housing.

Environmental Implications of Urban Sprawl

Johnson (2001) acknowledges there is no clear description of ‘urban sprawl,’ and therefore there are challenges in determining if the effects are desirable or undesirable, but it is clear there are environmental impacts. One definition adapted at the turn of the century by the US Department of Housing and Urban Development is:

A particular type of suburban development characterized by very low-density settlements, both residential and non-residential; dominance of movement by
use of private automobiles, unlimited outward expansion of new subdivisions and leap-frog development of these subdivisions; and segregation of land uses by activity (USHUD, 1999, p. 33, cited in Johnson, 2001, p. 718).

This definition is significant because there is evidence that there are many effects of urban sprawl. Ewing et al. (2008) suggests there is evidence of a link between low physical activity and poor health outcomes, and urban form. Urban sprawl means people often have to make greater use of private vehicles or other forms of automobile transport, and are less likely to walk or use alternate active modes of transport (Ewing et al., 2008; Johnson, 2001). This has a detrimental effect on the health of urban populations and physical inactivity is linked with an increased risk of many diseases and conditions, including: obesity; hypertension, non-insulin dependent diabetes; coronary heart disease and other severe conditions (Ewing et al., 2008). This is because people no longer have the same capability to walk or cycle between destinations as the urban form covers a greater expanse of land and for a range of reasons people are choosing to live further from the city centre, either for the lifestyle of outer suburbs or for affordability reasons (Johnson, 2001). There is a need to plan urban form to prevent these issues and to encourage healthier lifestyles (Ewing et al., 2008).

Research has also been conducted to understand the political and financial impacts of suburban sprawl (Johnson, 2001). The cost of travel increases when people live further from where they work or study, as well as greater environmental costs. Other issues associated with urban sprawl are reduced regional open space, greater air pollution, higher energy consumption, decreased aesthetic appeal of landscape, and reduced diversity of species and ecosystem fragmentation (Johnson, 2001). Another complexity of urban sprawl is complication with ‘environmental justice,’ and problems with poorer populations and minority communities, as disproportionate urban investment occurs and more hazardous land uses (Johnson, 2001). The land that is occupied by higher socioeconomic groups is often more valuable and a more stable or a better quality. While, lower socioeconomic groups cannot afford to reside in desirable areas and so often live in rundown areas or neighbourhoods that are difficult to navigate and are less maintained (Johnson, 2001). In these areas there is often low quality buildings, this impact will be discussed in the following section.
The Environmental Impact of the Construction Industry

The methods of construction and building materials used in establishing new communities can have an effect on the environmental sustainability. Zolfagharian et al. (2012) stated there is a need to better inform those involved in construction of the environmental degradation caused by the building industry. Improving the knowledge and education regarding construction has the potential to encourage more sustainable practices (Zolfagharian et al., 2012). Lee et al. (2010) stresses there is a need to address the issues with the construction industry, as currently it is too profit-orientated and there are irreversible effects on the environment through the activities of building, which have the potential to alter ecological integrity. The construction industry is active worldwide and that is one of the reasons it is pivotal to address environmental concerns (Ortiz et al., 2009). Ortiz et al. (2009) discussed the life cycle assessment (LCA) and its ability to inform the lifespan of buildings and their materials, the authors described the LCA as, “A methodology for evaluating the environmental load of processes and products (goods and services) during their life cycle from cradle to grave,” (Ortiz et al., 2009, p. 29). Understanding the source, the environmental effect and the long-term repercussions of building materials will aid future decisions when constructing new-builds.

Hill and Bowen (1997) believe that to make changes to the building industry, there is a need for planning officials to instigate processes that will support more sustainable practices. This would entail developing a system to manage all construction activities and assess the environmental effects (Hill and Bowen, 1997). Hill and Bowen (1997) identified four key attributes of sustainable construction; these include social, economic, biophysical and technical concepts. These attributes have been used to create a framework for executing sustainable development, and also require adequate environmental assessment in the planning and design processes (Hill and Bowen, 1997). Evidently, when developing new-builds, industry members and residents need to be aware of options that are available to them and incorporate these into their building. It is evident that there is a need to contemplate construction processes when attempting to reduce the impact on the environment. There have been social doctrines practiced to attempt to reduce this impact, while considering the social and economic benefits that can come from smart designs. The next section will assess New Urbanism and how it seeks to address sustainability.
New Urbanism

New Urbanism is a doctrine that evolved to encourage urban design with the intent of improving sustainability and the sense of community. Talen (1999) states that new urbanism does this by, “integrating private residential space with surrounding public space; and careful design and placement of public space,” (Talen, 1999, p. 1363). Design elements are carefully selected to be suited to the unique neighbourhoods, and advocates design-based strategies incorporating traditional urban forms to help prevent suburban sprawl and inner city decline (Bohl, 2000). New Urbanism as a practice seeks to create place identity, sense of community and environmental sustainability (Day, 2003). The goals of New Urbanism are as follows, fostering mixed uses (commercial, civic, residential, public spaces, etc.), to provide jobs near to residences providing residents’ with the opportunity to walk or cycle, and reduce auto dependence, while maintaining a unique identity for an area (Day, 2003). Many of these aspirations will improve the sustainability of a neighbourhood. Thompson-Fawcett (2003) discusses the European influence on the United States development of New Urbanism, the author acknowledged the significance of Andreas Duany and Léon Krier on the progression of New Urbanism. Krier provided a critique of the industrial rationality within cities, and suggested a city should be limited in size and should blend all urban activities (Thompson-Fawcett, 2003). These practices can be developed into new models of living to lives in urban settings.

The effects of urban sprawl have changed the nature of cities (Dixon and Dupuis, 2003). People have continued to build detached houses with backyards and relatively large property sites, but Dixon and Dupuis (2003) propose encouraging medium density could provide more opportunities for housing. Attached housing or apartments enable people to live in areas that are closer to centre cities and also reduce land footprint in these spaces (Dixon and Dupuis, 2003). Dixon and Dupuis (2003) provide evidence of urban intensification in Auckland in relation to New Urbanism. Auckland faces a lot of issues in regard to housing; there are changes with pricing, quality and social implications. Developing a solution to urban sprawl that is more sustainable will be beneficial for all spheres; New Urbanism suggests mechanisms that will aid planners, but also environmentalists and economists (Duany and Plater-Zyberk, 1992). Duany and Talen (2002) perceive New Urbanism as a potential solution because:
Both groups [planners and environmentalists] are now intimately involved in exposing the liabilities of current urban growth patterns. Environmentalists may speak about the need to reduce the ecological footprints of cities (Beatley & Manning, 1997), whereas economists speak in terms of rectifying externalities and social costs (Persky & Wiewel, 2000), but the objectives are fundamentally the same. (Duany and Talen, 2002, p. 245).

This reiterates the interconnected nature of the aspects of sustainability. Bohl (2000) indicates that adopting the ideals of New Urbanism has the potential to revitalise an area by drawing in residents, retail and commercial spaces, while maintaining modest scale neighbourhoods. This has advantages for the physical form but also the social and economic aspects of society (Bohl, 2000). When environmental sustainability is taken into consideration there are many beneficial affects for the social landscape. The next section will capture these benefits and the socially unsustainable effects of conventional housing.

2.1.2 Social Sustainability

Urban form and housing can contribute to the success of a community and in modern times there is a need to address issues of isolation and loneliness in conventional neighbourhoods (Burton, 2000). Bramley and Power (2009) recognise current debates of sustainable development go beyond considering simply environmental concerns, but also stress the need to contemplate social equity. Initially, the concept of sustainability came into existence from environmental discourse, and concern for the opportunities for future generations (Bramley and Power, 2009). However, it is now evident that there is a need to incorporate social and economic dimensions of society into planning and policy practices to create urban forms that are both socially sustainable and functional (Bramley and Power, 2009).

The year 2008 marked the first time half of the world’s population resided in urban environments, and since then the proportion has only continued to increase (Dempsey et al., 2009). It is more important than ever to address social issues that are arising in urban cities as a consequence of urban form. Research into social sustainability in the built environment is very limited despite the definition of sustainability having an anthropocentric focus (Dempsey et al., 2009). The Office of the Deputy Prime
Minister (ODPM), a UK Government department established the definition of sustainable communities, which is as follows:

Sustainable communities are here defined as ‘places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all. (ODPM, 2006, p. 12).

The definition above provides insight for this research and provides a normative framework that portrays an ideal sustainable urban development. The ODPM (2006) recognises the need to plan for the social sphere, and create environments where people want to live and occupy. All of these contribute to a cohesive society, and one aspect that is not considered is the sustainability of the built environment (Tosics, 2004). Planning and policy can be utilised to improve social sustainability through the regulation of the quality of housing (Rydin et al., 2012). This will be discussed in Section 4.1.3. This part of the chapter will consider the need for diversity in neighbourhoods, the risks of isolation, the importance of citizen engagement in decision-making, and the overall quality of life for residents.

**Diversity within Neighbourhoods and Vulnerable Groups**

Encouraging diversity within neighbourhoods enhances the experiences for all residents while creating a unique setting with people who can utilise their skills and knowledge to benefit the wider community (Saeidi and Oktay, 2012). Talen (2006) surmises there is a need for planners to create physical environments that foster social diversity, and investigate features that create a variation among populations based on age, gender, ethnicity and sexuality (Talen, 2006). When people feel connected to an environment they will be more likely to engage with that space, and having a diversification of groups in a neighbourhood reduces discomfort towards another group. For this research, it will vital to understand if the issues are prevalent in cohousing communities or if they have overcome barriers of segregation or disempowerment (Hall et al., 2015). Furthermore, it is evident that having a diverse population enables people to gain tolerance and knowledge of different values, ideals and beliefs (Hall et al., 2015). Diversity is a progressive aspect to a society and should be encouraged by all means.
In regard to diversity, it is also good to cater for the needs of the most vulnerable groups in society. This often means having spaces that are safe and accessible for children and the elderly (Morrow and Phillips, 1999). Families’ experiences in urban environments are determined by social and physical elements governed by political forces (Blakely, 1994). Parents can have a perception of their children’s safety, and it is important to address concerns of safety without compromising the experience of the child in a community (Blakely, 1994). This can be done by creating open spaces that are away from eminent traffic and can be easily viewed by a supervising adult (Delvin, 1980), but neighbourhoods need to be designed in a way that provides independence for children (Davis and Jones, 1996). Similarly, designing spaces for the elderly enables them to maintain their independence, but it is good to encourage social interaction with nearby residents to create support networks (Devlin, 1980). The form of houses can influence the lived experience of residents. For example, high-rise buildings and similar structures can cause challenges for older people who are less physically-abled (Devlin, 1980). It has become apparent that enabling the elderly to engage with a mix of ages has been beneficial for all age groups (Cacippo and Hawkley, 2003). Due to this, there is a need to design urban environments and homes that are suitable for a range of demographics and to foster social interaction. Kleinhaus (2004) suggests that housing diversification enables a greater variation of the populace in an area. Furthermore, reference is made to the concept of pepper potting, whereby there is a mix of tenure and some houses are owner-occupied, while others are rental. This promotes the amalgamation of socioeconomic groups in a community (Kleinhaus, 2004).

The next section will review the risks of isolation within neighbourhoods and the importance of fostering relationships.

**The Risk of Isolation and Need for Relationships in Society**

With the fast pace of modern life many people or households become isolated from their surrounding neighbourhood. The risks and causes of isolation are not fully understood. Cacioppo and Hawkley (2003) indicate that isolation is a contributing factor for morbidity and mortality and is prominent in the elderly, the poor, and minorities and there is a need to foster interaction and preventing loneliness within societies, this can reduce the stress levels of individuals and even affect their physical health (Cacioppo and Hawkley, 2003). Policy and intervention mechanisms can be instigated to improve social connectedness by creating environments that encourage a
range of groups to interact (Umbro, 2016). Spaces that are lively and pleasant and address the needs of people are often positive places to encourage groups to congregate (Holt-Lunstad et al., 2015). Social connectedness has been found to be a critical contributor to the survival of research subjects in studies undertaken to understand the effects of loneliness (Holt-Lunstad et al., 2015). Holt-Lunstad et al. (2015) stresses the importance of creating relationships and support networks in a community to improve the quality of life of all residents. As well as creating positive relationships it is also vital to be involved with the development of progression of a lived environment. In many housing models, the residents’ have little input into the design of their house or community, the impact this has will be discussed.

**Citizen Engagement with Decision-making Processes**

While planning authorities often endeavour to engage citizens with their community design, not all groups participate, which means they can feel disempowered. Burby (2003) was interested to see if broader stakeholder groups involvement improved plans and policies and enabled people to feel more engaged in the development of their community. From the research conducted, greater involvement of stakeholders and citizen involvement was strongly supported, and found, “Getting often-neglected stakeholders into the planning process provides planners with an important tool for increasing their political effectiveness without being overtly political,” (Burby, 2003, p. 44). Arnstein (1969) developed the ladder of participation for a model for decision-making, and each of the rungs represents a level of engagement, Figure 1 below is the visual image developed to portray these levels (Arnstein, 1969). Although the ladder was not developed precisely for housing or social sustainability purposes, it does contribute to both as it enables residents to be involved with vital processes that will affect their lives.
There are eight rungs on Arnstein’s ladder, lowest to highest they are as follows; manipulation, therapy, which are nonparticipation, informing, consultation and placation, which are degrees of tokenism, and finally partnership, delegated power and citizen control, which are degrees of citizen power (Arnstein, 1969). It is important to recognise that over time there have been an array of interpretations and adaptations to the original principles. The purpose of the ladder was to portray the significance of engaging the public in decision-making processes and ensuring that the level of participation was valuable (Arnstein, 1969). In the context of social sustainability, this means enabling residents to have a say in their living conditions and urban form. This will benefit the public’s perception of their environment and improve their quality of life.

**Overall Well-Being and Quality of Life**

An unsustainable neighbourhood does not cater for the needs of those that occupy it, and there is a need to address these issues. If a community is diverse, inclusive and empowers the residents it can improve the quality of the lived experience (Pacione, 2003). Pacione (2003) acknowledges there is a lot of speculation regarding the phrase ‘quality of life,’ but realises most interpretations understand there is a close connect
with housing conditions, environmental condition and connection to people. The urban liveability of a neighbourhood affects the quality of life for those that reside there, having clean air and water, and good quality housing contributes but the most important is having a positive relationship with other people (Pacione, 2003). Gruber and Shelton (1987) found there was a strong correlation between people who have a strong relationship with their neighbours and an overall perception of residential satisfaction. To understand residential satisfaction comparisons were made between conventional homes, mobile homes and apartments (Gruber and Shelton, 1987). While the intention was to remove residential satisfaction from housing satisfaction, the authors recognise that this is difficult to achieve (Gruber and Shelton, 1987). From the study they found neighbourhood characteristics and attributes were related to respondents’ overall satisfaction than with their homes (Gruber and Shelton, 1987). Following from this, Lovejoy et al. (2010) stated social relations are affected by neighbourhood design, which in turn reflects resident satisfaction (Lovejoy et al., 2010). Hörnquist (1982) established a diagram to incorporate the factors contributing to a person’s quality of life and overall satisfaction, this can be seen in Figure 2. The figure portrays the need to satisfy physical, psychological, and social, activity, material and structural aspects in order to achieve a good quality of life (Hörnquist, 1982). While Arnstein and Hörnquist are both relatively outdated sources, their principles and are ideas still apply to modern life. For this research they inform how the societal aspects of cohousing improve the lives of residents and enable them to be engage with decision-making processes.
When considering how these aspects affect the housing conditions in Aotearoa New Zealand and the challenges that need addressing this will be a helpful aid. There is the potential for cohousing to address these aspects of the residents’ lives. Aforementioned, sustainability is comprised of a range of aspects, a review has been undertaken for social and environmental impacts and the following section will establish the current economic barriers of housing quality in Aotearoa New Zealand.

2.1.3 Economic Sustainability

Economic outcomes and complications are also present in the current housing market. There are challenges in regard to housing prices, maintenance costs and general living expenses (Stone, 2006). All of these issues are causing it to be harder to invest in high quality homes and some of the population are forced to settle for low calibre houses, which are detrimental to their mental or physical health. The main economic challenge is affordability in the housing market. There are two aspects to affordability, in the sense of affordability as a function of income and secondly as a function of construction cost; these are reviewed below.

Affordability

Affordability is complex to define, but affects a household’s ability to afford adequate housing, as well as compromising their ability to make environmentally or socially
sustainable decisions (Stone, 2006). This section will view affordability as a function of income and affordability as a function of construction cost.

The main economic challenge is affordability and buying into expensive housing markets. Hulchanski (1995) stresses the need to define the term ‘affordability’ and the limitations it evokes for residents and homebuyers. Affordability is being utilised in literature as a way of recognising housing challenges in the global context (Hulchanski, 1995). Research suggests a household has problems with housing affordability when a large percentage of its income is used to find “adequate and appropriate” housing (Hulchanski, 1995). Stone (2010) supports this claim and argues that affordability is a clear challenge when, “the cost of its actual or potential housing” are constrained by the income of a household (Stone, 2006, p. 151). It is important to understand affordability is not a characteristic of housing, but instead it is a relationship between housing and people (Stone, 2006). Stone (2010) controversially suggests all housing is affordable despite its cost, just not to all groups. Alternatively, he claims that the only true ‘affordable’ property is one that is free as everyone can afford it (Stone, 2006). There are also difficulties in relation to people having the capacity to afford satisfactory housing and residential environments. This means that houses do not appropriately suit their needs or there are issues in regard to physical standards of decency, overcrowded conditions, insecure tenure, or unsafe and inaccessible locations (Stone, 2006). Stone (2010) declares housing standards and housing affordability cannot be separated, because in some instances the house may be appropriate if it was better suited to another residents’ needs. For this, an example is provided of overcrowding. With less occupants, the dwelling may provide better housing conditions. The key argument of this article was to show that there is a ratio between housing affordability and residual income, and how affordability is a highly subjective term. It is evident that there are challenges in regard to housing quality and what low-income groups can afford (Stone, 2006).

Following from this, affordability affects the spending habits of residents. Hulchanski (1995) supports this argument and elaborates on household spending. This means human behaviour and spending provides for their livelihood and determines available income for housing (Hulchanski, 1995). Glaeser and Gyourko (2003) raised concern that housing advocates have confused the role of housing prices with the role of poverty. The authors support the notion that housing affordability is when the housing
price is relatively higher than the fundamental costs of production (Glaeser and Gyourko, 2003). There also seems to be the idea that housing affordability is related to a benchmark, but Glaeser and Gyourko think it is more suitable to compare the price of a house to the physical construction costs of housing (Glaeser and Gyourko, 2003). This is a more sensible means to measure if a fair price is being paid, with comparisons made to the surrounding area and market price. Affordability is a sustainability issue because excess spending and high cost building is unsustainable because housing has lost its social function and now has become too profit orientated. There has been a shift away from having a home as a human right to financial and housing markets dominating the control of housing prices.

**The Social Cost of Poor Construction and Building Materials**

There are also costs associated with maintaining and improving houses that can affect the economic sustainability of a building. Howden-Chapman *et al.* (2007) found installing insulation dramatically improved the welfare and health of residents, however this can be a cost restrictive practice. A study found insulation had a multitude of benefits, it was found that installing insulation created a “statistically significant increase in the indoor temperature and a decrease in the relative humidity,” (Howden-Chapman *et al.*, 2007, p. 7). Furthermore, the households’ exposure to temperature below 10° celsius was reduced by 30 percent. In the study, occupants reported that having reduced exposure to low temperatures and high humidity provided them with a greater sense of comfort in their homes. Many of the occupants also reported their houses felt less damp and there was a reduction in mould.

The relationship between working or living in damp buildings has been recognised as having an effect on occupants’ health, and often causes coughs, wheeziness, allergies and can induce asthma (Howden-Chapman *et al.*, 2007). The study conducted showed participants supported the investment in insulation as it had improvements on their health. Occupants reported an improvement in their general health, and a reduction in respiratory symptoms, while having a greater sense of comfort and overall well-being. The households were also able to spend less on heating and these savings provided them with more disposable income. Unfortunately, not everybody has the opportunity or can install improvements to their home, and this has detrimental effects on their
health, in the future it may be beneficial and viable for government bodies to help with health related benefits to improve the quality of life for residents.

2.1.4 Impact of Social Sustainability

It is evident all of the forms of sustainability interconnect and there are a lot of issues directly associated with housing and urban environments that require resolutions. There is a need to understand these problems in more specific detail and the next section will understand the problems with homes and the problems in Aotearoa New Zealand. Understanding the challenges will inform how cohousing or alternate models have the potential to address them and provide a solution for a range of reasons. The following section will explore current sustainability challenges present housing and will address how cohousing has the potential to provide a solution.

2.2 Sustainable Housing and Challenges

Alternative forms of housing, such as ‘cohousing,’ ‘living communities,’ and eco-villages endeavour to address apparent unsustainable characteristics of conventional or standard urban forms and housing. In order to understand the intention of these models, the challenges they wish to address must be acknowledged. The following section is structured to assess the current form of homes in Aotearoa New Zealand, the changes overtime, the health issues prevalent as a result of housing conditions and the potential for policy and regulation to address these issues.

2.2.1 Physical Form of the Housing Stock in Aotearoa New Zealand

The most prevalent forms of residence in the Aotearoa New Zealand housing market is owner occupied, detached dwellings on large sites (Dixon and Dupuis, 2003). Overtime, site sizes have decreased, especially in large cities and people no longer aspire to have the typical quarter of an acre. While some people are choosing to live in apartments or small urban homes, but as housing prices have increased there has been a surge in moving to the outer areas of towns (Dixon and Dupuis, 2003). This has led to issues of urban sprawl. Local authorities and network experts are exploring ways to enforce urban containment (Memon and Gleeson, 1995), and this will be discussed in a following section. There is also an inequity of housing in Aotearoa
New Zealand, and a large percentage of the population reside in housing with little or no insulation.

Howden-Chapman *et al.* (2007) claims two third of the housing stock in Aotearoa New Zealand is comprised of three or four bedroom wooden houses on wood or concrete piles, and about a third of homes have no insulation (Howden-Chapman *et al.*, 2007). A study was undertaken to explore the benefits of insulation and the improvement it can make to insulated dwellings, the results found insulation had a multitude of benefits and created a “statistically significant increase in the indoor temperature and a decrease in the relative humidity,” (Howden-Chapman *et al.*, 2007, p.7). The effect poor quality housing has on the physical health and mental well-being of residents is a prime reason for exploring alternative models, this will be discussed in the following section.

2.2.2 Changes in the Housing Stock

Although it has been typical for Aotearoa New Zealand citizens to live in larger dwellings with land, there has been a shift in recent times in order to adjust to the high housing prices in urban areas, and therefore people have chosen to live in smaller houses or high rise complexes (Banks *et al.*, 2010). Urban areas host many core aspects of life and Poll (1997) claims urban areas provide for health, family, work and leisure sectors and due to this there is a perception it is a more practical space to reside in (Poll, 1997). There are other changes in people’s lives that further evoke a change in lifestyle. These changes in housing and lifestyle are contributing to many people making the decision to buy smaller properties and homes, downsizing is helping to reduce people’s financial and time pressures (Foxley, 2001). The urban arena appears to be where most daily activities occur, and this means people are facing the choice to live near to where they work, or commute longer distances if this is not a viable option. A lack of options and barriers has prevented people from selecting homes that best suit them (Banks *et al.*, 2010). This means there is a need to consider alternative housing models, particularly models that will address the all of the needs of residents.
2.2.3 Health Issues in Aotearoa New Zealand Homes

Housing is integral to identifying the quality of health of residents; with the changes in homes there was also a shift in the materials and quality of the builds (Jarvis, 2011). It has been suggested, if houses are in inadequate conditions it can cause those that reside in them to be susceptible to: respiratory disease; mental health problems; fire safety risk; and coronary events (Keall et al., 2010). Aside from health risks, structural deficiencies can also pose a threat. Lack of insulation and suitable heating often occurs in Aotearoa New Zealand houses, and needs to be addressed (Howden-Chapman et al., 2007). Heating is a large expense for occupants and often it is where costs are cut, leaving residents exposed to cold conditions that are damp and harvest mould growth (Keall et al., 2010). Often the impact of housing on residents’ health is not acknowledged, and for socio-economic reasons people cannot live in better housing circumstances (Krieger and Higgins, 2002). However, Krieger and Higgins (2002) states, “An increasing body of evidence has associated housing quality with morbidity from infectious diseases, chronic illnesses, injuries, poor nutrition and mental disorders,” (Krieger and Higgins, 2002, p. 758). Overcoming these challenges in Aotearoa New Zealand could be potentially facilitated by the improvement in quality of housing. It is important these issues are addressed because it can have long-term effects on people, particularly children and the elderly (Krieger and Higgins, 2002). Due to this, there is a need to address these issues and determine an appropriate form to support the needs of all residents.

2.2.4 Policy and Regulation of Housing

Howden-Chapman and Chapman (2012) perceive that local and central governments have an integral role in regulating the location, density and quality of housing stock in Aotearoa New Zealand. The location and density of housing has flow-on effects regarding physical exercise due to proximity to destinations, such as schools and workplaces, which has long-term ramifications on carbon emissions (Howden-Chapman and Chapman, 2012). It has been recognised that high quality buildings increase the cost of construction, but having higher quality materials have substantial benefits for residents’ health and environmental sustainability (Rydin et al., 2012). However, Rydin et al. (2012) developed recommendations for the progression of urban planning practices, at the premise, the main recommendation was for planning
to be accountable for addressing the inequalities within cities and prepare policies and change current legislation to enable everyone to have access to good quality homes (Rydin et al., 2012). This means housing quality should be monitored without having a negative impact on the affordability of houses. This reflected the recommendations of the Healthy Cities movement and The Commission; the take home message was that city governments should work with a range of stakeholders to build a political alliance for urban health and policy makers at a national level should understand the issues based within urban environments (Rydin et al., 2012). It was also emphasised that urban planners and those responsible for public health should communicate to work towards creating healthy and safe cities (Rydin et al., 2012). The World Health Organisation defines a healthy city to be: “one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing their maximum potential,” (Rydin et al., 2012: 7). This shows beyond physical health, there is a need to promote a sense of belonging and ownership to fellow residents to ensure people feel welcome and belong in their lived spaces. Regulation and policies are methods that can enable this.

Murphy (2003) states the housing policy in Aotearoa New Zealand has traditionally been controlled by market intervention and supporting home ownership. From the early 1900s, most central governments in Aotearoa New Zealand have been supportive of ‘home owning’ democracy and the dream of New Zealanders to own their own “quarter acre slice of paradise,” (Murphy, 2003, p. 119). The Fourth Labour Government in 1984 saw a significant change in the housing policy of the country, and the Housing Corporation intervened more to help those that had serious housing issues (Murphy, 2003). This meant there was greater management of state houses and supplements to low-income households to assist with housing costs (Murphy, 2003). Post World War II there was a social safeguard in the provision of state housing, while there was criticism this was an expensive mechanism; it dramatically reduced homelessness in the country (Matznetter and Mundt, 2012). However, in the 1980s there was a change and those residing in state homes lost the autonomy they once had (Matznetter and Mundt, 2012). Thorns (1999) reflects on this radical restructuring of the housing provision system suggested it was an attempt to shift away from a mixture of direct provisions and housing benefits supplied by the state, and towards
an indirect system of income supplementation. This profit-orientated move was also supposed to help low-income households into higher quality housing. However, over time there still remains issues with the maintenance of privately owned rental properties and it is believed there is a need to monitor these houses as many tenants are vulnerable and do not know the extent of their rights when residing in these properties (Thorns, 2000). And so, there is an argument that those practices did not operate in the way they were intended.

In the international context, there has been attempts made to both reduce the reliance on housing subsidies and the improvement of publicly and privately owned properties. Turner and Whitehead (2001) discuss the Swedish housing policy and the dramatic changes made during the 1990s. They discuss that housing had traditionally been a core element of the welfare state in Sweden, but dramatic alterations to the system were required due to high costs (Turner and Whitehead, 2001). In this article comparisons were made to policy in Aotearoa New Zealand and the Netherlands. This was because Aotearoa New Zealand had also made a dramatic shift from a range of subsidies and tax reliefs and was replaced with market rents and prices and a single ‘accommodation allowance’ payable to low-income household tenures (Turner and Whitehead, 2001). While in the Netherlands all existing supply-side subsidies were combined into a single capital grant and a ‘privatised’ system of guarantees were established to assist both social and owner-occupied sectors to raise finance (Turner and Whitehead, 2001). Sweden wanted to encourage the emphasis of liberalisation and reduced government involvement, and so they chose to reduce and restrict housing subsidies and combined grants and subsidies to “depressed housing areas while continuing the programme of housing allowances given to low-income households,” (Turner and Whitehead, 2001, p. 216). Although these housing policy practices do not directly relate to this study it is important to understand the complexities that have arisen over time in relation to social housing, as cohousing complexes at times include a state-owned property and these principles may have to be taken into consideration. It also suggests the private sector needs to be responsible for maintaining the quality of homes (Thorns, 2000). Despite this message being evident when reviewing current literature it became apparent that there has been little investigation into what policies are available to control the quality of housing and maintenance of privately owned properties. Evidently, there are a multitude of issues
in regard to sustainability, and all spheres have flow-on effects. The environmental, social and economic challenges cannot be reviewed separately because they all impact on one another. It has been suggested that cohousing could provide a viable alternative to conventional housing and address the issues of sustainability; this will be explored in the following section.

2.3 Cohousing as a Housing Model

Cohousing has been perceived to provide a ‘utopic’ alternative to traditional neighbourhoods, as with other intentional communities, cohousing is a manifestation of a social dream (Sargisson, 2004). Cohousing has adapted from traditions of communal living and previous community movements focused on social sustainability, they have been modelled to acknowledge the needs of humans and nature simultaneously (McCamant and Durrett, 1994; Meltzer, 2000). Sargisson (2004) recognises an intentional community as, “groups of people who have chosen to live and sometimes work together for a common purpose,” (Sargisson, 2004, p. 321). This has been discussed in the previous section but it is important to understand the potential cohousing poses moving forward (McCamant and Durrett, 2011). Sargisson (2004) claims that intentional communities are made up of a group of people that have decided to live together “for a common purpose,” often because they are no longer satisfied with standard suburban housing. Therefore, it is a viable option to combine traditional, sustainable building and the living style of the 21st century to create a society that is socially, economically and environmentally innovative (McCamant and Durrett, 1994). From the literature, it is evident that authors hope to distinguish the difference and similarities between intentional communities and cohousing (McCamant and Durrett, 2011; Sanguinetti, 2014; Jarvis, 2011). The following subsection will review the practices involved with the cohousing model.

2.3.1 Cohousing practices

Priest (2015) discusses that cohousing has come from ‘co-operative housing’ and as a housing model could be a solution to the current housing crises that are materialising worldwide. Waxman (2005) described cohousing according to the UK Cohousing Network, whereby cohousing is defined as a form of intentional community, containing self-contained homes with supplementary-shared facilities and has been
planned and managed by the residents. Cohousing provides a chance to share more than just living spaces, with the potential for car-sharing, investment in environmental technologies, education, social services and training (Wang et al., 2017; Priest, 2015; Garciano, 2011). Other features available in cohousing developments are the sharing of resources and skills to aid neighbours, including items such as tools, books and larger equipment that is rarely used but helpful to own (Garciano, 2011; Vestbro, 2000). Education and tutoring plays a significant role in cohousing and eco-villages as it provides residents to benefit from each other and learn new skills (Garciano, 2011; Vestbro, 2000). Widener (2010) argues that having a calculated spatial design and shared social and management activities creates a range of interactions between residents and has the potential to enhance social, economic and environmental factors by sharing resources and spaces. This means the spaces need to be designed in a fashion that caters for those that will reside in the community.

It is undeniable that there are benefits of cohousing and internationally there have been many successful examples of cohousing. The most common features of cohousing that have been deemed beneficial are the shared responsibilities, improved social interaction and social awareness and action towards sustainability (Waxman, 2005). The privacy provided by the self-sufficient units is an important feature of cohousing developments. This is because residents still have the ability to maintain their own space, while having the freedom to enter communal spaces and interact with their neighbours (Fromm, 2000). McCamant and Durrett (2011) deem this as an important aspect that has led to the long-term success of cohousing in Denmark and now in other countries. This section of the literature review will discuss cohousing in more detail and examine the potential it holds as a solution to current housing issues and the provision for environmental, social and economic sustainability.

**Benefits of Cohousing**

Cohousing is a new social process as well as a new housing model. It provides a lifestyle opportunity as people move away from typical nuclear families in single detached housing units, as this is no longer a viable option for some residents (Widener, 2010). It enables the replication of older community models with modern alterations, whereby residents sacrifice interior space to gain contemporary technologies and face less financial pressures (Khan, 2006). Cohousing provides
social benefits with residents sharing typical roles that family members regularly have to manage on their own. These tasks include childcare, garden maintenance (of shared spaces), and in some instances meal preparation (Garciano, 2011). Aside from these responsibilities, residents are also provided with a greater sense of security because neighbours are aware of one another, and therefore more likely to look after each other as well as be on alert for the security breaches within the housing complex (Garciano, 2011; Widener, 2010).

The consideration of cohousing and eco-villages provides an opportunity for a creative and sustainable housing model, and produces strong relationships, improves social interaction and sustainable living (Wang et al., 2017). Wang et al (2017) explored the idea cohousing has the prospect of fostering a supportive housing environment, which also encourages a low carbon lifestyle. Furthermore, it has the potential to provide an alternative housing form that could address wider discourses regarding social, economic and environmental sustainability (Wang et al., 2017). In Aotearoa New Zealand, neighbourhoods are often homogenous, and in many towns and cities there is an aging population (Winstanley et al., 2003). This causes a lot of issues, particularly in regard to accessibility, affordability and social isolation (Glass, 2009). Cohousing provides an opportunity to cater for the elderly, while ensuring that they are immersed in a diverse community, where resources and responsibilities are shared (James et al., 2012). In literature, it was often discussed that cohousing can enhance the relationships between residents. As Sanguinetti (2014) suggests cohousing encourages people to have ‘pro-social’ behaviour and a strong connection to nature, which in turn benefits their overall well-being.

Garciano (2011) argues that cohousing evokes a sense of belonging in residents or members of the communities, because they have strong relationships and it provides them with a purpose. This is particularly important for the older residents as it helps to reduce social isolation (Khan, 2006). Residents are integral to participatory planning processes, adopted for design and development and subsequently management at the complex (Garcino, 2011; McCamant and Durrett, 1997). From the literature it is evident that this is an aspect of cohousing that is unique and ensures that communities are effective and operate successfully for all members of the development (McCamant and Durrett, 1997; Garcino, 2011, Wang et al., 2017). Williams (2005) emphasised there is no exact formula or pattern for developing a
successful cohousing development because each one must evolve in a way that is natural for those that will occupy the space and external factors, including the economic and environmental situation, also contribute to the way it shapes (Williams, 2005).

**Critiques of Cohousing**

While many authors have recognised that there are a range of benefits that come from living in a cohousing project, it is important to acknowledge the drawbacks of this unique style of living. The main critiques for cohousing are in relation to cost or affordability, social exclusivity and power relations (Fenster, 1999). Cohousing is portrayed to be very idealistic and it is important to be aware of the challenges that do occur within this model of living that has only recently been introduced into modern society. There are barriers and challenges to creating a cohousing development. Some of these problems are in relation to gaining funding for the projects, as commercial banks are often weary of investing in developments that are unusual. Therefore, banks enforce strict conditions on any loans they do agree to (Fenster, 1999). One example of this is the condition imposed on all residents to be liable for loan repayments and contribute to the mortgage fees.

Cost is one of the common critiques for cohousing because it has been suggested that houses within the complexes are more expensive than traditional houses in the same area (Fenster, 1999). Azab (2008) recognises that cohousing buildings are often built to a higher standard or utilise more ‘environmentally-friendly’ materials that initially cost more than typical building materials (Azab, 2008). However, this means it is not a viable investment for lower socio-economic groups because they cannot afford the higher prices, despite it meaning that long-term running costs may be lower (Azab, 2008). Aside from building costs, cohousing projects often require a membership fee, this is similar to apartment living, as it helps to fund and maintain the communal spaces and operating costs of the shared resources (Azab, 2008). These regular payments are also a living cost that makes cohousing too expensive for some groups (Fenster, 1999). This may be an economic problem, but it has social repercussions as it limits the opportunities for some members of society and can result in a highly homogenous population residing in cohousing developments.
Due to the nature of cohousing, there are often rules relating to the management of residents’ private property and the expectations regarding the appearance of their houses (Cohen, 2005). This can cause tensions as some residents wish to make their houses more unique and feel pressure to have exceptionally tidy properties and uniform paint colours (Cohen, 2005). Cohen (2005) suggests that residents have the opportunity to make their homes more personalised on the inside. Fenster (1999) also suggests that it is important that the external areas of properties are tidy because it creates both a more pleasant, but also safer experience for everyone within the complex Fenster (1999).

The most common critiques of cohousing are related to the social implications. Fromm (2000) states there are issues with privacy and individualism, as well as potential challenges with cliques and power relations between residents (Cohen, 2005). The close proximity of cohousing dwellings means that residents can potentially feel their privacy is being invaded or there is a loss of individualism (Fromm, 2000). The open nature of cohousing developments cultivates a tight-knit community where people are well informed about each other’s lives (Fromm, 2000). Within cohousing neighbourhoods it is natural that some people naturally become closer because they are more similar to other residents, however as with any society, some groups have a louder voices than others (Cohen, 2005). This means that some residents feel excluded or their opinions are not as valid as others.

The final critique of cohousing is the lack of diversity. It has been discussed that cohousing communities are often homogenous, and worldwide it has been found residents are often white, middle-income and educated (Sanguinetti, 2014). As previously discussed in Section 2.2.1, it is vital for communities to have a mix within the population to foster tolerance and acceptance, while gaining knowledge of new ideologies and values. When designing a neighbourhood it is vital to plan for a variety of groups and have features that appeal to a range of ages, genders and ethnicities (Saeidi and Oktay, 2012). Creating cohousing neighbourhoods that encourage diversity will improve the quality of life for all residents (Sanguinetti, 2014). Enabling all members to engage with decision-making processes and harvesting a sense of community is another vital component to a successful cohousing community. In the following section this will be discussed, with reference to the participatory practices of cohousing.
Democracy and Inclusive Communities

McCamant and Durrett (2011) recognise, “One of the key strengths of cohousing is the active participation of residents, from the earliest planning stages through construction,” (McCamant and Durrett, 2011, p.26). Residents of cohousing projects are engaged from the initial stages of buildings until the construction phase is over. Once the residents move on site a non-hierarchial decision-making process is developed to suit the community (McCamant and Durrett, 2011). Each community must develop their unique style of processes that are appropriate for the group (Williams, 2008). Healey (1997) supports collaborative planning and it could be a successful theory to adopt in the context of cohousing and eco-villages. Collaborative planning relies on communication and ‘consensus-building practices’ (Healey, 1997).

As cohousing projects often operate on democratic practices, collaborative planning aligns with core values. Collaborative planning enables all parties to express their opinions and influence the development of a project (Healey, 1997). Social cohesion and inclusion are claimed in theory and policy to contribute to strong, fair and just societies for present and future communities (Pacione, 2003)

In Aotearoa New Zealand, of the current intentional communities many are egalitarian and have no defined leader or hierarchy of leadership, all of the communities range in composition and their goals vary (Sargisson, 2004). Naturally some members of the communities are less engage than others. Sargisson (2004) found the intentional communities in Aotearoa New Zealand hold regular meetings with all members and have decision-making processes that require a consensus from all members of the community. It is important to recognise, like any democracy, challenges arise and voices can become louder than others and it is important to manage any biases that present themselves in community discussions (Sargisson, 2004). Due to this, it is important to develop suitable system to manage the discussions conducted with the community to ensure the all decision-making processes are just and power relations are mitigated (Sargisson, 2004).

Similarities to Papakainga in Aotearoa New Zealand

Palmer (2016) suggests there have been challenges for Māori in building sustainable and affordable housing in urban and rural areas and it is important that these barriers are overcome (Palmer, 2016). Colonisation has meant planning rules and legislation
has made it difficult for Māori to develop rural land in the fashion they hope to, particularly having medium to high density housing on rural plots (Palmer, 2016). Pre-colonisation, Māori papakāinga was always located near to the marae in both rural and urban areas (Trapani, 2018). Papakāinga is described as the ancestral home of a Māori kinship group or a housing development for Māori on their ancestral land (Trapani, 2018). In modern times Māori groups have endeavoured to develop papakāinga in a way that combines “traditional pā-based housing and co-housing models,” with common resources shared in the community, which has similarities with the cohousing model (Trapani, 2018). Kake (2015) recognises that Māori groups in Aotearoa New Zealand face issues with affordability and suitable housing due to “Eurocentric design and development paradigm that ignore Māori values, traditions and practices,” (Kake, 2015: 8). Kake (2015) spoke of their personal experience raised by a Dutch father and a Māori mother, who wished to live an environmentally responsible and socially sustainable life. Kake was raised in an Australian eco-community and saw parallels between the principles of papakāinga (Kake, 2015). There are similarities in the goals of the two housing models and both could inform one another’s progression.

### 2.3.2 Cohousing as a Sustainable Practice

Williams (2005) observes in England there have been national and policy changes made to encourage more sustainable communities. National policy was created that states that urban spaces must be ‘liveable’ and promote social interaction. Building on research that has been undertaken in relation to residential design and resident behaviour, Williams investigates how cohousing can promote positive relationships within communities. It has been found that social capital has the ability to improve economic outcomes in a neighbourhood and improves the labour market and productivity of residents that feel more valued (Williams, 2005). Having a relationship among neighbours has also proven to reduce crime rates in an area, as people feel more liable to one another (Pretty and Ward, 2001). Cohousing is being supported because as an urban form it increases the feeling of belonging among residents, and in many cases connects the private sphere with the public space (Williams, 2005). Cohousing developments have adapted organisation structures to be suitable for this unique style of living, there is still a form of management but
residents’ make an effort to maintain a democracy and ensure everyone is involved in decision-making processes (Williams, 2005).

2.3.3 Summary of Cohousing as a Housing Model

From these findings it is evident that cohousing provides a potential solution to the current housing issues in Aotearoa New Zealand. The quality of housing is currently an issue because residents’ physical and mental health are taking the toll for lack of insulation, damp and cold environments and unaffordable homes across the country (Howden-Chapman et al., 2007). There is a need to consider sustainable alternatives that will provide residents with a more rewarding lifestyle and make better use of shared resources (Widener, 2010). Achieving this will better meet the social, environmental and economic dimensions of sustainability for housing practices. It is evident there is a need for policy and regulation changes to occur so national and local governments can help to promote more sustainable building choices and ensure the construction of higher quality builds in Aotearoa New Zealand. Cohousing appears to be a positive solution to many of the current issues and challenges in conventional neighbourhoods because it provides residents with more suitable social, economic and environmental options (McCamant and Durrett, 1994). Cohousing can also be adapted or inform indigenous development practices like papakāinga or aged-care developments, because it has been proven to improve support networks (James et al., 2012).

2.4 Conclusion

Understanding where the sustainability issues currently lie within conventional housing is vital for determining the characteristics that would be beneficial for alternative housing models to portray. This literature review provides a framework for the research of what is considered “good quality” housing and the need to create a sense of belonging in residents, so they feel responsible to their living environment but can also make more sustainable choices. It has been establishing that having high quality, energy-efficient homes, that are designed in a way that harbours social interaction and the sharing of skills and resources will improve how residents experience the three dimensions of sustainability. While it is vital a cohousing development is sustainable, the site alone is not enough to reduce the ecological
footprint of those that reside there (Ewing et al., 2008). The surrounding environment and access to nearby facilities is essential for having a sustainable lifestyle, with a reduction of private vehicle use, increase in physical activity, reduction of energy consumption and shared resources (Garciano, 2011). Sharing roles and non-tangible resources is also essential to the success of cohousing developments, and making use of everyone’s knowledge is crucial for having a successful neighbourhood (Garciano, 2011). Cohousing communities addresses a lot of the current issues of conventional neighbourhoods and it provides residents with a sense of belonging while maintaining their privacy and independence (McCamant and Durrett, 2011). Overall, it appears that in international case studies that cohousing is addressing many of these challenges and overcoming them by working as a cohesive community, Tables 1-4, provides a summary of criteria taken from the previous discussion to use as an evaluation tool for the cases. In this study, the following chapter will explain the research paradigm developed for this study and the appropriate methods to utilise when entering the field.
3 Methodology

This section describes the methodology utilised in this research to understand the complexities of cohousing in the Aotearoa New Zealand. The chapter begins with a discussion of the realism paradigm, which situates the research. Following this will be a description of the research approach and methods used in this study. Both primary and secondary methods were employed. The primary research methods included semi-structured key informant interviews, brief interactions with other residents, as well as site observations and mapping. Secondary research methods were also used to contextualise the research including a policy document analysis and a review of the resource consents for both cohousing communities. The final section reviews the ethical considerations of this research and the positionality of the researcher and any limitations present in the study.

3.1 Research Paradigm

Aitken and Valentine (2014) recognise philosophy and methodology are often taught separately, and therefore there is a degree of disconnect between the two, which fails to acknowledge that research paradigms inform how research is undertaken (Aitken and Valentine, 2014). This study takes a realist approach, which is founded on the idea that, “the world is whatever it is, largely independently of what particular observers think about it, and not simply a product of the human mind.” (Sayer, 2015, p. 106). Realism as an approach relates to the relationship between reality and the researcher, and realism acknowledges, “there is a “real” world to discover,” (Healy and Perry, 2000, p. 120). It is important to recognise that social construction is a process that evolves over time and eventually becomes independent from its constructors (Sayer, 2015). Sobh and Perry (2005) stipulate that reality is only “real” in an imperfect sense and so triangulation from a range of sources is required to gain an understanding or knowledge of any research topic. The realist approach enables the research to adopt the suitable methods to adequately answer the research aims and questions regarding cohousing in the Aotearoa New Zealand and international contexts (Sobh and Perry, 2006). After the research questions were developed there
was a need to consider the appropriate methods that could be utilised (Amaratunga et al., 2002). For this research it was determined that qualitative data would be the most suitable. The following section will explain the research process and the benefits of qualitative data.

### 3.1.1 Research Design

This research utilises qualitative data, which endeavours to understand human environments and human experiences in relation to a conceptual framework (Hay, 2010). For this research the framework is based upon the idea of establishing the current sustainability issues in conventional housing, recognising how cohousing can address these and understand the lived experience of residents. Qualitative research is used to explore the social, cultural, economic, political or environmental spheres (Hay, 2010). Individuals have unique experiences and using qualitative data provides an opportunity to portray the variation in voices in an environment and also encapsulates both the common opinion, but also the thoughts of minority groups in a community (Hay, 2010). Another beneficial feature of qualitative research is the flexibility it provides the researcher, as well as the ability to be socially sensitive to the context of the research (Hox and Boeije, 2005). The reason that qualitative research was employed was because it provided flexibility in interviews, and because of the differences between the two case studies. Qualitative data is also more open to various interpretations and meanings, which can create issues in regard to reliability but provides more detail and potentially emotive sentiments from participants (Hay, 2010). All of the data for this research is qualitative, and semi-structured interviews were adopted to gain an understanding of the participants’ experiences. Site observations also enabled the researcher to gain an understanding of the context of the case studies. Using a multi-method approach meant both primary and secondary data was used in this research. Secondary data is considered to be research that has previously been prepared from other sources, and can be revised in relation to contemporary research (Hox and Boeije, 2005).

The importance of ‘triangulation’ is also emphasised, which is the use of multiple contemporary methods to gain an in depth understanding of a research problem (Hoggart et al., 2002). Using multiple methods of research makes a more thorough investigation and prevents reliance on one source (Hoggart et al., 2002). The
triangulation approach has been recognised to lie within the empirical-realist tradition and enhances the ability to ‘cross-check’ results and methods to develop insight into a social problem (Winchester, 1996). The following section will explain the secondary research methods and why they were appropriate for this study of cohousing.

### 3.1.2 Case Studies

For this research two cohousing communities were selected for data analysis. Case studies provide insight into an area of study, and enable a research to review issues in an appropriate sized population (Rowley, 2002). This first case study is the Earthsong Eco-Neighbourhood located in Ranui, Auckland, which is west of the city centre. The original members of Earthsong started the initial stages of development in 1995 and they wanted to create a neighbourhood that was socially and environmentally sustainable. Earthsong is the only existing cohousing development in Aotearoa New Zealand and is valuable because it has been operating for several years. Consequently, the residents and those involved were able to provide information about the success of the project over an extended period of time. This community also has a focus of permaculture and this is conveyed in the values of the residents and the lifestyle at Earthsong.

The second case study is the High Street Cohousing Project located in Mornington, Dunedin. This project is still in the process of being developed but also has merit because future residents were able to share why they were interested in becoming involved with cohousing as a style of living. It provides an example of a cohousing development in a contemporary context and is a useful comparison to Earthsong. Discussions began in 2013 for the potential of a cohousing neighbourhood in Dunedin, and since then the group of five that gathered has expanded and it is expected that the residents of 24 units will move in to their homes by 2020.

### 3.1.3 Secondary Data Collection Methods

Secondary data sources are valuable in supplementing the primary sources when undertaking research (Kitchin and Tate, 2013). Secondary sources play a role in situating the research and providing the researcher with a basis to develop their own ideas for their study. The review of documentation related to a topic can help to
provide insight that may otherwise not be apparent (Kitchin and Tate, 2013). For this study a document analysis was undertaken of relevant legislation and plans.

**Document Analysis**

Document analysis is where the legislative, policy or other informative documents are reviewed to understand what planning rules will or have affected these cohousing communities (Bowen, 2009). Documents relevant to this study included the Resource Management Act 1991 (RMA), the relevant district plans for both case studies including; the Transitional Operative Waitemata District Scheme 1991, the Waitakere City Proposed District Plan 1995, the Dunedin City District Plan, and the Proposed Second Generation Plan (2GP). Reviewing the legislation aided in understanding how cohousing fits into the policy and consent processes in Auckland and Dunedin because both the projects are very unique. The resource consents were analysed to provide insight into relevant rules and conditions that were placed on the two communities and how it differs from traditional housing. This method was particularly insightful for the research question that endeavours to recognise the challenges and constrains on cohousing neighbourhoods. These secondary methods provided a basis for the field research and the primary data collection, which is explained below.

### 3.1.4 Primary data collection

This section explains the primary research methods that were adopted for this study, these include; semi-structured key informant interviews, a spatial analysis, which includes a matrix made from site observations and GIS mapping of the surrounding areas.

**Key Informant Interviews**

The primary method used in this research is key informant interviews. Key informant interviews are a thorough mechanism for gathering informants’ opinions and it provides them with an opportunity to express their own thoughts in a situation where they feel comfortable (Hay, 2010). For this research 12 key informant interviews were conducted with 13 participants overall. The interviews were semi-structured and with open-ended questions, which enabled the conversation to flow more naturally with the
participants and made it possible for the questioning to adapt during the interviews to suit the person and their expertise or personal experiences (Dunn, 2010). Semi-structured interviews also allow key informants to feel comfortable and it is important that no questions are leading or directive in any way (Leech, 2002). Themes were developed from the literature review prior to conducting the interviews and provided a topic guide (see Appendix A) for each interview. This enabled the research to redirect the interviews when necessary to maintain relevance to the research.

Interviewing a range of key informants enabled the collection of data that included diverse personal experiences with cohousing and the decision processes related to the case studies. For this research the main groups of people interviewed were residents, potential residents, developers, architects, and council officers, as shown in Table 1. The recruitment process for participants involved contacting specific individuals that were publicly acknowledged as being significant figureheads of the projects. Once initial conversations were held with informants, more key informants were gained through the ‘snowball technique’. The snowball technique is when one or more informant acts as the initial contact and refers the researcher to further participants (Biernacki and Waldorf, 1981). This method was effective in this research because many of the residents were close with their neighbours or future neighbours, and so they were able to pass on the details of the researcher. The residents were able to discuss what contributed to their decision to become involved with cohousing and their own experiences in the communities, while the planning experts were able to provide information about the consent process and how cohousing communities fit into the respective district plans and planning policies. The architects of each development were able to discuss the physical form of the sites and how the built environment is vital for the success of the neighbourhoods. The varied knowledge of the participants ensured that all of the relevant research areas were explored. A list of key informants and their position or field are identified in Table 1 below.
Table 1 A List of the Participants for the Research Project.

<table>
<thead>
<tr>
<th>Participant Classification</th>
<th>Participant Number</th>
<th>Relevant Case Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experts</td>
<td>Participant 1</td>
<td>Earthsong Eco-Neighbourhood</td>
</tr>
<tr>
<td></td>
<td>Participant 2</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 3</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 4</td>
<td>Earthsong Eco-Neighbourhood</td>
</tr>
<tr>
<td></td>
<td>Participant 5</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Residents</td>
<td>Participant 6</td>
<td>Earthsong Eco-Neighbourhood</td>
</tr>
<tr>
<td></td>
<td>Participant 7</td>
<td>Earthsong Eco-Neighbourhood</td>
</tr>
<tr>
<td></td>
<td>Participant 8</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 9</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 10</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 11</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 12</td>
<td>High Street Cohousing Project</td>
</tr>
<tr>
<td></td>
<td>Participant 13</td>
<td>High Street Cohousing Project</td>
</tr>
</tbody>
</table>

The table shows the participants were divided into two groups, experts and residents. If the key informant consented the interviews were audio recorded, and this enabled the researcher to be more engaged with the conversation and did not require excessive note taking during interviews (Doody and Noonan, 2013). Some notes were still taken during the interviews to help recognise particularly important pieces of information or to take note of the body language of participants and gestures, non-verbal language can be insightful when undertaking research (Doody and Noonan, 2013). While interviews were a large part of the primary data, it was also valuable to understand the context of both sites and therefore spatial analysis was also undertaken.

Site Observations and Field Notes

Two methods were used to gain an understanding of the physical context of each development. First, a mapping exercise was undertaken on the site. Secondly, a matrix was adapted from Thompson-Fawcett and Bond (2003) from their research of the Urbanist movement, to determine the key principles or aspects of cohousing. The
findings and observations of a physical and cultural landscape can be a useful tool in presenting data (Cloke et al., 2004). Critically engaging with these landscapes can provide an additional lens to the research and provide additional information to key informant interviews. Taking field notes of the observations is a method that enables the researcher recall information about the site, as this often contributes to ideals of a community (Cloke et al., 2004).

Maps were used to portray this information; maps are important for communicating spatial relations and are visual means to describe an environment (Kitchin and Tate, 2013). These were used to record the proximity to facilities, such as shopping centres, parks, bus routes, medical centres and other features to the housing developments. Cloke et al. (2004) claims that describing places and landscapes is a valuable line of geographical enquiry (Cloke et al., 2004). This is because of the value that comes from interpreting the landscape of people, culture and social relations that can be shaped by the physical landscape and they are often highly politicised spaces (Cloke et al., 2004). Mapping the nearby areas to the case studies provides a means to portray the sustainability of the locations as it informs whether residents can interact with their neighbourhood and if it addresses most of their needs (Hoggart et al., 2002). This is because it will help to determine the sustainability of the community, for example it may encourage the residents to reduce the use of private vehicles and encourage social interaction and connections with the wider neighbourhood (Hoggart et al., 2002). As previously mentioned, along with transcribing and coding the interviews, visual representations of the spatial analysis were developed through appropriate maps and a matrix of the features on site. These methods provide a simplified representation of the benefits and potential barriers or challenges that may be present on site (Cloke et al., 2004).

### 3.1.5 Data analysis

The data analysis for this research was undertaken by transcribing the key informant interviews verbatim from the audio recordings, which also enabled the researcher to review the interviews and familiarise themselves with the data (Dunn, 2010). Once all of the interviews were transcribed they were coded using NVivo software. The software enabled the researcher to store and view all of the data and move similar topics into ‘nodes,’ when reading the transcriptions it was possible to identify
reoccurring themes, and ideas that reflected existing literature regarding cohousing. Compiling the data into themes or nodes allows the research to better prepare for the writing of the results and analysis chapters and enables them to be systematic and rigorous in their research approach. While undertaking this research it was vital to act in an ethically manner and ensure participants felt safe and comfortable at all times. The ethical considerations will be reviewed in the following section.

### 3.1.6 Ethical Considerations and Positionality

When conducting research it is important to maintain ethical practices (Valentine, 1997). Approval was granted from the University of Otago ethics committee in June 2018 for this research to proceed. To protect participants’ identity, their anonymity was assured as far as possible and care was taken reporting any personal views and opinions that might make it possible to identify the key informants. As this was a limited pool of informants, many of them knew each other and it was important to attempt to keep their own views confidential and not disclose any information that was shared during their interviews. Key informants were provided with information sheets and consent forms prior to their interview (see attached Appendices B and C). The information sheet provided the key informant with a detailed explanation of the research and what is expected and being asked of them. It provided the information relevant for them to provide their consent and gains permission to audio record the interviews, if they were willing to continue they were asked to sign a consent form. Key informants were made aware that they could withdraw from the interview at anytime, and were not expected to answer any questions that would make them feel uncomfortable. All of this information was conveyed to the key informants prior to their interviews.

Recognising the researcher’s positionality can help to manage power relations in the field (Sultana, 2007). Chiseri-Strater (1996, p.147) states that, “all researchers are positioned,” and this relates to how a researcher describes or recognises race, nationality and gender. The lived experience of a researcher and their own race, gender and nationality contribute to their positionality (Sultana, 2007).

I am a pakeha female in my early 20s, but I have no previous involvement with cohousing. I have grown up in Canterbury in a semi-rural neighbourhood and have
some contact with my neighbours. I also come from a family that is involved with construction and became aware of sustainability issues that have arisen with building materials and affordability. In fact, that was one of the reasons I became interested in cohousing communities and their potential to aid social, environmental and economic sustainability in the urban context. When entering the field it was important not to have any preconceived ideas about cohousing in Aotearoa New Zealand because most of the literature relates to Denmark or North America. Therefore, despite my postionality I sought to remain objective and gain a broad range of participants and portray a full picture about cohousing when collecting and interpreting my research data.

3.1.7 Limitations of the Research

It is valuable to recognise any limitations that were involved with this research project. One of the major challenges of this research was that Earthsong is the only ‘certified’ cohousing development in Aotearoa New Zealand. This means no comparisons are able to made around the country. In addition, its location in Auckland meant that logistics limited the ability to be flexible with time and resources. However, this limitation was less significant in Dunedin, as the researcher was able to arrange times with participants over a period of several weeks. Another limitation was gaining access to older or outdated information. The resource consent for the Earthsong Eco-Neighbourhood was initially granted under the Waitakere City Council, which merged with Auckland Council. Consequently, it was difficult to get in touch with somebody that could provide a council perspective in Auckland and documentation was no longer accessible.

3.1.8 Conclusion

This chapter outlined and provided a justification for the approach and specific methods used in the study. As mentioned, the research has assumed a realist approach, which means that the world is there to be discovered. A detailed theoretical framework helped to situate the research and provide an evaluative framework for analysis. The primary data collected was key informant interviews and maps that portray the surrounding features of the cohousing sites, and finally policy documents and the resource consents were reviewed to produce greater insight of any challenges
of the two cohousing projects. The following chapters will outline the results and discuss the data collected in the field. This information adequately provides an awareness of the two case studies and how they could be more sustainable than conventional neighbourhoods and improve the quality of the residents’ lives.
This chapter discusses the sustainable aspects of cohousing in comparison to ‘conventional’ and ‘standard’ building practices and neighbourhoods. The chapter reviews the aspects of the two case studies in Aotearoa New Zealand that exhibit more sustainable attributes than conventional housing. Some of the practices adopted at Earthsong and High Street are perceived as being environmentally, socially and economically sustainable or conscious. This contributed to the decisions residents made about their projects. Following from the sustainable practices being critiqued, the chapter will consider how residents of cohousing communities experience those dimensions of sustainability. A matrix was established to provide a summary of the sustainability characteristics of the case studies. It has been adapted from Thompson-Fawcett and Bond (2003), which they developed to critique the Urbanist movement. In this study the criteria has been drawn from the literature reviewed in Chapter Two and listed to establish the sustainable components of cohousing, these include: location of the site; design; living style; economic; planning processes. The symbols used in the matrix indicate if the case study meets the criteria of an ‘ideal’ cohousing development. The symbols are as follows: meets the criterion (✔), does not meet the criterion (✗), partially meets the criterion (★), irrelevant to the case study (〇) or information not yet available (?). The findings of the matrix will be used in this chapter to understand the degree to which both case studies meet sustainability and cohousing criteria. The following discussion is divided in the three dimensions of sustainability, including environmental, social and economic. Each of these sections is investigated and reviewed with the use of the matrix to understand how it relates to the residents’ experiences and the dimensions of sustainability. This chapter addresses the first and second research question described in Chapter One. The first question explores the extent of the environmental, social and economic sustainability of cohousing, and the second is how the residents of the communities experience the dimensions of sustainability.

4.1 Environmental Sustainability

Cohousing communities provide an ideal situation to review the environmental attitudes and behaviours of residents (Meltzer, 2000). It has been found that residents of cohousing
developments have a pro-environmental attitude and wish to reduce their ecological impact (Williams, 2008). Often cohousing groups highlight these aims in their mission statements (Meltzer, 2000). For the two Aotearoa New Zealand case studies this is certainly true. The residents of Earthsong describe their vision as having, “a commitment to address both the isolation and the high resource use arising from conventional settlement patterns, by building a neighbourhood that is more socially and environmentally sustainable,” (Earthsong, n.d.). The High Street members also described environmental sustainability as being a core part of cohousing and it influenced their choice of materials. Important elements of environmental sustainability include the location of the site, amenities in and around the site, site design, and building construction. These are discussed in turn in the following subsections.

4.1.1 Location of the Sites

The location of cohousing communities in relation to surrounding facilities and public transport routes affects the environmental sustainability of a site. Johnson (2001) observes that the effects of urban sprawl are reduced by people residing nearby their daily activities and needs, which reduces the reliance on private vehicles and carbon emissions, as people are able to walk or cycle (Johnson, 2001). This subsection will investigate the proximity of both case studies to facilities and public transport routes in their area. Both Earthsong and High Street are within walking distance of shops, sport fields, public transport routes, in particular bus stops. High Street is also near the city centre of Dunedin, one participant said it is approximately a fifteen-minute walk and easier than taking a vehicle into the city centre. Table 2 below clarifies the ways in which location contributes to environmental sustainability in each case.
Table 2 Matrix of Location of the Case Studies.

<table>
<thead>
<tr>
<th>LOCATION OF SITE</th>
<th>Earthsong</th>
<th>High Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locality to city centre</td>
<td>★</td>
<td>✓</td>
</tr>
<tr>
<td>Proximity to public transport links and routes</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Close to railway line and station</td>
<td>✓</td>
<td>○</td>
</tr>
<tr>
<td>Size of units is smaller than conventional homes and easy to construct and maintain</td>
<td>✓</td>
<td>★</td>
</tr>
<tr>
<td>Within 5-10 minutes walks of daily needs</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Good accessibility</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Encourages the walking and cycling</td>
<td>★</td>
<td>✓</td>
</tr>
<tr>
<td>Nearby recreational spaces and activities</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Evidently, both communities fulfil much of the criteria for environmental sustainability in most areas. The following will examine the amenities within the vicinity each of the communities in more detail in turn.

The site the Earthsong members acquired was further from the centre of Auckland than the residents would have liked, but there were a myriad of other features that made it appealing. It was also challenging to obtain an appropriately sized property to develop a cohousing community and so the residents accepted the Ranui site was worth purchasing. Participant 6 spoke of the surrounding area and the benefits:

Yeah, we looked for about two years. We wanted to be walking distance to shops, community facilities and public transport, and we are here. We are right next door to the suburban centre. And there is a trainline, the Western train line is about seven minutes walk down the road… And also it was a clean site, it was an orchard, and had been run quite organically for many, many years, it was a beautiful, green site… ideally, I would have liked to have been a bit closer to town, but there were very few properties big enough, and certainly none affordable closer to town that we could find. So this has worked pretty well (Participant 6).

This property had other advantages, because the principles of cohousing closely aligned with the sustainability goals of the local authority at the time; this will be explained in greater detail in a following chapter. Figure 3 below is a map of the nearby features and provides a visual representation of how close supermarkets; libraries, community centres, schools and medical centres are to Earthsong. Undertaking an investigation of the wider
neighbourhood of Earthsong provided insight into the daily life of residents. The Earthsong members could fulfil the majority of their daily needs within one kilometre of their property. Cohousing neighbourhoods located near city centres or shopping centres encourages interactions with fellow residents and the wider community as well reducing residents’ use of private vehicles (Ewing et al., 2008). This illustrates that the location of the site can improve the social and environmental outcomes for the cohousing developments. Figure 3 shows a map of the features nearby to Earthsong and portrays how accessible everyday needs for residents can be meet in their immediate vicinity.
Figure 3 Map of Earthsong Eco-Neighbourhood and the surrounding amenities contributing to the environmental sustainability.
Figure 3 shows there are several stores, schools and community facilities within the vicinity of Earthsong, meaning it is not a necessity for them to travel to larger centres as they can buy their food locally, walk their children to nearby early-childhood centres and schools, and walk to the Ranui domain for recreational activities. There is also an extensive medical centre nearby, see 9 on the map, which includes a physiotherapist, doctor, pharmacy and dental clinic, and religious and community centres. It is also clear there are strong public transport links, allowing residents to easily navigate the city without relying on private vehicles and producing high levels of carbon emissions.

The High Street Cohousing Project is located in Mornington, Dunedin and is also close to a range of shops, amenities and recreational spaces. This site is situated on the boundary of the town belt of the city and this has contributed to the expectations of the Council, but it also aligns with the philosophy of the residents. Figure 4 depicts the features close to the High Street site. The group perceive protecting the environment and reducing their ecological footprint as an essential component to their community. One of the residents described what was in the surrounding area of the site:

There’s a bus stop right on that corner there and one exactly opposite over by the pedestrian crossing, and then there is green belt, so we are discreet block really… if you cross Queens Drive, which snakes it’s way through the green belt, from one end to the other you go up to Mornington Park, which has got a skateboard park, it’s got tennis courts, it’s got children’s play area, it’s got soccer fields and there’s a whole bunch of suburban shops, which I think is one of the best suburban shopping centres left in Dunedin, lots of them have closed, so it’s got everything from hairdressers to restaurants, takeaways, big medical centre, with a physio, with blood collection things, there’s chemist, there’s dairy, there’s accountants, there’s dentists, there’s coffee roasters, there’s cafes, there’s a big Countdown, there is a petrol station, there’s a really fantastic cobbler, there’s flower shops, So it is really handy and it is really only 20 minutes or quarter of an hour down the hill [to the city centre], I can certainly do get to the Octagon in 20 minutes walk from here and back up the hill. And then there are fantastic walks through the green belt, it’s a very, very handy site (Participant 8).

Evidently, the residents appreciate the facilities nearby; some of these features have been mapped in the figure below.
Figure 4 Map of the High Street Cohousing project and surrounding amenities, contributing to sustainability.
Participants 9 and 12 described how living at High Street would help to reduce their reliance on cars and it was influential in their decision to engage with the community. Participant 12 could no longer drive for medical reasons and in recent years had learnt to live without relying on a car. The participant felt Mornington would be an attractive neighbourhood for them as they could walk to a range of facilities and perform a range of recreational activities. While there is no train service near High Street, it is on a main bus route. There are great sport facilities near to the site that can be seen at Point 7 on the map, the park also has a playground and skate park to meet the recreational needs of the younger residents at High Street. The boundary of the site is on the Dunedin Town Belt, which means the site will always have a green aspect and it cannot be built out by other residential developments. Reducing the use of private vehicles and encouraging people to make use of active transport modes is one mechanism to enhance sustainability (Johnson, 2001). Cohousing groups tend to be comprised of environmentally conscious people, who wish to improve their living situation. While the case studies were located near to bus and train stops but the residents said sometimes they were not reliable or the routes did not make it an efficient way to travel. Earthsong is within 800 metres of the Ranui Train Station but when travelling to the city centre of Auckland the participants said they had to use multiple modes of transport. In response to a question concerning the use of public transport a participant replied:

I did when I first came here and the train is just a 10-minute walk up the road. It is an hour into town, and I used to get off a bit earlier. I'm heading to the university… So I would get off at Mt Eden and get the bus down because it's quicker instead of taking it all the way. I don't know if you know how the train works but it goes into New Market and it has to turn around because it's got that, an outline, it doesn't have a loop. So it takes quite a bit longer and then you have to walk back up the hill to the university. So I thought this is ridiculous, so I would get off earlier, get the bus down and come back, then that's another 45 minutes home in the evening. And well it is an hour out, counting the bus… I sort of gave up on that, and I take my car into Mt Eden and I park it, and then I work at the university in the afternoon and then I'll come home after the traffic gone and because that North-Western motorway is complete rubbish, its blocked up from about 4pm til 7pm. So you know the buses aren't terrific out here. So the train is good (Participant 7).

In regard to time and cost, Participant 7 shared it was far easy to drive their own vehicle. If cohousing communities prove to be a more common model in Aotearoa New Zealand, it will be beneficial to have public transport routes that enable the residents to make use of them. This will encourage the residents to utilise them, as it
is affordable and it will also help them to reduce environmental impacts. In summary, selecting the location for a cohousing community is one of the critical decisions in establishing a project (Meltzer, 2000). The location of a site in relation to commercial and service facilities, schools and places of employment has environmental effects and can regenerate surrounding areas due to an influx of new groups into a wider community (Meltzer, 2000). The case studies have met this criteria well.

4.1.2 Design of the Developments

This subsection considers the impact design has on cohousing communities, and how it contributes to the sustainability of the projects. Marcus (2000) perceives there is a correlation between the design of cohousing sites and a stronger sense of community for children and adults. Keeping vehicles and parking to the periphery of the site increases the safety for all members but especially children. It also prompts residents to walk through the communal areas and encourages further social interaction (Marcus, 2000). The members from the case studies acknowledged the layout of their communities is a substantial decision. Earthsong’s secondary ambition of being conscious of permaculture was instrumental in informing these decisions. While sustainability is not explicitly stated in the principles of cohousing, people involved with cohousing are often ‘environmentally-minded’ and attempt to reduce their ecological impact (Williams, 2008). Table 3 describes the sustainable design considerations.

Table 3 Matrix of Design of the Case Studies.

<table>
<thead>
<tr>
<th>DESIGN</th>
<th>Earthsong</th>
<th>High Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of sustainable materials</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Construction methods are efficient and ethical</td>
<td>★</td>
<td>✔</td>
</tr>
<tr>
<td>Limited use of plastics and treated materials</td>
<td>✔</td>
<td>?</td>
</tr>
<tr>
<td>Energy efficient</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Adequate integration with nature and surrounding environment</td>
<td>✔</td>
<td>★</td>
</tr>
<tr>
<td>Design cohesive with surrounding neighbourhood</td>
<td>★</td>
<td>✔</td>
</tr>
<tr>
<td>Buildings align with relevant rules</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Attractive buildings and environments</td>
<td>✔</td>
<td>?</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Communal building is a pleasant space, energy efficient, environmentally-friendly and high standards of design and construction</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Positive transitions between the public and private realms</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Range of sizes allows from multiple groups</td>
<td>★</td>
<td>✔</td>
</tr>
<tr>
<td>Parking and cars kept to the periphery of the site to improve safety</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Table 3 how each case study carefully selected materials and construction methods used on their sites – this is discussed further below. There were some aspects that only partially fulfilled the criteria of a ‘successful’ cohousing, but many of these were subjective and difficult for the researcher to determine without more information about the decisions made. Both cases had a mixture of unit sizes to allow for this, but participants mentioned Earthsong homes were smaller than they may have liked but they understood this was determined due to environmental and cost concerns. Williams (2005) acknowledges the value of having a range of unit sizes to promote diversity within neighbourhoods. Different groups require particular living quarters; elderly couples or individuals prefer small units, while larger families need up to four bedrooms. All of these layout decisions improve the quality of cohousing communities (Williams, 2005).

The site design of a cohousing community predominately determines the social environment of the group, as well as the feasibility of a project, as the design must be approved by the relevant local authorities and must be sympathetic of any relevant plans and policies (McCamant and Durrett, 2011). Marcus (2000) investigated six cohousing communities in Europe and found that the site design had a positive impact on the sense of community of residents. The investigation established that the intentional design of the neighbourhoods facilitated the success of cohousing developments (Marcus, 2000).
Earthsong Site Design

A discussion with a resident at Earthsong who had lived in four different units on site demonstrates this point. Participant 7 preferred living in the unit furthest from the common house because they “bumped” into the most people when walking to use the common facilities. Figure 5 shows the site layout of Earthsong and how the pathways connect to get to the common house. The permaculture focus of Earthsong has resulted in the site having a range of green spaces and outdoor seating areas. The group also developed an orchard at the rear of their site with fruit trees and a vegetable garden; all the members help to maintain this area and are welcome to the produce. The fruit trees and small orchard are well maintained and when talking to the residents they seemingly felt proud of their common property. The site design also demonstrates a density that provides the residents with their own small green spaces. Figure 6 shows landscaping and housing arrangements have provided the residents of Earthsong with privacy, and pleasant spaces. The planting also makes the site appear less dense as the units are kept to the periphery of the site.
Figure 5 Site Plan of Earthsong Eco-Neighbourhood. (Source: Helen Ballinger Landscape Architect, 1999)
In cohousing communities, all of the communal areas facilitate interaction. For example, the area children play in is easily viewed from the private residences and the composition of buildings make them feel more homely, all of these environmental factors feed into the social composition of the neighbourhoods (Garciano, 2011). Separating parking from the living environment is one of the main practices initiated at cohousing developments worldwide (McCamant and Durrett, 2011). Figure 6 demonstrates the parking in the lower right of the image; clearly the pathways connect all residents to the centre of the development. McCamant and Durrett (2014) observe, “An intelligently crafted site design creates proximities that foster community, privacy, and obvious long-term successes,” (McCamant and Durrett, 2011, p. 241).

The design of Earthsong places each unit a similar distance from the common house, to make it practical for everyone to access the shared driveway and common facilities. For most cohousing communities the location of the common house is central or easily accessible from the private dwellings to encourage the residents to make use of the space (Marcus, 2000).

![Image of the Earthsong Eco-Neighbourhood portraying the privacy created by the landscaping. (Source: Earthsong, n.d.).](image)

Figure 6 also portrays the focus of landscaping and permaculture at Earthsong. Residents did not have their own guest bedrooms because the common house had spaces for guests to stay and a large shared laundry. These shared facilities contribute to the environmental sustainability of the community and has enable the residents to
reduce their household’s footprint. The materials of the Earthsong units have also been instrumental in the environmental sustainability of the project; this will be examined in a following section.

**High Street Site Design**

The High Street project differs from Earthsong in many ways, but the residents’ had a similar value system. The group decided to use Passive Houses arranged in a terrace style. This site had previously been a school and to save demolition costs, the group made the decision to transform the existing building into a common house with three two-bedroom units, Figure 7 depicts the layout of the site.
Figure 7 High Street Site Plan. (Source: Architype, 2014).
The location of the units determines how often residents interact and social contact occurs. The residents had a considerable number of meetings to determine the appropriate arrangement for their site. Participant 8 spoke of having a built environment that would instigate regular interaction:

we had lots of design meetings where we sat around and worked out, what is important to us? What is important in our shared living space and what do we want in that? And how can we best use this site? How can we create those serendipitous social action moments by having a common laundry or whatever it is? (Participant 8).

From the research, it is evident that it is difficult to separate environmental and social sustainability. Many of the residents’ decisions were informed by their consideration of both spheres, as well as the financial viability. Figure 8 shows the buildings are arranged in a terrace style, which is more energy efficient. There are benefits of having higher density properties as it contributes to the affordability of cohousing, infrastructure does not have to spread as far and energy can be saved through common walls (Poley, 2007). As with Earthsong, this development has a range of unit sizes to accommodate a mix of demographics; some changes were made during the induction phase, as it was evident some sizes were in greater demand than others.

Figure 8 Graphic image of proposed layout of the High Street Cohousing Project. (Source: High Street Project NZ, 2018).
This site has a central focus and all of the houses have doors that open into the common space, to foster engagement among the residents. This space also allows the children to interact and play while having all residents being able to keep an eye out for their safety. The residents intend to landscape the property, but the final decisions have not yet been finalised. The design of a site is integral to the success of a cohousing development and architects and residents work closely together to develop a neighbourhood that will function well for all ages and demographics.

4.1.3 Building Materials

The building materials and construction methods utilised by the case studies reflect the aspirations of the groups to reduce their environmental impact. As previously mentioned, the houses at the communities are smaller than conventional homes as the residents do not want to have a large footprint and do not require as much space as they have the use of the common house. The units are all designed to be orientated to the sun, which improves the liveability and can help with energy saving and efficiency, but McCamant and Durrett (2014) do not believe it should comprise the sense of community. This section considers the building materials and construction methods used at the case studies and how the residents made a conscious effort to be environmentally sustainable.

Earthsong Materials

The materials at Earthsong were selected due to the knowledge of the residents and architect involved. The materials were ethically sourced and selected due to the durability and sustainable properties they possess. One of the most significant features of the units at Earthsong was the rammed earth walls, which are exposed internally and constructed by mixing selected aggregates, often including gravel, sand, silt and a small amount of clay between flat panels of formwork. Wooden poles are used to compress the earth to create thick walls that are well insulated while maintaining breathability and reducing environmental impacts. The following quote from Participant 6 explores the thought processes involved in adopting the building materials and construction methods:

Yeah, well I mean the rammed earth was, people just fell in love with it really, its an eco-house and rammed earth just fits with that, but every material we considered, we sort of said, ok where did it come, how far has it travelled? Is it
devastating a natural environment – where it’s dug out or logging native forest or anything like that? Is it toxic to people who manufacture it or the buildings or the people that are going to live in it? How recyclable is it? A real range of that criteria really, and made our choice from that, the best material that we could come up with across and of course is it affordable? And sometimes you had to choose between really eco products that were flown over from Germany or a more local product that was not as desirable (Participant 6).

Discussions with informants showed extensive feasibility studies were undertaken when making decisions about the materials. There is no treated timber on the structures at Earthsong, instead the durable species were used such as Macrocarpa and Cyprus, all of the floors are concrete except one small section of the common house, which allows the residents to have a dance floor in the shared space. The use of concrete floors was beneficial as it aids with passive-solar and maintains the heat from the sun coming through windows. Each of the units also has solar panels that produce power for the site. Participant 6 stipulated these methods of construction were appealing due to the energy-saving properties and ethical materials:

And then the rammed earth walls, local materials, doesn’t come from very far, low, not a lot of energy goes into making it, it’s really good thermal mass, its non-toxic, etc. (Participant 6)

Talking to an expert informant it was discovered the rammed earth walls are not as uncommon as it may be thought. There is a misconception that sustainable and untreated materials are not often used, but they are readily available in Aotearoa New Zealand but often at a higher cost than ‘standard’ materials. It was also evident that most construction companies would have the ability to build with these materials. The architect, when developing Earthsong also considered other sustainable practices. This is captured by the quote below:

…apart from the rammed earth, we used pretty conventional materials, and you might even say the rammed earth is not ‘unconventional’… we kept clear of plastic products wherever possible, plastic products in the building industry are the source of more problems than they are an answer a lot of the time. So we kept clear of that. That was by agreement with the owners (Participant 1).

There was evidently a positive relationship between the residents and the professionals who helped design their site. All of the residents agreed to the use of non-toxic materials. Solar water heating systems and rainwater retention systems were also implemented, however some water on site comes from mains supply. There was the intention to process all the sewage on site, but it was evident this would not be a viable option. Participant 1 explained they had approval on their consent to treat
sewage on site, but due to cost they chose not to. It appears costs were a contributing factor to some features not being included in the final design of the units and the common house. In developing the founding principles of cohousing, McCamant and Durrett (2014) did not specify communities had to be sustainable, but they recognised the values of members often informs this. Residents of developments endeavour to have energy efficient homes and resource conservation, but are often limited by funds (McCamant and Durrett, 2011). This was evident at Earthsong and is demonstrated by the quote below:

A cohousing community doesn’t have to be environmentally sustainable; it can be completely standard construction and still be a cohousing community because the cohousing describes the social organisation rather than the physical structures of buildings. But we were trying to do both...because we had strong thoughts about non-toxic materials and how we wanted them built (Participant 6).

Some residents mentioned the design of Earthsong contributed level of engagement within the community. Two participants discussed how the appearance of the buildings and Earthsong and premise of the community attracted them, one of the participants moved into Earthsong after attending public meetings. The other participant attended several open days at Earthsong, but decided the High Street project would be more desirable due to it’s location in Dunedin and the lower costs. The participant was asked if sustainability informed their decision to engage with cohousing. They responded:

it probably attracted me more in Auckland than it does here [Dunedin], because they have established gardens because it looks like it’s been there for 50 years, it kind of has a vibe about it, this sort of harmonious feel to it, whereas High Street Cohousing is different because they aren’t adobe buildings (Participant 13).

The appearance of the buildings influences people’s decisions to reside within a cohousing development. While they may recognise the social and economic value of living in a community, they also have to be attracted to the houses. Participant 7 noted that the design and materials used at Earthsong captivated their attention:

What drew me in? A couple of things really, a lot of it was about the architecture and about the stamped earth walls, and the wood, the smaller size. So lots about the design principles (Participant 7).

People overcame any issues with the homes because of the value of Earthsong, they also understood that having access to the common house reduces any major challenges of a small house. For example, one participant said people could book the
common house for their own use on particular occasions. Participant 7 had family members coming and would cook in the communal kitchen and eat with them in the common house. Another participant said being able to do this was advantageous and was another benefit of cohousing and enabled them to comfortable live in a small home. The sustainable materials also provide the group with a sense of satisfaction and will have long-term benefits for the environment.

High Street Materials

The High Street project has had the advantage of learning from the experiences at Earthsong. They also have two members of their community whom have industry experience with sustainable buildings. The residents made the decision to use the Passive House standard, which is more energy efficient than standard homes. The Passive House standard far exceeds the Aotearoa New Zealand building code and seeks to maintain a constant temperature within the dwelling all year round. Communities often adopt innovative concepts, which contribute to the sustainability of their projects (Fenster, 1999). The High Street community was no exception to this, and the construction methods and materials will be examined to understand how these choices were more sustainable.

As previously mentioned, the Passive House standard will enable the homes to be energy efficient and the high quality builds keep the housing a comfortable temperature in all seasons (Ridely et al., 2013). The houses have a low ecological footprint by installing high levels of insulation, having triple-glazed windows, which seal and a ventilation system to keep the house dry (McLeod et al., 2013). Passive Houses cost 10 to 15 percent more than standard homes, but these additional costs are expected to be recouped through energy savings over a decade, and energy savings can be up to 90 percent of a standard home (eHaus, 2015). The participants believe this standard closely aligned with the vision of their project, when asked if the design was sustainable, Participant 2 responded:

It depends, sustainable is a difficult word to define, it has different meanings to different people. If we are talking about a pathway to a low carbon future and low carbon economy, I mean Passive Houses can be a really important piece of that puzzle, because obviously it reduces your heating by 90% and also makes really healthy spaces and really comfortable spaces as well. So it’s going to be a really important piece of the puzzle to get us off fossil fuels. Because if we can move more of our housing stock to be low energy, we can free up more electricity for
things like transportation and industrial processes, that we really need it for. At the moment we waste it on running thousands and thousands of heat pumps to keep draughty homes filled with hot air…It kind of ticks a whole bunch of different boxes (Participant 2).

While the Passive Houses significantly improve the sustainability of this project because it has a range of advantages however, there are other features of the site that has an effect. Two central hot water heat pumps were installed for all of the units, one for the Alva Street block and one for the High Street block. Participant 2 continues to explain the benefits of this feature:

And then the other things we are doing, we are doing the hot water heat pump, which we are doing ‘district hot water heat pumps’ for the houses. So you’ve got the High Street block and the Alva Street block, and at the end of each block there will be a large hot water heat pump, and that runs a hot water loop under the whole building, so that will drastically reduce hot water consumption, so you’ve slashed space heating cost to virtually down to nothing for most of the houses, hot water costs will be 30% of normal housing, because you are using a really efficient heat pump system, and freeing up more space inside the houses because you don’t have all these cylinders and stuff. And then it’s really just down to, by the time you have some LED lights and some energy efficient appliances, the energy consumption of these buildings will be way, way down. So those are the key kind of things that we have sustainability wise. In terms of natural materials and things like that, we haven’t been able to push that as far but one step at a time. If we can just get this started as a exemplar of what can be done, then we can, that’s the kind of key objective with this project. To show, look this is what can be done, and we can get things moving in that direction (Participant 2).

As with Earthsong, the parking is kept to the periphery of the site and the residents are considering the potential for car-sharing schemes or electric vehicle charging stations once they have established the development. The residents recognise this is another way to reduce their ecological impact:

I cycle to work everyday and I use my car only for longer distances, I live quite close… so I use it maybe twice a week for an hour or so. So you can see how many hours its just sitting there not being used, even though it's a good car, it's a functioning car and it can provide value to people (Participant 9).

Sharing of the resources is essential to the success of cohousing communities. Private vehicles often sit unused, so it would be possible for Earthsong and High Street to explore the potential for car-sharing, the residents require reassurance they will always have access to a vehicle when necessary. This is an activity both groups intend to do further research on. It is obvious the participants, residents and experts, valued environmental sustainability and therefore they favoured ethical materials that had a less detrimental impact on the environment. McCamant and Durrett (1994) recognise
the value of cohousing and from their investigations into a multitude of
neighbourhoods have found different styles all have similar outcomes, “from a shared
house to a cluster of full-scale eco-villages, offer examples of successful living
environments that contribute to sustainable living and build social capital. They also
offer solutions for urban infill, adaptive reuse; and redevelopment strategies,”
(McCamant and Durrett, 2011, p. 299). This is evident at Earthsong, but it is yet to
see how the values of cohousing will materialise at High Street.

4.1.4 Summary of Environmental Sustainability

This section has focused on how cohousing communities are potentially more
environmentally sustainable than conventional housing. The design of cohousing
facilitates interpersonal relationships and the physical form has long-term social
benefits. Encouraging more of these groups to form in Aotearoa New Zealand has the
potential to reduce the amount of energy consumed and carbon emissions produced
from independent households (Sanguinetti, 2014). Improving the consumption habits
of residents plays a role in changing the current environmental degradation occurring
worldwide (Sanguinetti, 2014). Often there is a severance between addressing social
issues in society and environmental, but the two are interconnected and therefore
future-proofing communities requires planning professionals to adapt the physical
form and design spaces that consider the groups that occupy them (Rydin et al., 2012).
The design of the properties and the choice of materials have environmental
repercussions, but it also has an impact on the well-being of the residents. In the
future, there is the potential for cohousing communities to be even more self-
sufficient with food produced on site or locally sourced.

4.2 Social Sustainability

Sustainable practices include more than environmental concerns; social equity and
positive relations improve the quality of people’s lives and encourages them to form a
community within their neighbourhoods (Bramley and Power, 2009). Further
investigation is required into the effect of inclusive communities and how
participatory processes benefit residents (Dempsey et al., 2009). Cohousing has the
potential to improve the emotional well-being of residents and enables them to engage
with all the decision-making processes of their community (Vestbro, 2000).
Cohousing communities rely on all members have mutual respect for each other’s values and beliefs, and to be tolerant of one another’s differences (Fischer, 1982). This section of the chapter will consider how cohousing has the potential to be more socially sustainable than conventional housing.

4.2.1 Living within Cohousing Communities

The design of cohousing communities enables the residents to engage in public or shared spaces, but they maintain a strong sense of privacy in their own units (Marcus, 2000). The common facilities need to be well maintained and organised in a fashion that enriches the life of those living in a cohousing neighbourhood (Williams, 2008). Table 4 contains criteria related to the common facilities, which enrich the lives of the residents, how often they meet and how effective these meetings are controlled so each of the residents can engage.

Table 4 Matrix of Living Style of the Case Studies.

<table>
<thead>
<tr>
<th>LIVING STYLE</th>
<th>Earthsong</th>
<th>High St</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal facilities enrich the quality of life of residents</td>
<td>✔</td>
<td>?</td>
</tr>
<tr>
<td>Regular meals and cooking together</td>
<td>✔</td>
<td>?</td>
</tr>
<tr>
<td>Regular whole group meetings and membership gatherings</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Participatory processes</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Shared responsibilities and duties</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Site well-kempt and tidy</td>
<td>★</td>
<td>?</td>
</tr>
<tr>
<td>Group activities encourage interaction of residents</td>
<td>✔</td>
<td>★</td>
</tr>
<tr>
<td>Diversity of age, gender, race, etc. among residents</td>
<td>★</td>
<td>✔</td>
</tr>
<tr>
<td>Development encourages residents to live energy efficient and sustainable lifestyles</td>
<td>✔</td>
<td>?</td>
</tr>
<tr>
<td>Clear channels of communication are established</td>
<td>★</td>
<td>✔</td>
</tr>
<tr>
<td>Unified ownership/control of the site</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Citizen-based participatory planning and design</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Design of site allows for interaction with fellow residents</td>
<td>✔</td>
<td>★</td>
</tr>
<tr>
<td>Size of site is suitable to cater for a range of activities</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Size of site creates a vibrant atmosphere for residents</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
4.2.2 Participatory Processes

Democratic and participatory processes are an integral principle in cohousing communities; all residents are involved in decision-making for new features or alterations on site (Garciano, 2011). McCamant and Durrett (1997) identified one of the features they most appreciated in the Danish communities was the involvement of residents in making decisions about the buildings, activities and changes made. As architects, McCamant and Durrett wanted to integrate these processes in the American communities they designed. Earthsong and High Street have strived to engage all of their members. When asked how choices were made and who was engaged with the decision-making Participant 8 responded with this:

Ok, so everybody was! That is one of the fundamentals of cohousing as well, so there are other projects around New Zealand as well, that are sort of nascent projects that call themselves “cohousing” as well. Strictly speaking, they’re not, there is the six tenants of cohousing described by the two architects that initially described the Scandinavian projects, and I think they are really important. So there are some places where there are some groups around, where a couple has bought the land and sort of designed stuff and people buy that or a couple have bought the land and other people have plonked whatever they want on that. So it hasn’t been a participatory process for all the participants and I think that’s what’s really important (Participant 8).

McCamant and Durrett (1997) developed the six tenants or principles referred to here, which include; participatory processes, intentional neighbourhood design, common facilities, resident management and non-hierarchical structure and decision-making, and separate income sources. One of the core aspects not included in other forms of housing is the participation of all residents in the design and involvement in earlier phases of the site. The participants felt the term ‘cohousing’ was being used incorrectly in Aotearoa New Zealand, as people did not have a comprehensive understanding of the style of living involved in these communities.

Earthsong and High Street residents conveyed that they felt included in all meetings and decisions about their projects and power relations were suitably managed. At Earthsong and High Street the residents meet regularly to discuss upcoming events, management issues and general operating decisions, having regular meetings allows everyone to be involved with decisions and choices that affect their lives. The residents felt empowered by their ability to make judgments and have a say on the
management of their community. Participant 7 from Earthsong, was particularly passionate about this:

Oh there is a monthly full meeting, and its good if everybody goes to but nothing is compulsory. But every month there is a site meeting, and every month is a permaculture meeting for the gardens and how you managed this and to how manage that… Some people are much better at expressing themselves in those group meetings and therefore having things go down a path, their desired path, and that's a human thing, that’s a human condition, that’s how we are and how we work and it’s interesting to see how it works here. And maybe I’m just more attuned to it because of having these group meetings all the time. But maybe that develops awareness… [in relation to planning rules and regulations] you don’t really have any input or control over how things are developed do you? And you don’t in here, from the external but at least you have some input over how you are living your life in your space if that makes sense. You feel like you’re engaged a little bit more in how your community runs and functions. You are involved in how this space is used, yes you’ve got the external controls in terms of development planning, and resource consents and all the rest of it but once all that’s met, you actually do feel you’ve got control over what’s going on internally more. And I think that’s a very empowering thing, and I think, the more people that can have that community orientation to their living the better (Participant 7).

At both communities meetings are facilitated and the discussions are managed by a colour card mechanism, which allows the residents to share their opinions and ask questions in an effective and inclusive way. Table 5 and Table 6 show how six colours are used in a ‘Discussion Mode’ and a ‘Decision Making Mode, the meaning for the cards:

Table 5 Explanation of the Colour Card System for Discussion Mode.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>I have an interpersonal difficulty that is preventing my full participation</td>
</tr>
<tr>
<td>Red</td>
<td>I have a process observation, e.g. the discussion is off the subject</td>
</tr>
<tr>
<td>Orange</td>
<td>I wish to acknowledge someone or something</td>
</tr>
<tr>
<td>Yellow</td>
<td>I have a question, or need clarification</td>
</tr>
<tr>
<td>Green</td>
<td>I can provide clarification</td>
</tr>
<tr>
<td>Blue</td>
<td>I have a comment or an opinion</td>
</tr>
</tbody>
</table>
Table 6 Explanation of the Colour Card System for Decision Making Mode.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>I agree with the proposal at hand</td>
</tr>
<tr>
<td>Blue</td>
<td>I am neutral or basically for it, with slight reservation</td>
</tr>
<tr>
<td>Yellow</td>
<td>I have a question to be answered before I can make a decision</td>
</tr>
<tr>
<td>Orange</td>
<td>I have a serious reservation, but am not willing to block consensus</td>
</tr>
<tr>
<td>Red</td>
<td>I am blocking this proposal and I am willing to find a collective solution</td>
</tr>
</tbody>
</table>

The colour card system has proven to be valuable at both communities to keep the meetings moving in a timely matter, while mitigating any power relations. The members must come to a consensus on decisions. Cohousing communities worldwide have adopted the colour cards, but they are often refined to suit the members. The cards encourage all groups to engage in the process, and even less dominant personalities have an opportunity to express their thoughts, the participants perceived it was an effective mechanism:

I’ve been in so many meetings where it wasn’t very organised and there is lots of opinions going across the room, and some people are more explicit or forthcoming or just extroverted in their contributions, but I think the colour card system helps deal with these issues and allows for kind of a structured discussions of first addressing all of the questions that are about a certain topic and then talk about it and trying to answer those questions and then come to some sort of decision-making…. Normally, I don’t think we have a lot of opinions being expressed that are just personal inclinations but I think typically we have factual information, and I think typically it shapes our common thinking and I think it allows us to make decisions without necessarily delaying the process or going through mediation or having elaborate discussion. There are definitely contentious issues, definitely, but I think for many parts I think it has been working pretty well. I think it works well in the meetings (Participant 9).

Participant 9 held the colour card system in esteem, and felt it was effective at involving everyone and made it possible to get clarification or provide explanations when it was suitable. Although the High Street residents have not yet moved on site they have met weekly for the last few years to make important decisions about the layout of their site, the design of the buildings and the common facilities. The
Earthsong members have big group meetings monthly to discuss any big decisions while the smaller groups, those that work with specific areas for example membership or gardening meet more often and report back during whole group meetings. Group meetings were one way the residents participated in the operation of the communities, but there are other activities and responsibilities they must engage with to ensure the success of their project. The residents at Earthsong have been on site for over 10 years and over that time they have had to maintain the property, undertake administration tasks, which includes membership management and advising new or potential residents and organising events. These activities require everyone to be involved with areas of interest and share their time and resources. This will be discussed in a Section 4.2.4 The diversity of the communities contributes to the success of the groups as they can provide different skills.

4.2.3 Diversity within Cohousing Communities

Diversity is essential to any strong neighbourhood because it enhances the social experience of residents. There is a need to cater for diverse groups in building design and housing sizes, this means having large, family units down to single units for the elderly (Saeidi and Oktay, 2012). The location of work places can also influence the diversity of a community, as people often live close to their employment, schools and medical facilities (Saeidi and Oktay, 2012). Talen (2006) believes planners should evaluate how the physical form provides for socially diverse areas, and understands that form can support social diversity. This will require planners to move beyond unit mix and mixed use and consider landscape ecology and connections between landscape design and ecological health as these can have an influence on human habitat. In the instance of cohousing, there have been critiques of the communities being homogenous, Sanguinetti (2015) recognised most cohousing groups are comprised of white, affluent and highly educated populations. Cohousing groups face challenges with aging populations as children move away, and the cost is prohibitive for young adults and families (Sanguinetti, 2014). At Earthsong and High Street these challenges are recognised and while there is some level of diversity the groups feel they could be more diverse:

Not so much ethnicity, but there is a big diversity in ages, people do all sorts of jobs, from bus driving, to a professor of law. Ethnicities, there is two Japanese families, there are various Germans and Fijian, Maori, just a smattering really of
non-white, and this is pretty general in the United States as well in cohousing, and that seems, well who knows, we are self selected, so whoever turns up and wants to be a part of it. So its not like, we kinda choose... We are undeniably middle class because those are the people that can afford to buy houses. But within that, there’s people on pretty low incomes, and people on high incomes. Probably more educated than the general population I would say (Participant 6).

The participants recognised their community was homogenous and felt education and knowledge were contributing factors to people becoming involved with cohousing. Participant 11 thought an awareness of cohousing often came through educational circumstances and often residents undertake research to better understand the cohousing model. Within the High Street group there is some level of diversification regarding the nationalities and ages, although there are more elderly. Participant 10 stated they would have liked more diversity in regard to minority groups:

I can understand, we have had several lesbian couples come along and they haven’t, I was keen that they did enter, but they didn’t and often people don’t give you a reason why. They were friends with people in cohousing and they felt very comfortable with us, it wasn’t that they felt uncomfortable because of the gender difference... But I certainly would have liked and would have been happy with them, I would have been really happy if somebody transgender or whatever turned up, because again I do believe in diversity and I do believe that it’s still hard for people of gender diversity to feel safe. And a lot of us is about feeling safe in diversity... And again, we don’t have any New Zealand diversity, in terms that we don’t have any Maori people, I would be pretty sure if anybody had Maori descent by now, particularly because we bought the site from Ngai Tahu. If we were up in Auckland I would have encouraged not only Maori but also South Pacific people, we don’t get a lot of racial diversity in Dunedin, we do through the university but most of you are travelling through (Participant 10).

Participant 10 wanted minority groups to feel safe and comfortable within the cohousing community, but recognised there were still challenges young families had to overcome in regard to cost and the time commitment that was required from cohousing. Hall et al. (2015) discussed the benefits of diversity, suggesting it can expand ideologies and beliefs within groups and creates a greater understanding of different identities among the residents. The groups wish to attract more variation within their communities, but are still investigating the best ways to do this. As High Street is still at the construction phase, the members had to be in a financial position to afford new buildings. In the future they hope there will be more rental properties available and are still investigating a path for social housing on site. Cohousing as a model wishes to encourage people to share resources but future research will be
valuable to discover how minority groups can be catered for within the communities (Hall et al., 2015).

4.2.4 Shared Resources and Skills

Cohousing communities have a relatively large number of members who can provide a range of skills and knowledge from personal experiences, beliefs and educational backgrounds (Meltzer, 2000). An additional social benefit of cohousing is the ability to share resources and skills. As noted, the principles and practices of cohousing help to promote interaction among neighbours and this is largely though the shared spaces and resources (Widener, 2010). There is an expectation the residents will join group activities and help to maintain their communal spaces (Widener, 2010). For some residents, it was challenging to meet all of the obligations. One participant said they felt very included and enjoyed the style of living cohousing provided, but at times there were challenges with joining in group activities. For this participant, their older age was a contributing factor and they did not feel up to the extensive gardening required at Earthsong. Another resident at the community accepted this and realised there were some tasks that were better suited to people with particular skills and interests. The example provided by Participant 7 was Earthsong’s website and computer services; the participant recognised they were unable to perform such roles but enjoyed gardening and so often attended the ‘working bees’ to help with the extensive gardens on site, there are a range of task groups at Earthsong as discussed in the quote below:

There's 32 units, some people own more than one unit and rent them out, so not every resident is an owner, but all the owners are Body Corp members, but there is a Body Corp committee with a Chair that does all the insurance, and all the things that Body Corps do. We have our I.T. committee, which is wonderful, which looks after that. And so they all meet once a month, have an agenda, write up the minutes and send it out, and send messages out for people of things they are meant to do or not meant to do or whatever. Mostly I think it works, sometimes you get down on numbers. The permaculture group isn’t very big at the moment. There’s a lot of gardening work to do here. How you share out the workload I think is something, I mean that it needs attention… And also if you're a permaculture site, you know you're thinking about growing food and organic production, if you just don't participate in that then its not very helpful. But as I say [the IT person has the skills] he doesn't do any gardening because he doesn't like it. And I think well ok, I can’t do the I.T. in the end it does come out even mostly (Participant 7).
The residents of both communities recommended caution in expecting a record of hours involved in maintaining the site. Participant 7 had heard of similar communities, (although not cohousing), that had timesheets and members were expected to contribute a certain number of hours per month of managing the site and administrative duties. When too much pressure is placed on the residents it can have detrimental effects and negatively impact the quality of life of residents (Williams, 2008). The participants did not believe that this would be reflective of the lifestyle expected of cohousing residents. The ability to share tasks and resources contributes to the sustainability of the projects and Participant 9 agreed moving into a cohousing community allowed everyone to have access to higher quality goods and they could buy one set of quality tools, garden equipment, kitchen supplies and infant supplies and share them in the community. This would reduce each of the household’s ecological impacts. Participant 9 thought this was one of the long-term benefits of cohousing. There were a range of advantages recognised by this participant about the shared resources and skills cohousing communities can provide:

So I think currently, you might be likely if your neighbours have kids too and they might be able to play with, but often at times they might have to cross roads that might be busy or dangerous, and with the particular architecture of the cohousing, I think there is a nice idea about safety and the common garden where kids can play… I think it makes sense on so many levels. You can purchase proper [gardening] equipment other than if I want to build something once in 5 years, I might not be wanting to buy expensive equipment for that, and I go to the Warehouse and I buy some shitty electric screwdriver or whatever, you know, it might be low quality and produced elsewhere, maybe less ethically so there is concerns with that too. So I think having that group there, you can make decisions about your common resources together and I think you have more financial strength in terms of getting the proper tools or proper materials, proper architecture and really draw on the wisdom of the community. So that is another thing…not just material resources, but maybe I can babysit your child one day, and you can babysit my child one day, and all of these kinds of services, or you bring my kid to school on Mondays or whatever, so there is sharing of our time as well and I think that can make a lot of sense. Then the common meals, I think, apart from it could allow for lots of interesting conversations, I think from an economic or time perspectives, it does make a lot of sense to me as well… I think that’s very efficient and its also very social, so it makes a lot of sense to me (Participant 9).

The quote above captures many of the dimensions residents experience in cohousing while portraying the sustainable essence of the communities. By reducing the need to buy as many resources there are reduced expenses, reduced environmental impacts
and improved social relationships and trust. The significance of the relationships within a cohousing community will be discussed in the next section.

4.2.5 Relationships Among Residents

Many of the aspects described above contribute to the social dimensions of cohousing neighbourhoods. The participants recognise cohousing is a unique style of living that is still a largely unproven model in Aotearoa New Zealand. Earthsong residents have experienced the social benefits themselves and feel more included than in conventional neighbourhoods. Cohousing is often captured in a positive light, but there are some challenges with personality differences and tensions arising. The participants spoke of this, but understood it was to be expected in any community. Overcoming these differences is beneficial for the operation of the neighbourhood and they were willing to accept it was a way of life. In formal situations the colour cards help to reduce any detrimental power relations. But there are also always informal tensions among the residents. At Earthsong people feel it has made them more tolerant and the High Street residents believe they will be able to overcome these tensions in a similar manner:

When I was first looking at cohousing and meeting some of the Otago people, I kind of realised I wasn’t going to get on with all of them and some of them are just really not my kind of people, and I thought that’s not going to work, I can’t think of a conversation with these people, apart from the weather, and it wasn’t until I read about cohousing and they said you don’t have to get on with everybody, there are going to be 22 households all together, so there will be some you just don’t get on with, you’ll just know, So and So lives over there and you might share a job together and you might plant a tree at the vege garden or whatever, apart from that you might not have a strong connection. And once I realised I didn’t have to like all of the people that was quite liberating, you just have to like a few of them and others get on with. And if there’s some people I don’t like, well that’s kind of normal, so that was a real breakthrough for me (Participant 13).

As this quote shows, the residents accept they will have to appease any tensions to have a strong social atmosphere within their communities. There are a multitude of ways cohousing could be perceived, as being more socially sustainable than conventional neighbourhoods, sharing the responsibilities of daily life with one another is beneficial for residents. As Earthsong has existed for several years, it is useful to understand the operation of the project. The High Street residents have
observed the processes at Earthsong, to discern how they could organise their own community.

The following will discuss some of the communal activities and facilities the residents view as successful at Earthsong. Currently they cook twice a week and have eight cooking teams, this means each adult only has to cook once a month and share the cost among each other. The participants believe this functions well and they enjoyed the experience:

We have cooking teams, we have eight cooking teams, there are four Thursday teams and four Saturday teams. And so, the teams cooks once a month and about four or five people in a team, and they think about the menu and they buy all the food and they cook it all up and serve it then go, eat their own, and then do all the dishes and sweep the floors, so everything, absolutely everything once a month and the other 7 times a month somebody else’s team is doing that and you just turn up and have a lovely meal, and talk to your interesting neighbours and go home when you feel like it (Participant 6).

The participants felt eating together made them more sociable and enabled introverts to engage in meetings comfortably. A participant from High Street believed cooking and eating meals together would improve the well-being of everyone and make people feel more comfortable with one another:

Well yes, but except, there is always an annoying neighbour, cohousing will provide that challenge. Mental health is the biggest challenge, and when somebody becomes ill and you have to deal with irrational behaviour, will be the biggest challenge of cohousing. But cohousing, with preparing meals and eating together, I see as being the best mechanism for people developing relationships that are, because food is such a bonding exercise (Participant 11).

As well as eating together, the residents believe cohousing provided them with an opportunity to purchase items in bulk, which would enable them to save and reduce waste or buy unnecessary quantities for themselves. Both communities have over twenty households with similar needs; High Street residents will investigate this once the development is operating. The sharing of resources has previously been mentioned, but there are social outcomes to be considered. Sharing items requires the residents to trust and respect each other. This was discussed by participants who thought it was essential to their communities. Participants 11 and 12 believed when neighbours have trust and develop positive relationships they can overcome many barriers and learn to share their personal items as well as take care of the shared resources:
And cooperative housing in particular, but cooperative anything is really, really good because you are trusting the person or letting them trust you. And so there's a bonding thing… everybody starts sharing but you share more and more or trust more and more. It's not a bonding it's just an acceptance so I suppose which is a really big issue (Participant 12).

Within cohousing communities there is also a commitment to support residents and provide a safe environment for all ages. As discussed, this is reflected in having cars at the periphery of the site. Participants 9 and 13 suggested residents are able to keep an eye out for children and make a conscious effort to support elderly members when necessary. Participant 6 spoke of one of the younger residents that has adopted one of the older women as her “second grandmother”. Another participant said being part of Earthsong helped them through a difficult period of their life. Cohousing communities are comprised of private units and common areas and shared duties, which provides elderly persons with a support network (Wang et al., 2017). Communities designed for the most vulnerable groups often have the greatest success because if children and the elderly can safety navigate spaces they are appropriate for most other groups (Banks, 2012). Older members of cohousing communities can provide informed judgements in decision-making processes and still have a high level of enthusiasm for their quality of life (Bamford, 2005). Young people benefit from interacting with elderly, and it has been suggested it improves the mental welfare of all residents (Bamford, 2005). In future scenarios it may be beneficial to consider cohousing as a model for other styles of living. Participant 5 is undertaking research into how the principles of cohousing could benefit from and/or contribute to the design of papakāinga housing in Aotearoa New Zealand. Papakāinga is housing developments for Māori on their ancestral land (Trapani, 2018).

Cohousing principles have the ability to be incorporated into other types of housing and Palmer (2016) suggests papakāinga could benefit from the integration of the sustainable practices that have proven successful in cohousing. While it is integral for papakāinga to adhere to traditional Māori practices and culture, the participatory processes and social interaction of cohousing could be valuable to these developments. Participant 5 recognised the ‘bottom-up’ approach of cohousing enables residents to be engaged in the design of the site and other important decisions, the participant suggested this could be adapted into the development phases of papakāinga. The ownership of the papakāinga units is also complex because the tribe maintain
ownership of the land due to the cultural belief that nobody should own or possess land:

Yeah, this one, it’s interesting. This was the tribe. The tribe was the developer, this is top-down I suppose, whereas Earthsong was bottom-up. The residents own the houses, but lease the land, so the tribe still owns the land, which is another whole can of worms, not can of worms but it’s one of the key principles I’m looking at, if you take out the land is that a factor? In terms of ownership, because the traditional Maori view is that you don’t own the land, you use it, you’ve got use rights but you don’t have ownership. So it’s interesting how they have managed to do that in a contemporary context…it makes it more affordable because you are just buying the house not the land, especially in Auckland (Participant 5).

Understandably, papakāinga adheres to many traditional Māori practices but there is the potential to make adjustments to better exhibit the interaction and relationships of residents as appropriate. The two housing models have the potential to inform one another, while maintaining their unique attributes. Similar to cohousing, papakāinga must cater for those whom reside within the development but Participant 5 provided a unique perspective on how these spaces could be improved.

4.2.6 Summary

In Chapter 2, there were several issues identified with the current housing stock in Aotearoa New Zealand. Literature on cohousing suggests it has the potential to address these issues and provide a higher quality of life for residents. The participants of this research felt it was a more inclusive way of living and felt less isolated. Participant 6 believed cohousing could provide a positive social outcome while addressing environmental and economic challenges. Cohousing still provides residents with a level of privacy, as their units are fully self-sufficient and residents respect the divide between the public and private realms (Poley, 2007). Some of the residents believed this contributed to the success of the communities.

Participant 13 is from Auckland but intended to retire in Dunedin, they were asked why they did not choose to live at Earthsong and cost was a factor. This highlights why it would be valuable to have more variety of cohousing communities in Aotearoa New Zealand, to cater to a range of groups and budgets. In time, the properties at High Street and Earthsong may come up for rent, but currently homes tend to be owner-occupied. The residents involved with this research were a variety of ages, which means it was possible to hear how they felt it would benefit them at different
life stages. Some of the participants were from overseas and did not have any extended family in Aotearoa New Zealand, they felt the community acts as a pseudo-family for them and enables them to expand their networks. There are some aspects of the social sphere that cannot be identified as being fulfilled or unfulfilled at High Street due to the project not yet being completed. In the future it would be valuable to hear how their perceptions and plans functioned in practice. It is clear there are many aspects of social sustainability the residents of both case studies experience due to the nature of cohousing.

4.3 Economic Sustainability

This section will review how cohousing can be more economically sustainable through lived experiences. In the next chapter, there will be an analysis of how the construction and building materials have led to a comparatively higher cost of cohousing developments. Residents acknowledged the value of having a good quality build and understood in the long-term it would benefit their physical health, but it created barriers for people to purchase the units. Most of the participants understood cohousing to be a long-term investment and the social and environmental interests outweigh the high cost. As discussed, cost caused a loss of diversity among the group members of both case studies, but they have explored mechanisms to aid this such as by engaging with social housing companies and the potential for more rental properties on site. The residents often discussed financial difficulties, but they rarely discussed economic factors in terms of sustainability or any particular economic benefits that came directly from living in a cohousing development.

Table 7 illustrates the economic criteria in the matrix, which are fewer because making a profit is not a core value of cohousing. Cohousing developments are formed by residents who have a shared value system and due to the units being sold to a niche they are not a highly profitable development. The residents of Earthsong and High Street were aware of this and financially they struggle because they had to establish themselves as developers to construct their communities, which meant they operate in the commercial sphere. From the perspective of planning professionals, this was advantageous as they valued the concept of cohousing (discussed in Chapter 5). The High Street project benefitted from being a cohousing development because the planner was concerned the old school site would be sold at a large profit but thought
the cohousing development would be beneficial to Dunedin’s identity, and other experts understood it would be beneficial for the economy.

Table 7 Matrix of Economic Components of the Case Studies.

<table>
<thead>
<tr>
<th>ECONOMIC COMPONENTS</th>
<th>Earthsong</th>
<th>High Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development is a durable, long term investment</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Affordable for all groups and a range of demographics</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Income not shared among households</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Suitable mechanisms in place to run the common facilities</td>
<td>✔</td>
<td>?</td>
</tr>
</tbody>
</table>

As discussed above, residents share resources, costs and skills, which has economic benefits for the community, as residents do not have to carry the burden of living costs on their own. While the residents have this advantage, they still maintain their own income and live ‘regular’ lives.

4.3.1 Economic Circumstances and Resources

In Chapter Two, it was evident there is a lack of research conducted into the economic repercussions of cohousing. The participants recognised the purchasing of a cohousing unit was more expensive than conventional housing and so they have had to overcome this barrier. Due to the number of residents that live within cohousing communities it is valuable to share the costs of resources. Some of the participants spoke of the potential to buy items most households will require in bulk, this will have direct economic repercussions:

Yeah because I see lots of scope for doing things like group purchasing of food and things like that, you could buy a pallet of tin tomatoes and things like that, and divvy up, buy in bulk. There is that potential, and have car-sharing between people, if people have a ute and you need access to a ute once in a while or those kind of things will be easy to set up just between different people. It doesn’t have to be anything formal but I think there will be lots of scope for that. I was looking through stuff the other day and there is just lots of things you don’t need and everyone doesn't need to have even in the kitchen if you look at the stuff in the kitchen there is stuff you might use like once or twice a year and if you just had access to one of those things, then you wouldn’t need to buy them. Then everyone’s level of stuff might go down, if there is a coordinated approach about those kinds of things (Participant 2).
Sharing resources has a multitude of sustainable benefits, environmentally it means a neighbourhood can reduce their resource consumption, socially it creates trust among the residents, but economically it reduces the cost of living. The economic advantages of cohousing occur over a long-term period, as the initial cost is higher than conventional houses, but in time, residents will recoup many costs. The smaller size and high quality of the units at Earthsong and High Street will reduce heating costs and energy usage, which in turn will provide economic savings for the residents. The residents at Earthsong conferred their homes were a comfortable temperature and they did not have to heat or cool in the same way they had in conventional homes. The hot water system discussed in Section 4.1.3., will also reduce energy consumption. Participant 2 believed the shared hot water cylinder would make residents feel obliged to be conscious of their water use as meters are used and each householder is charged their usage:

Yeah, it’s got a flow meter so that you can see how many litres of hot water you have used over a period of time, and then you just pay for the energy, just divide that up by the amount of energy that is being used in the system and you just pay for the proportion of it. So it is a user pays system, but that’s good because then people don’t just keep using it, don’t just have three hour long showers and stuff (Participant 2).

The residents will have a sense of responsibility in regard to their energy consumption because everything is processed through the Body Corporate on site. Accountability for actions often has repercussions on the activities of residents as they feel a sense of obligation to make positive choices within their private spaces (Holtzman, 2014). Many of the other factors that contributing to the economic sustainability of Earthsong and High Street has been discussed in the previous sections. Environmental, social and economic sustainability are not separate from one another and the interconnection is what feeds into the values of cohousing communities (Holtzman, 2014). For example, being close to surrounding facilities enables residents to be less reliant on private vehicles and make use of walking or cycling paths, living close to public transport networks also reduces the need for private vehicles which is an economic saving as well as an environmental one. Sharing and teaching skills to one another skills improves the lives of the residents and can aid in saving capital (Holtzman, 2014). One participant said someone who was musically talented taught the children at Earthsong musical skills, and they learnt art and woodwork skills from other residents.
As previously discussed in Section 4.1.1, the case studies are located near public transport routes. The improvement of these services could improve the economic experience for residents of cohousing communities. If they can make use of active or public transport they can reduce their costs and environmental impact and often improve their social well-being and physical health. This area of the research portrayed how cohousing can provide for all the aspects that contribute to residents’ quality of life. Cohousing communities have proven to be successful in Denmark and other countries because residents share the cost of living but each household has a private income (McCamant and Durrett, 1994). The effect of this and how it sets cohousing apart from other communal styles of living are evaluated in the following section.

One of the core principles of cohousing is that residents do not have a shared income; which is different to some alternative styles of living (Earthsong, n.d.). Some ‘alternative’ villages or communes have a shared income among residents and everyone has access to the funds. A cohousing community is not a source of income for the residents, while some in the group pay members to fulfil a role it is often a small amount, and other work is considered a responsibility of the members. All of the members on site pay an annual membership fee, which is dedicated to the running cost of the community and the needs of all the members. The main use for this cost is the energy and water bills for the common house, laundry and outdoor spaces, purchasing of shared resources and replacements for damaged tools and equipment used to maintain the site. Participant 7 acknowledged while these costs did not come with living in a traditional neighbourhood; they are shared so it is not as big a burden. The participant spoke of having to fix washing machines and tools when they lived in a conventional home and it was a large expense; in the cohousing community they do not notice when these issues occur due it being included in their membership. From the research, it is evident that cohousing communities do not intend to make a profit, but there are economic components that contribute to the sustainability of the developments. Overtime, there is the potential for the residents to save and benefit from being part of a community. They can reduce their need for as many resources, which is advantageous in relevance to spending and reducing the households’ ecological impact. In the following chapter, the challenges of affordability will be discussed as acknowledgement it is a constraint to some groups.
4.4 Synthesis

From the research, it appears cohousing is a more sustainable practice than conventional housing. Cohousing is reflective of traditional villages, where all members are engaged with the operation of the site, but they are still free to live their individual lives (Sargisson, 2012). Essentially, the residents are getting the best of both worlds. The participants involved with Earthsong and High Street wanted to reduce their economic impact, improve their social sphere and potentially save economically. These aspirations have been achieved for the most part. It is difficult to determine some factors of the High Street project as the units are not yet built, and the residents do not yet have the benefit of living in the complex. In the future, it will be beneficial to review the success of this site, particularly due to the differences from Earthsong.

While both sites have similar aspirations and follow the guidance of McCamant and Durrett, they have materialised in unique forms. This is typical of cohousing communities and is advantageous, as they need to cater for those occupying the space. The common facilities and spaces are integral to the sustainability of the site as it enables the units to be smaller than traditional homes, residents share the operating cost, but most importantly it provides them with a space to socialise. It is evident the residents have a positive experience due to the dimensions of sustainability with their developments. For these reasons, cohousing should be considered a viable alternative in the Aotearoa New Zealand context.
5 Enablers and Constraints of Cohousing

Because cohousing is an unconventional type of building and residential development in Aotearoa New Zealand, there are many challenges getting these projects off the ground. Often residents are faced with financial challenges, social challenges and difficulties with planning rules due to plans and policies not having any recognition of these communities. It appears some of these barriers have contributed to there being so few examples of cohousing in Aotearoa New Zealand. However, there have also been actions that have aided the two ‘official’ communities to develop. Interest in the social and environmental principles of cohousing has seen support from planning agencies, and political perspectives have also further encouraged the progress of cohousing. This chapter will explore what has enabled and constrained cohousing in this country, thereby addressing research question 3.

Due to the current stages of the two communities, for this section there is more information readily available about the High Street project. This is because it is still in the development phase and so the line of questioning associated with this chapter was more relevant to them. There is also more documentation available due it being processed more recently by the Dunedin City Council. Earthsong was established under the Waitakere City Council, which has since merged with the Auckland Council, meaning that many original documents were unavailable. This is something to be aware of, as the information could be misconstrued that Earthsong did not have as many challenges.

5.1 Planning

Planning is a complex practice and it can be difficult to determine the decisions for projects that are not included in any plans and have not previously been established in a region. Applications are often processed on a case-by-case basis. Participants from Earthsong and High Street communities note that planning professionals and other industry experts were cooperative and while very few barriers arose, it was less straightforward than conventional developments. Rydin et al. (2012) states urban planning has an important role in addressing the quality of builds and designs, which
determine the nature of social interactions in neighbourhoods (Rydin et al., 2012). This means it is advantageous for all parties involved if the planning authorities are engaged with a project from the early stages. This has been challenging for cohousing because it is an uncommon practice and there is limited information available about the success of communities in Aotearoa New Zealand. The following sections discuss the challenges encountered by the residents at Earthsong and High Street and how the rules of consents, district plans and having a lack of knowledge of these processes created constraints for assembling a cohousing community in Aotearoa New Zealand. It is also valuable to understand how planning professionals and practices enabled the two cohousing neighbourhoods to gain their consents and become a reality.

5.1.1 Consent Conditions

Both cohousing communities engaged with planning and industry experts who were aware of the relevant rules and restrictions of the activities on site. This allowed the groups to prepare the appropriate documentation and aided their understanding of what may be contrary to current plans or rules. Due to the High Street Project application being more recent it was possible to gain access to the decision made by the local authority and the conditions placed on the site. This will be discussed in this chapter and provides an opportunity to see how planning and industry experts viewed cohousing. For Earthsong, the consent application provides insight into the conversations the members had with the local authority and how they were involved in sanctioning the project to go ahead.

High Street Consent Conditions

In Dunedin, the planner involved with processing the consent was most concerned the site would become an over-dense site in a residential area. This meant maintaining the site as a cohousing neighbourhood was essential to gaining consent and a covenant was placed on the site that required all residents to adopt a cohousing lifestyle. The residents were supportive of the covenant because they require all the residents to be involved in the decision-making processes. In addition, the planning authority placed a condition on the site that would ensure would adhere to the principles stipulated by Kathryn McCamant and Charles Durrett in their book, ‘Creating Cohousing: Building Sustainable Communities’ written in 2011.
The decision by the planning authority to allow the application to be granted on the condition the site remains a cohousing community demonstrates the housing practice is favoured by planning professionals and they have informed themselves and value the intentions of the residents. It also shows planners acknowledge it is a beneficial option over high density, multi-unit developments, as cohousing residents must adhere to the rules of a body corporate and this benefits the wider neighbourhood as it helps to control residents by having noise restrictions, management of the activities of residents and co-operation of all members. Body corporates operate in many multi-unit or apartment style housing developments. They act as a governing body for the property and sets out the rules and responsibilities of residents (Blandy et al., 2006). In all styles of living the residents pay a membership and are involved in decision-making processes. The rights and responsibilities of unit members vary for all body corporate structures. Body corporates can align the goals for all residents and provide guidance for the operation of a community (Blandy et al., 2006).

As the project is unusual, the application was publicly notified. The reason for their decision in suggested in the quote below:

So when the application came in, the district plan doesn’t recognise cohousing, its just a residential development, so it was simply just an ‘over-dense’ residential development, which is why we notified it. During the processing of the consent, it was presented very much as a cohousing proposal where everybody was like an overgrown family, living in a tight community… but the applicant’s planning consultant, he had a right of reply [at the hearing] and he said right at the very end, “please don’t personalise this consent. We don't usually personalise consents, they usually go with the land… but I recommended that we personalise this consent, and I had supported it purely on the basis of the cohousing model… and I’m thinking hang on, if they consent for an over dense development, they can then sell this on at a huge profit, to Joe Bloggs, a developer who just builds houses (Participant 3).

As the quote above states, consents are not typically ‘personalised’ but for this application the planning authority thought it was appropriate to put restrictions on how the site was used to prevent it being sold to developers for a large profit. Personalising the consent means the site must operate as a cohousing community at all times and if this changes it will be a compliance issue and therefore those residing at the site will either have to rectify the situation or vary the consent. Rules or conditions were stipulated that the residents had to have meetings and other such activities associated with cohousing.
When the application was publicly notified there were strong voices opposing the development from the surrounding neighbourhoods. The residents indicated it made the consent process quite challenging, and felt it may have long-term repercussions.

Yes, there will be a covenant on all of the properties that everyone must agree to participation and the body corporate. Yeah resource consent was a painful process, and the opposition of some of the neighbours is going to be a real barrier to forming relationships (Participant 11).

Sargission (2004) recognises cohousing communities are successful because residents decide to live together for a common purpose, but there are often difficulties with external groups that have misconceptions of cohousing groups. This is likely a barrier that has occurred in both Dunedin and Auckland, but at Earthsong they felt it had been overcome and the group endeavours to integrate with the wider community. In terms of gaining consent the opposition did not have a detrimental effect. The Council considered the opposing submissions but deemed it would alas be an appropriate project and granted approval. Earthsong did not have the same enforcement mechanisms regarding the conditions of their consent but their membership also required all residents to adhere to the cohousing style of living.

_Sargission Consent Conditions_

While Earthsong does not have any conditions on their consent explicitly stating the land must be used for cohousing, it is part of their membership agreement. They wanted to ensure people were well informed about what it meant to be involved in a cohousing agreement before agreeing to reside at the eco-neighbourhood. In the early stages of preparing the consent for Earthsong a chief planner from the Waitakere City Council came to the site and provided advice to the residents. One of the participants involved with initiating Earthsong acknowledged the Council was highly involved with enabling the progress of the application. This is shown by the quote below:

>We went in to talk to the council, the chief planner, when we were very early designing, we invited them out and walked them around…he looked at the neighbours and thought things like “oh that neighbour is going to be a wee overlooked, so let’s say you put frosted glass on windows,” we talked things through and treated them like allies, we had no problem getting resource consent because of that I think (Participant 6).

The participants from Earthsong felt it was fundamental to have a positive relationship with the Council because of their awareness of the relevant legislation.
Local authorities having a high level of engagement and collaborating with applicants can aid in streamlining projects and improve the quality of resource consents. If applicants are aware of potential issues with their activities, they can work to avoid, remedy or mitigate these effects. This level of engagement shows cohousing can be enabled in Aotearoa New Zealand when local authorities and industry experts are willing to share their knowledge and skills to support the applications. While local authorities are willing to help with resource consents, they still impose conditions to ensure that cohousing principles are maintained on the site. Common houses are an essential aspect of cohousing but there is a need to control how these spaces are used, this will be explored in the next section.

Rules in Relation to the Common Houses

The common houses are integral to the functionality of cohousing communities. The buildings having shared facilities for all the residents to make use of and enables them to have shared meals and activities. Common facilities require all members to be engaged in maintaining and utilising them and provide a beneficial atmosphere for all residents (Meltzer, 2000). Groups from different cohousing communities have to select facilities that will be suitable to their use and this means each common house is unique (Meltzer, 2000). The planning authority in Dunedin felt it was necessary to control the use of the common house as it had the potential to disrupt the wider community if it was not used appropriately. Conditions were imposed that required that the common house would only be used by residents and their guests to have meals and gatherings, but cannot be made available to outside parties for any activities or events and no financial or form of trade can be made for the use of the common house. Restrictions have also been established for the two guest bedrooms: guests can stay no longer than two weeks or it will be considered a residence and require additional consent. Moreover, there is a limit of five guests at any time. The residents were very understanding of these rules and thought it was good to have further elaboration of what activities were suitable and unsuitable for their site.

The Earthsong resource consent explained the intended use of the common house, it was recognised as a space to allow residents to spend time together and would have common utilities, for example a laundry, non-commercial kitchen and administrative offices and activity rooms for children and guest bedrooms. The purpose of the
‘Common House’ was to encourage community interaction and resident families to spend time with their children, cook meals together and just generally facilitate interaction among members.

Aside from specific conditions placed on the consents for both communities, there are also rules enforced by the Resource Management Act. Sections 16 and 17 establish it is a duty for all persons to avoid unreasonable noise, and avoid, remedy or mitigate any adverse effect created from an activity they undertake. These responsibilities are instrumental in controlling the behaviour of the residents at Earthsong and High Street. The restrictions enforced by the planning authorities shows they accept cohousing and the activities undertaken in the common houses but recognise a need to limit how these facilities are used. The groups did not intend to lease the common house to external groups and accepted the conditions. Common facilities and spaces are essential to the success of cohousing complexes and the communities wanted to make use of these rather than attempt to gain a profit.

5.1.2 District Plan Rules

The unique nature of cohousing neighbourhoods means there were no rules in either district plans for such developments. This was the reason the planning authorities made some restrictions to control the operation of the communities and to ensure they did not significantly contravene any of the current plans and regulations in their areas. The residents suggested that the councils and planners aided their projects’ applications and the groups were fortunate with the location of their sites. Participant 8 said while there were challenges with gaining consent in central Dunedin on the town belt they were fortunate to be applying in an urban environment. In Aotearoa New Zealand, there are other groups of people who wish to establish a cohousing neighbourhood in a rural context but Participant 8 believes it will be difficult due to density rules:

So I’m sure, say the rural people, if they were ever to get off the ground they would have an even harder job because of the legislation about rural properties and groups of properties together, because you have to buy so much land and you are only allowed one dwelling on it, so that would be a whole different set of challenges because of different bylaws (Participant 8).

Groups wishing to establish a cohousing community in a rural context face challenges due to zoning as rural or semi-rural properties have restrictions on site coverage by
buildings. There would also be difficulties in regard to infrastructure, sanitation and water supply for a large number of residents. In the future it will be valuable to see the reception of cohousing and if it is adopted as a common choice of accommodation, if so, local authorities will have to investigate the benefits and disadvantages of cohousing and potentially adjust district plans and policies to cater for the alternative style of living. The zoning for both High Street and Earthsong enabled the projects to move forward because they are zoned medium density and residential.

**District Plan Rules for High Street**

As previously discussed, neither of the relevant district plans allowed for an activity like cohousing. In fact one participant said the current Dunedin District Plan does not even allow for family flats, but the new plan will attempt to do so. The proposed Second Generation Plan (2GP) for Dunedin will be more aligned with the vision of the High Street project because below the town belt the Council wants all areas to be zoned medium density. An architect involved with the High Street project discussed this and their consent permission:

> We are still under the 26 [units] we got consent for, there is a lot less floor space, it looks a heck of a lot less dense than what they actually consented us to be able to build. I think we could almost now do this under the new district plan, so they want more density within the green belt, it just wasn’t around at that point (Participant 2).

The proposed plan will zone the site as ‘Inner City Residential’, which is described as the area between the university campus and the town belt and central business district. It is proposed this area will be medium density residential living and provide for a range of housing choices (Dunedin City Council, 2018b). The area also has good public transport and facilities and therefore the environment supports higher density developments. Part of the site was included in the High Street Heritage Precinct. As a result of this, the architect designed the High Street block with features that were reflective of the surrounding homes. The quote below suggests what these features were and how some of the residents felt constrained by it:

> …we were also constrained that we come under the historic, yeah, the City Council designated that area, all up High Street and all of those older buildings are a historic precinct. So we did have to design it…to design it in a way that satisfied them [council] that it complemented the precinct. So we were constrained there, if it had been mine choice I would have had something ultra, ultra modern and totally different but you know, let’s be sensible, and that is why
we have the design that we have. We were within a lot of constraints and that’s why we had that (Participant 10).

Precinct rules apply to all buildings and maintain the character of an area. Schedules are created to preserve the heritage value of neighbourhoods and any new builds must be consistent with pre-existing facades (Dunedin City Council, 2018a). For the High Street project, some residents were disappointed by the precinct rules, but it may mean it is more integrated in the neighbourhood would add to streetscape cohesion.

The 2GP Plan in Dunedin demonstrates that overtime adaptations are made to district plans and they can become better suited to new activities. In the instance of cohousing there is a lot of forbearance required from local authorities, as currently it is not common enough to incorporate into district plans. In the future, cohousing may become a more appealing choice of living and rules and plans will have to be reassessed. Although there were no explicit rules relevant to cohousing, the High Street development was deemed a suitable project to be constructed in Dunedin City. It was evident that the site being a cohousing project made it more desirable than any other multi-unit project because it would have a strong organisational structure and the residents wished to live in a sustainable matter that would have long-term benefits for the wider community. Adjustments to the design and function of the activity were made when it was deemed necessary and had the potential to compromise the consent process.

**District Plan Rules for Earthsong**

A review of the resource consent for Earthsong indicates the site was zoned Residential 3. The development was a discretionary activity under the classification “multi-unit housing development,” and the community building was considered an accessory building, which was permitted. There were several aspects of this activity that suggested it was suitable under the Waitakere City Council District Plan.

One of the primary details that aided the advancement of Earthsong was the site’s proximity to the Ranui Rail Station. The Waitakere City Proposed District Plan 1995 classified land as “medium density housing” and limited discretionary activities on sites with a minimum site area of 2000 metres squared and within 500 metres of a railway station. The consent recognised that this was not the description of the entire site:
In this case, approximately half of the site falls within a 500m radius of the Ranui railway station and accordingly, this provision does not strictly apply. Accordingly, the proposal requires resource consent for a discretionary activity pursuant to Rule 2.3. of the Plan. (Earthsong Resource Consent prepared by Bentley and Co. Limited, 1999).

One of the participants said they had discussions with the Waitakere City Council about this and they made adjustments to support the medium density criteria for the site:

…but also, because half of the site, basically they drew out a circle around the railway station of 800 metres and half of our site is within that circle. And that as right you can do medium density housing within that 800-metre radius, so they just kind of stretched it to the rest of the site (Participant 6).

This quote shows how groups can work with the relevant councils to have their projects move forward and local authorities are willing to support cohousing developments, especially when they closely align with the ambitions for the community or city. This will be explored further in Section 5.2 of this chapter. The relevant councils for the case studies displayed support for the progression of the cohousing communities and allowed the groups to overcome rules and plans when they created barriers.

This demonstrates industry members and local authorities have enabled cohousing as a practice; prior to entering the field it was expected that there would have been more constraints from plans and rules. While it is clear the communities were able to overcome challenges with plans and conditions of their consents, the participants stated they had limited knowledge of the planning systems and it may have been beneficial to have a spokesperson within councils to better inform them of procedures, while they had architects and consultants to help with the preparation with the consents and hearings, having a direct contact within the local authority would have been valuable, this will be discussed further in the following section.

5.1.3 Knowledge of Planning Practice

The RMA, district plans and regional plans are complex statutory documents that can be difficult for lay-people to understand. Both councils were instrumental in preparing the resource consents for the projects but the ideal situation would have been for each of the communities to have a person in the council that worked closely with them and
understood the principles of cohousing. At High Street they tried to have a direct contact dedicated to help them with their consent:

…we tried to get [someone] appointed early on, but [it] didn’t actually happen early on, [to] have somebody that operated as a portal into council and they don’t have to do everything but they have to understand council divisions and processes and people in order to point us in the right direction depending what it is that we are asking about... And so having an able person in council who is willing to learn about cohousing but who very much understands the council processes and the people, especially big councils it would be really useful (Participant 8).

The quote above suggests that future cohousing groups would benefit having a contact within their relevant local authority that would be able to explain the complexities involved with applying for resource consents and other applications. At Earthsong, a chief planner came to the site and acknowledged where some changes could be made on site and this fast-tracked their progress. This provides scope for future cohousing communities to liaise directly with a key contact person within their local authority to inform them on formal processes.

5.2 Finance

Cohousing is a unique style of living and due to its rarity in Aotearoa New Zealand it has been perceived with apprehension. From the field research, it was evident financing and the costs of the cohousing projects were the biggest challenges for both of the case studies. The respondents discussed the extensive constraints of gaining funding for their developments, the difficulties of finding the appropriate legal structure and the cost of high quality and sustainable materials. This section will review these challenges.

5.2.1 Banks and Investment Challenges

Investors and developers are apprehensive of projects they do not understand and this was evidently the case in the instance of Earthsong and the High Street project. One of the experts, an architect, discussed how cost became a challenge for the Dunedin project and processing loans prevented them from progressing:

So I think they have had a bit of trouble getting it off the ground, I think the units are not as cheap as they would like them to be, which means its been a price down, it takes a special person to buy quite an expensive unit and have neighbours everywhere and sharing resources and stuff. So it's a special sort of person. It'll be interesting to see if it works. I wouldn’t like to say (Participant 3).
Residents of both developments experienced challenges with gaining loans and mortgages from any banks in Aotearoa New Zealand. Participant 8 said the offshore parent companies of the major banks had prevented them from lending to any multi-unit developments in Aotearoa New Zealand. This caused challenges for the High Street project and they are now borrowing at commercial rates, which is presenting more barriers. Both groups had to form companies and register for GST, but observe it is not an ideal framework for cohousing because they had no intention of making a profit. The groups had investigated other legal structures that may be more suitable but it raised challenges of liability among members:

...we have explored other options like trusts and incorporated societies but there is no limited liability on those, which would mean that if everybody walked away and all the other trustees disappeared or whatever and I was the only one around then I would be liable for the entire, you know, millions and millions of dollars of development and nobody would put themselves in that position. And we call ourselves a not-for-profit company, but in fact there is no such thing as a not-for-profit company in this country according to tax laws. So it makes us doing business really difficult...because the company is doing the development and even though we are the company and we are all the shareholders and we have given loans to the company in order to do the development. The company is forced to sell it back to us at market value and so if the market value and the cost are the same, that’s great, but how often does that happen? If the cost is above the market value, that’s not good because then the bank doesn’t want to lend to you because then if something happens and something falls over they can’t realise their investment, if the cost is below market value and the market value is higher that automatically puts everybody’s prices up, and you know what building costs are in this country, they are horrendous and they just go up by the second. And so we are very much on the edge, most of us in the group because costs have just kept rising and we are also doing passive house, it’s not as though we are doing high end spec at the finished level, it’s quite modest our fit-out (Participant 8).

Evidently, the current structures are not suitable for cohousing but there are very few options that do not present a challenge for the residents. At Earthsong and High Street, the residents found it difficult to work between being private homeowners and a company and were investigating alternate options. One resident discussed the potential for a ‘limited liability partnership’, which would mean all the partners would have joint liability and would provide the groups the ability to determine a structure themselves and provide them with some flexibility to the management of their cohousing communities.
Eventually, the High Street project found a bank willing to lend to them, however it is at a commercial rate and therefore higher than a single homeowner receiving a loan or mortgage. When asked if it was a standard home loan one participant replied:

No, you have to borrow at commercial lending rates, it's a commercial project. The banks are loathed to bank to any multi-unit housing project at the moment, nevermind something that is different. So we ended up going to any major bank and they all turned us down until we got to Kiwi Bank and they said, “ok we think we can work with you guys,” and so they should because we had presold all of them it’s not like we are going to them and saying, “we’ve only sold 50% of them will you help us fund this project,” the terms were pretty harsh i.e. 33% cash and you have to presale all of them, they can’t really lose on that. But it’s great that they were willing to, because again they’ve been working with us for the last year or two years (Participant 2).

This shows the bank was supportive and made it possible but residents were still obliged to lend at a higher lending rate than typical privately owned homes. While every unit had to have a twenty percent deposit, the site overall had to have thirty-two percent against the project. The commercial rates are typical for developers that have the intention to sell units for a profit but the High Street residents have no intention to do so. Unfortunately, this shows there are not appropriate structures for cohousing to operate under. A participant from Earthsong said they were viewed as developers rather than private homeowners and this is captured in the quote below:

The biggest challenge was kinda operating in the middle between the multihouse project run by developers and the single home maybe, maybe run or built by the individual owners, we are kinda in the middle of those, part of both worlds and so we would often get, we would often have to meet these criteria: the multihouse criteria, when actually we were just a bunch of individual house owners working together. So, tax, GST, getting a construction loan, various things were, we just had to work it all through, think OK, what are the ethics underneath it that means we should argue to do it this way, rather than that way. Its like tax law is written either for individuals or for big profit making companies. We weren’t either of those (Participant 6).

The quote from Participant 6 exemplifies that if cohousing becomes more common in Aotearoa New Zealand there is a need to establish structures that enable the residents to operate as private owners rather than developers. The High Street project still faced difficulties. Finding a structure that did not have detrimental effects on the individuals but would function in the early stages of the projects was evidently hard for both projects and New Zealand tax laws and business responsibilities causes a constraint for cohousing developments. While the residents are stakeholders in the development companies they are forced to sell the units back to themselves at market value.
participant discussed the complexity of this because if the cost is higher than market value then the bank does not want lend because if anything falls over they are unable to realise their investment. However, if the cost is below market value then that increases the price of the units and it is unlikely that market value will be equal to the cost. For the High Street project this is a challenging time as they are yet to build the units and so will have to see the market value when the building stage is complete. While it is evident there are challenges with this component of the processes to initiate a cohousing development, it is beyond the scope of this research. Clearly, it is an area that warrants further investigation.

In Denmark banks are more willing to lend to cohousing projects because all of the units are spoken for and if circumstances change and people leave the communities, the houses are quickly filled by other residents. It has been found that in different countries and cultures there have been a variety of financing mechanisms and ownership structures, such as limited-equity cooperatives and rentals owned by non-profit organisations (Blandy et al., 2006). McCamant and Durrett (2011) stated, “Danish communities were able to take advantage of government-sponsored, guaranteed construction loans that structure the developments as limited-equity cooperatives,” (McCamant and Durrett, 2011, p. 35), which has enabled them to collaborate with non-profit organisations and has seen cohousing become a more common housing practice in the country. This structure is not yet common in Aotearoa New Zealand and therefore both case study groups had difficulty determining the appropriate structure to operate under, this will be explored in more detail in a following section.

5.2.2 Legal and Planning Costs

There were also challenges with the legal and consenting costs due to the communities being extensive developments that required the input of a range of industry experts. Many of the residents recognised the long term benefits were worth the higher cost of the units rather than traditional neighbourhoods. They were all aware they did not have the appropriate knowledge to instigate the communities without the help of professionals.

And we are a bunch of amateurs and we are not developers and the legal issues too, because there isn't just the package you can take and put down and here’s all
the papers you need and just tweak them. I think the legal build is going to be
over a hundred grand and that’s actually, they’ve had a friendly lawyer who’s
rebated the fees. There has been a cost to that and efficiency. But it’s just
agonising, and Earthsong was the same, have you have seen their Trust deed, it’s
like 60 pages long, they just took the standard Trust document and tried to build it
into something (Participant 11).

Participant 11 is a member of the High Street project and has been involved in the
challenging processes of gaining the appropriate documentation to move the project
forward. The quote above reflects there is a long process in gaining the appropriate
legal and planning requirements right when developing cohousing as well as the
exorbitant cost of arranging construction. Due to cohousing being an unconventional
model, it requires those in the profession more time to analyse and understand the
desired outcomes of the community. Even having good connections and working with
people that believe in the projects it was a still a difficult period for the High Street
project and this was a constraint.

5.2.3 Purchasing of Sites for Cohousing Communities

There have also been complicated processes to procure the sites and as the Dunedin
project was located on what had previously been the High Street School, it had to be
offered to a range of stakeholders before it was available for purchase. When an
educational institute is surplus to the requirements of the Ministry of Education the
land has to be offered back to any donor families, government departments, the City
Council and to local iwi (in that order). Participant 8 was aware of this process and
contacted Kai Tahu’s property division in Christchurch when they understood the iwi
would be offered the site to purchase and would have a month to make a decision
whether. If Kai Tahu turned the site down for themselves, they could tender it or it
would go on the open market. The small group involved with the High Street project
at this stage had a week to prepare a tender and make an offer. The group knew if the
site went to the open market they would be unable to afford the site, therefore it was
crucial they prepared a suitable offer to Kai Tahu. In a discussion with Kai Tahu’s
property division they were told they had a short period to prepare a tender, although
this was faster than they expected Participant 8 spoke to the group and said:

I put to the group, what is it worth if we don’t get it? So we did a very quick lot of
homework over those four days and we managed to get the weekend out of it, and
sat around my lounge again, we did get a valuer involved, although that wasn’t, it
was a tricky site to kind of value, because flat sunny land in the middle of, just
under the green belt, doesn’t happen very often and comparing to other schools that were on the marke…we decided to put in a cash offer on the Monday and to cut a long story short it was accepted and I also wrote a letter because the woman I had spoken to at Kai Tahu was very interested in the sustainability thing, from an economic, environmental and community point of view, so I wrote a letter outlining that and basically while Kai Tahu generally work very much on a commercial level, that letter was the thing that swayed it because we know the developer that we had been working with put an offer in for the same amount of money, so that was interesting (Participant 8).

The quote suggests other groups recognise cohousing has the potential to provide long-term sustainability benefits. Participant 9 suggested that Kai Tahu appreciated the principles of cohousing and its wider benefits.

5.3 Other Costs

There were other barriers associated with the high cost of the project. Opting to use good quality, non-treated and local materials caused an increase in the cost. The Earthsong residents made the decision to use the rammed earth method, which was more expensive than conventional building practice and required some level of expertise from the contractors. Installing solar panels and extensive water systems were other features that pushed the costs up further and created some price barriers for potential residents.

People have to pay the extra at the front end for being sustainable, putting in green roofs, and/or putting in solar or using materials that aren’t readily available. So that’s a cost factor… There was a large degree of uncertainty. You also needed a reasonably large piece of land that was vacant. Because of the price of the land it could be prohibitive for the outcome (Participant 4).

The choice of materials has definitely been a constraint for potential residents because they cannot yield the cost of the units. While there are many long-term benefits on having warmer, drier and ethical buildings, for some people it is unaffordable and this has reduced the diversity of the groups as the high cost of the units made it challenging for young families, low-income families and immigrants. The residents recognise that this is a barrier for potential members, but feel they cannot compromise the quality of the builds:

You have to balance that against the fact that new building in New Zealand is horrendous price, it’s appalling price and we are also, and of course we are doing passive house, I mean it’s an expensive build, it’s not a cheap build, it’s a really good quality build, so while it’s expensive, you’re getting value for money. It’s
definitely value for money but the price has cut quite a few people out, yeah it has, it has to be said (Participant 10).

Diversity has been described as a core principle of cohousing communities and having a range of age groups means group members have different strengths and levels of dependency (Dempsey et al., 2012). The High Street group wanted to incorporate a social housing aspect into their project but found there were difficulties getting private organisations involved. The Dunedin City Council has bought one unit that may be used for social housing but there are concerns for how those tenants will integrate into the community, this is reflected in the sentiment below:

Yes and they talked about the community housing, Council buying one or two or six or whatever and putting in tenants who wouldn’t necessarily be able to afford their own home, whether or not that happens or changes things, it’s going to be interesting, how’s that going to work if it happens, how’s that going to work, how’s it going to end up? …but you know what I mean if it gets run down, if the wrong people are living there, or aren’t looking after it, or are creating a bit of awkward place to live…people don’t want to live there because its unpleasant, what is going to happen, (Participant 3).

Some argued that the initial financial investment was worth it, because in the long-term the social, environmental and economic benefits would improve their quality of life. Participant 9 recognised that if a direct comparison was done on the price of a cohousing property compared to a conventional home it would appear to be more expensive but there are extensive benefits to being part of a community:

…if you calculate the price per square metre, definitely yes [it is more expensive], because we have a relatively small footprint per unit, given that we don’t have gardens all around each unit. So if you compare it like that yes. Also if you don’t take into account that we have a shared common facility, I think also yes then we are more expensive. And also if you ignore the savings you might have later down the road with regards to heating and sharing the facilities, I think again maybe it will be higher prices than others. But I think overall, if you take everything into account then it is not expensive, it is actually good value. It’s really, it is a bit of an upfront investment but I think it makes financial sense, to me at least, that’s why I have stepped in (Participant 9).

Residents have a lot to gain from high quality builds because it can improve their physical health and overall well-being but it does come at a cost (Howden-Chapman et al., 2012). While the residents’ felt upfront costs were a big constraint for the projects they stressed having good quality materials was integral to the success of their communities:
We’ve had a lot of interest from families but for most of them it has been the cost of the new build, (Participant 10).

Yeah, that’s been a major issue with our development as well. I have been, I’ve joined very recently just this year, earlier this year in February or March. So I don’t have a deep understanding of the entire development, but what I have learned over time is that there have been, people adding and coming and going, and the people that went away again was partly based on financial reasons, there were price hikes, there were some perhaps now, unrealistic ideas about the price range of the units and looking further and deeper and taking more time, people realised, “ok these aren’t really realistic,” so there have been price bumps over time... (Participant 9).

Overcoming these challenges with cost has the potential to improve the quality and diversity of cohousing communities. It is clear that the units are expensive and very few rentals are available but social housing could provide an opportunity for people that otherwise could not to engage with the project. In the future there is a need to explore the success of cohousing and how the principles can be implemented into other housing styles. Cost and financing was the challenge participants conferred the most and although they managed to overcome barrier it was not always a perfect fit. There is still a lot that can be done to improve the funding aspects of cohousing communities in this country.

5.4 Perceptions and the Political Sphere

An addition challenge to establishing a cohousing community in Aotearoa New Zealand is because people do not having a clear understanding the intention of these neighbourhoods. As a result of this, there has been informal and formal opposition to them being built. Opposition has the ability to slow processes or make it difficult to get developments off the ground (Campbell and Marshall, 2000). There is a need to better educate the Aotearoa New Zealand population of living in an environment where people share resources, interact regularly with people outside their household and work to reduce their ecological footprint. Cohousing is often misconceived as being an exclusive, cult-like environment, but Gruber and Shelton (1987) found a correlation between residents who have a strong relationship with their neighbours and a higher standard of residential satisfaction. While perceptions can be a constraint, they can also empower the progress or success of a cohousing development. From the research it was evident both cohousing neighbourhoods have been enabled in many regards. The experts and residents suggested that the planning profession aided their
progress and adjustments were made when necessary. The councils were interested in the concept of cohousing and it’s sustainable practices. The political agency of the proponents of Earthsong and High Street helped the developments become a reality. Some of these aspects have been discussed in the chapter but there has also been support and opposition from lay-people and local groups. When members of the public have the opportunity to express their opinions it provides them with a level of empowerment, which leads to more successful communities because they can seek to address wider public concerns (Campbell and Marshall, 2000).

5.4.1 Submission Processes

As noted, the Dunedin City Council publicly notified the application for cohousing at the High Street site because, “the application has the potential to undermine the integrity of the District Plan reviewed the application for the High Street project”. The public had an opportunity to express their thoughts about the application. The submissions that came in opposing the cohousing community were insightful of how people felt about this style of life and highlighted fears of what might be coming into their neighbourhood.

There were a total of 54 submissions made against the High Street application with 47 in support and 6 in opposition and 2 submissions of neutral opinion but wishing to make a statement. This reflects people were mostly positive about the potential of the project, with submissions coming in from Dunedin, Auckland, Christchurch and even America. Those that opposed the project all lived nearby and were concerned about the amenity of their neighbourhood and how it would affect their properties. It should be acknowledged it is uncommon to have so many submissions for an application this size, but Participant 3 did not think it was surprising considering how many people would be residing at the property. There was a range of opinions shared in relation to the High Street proposal. Below are some concerns members of the public expressed as reasons of opposing the High Street resource consent:

- Style of houses; people felt they were not in keeping with the range of architectural styles in the area
- Visual impact of the three story buildings and high density of property
- Proximity of buildings to periphery of site
- Some submitters recognised the value of cohousing but thought the physical structures were not reflective of the innovative style of living
• Plans had limited planting (trees and greenery) and concern at loss of mature trees
• Parking and traffic issues with an increase in vehicles
• Belief that the site is not appropriate for cohousing
• Children making loud noise after school hours
• Food smells and potential commercial use of common house
• Design of the buildings is totally out of character for the precinct.
• Overall, poorly designed, over-dense development. Will significantly reduce property values, and may lead to ‘slum’ type living.
• This is not the place for such a concept; site should be used for a quality residential development of lower density and higher quality homes.
• Housing density could increase population of the area by 80 people which is a very large increase
• Children playing in communal area could generate a lot of noise; previous school use confined noise to school hours, but this will be out of school hours. Building will help screen noise but quiet setting will be adversely affected.
• Requests that disruptive and noisy facilities be located away from neighbours.
• Solar panels may cause reflection onto neighbouring properties.

Participant 2 discussed the issues and was frustrated by the comments made about the activities that would occur at the site:

That’s when were just astounded when they were like, “we don’t want to hear children playing,” we were like that is mental. How can you not want to, and the site used to be a school, “oh but that wasn’t in the evenings, we don’t want to hear them playing in the evenings,” that’s just sick. A number of people have actually sold up and left because they don’t know what’s going to happen, I know at least one person has sold up and left because of the uncertainty that was going to go on next door, but that’s probably just as well (Participant 2).

The residents felt a sense of disbelief regarding the opposition of their project, especially as an alternative may have been for several standard houses to be built on the site with no regulation on how people had to live there:

Well, they were going to be faced with, if a developer had bought it and put 10 G J Gardner style houses in there, they would have had no control whatsoever. And no body corporate in there, exercising control and do you think we are going to tolerate out of control teenage parties? You’ve got much more prospect that the neighbour, that peace and tranquillity will be maintained in the neighbourhood where there is a strong body corporate (Participant 11).

Body corporates have the ability to control how residents interact on the site, and the residents at both projects thought it would be easier to control noise levels and disruptive activities in a cohousing community because everyone on site has agreed to the conditions of their contracts and memberships (Blandy et al., 2006). Residents of cohousing neighbourhoods also have greater rapport with their fellow members and
therefore do not wish to disturb the cohousing complex, which has flow-on benefits for the surrounding areas.

Public notification and consultation is a vital part of planning practice and enhances the democratic processes (Cheyne, 2015). The statutory legislation that allows for participatory planning in Aotearoa New Zealand is the Resource Management Act 1991 (RMA) and the Local Government Act 2002 (LGA), this acts to ensure the involvement of the public in decision-making processes (Cheyne, 2015). Providing members of the surrounding neighbourhood and those that felt they were affected parties with an opportunity to share their opinions encourage democratic processes and can improve developments. The local authority deemed that the issues raised did not have a great impact and granted the consent. The opposition, while unpleasant, did not cause a significant impact on the project. It is also important to recognise that there was also support for the establishment of a cohousing community on the Dunedin site. The reasons for support will be discussed in the following section.

The submission process also allows people to express why they support an activity. As previously mentioned, for the Dunedin project there were a significant number of submissions in support of the project, some these included:

- High quality housing that is sympathetic to the design of the heritage precinct
- An asset to Dunedin and closely aligns with the goals of the 2GP
- Cohousing as been seen to work overseas (specific places include Scandinavia, Europe and America)
- Sustainability principles and efficient use of urban land
- Support for the positive environmental and social effects of cohousing
- Provides a style of living that would improve the morale of the community
- Location of the site is close to public transport, sports facilities and local shops

The reasons for support from the submitters, closely reflects existing literature and suggests people have done some level of research to understand the cohousing concept. Many of the submitters shared opinions and were positive about what a cohousing neighbourhood would bring to Dunedin addressed in a previous chapter (Section 4.1 and 4.2) As noted, cohousing improves the well-being of residents and increases opportunities for socialising, sharing expertise and resources and being directly involved in decision-making processes about their communities (Williams, 2008). The submissions of support helped to provide the local authority with further
information about the success of cohousing elsewhere and how it would be suitable in the Dunedin context.

The residents of both communities felt passionately about integrating themselves with the local communities and wanted an opportunity to inform people on the purpose of cohousing communities. In Dunedin, they held a fun, activities day and welcomed people to their site. One applicant said this appealed to all ages and enabled them to engage with their prospective neighbours:

We thought it was important that Mornington and the wider community, Dunedin, knows that we are not a cult, we are socially minded people and we all do things in the community...we had a free fun-day and we set it up, it was basically orientated around children and we set up about fifteen things that children could participate in, and we waited and wondered if anybody would come and we stopped counting at about two-hundred and fifty and it was a wonderful day (Participant 10).

The purpose of this day was to emphasise they wanted to be involved with their community and were not an exclusive group, which enabled them to address any prejudices or misconceptions. The fun-day provided the local community with the opportunity to come and understand what would occur at the site and it seemed to have a positive effect. Once people are more informed about activities, they become more comfortable with the unknown and often gain an interest themselves (Aygeman and Evans, 2003).

Earthsong and High Street also held public consultation meetings and shared their experiences and knowledge of cohousing. This is how they recruited new members and informed the public about the intentions of their communities. They used the public meetings as an opportunity for the public to clarify any misgivings. It has been found that having public involvement in projects often leads to greater success because being informed dispels any concerns and enables people to share their opinions (Rowe and Frewer, 2005). Cohousing members need to raise awareness for their functionality and Williams (2008) thinks misconceptions can be overcome through marketing, awareness, distribution and pricing. Currently, it appeals to a small market in Aotearoa New Zealand and marketing may help cohousing to become more common practice. Currently cohousing communities grow largely through “grass-roots” or “word-of-mouth” approaches but marketing could encourage a top-down approach that is more commercial (Williams, 2008). The public meetings and
seminars could act as a mechanism to gain awareness and spread the appeal and benefits of cohousing.

Support from regulators such as planners has also been discussed (see Section 5.1). Building relationships with these experts can make a significant difference. The architect at Earthsong said he selected the planner due to his previous experience and passion for similar projects. The participant stated that when people feel passionately about a project they often have a higher level of engagement. This is suggested in the quote below:

I did a lot of work with him [the planner], because he had a particularly good understanding for sustainable type work and that’s why I nominated him for this job because I do think its good if a planner can believe in what he’s doing… you get a lot of people who just act as though they are reading the rules and complaining, and while that’s important its also really good if the planner can believe in what he’s doing (Participant 1).

For the Dunedin project this was proven in the opinion of the planning authority. The Council planner of the High Street project said that the fact that the application was a cohousing development influenced their decision:

It went through due-process. I did recommend ‘grant’ [the consent], which was largely because it was a cohousing project, if it had not been a cohousing project then they would have fallen, but if people want to try something a bit different and we can kind of see their vision and as long as they can manage the effects and it doesn’t upset the neighbourhood too much, council will give them a go basically (Participant 3).

Participant 3 has explicitly stated they would not have granted consent for a similar project if it were an application from a private developer. The Council thought cohousing would be an asset to Dunedin and would function as a model for the wider population.

5.4.2 Political Sphere

As demonstrated above, both Earthsong and High Street were located in local authority areas that supported sustainable alternative developments. Earthsong was closely aligned with the political will of Waitakere City when it was trying to establish itself as an ‘Eco-City’. Participant 1 highlights the role of these political allies:
we had Waitakere Council, we had the mayor, who was Bob Harvey and he was very supportive, and with the owners, with the Cohousing people, we approached Bob Harvey and he helped if you like, clear the way, in terms of who we should talk to and it meant that we, the resource consent was put in, it wasn’t, they had heard about it. They knew all about it. Bentley’s did all of document preparation and made sure we complied with everything we needed to comply with and so, in that sense, they did the work, but they were chosen because we thought they were the right people for the job (Participant 1).

The Waitakere Proposed Plan’s main objective was for a “sustainable future” and the residents understood their proposal was consistent with this aim. One participant felt if they had tried to establish a cohousing neighbourhood in a different area it would not have had the same reception:

I think, to be frank also they were fortunate to be choosing a site out in West Auckland, where there’s, where the councillors and politicians and the like, have an hankering for, to put it bluntly, people who are thinking green and who are thinking in that way, very much a Labour electorate, a Green led area. So it was favourable for the nature of the activity. If they had tried to do it Remuera they would have had trouble. So that helped the process. That’s the nature of the people that were embarking on that process, had also, those had the motivations (Participant 4).

Cohousing as an activity and the life residents intended to live was considered permitted by the plan and reflected the Council’s aim. As a consequence, many of the physical aspects of the proposed development were permitted; the medium density due to location of rail station; site coverage and the communal house as an accessory building. Due to these permitted activities there were less challenges regarding planning. Politicians and council members were not the only groups that enabled the progress of Earthsong. Some of the residents became politically engaged and prepared submissions for a district plan change proposal that would make cohousing closely aligned to the aims of the plan. Some of these ideas were captured and the following quote which explains this engagement process:

One or two of us [the community] actually put in submissions when they were developing that thing and managed to tweak some of their criteria to make it easier for what we knew we wanted to do in the future. And so when it came down to it, it was fine, it was perfect. It was all about creating good living spaces; and solar access rather than you must be so many metres from this boundary. It was all effects based (Participant 6).

From the data collected, it is clear Earthsong and High Street’s intention to be sustainable neighbourhoods with positive social effects aligned with the proposed plans of their cities. This has seen a level of engagement from the local authorities to
support the progress of the applications. Once again, this represents people appreciating the principles of cohousing and promoting the success of the communities.

5.4.3 Summary

When interviewing the participants, those involved with the High Street project talked about the objections to their project more than those from Earthsong. It is difficult to determine if this is because of the stage they are at or if their location in a historic part of Dunedin meant people were more opposed or because the public were given an opportunity to voice their opinions through the public notification process. When Earthsong was built it was in a semi-rural location on a site that had previously been used for an apple orchard. It is only within more recent years that the expansion of Auckland has seen an infill of Ranui and surrounding areas to the site. It is possible that people accepted Earthsong because it had been there prior to them moving to the neighbourhood.

5.5 Synthesis

This chapter, has addressed research question 3 by exploring the challenges and constraints the two cohousing developments in Aotearoa New Zealand have faced. There are several ways in which these challenges have been overcome. The political will of people and the intent of planning authorities to make cohousing a reality played a significant role. As Earthsong Eco-Neighbourhood and the High Street Cohousing Project are the only two ‘official’ cohousing developments in the country, there was limited legislative and planning knowledge that could be applied when making decisions about the projects. Talking with participants, both residents and experts, it was interesting to hear what rules and conditions were placed on the two sites to make them viable projects. Political power and key advocates also played a role in enabling the projects, particularly in the instance of Earthsong. And finally, there was a degree of support from planning professionals that made it possible for the High Street project to move forward. From the research it was evident that both cohousing neighbourhoods have been enabled in many regards. The local authorities were interested in the concept of cohousing and it’s sustainable practices. The
following chapter will address the final research question on how cohousing can be enabled in Aotearoa New Zealand and makes several recommendations to that effect
6 Conclusion

This final chapter will conclude the study and provide recommendations for why cohousing should be facilitated in Aotearoa New Zealand as a viable alternative to conventional housing. In doing so, this will answer the final research question. Cohousing appears to be a viable option for addressing many of the current challenges of Aotearoa New Zealand houses and environmental, social and economic outcomes. Chapter Four undertook an analysis of how the Earthsong Eco-Neighbourhood and High Street Cohousing Project addresses a range of sustainability issues apparent in current conventional neighbourhoods. The chapter used a matrix to review the aspects of the projects that were ‘good practice,’ and it was insightful to hear the residents’ justification for engaging with cohousing models. There were two key aims of the chapter, to understand if cohousing was a more sustainable model than traditional housing, and secondly, how the residents experienced the dimensions of sustainability. Following from this, Chapter Five explored the decisions and practices that enable and constrain the development of cohousing.

The research questions have been explored through a number of avenues, including key informant interviews, site observations, mapping methods and documentation analysis. The triangulation method was adopted to increase the validity of the findings. The intention of this concluding chapter is to review all of the previous discussions and in addressing the final research question suggest recommendations for how cohousing can be better facilitated in Aotearoa New Zealand.

6.1 Research Questions and Conclusions

Each of the chapters has addressed aspects of the research questions recognised in Chapter 1. The first objective was to understand if cohousing is a more sustainable practice than standard housing practices. Chapter 2 provided insight into the current challenges of sustainability in conventional housing stock internationally and within Aotearoa New Zealand. There is evidentially an issue with the standard of homes, which is having repercussions on residents’ physical and mental health. There are also difficulties in regard to affordability and environmental degradation. Understanding
previous research of sustainability and cohousing enabled the researcher to understand where solutions or alternatives were required to improve the quality of life for residents, whilst reducing the ecological footprint of households, as well as decreasing the financial burden of living costs. McCamant and Durrett (1994) were instrumental in improving the popularity of cohousing, as they introduced the model to the US context. As a result of the success of the communities, cohousing has been adapted to a multitude of contexts around the world.

Based on the findings, it was determined that the model would be effective in Aotearoa New Zealand. The smaller unit sizes and use of sustainable materials suggests it is worth encouraging the practice for the reduced impact it has on the environment in comparison to conventional homes. The selection of the site of the communities is also vital to the sustainability of a cohousing community, because if residents are able to make use of active transport modes or public transport systems their reliance on private vehicles is reduced. Both case studies were in locations nearby to a range of utilities and services, which has a range of benefits. One of the main benefits of cohousing is the sense of belonging residents gain and as recognised in Chapter Four, there are many socially sustainable practices that the residents of Earthsong experience as being part of their community. The High Street residents had already experienced some degree of this, but were aware it would be a more inclusive community once they were on site. The final dimension of sustainability reviewed was economic impact of housing; affordability and maintenance costs were recognised as the biggest difficulties in conventional housing. Currently there are still challenges with affordability in cohousing communities because there are only two in Aotearoa New Zealand and so due to limited access and high quality builds they are more expensive initially. The residents hope in time the higher cost of their unit will be recouped, particularly as they will share maintenance costs, resources and skills. While the research found that cohousing was a successful model, they are the only two ‘official’ cohousing communities in New Zealand. Chapter Five discussed the factors that enabled and constrained the development of the case studies.

Chapter Five reviewed the main enablers and constraints to Earthsong and High Street. It was found there was a mix of industry barriers and personal barriers that has prevented cohousing being a common housing model in Aotearoa New Zealand. The main ways cohousing was constrained in Aotearoa New Zealand was through
financing and operating with a suitable business structure, some planning practices and opinions and opposition from external parties. The participants of this study discussed the difficulties of gaining loans to get their projects off the ground. They also stated they lend at a commercial rate, which is significantly higher than standard homeowners. The high cost of the units also created a barrier as it dissuaded some groups from becoming involved with the communities. This will be discussed further, and a recommendation will be suggested for how this challenge could be overcome in the future. There were also challenges as planning authorities felt it would be appropriate to place conditions on the resource consents. This was to ensure that the facilities on site were not used inappropriately. For example, the Dunedin City Council did not want to High Street members to lease out the common house to members of the public or make any form of profit. The residents of the case studies said the local authorities were generally supportive of their developments. In contrast to the barriers, there were aspects the enabled the communities to develop. It was found the location was influential in gaining support for the project. Earthsong was under the authority of the Waitakere City Council, and the ambitions of the ‘Eco-City’ closely aligned with the principles of cohousing. For this reason, the community received a lot of advice regarding their project. In Dunedin, it was also evident that cohousing was a favourable activity for the Council, as they were concerned the large piece of land on the town belt would be heavily developed. The design of both projects was also appropriate in the sense they were medium density and non-obtrusive in appearance. Both projects received a lot of support due to their sustainable natures, and there is also recognition that cohousing has the ability to address many of the issues apparent in conventional housing. From the findings, it is clear that cohousing is a positive housing style and should be explored more in Aotearoa New Zealand. The following section will review how cohousing could be better facilitated in the country.

6.2 Facilitating Cohousing in Aotearoa New Zealand

As recognised above, the different chapters addressed the different areas of study. The main mechanisms that could enable the practice of cohousing in the country are policy changes, better business structures, and educating a wider audience of the benefits of cohousing. The findings of the research portray the benefits of cohousing
and as Participant 13 recognised in Chapter Four cohousing provides residents with an opportunity to maintain their independence, while increasing their engagement in the operation of their community. Cohousing should be better facilitated as it improves the sense of belonging in members, as previously mentioned it also helps to reduce environmental and economic challenges as well (Waxman, 2005; Crawford and Fuller, 2011). The participatory processes involved with establishing cohousing communities have the ability to develop neighbourhoods that cater for residents as they are engaged in all the vital decision-making processes. The loss of social engagement has been recognised as a risk in Aotearoa New Zealand (Blakely, 1994), particularly with the aging of the population. It has been recognised that conventional homes and traditional retirement villages do not meet the needs of everyone in society, due to this it is important to assess alternatives. Cohousing provides the potential for the elderly to maintain their independence, while being supported by a network. Many of the participants became involved with Earthsong and High Street because they believed when they reached retirement they would still be involved with a community and it reduce their feelings of isolation. At Earthsong, the elderly residents explained that being part of the community made them feel supported even when maintaining their own property, one participant said it gave them a sense of sharing the responsibility even when maintaining their own unit.

Participant 1 spoke of other mechanisms to encourage interaction between people in society. Although the following suggestions are not cohousing, it reflects how the principles can be developed in other situations. The participant discussed a design of retirement living on the same site as a preschool, with the potential for the elderly to take sessions and educate the children. This would be beneficial for both groups and connects a range of generations, which has been suggested as a positive social practice (Cohen, 2005). Although currently there are very few examples of cohousing in Aotearoa New Zealand, this idea exemplifies how it is possible to incorporate some of the practices into standard neighbourhoods to provide interaction within people and make good use of land. This means more people will reap the benefits of cohousing without the high cost. One of the main issues recognised by the participants was the cost of cohousing. In the following section, there will be a recommendation for how cohousing could be made more accessible to a wider population. Other recommendations are in relation to adjustments to district plans and rules, the
structures for cohousing communities to operate under and the potential for social
housing within cohousing. This section has summarised the major constraints of
cohousing in Aotearoa New Zealand. The following section recommends how it could
be better enabled in the country.

6.3 Recommendations for Facilitating Cohousing

The previous section indicates cohousing, as a model, should potentially have greater
support in Aotearoa New Zealand, to enable it to be more accessible to a range of
people and address many of the current housing challenges. The following
recommendations recognise the constraints and the key recommendations are in
regard to plan changes, banking and financial structures, government support or social
housing, and further education about cohousing. These recommendations have the
ability to encourage the development of communities in Aotearoa New Zealand.

Recommendation One: Adaption of Policies, Plans and Rule Changes

The findings of this thesis highlight that the current plans and policies in Aotearoa
New Zealand do not allow for any form of multi-unit development with separate unit
titles. Participant 3 recognised while processing the resource consent for High Street
there was challenging because the Dunedin City District Plan does not cater for any
multi-unit development, including family flats. The participant recognised that this
was being further investigated and has the potential to become more common in
districts plans across the nation. By allowing for alternative housing models it will
encourage the development of them. It will also assist planning authorities to process
the applications when they are submitted. In order to grant consent for the case studies
the authorities made conditions that control the operation of the community and
ensure they would remain cohousing developments. It would also be beneficial for
cohousing communities to have a direct figurehead or stakeholder within the local
authority, who was well informed by about cohousing. This would enable the
cohousing communities to have a direct contact within councils that could inform
them about planning rules and other related procedures. The findings suggest
cohousing did not have any significant barriers in regard to planning, but small
adjustments could make the processes easier when establish a cohousing community
in Aotearoa New Zealand.
**Recommendation Two:** *Allocation of Funds, Gaining approval from Banks and determining an appropriate business structure*

As identified in Chapter Five, financing and funding the projects was one of the greatest challenges for the case studies. The participants stated the large banks in the country were concerned with lending on an unknown style of multi-unit development. Eventually, residents of both of the communities gained mortgages, but lending was at a commercial rate, which is significantly higher than standard homeowner loans. The cohousing communities had to operate in the middle ground between a developer and a homeowner, which caused significant cost and time barriers. Overcoming this would better facilitate cohousing in Aotearoa New Zealand. One participant said they hoped, in time, financers would be more supportive of cohousing developments; in Denmark it is a popular housing model and the banks lend large sums with the ease of knowing the units are usually sold prior to construction and as residents move on their spaces are rapidly filled. It would be beneficial in Aotearoa New Zealand if the banks could develop an appropriate business structure that enables the residents to loan at a more reasonable rate and would encourage the development of the communities in the country. One structure suggested by Participant 8 was the Limited Liability Partnership, which means each member is not liable for one another, unlike a Limited Company, where there is often joint liability. Determining an appropriate structure would greatly facilitate cohousing in the context of Aotearoa New Zealand and would enable more interested groups to get their communities into the development phase.

**Recommendation Three:** *Mechanisms to enable cohousing to be made available to more diverse groups*

Currently, one of the greatest issues of cohousing is the inaccessibility of the model to all societal groups. As has been recognised, the residents of both communities are mostly middle class, white and well-educated people, but the groups wanted to increase the diversity within their communities. A recommendation would be for social housing to be instated on the cohousing sites. In Dunedin, there is the potential for the Council to purchase one or two units and provide social housing, the group had made attempted to interest other housing provider organisation, but had very little interest. Social housing would enable people who may not have the means to become involved to engage with cohousing. There is also a need to have greater variety of
cohousing models in Aotearoa New Zealand, particularly ones that cater to different demographics and socio-economic groups. The participants also suggested cohousing has the ability to reduce feelings of isolation often felt in conventional neighbourhoods, and is particularly good for the elderly and residents from overseas. When coming to Aotearoa New Zealand from other countries, people often do not have immediate family in the country; however, cohousing communities extend their networks and may act as an extended family. As the population in Aotearoa New Zealand becomes more diverse, it is important to cater for these changes and cohousing has the ability to do so. It has also recognised that improving the diversity of the residents within a cohousing community increases the success, and so making it available to a wider group is beneficial for all.

**Recommendation 4:** Provision for education sessions for the wider public to understand the principles of cohousing

From this study, it is evident that cohousing could provide a solution or alternative to conventional housing and provide residents with a greater quality of life by addressing the following issues; reducing their ecological footprint by residing in smaller, units constructed with sustainable materials; provide them with a sense of belonging and involvement with important decision-making processes for their community; and share costs and resources to improve economic sustainability. The final recommendation is to improve the education provided to society about how cohousing operates and the benefits of residing within a community. Earthsong do hold seminars and public meetings to try and raise awareness for the housing model, and this was how the initial footholds of the High Street project formed. A residents from Earthsong travelled to Dunedin to discuss the principles of cohousing and their experience, this could be a more common occurrence and once the High Street project is established they will be able to facilitate similar meetings. There is a need to remove the stigma surrounding community living, and the public needs opportunities to better understand the lifestyle within cohousing. Reducing the opposition and misgivings people have would better facilitate cohousing, especially during consent processes. In High Street, some submissions showed a lack of knowledge of the principles of cohousing. The participants wanted to express that the model not only has sustainable benefits, but also has positive effects on the physical health and mental well-being of residents.
6.4 Concluding Remarks

The research confirms that cohousing could be a suitable alternative to conventional housing in Aotearoa New Zealand and has the potential to address many sustainability challenges in the country. It is a critical period for communities to start making decisions that will reduce the impact on the environment (Sargisson, 2004). Housing is a method that could enable this and provide a higher quality of life to residents, while ensuring economic costs are managed. This further validates the investigation of cohousing as a suitable alternative for conventional housing in Aotearoa New Zealand. The benefits and critiques of cohousing have been reviewed in this research, and when talking to residents who have lived at Earthsong for over ten years, it is evident they feel any disadvantages are heavily outweighed by the mental and physical health benefits, reduction in environmental impact and increase in shared resources and skills. The cohousing model creates a village-like lifestyle, and this is essential to the success of the communities. The model has been adopting in a range of countries and there are now many examples to draw experience from and learn when developing new projects in Aotearoa New Zealand. A number of recommendations have been identified for how the practice could be better facilitated in the Aotearoa context, and how to reduce current barriers. In summary, the findings suggest that cohousing is a more sustainable practice than conventional homes, and the dimensions of sustainability create a positive experience for the residents. While there are constraints and enablers of cohousing there is an ability to learn from the current barriers and see it become a more common alternative housing style in Aotearoa New Zealand.
7 Reference List


Dunedin City Council, (2018a) *Dunedin City District Plan*. Dunedin.


8 Appendices

8.1 Appendix A Topic Guides and Themes for Interviews

Interview Guide 1 (Experts)

These guide questions will be for builders, developers, architects and local council members that have been involved in the two cohousing projects to understand their experience in the process of creating these developments.

- What involvement did the participant have in the process of the cohousing project?
- Why as the participant interested in becoming involved?
- In their opinion, what are the aims of this cohousing project?
- Was sustainability a key consideration in the vision for this project?
- What key challenges did the participant come across?
- Any potential policy issues they came across?
- What benefits or disadvantages do they perceive about cohousing?
- Were there evident logistical issues?
- Do you deem the houses to be more sustainable than typical homes? If yes, why is it a more sustainable alternative to conventional housing?
- Is cohousing more challenge to build/design/negotiate?

Interview Guide 2 (Residents)

These questions will be used in interviews with key initiators of the cohousing projects, who were instrumental in the development of the project, (some of these participants are also residents). These interviews will be used to gain an understanding of the lived experience of cohousing developments and the reasons why they are becoming more appealing.

- What made the participant choose cohousing?
- What did they know about it before becoming involved? How did they become involved?
- In their opinion, what are the aims of this cohousing project?
- What guiding principles were used when developing this project?
- Was sustainability an important factor when choosing cohousing?
- Are they glad they made the choice? What benefits and disbenefits have become apparent from cohousing?
- Have you felt more socially included in the cohousing environment versus a traditional neighbourhood? What was the main reason you wanted to move out of a ‘traditional’ lifestyle?
- Do the shared communal spaces function appropriately? Are they used often?
- Has it been a difficult process to be involved in?

Focus Group Guide
These guiding questions will be used in focus groups of 6-8 residents of each of the cohousing projects to understand their experience. It is hoped that a focus group with people they are familiar with will help residents feel more comfortable to discuss their experience.

- How did you become involved in this project?
- What pull factors encouraged you to become involved?
- Have you any major positive or negative experiences since becoming involved?
- Are there any potential power relations that have arisen?
- Is there much diversity in residents?
- Do you think it works well for all age groups?
- Do you enjoy having communal spaces?
- How important was sustainability for everyone?
- What made you decide not to remain in traditional neighbourhoods?
8.2 Appendix A Information Sheet

SUSTAINABLE URBANISM AND COHOUSING IN THE AOTEAROA NEW ZEALAND CONTEXT

INFORMATION SHEET FOR PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?

The aim of the project is to understand if cohousing can provide a more sustainable solution to new building developments. This research has two areas of focus. It will investigate the benefits and disadvantages that arise for residents of cohousing, and what this means for the success of projects. It will also explore what practices can enable or constrain the construction of cohousing developments, with particular consideration of the Resource Management Act and local policies. This research is being undertaken as part of the requirements for Livi Whyte’s Masters of Planning thesis.

What Types of Participants are being sought?

There are two sets of participants sought for this research associated with two cohousing projects that will be used as case studies. First, participants sought are residents living in the case study developments. Second, developers, architects, local council officers involved in the development of the two cohousing project case studies are sought. Participants will be selected via websites and through recommendations of further potential participants. The research will involve 12-15 interviews with key stakeholders, and two focus groups with residents (one from each case study).

What will Participants be asked to do?

Should you agree to take part in this project, you will be asked to take part in a semi-structured interview or a focus group that will last no longer than one hour. Participation is purely voluntary and no reward or compensation will be offered. Should you agree to take part in this project you will be asked questions about your experience with cohousing and evident benefits/disadvantages or aspects that enabled/constrained the development of the project you were involved with. With your permission the interview will be audio recorded. It will subsequently be transcribed for further analysis. The transcription can be made available for you on request – please provide your email address on the consent form.

The interviews will be semi-structured. This means that the questions asked during the interview will not be predetermined but several broad topics related to cohousing have been identified. For residents, these will explore themes around motivations for living in cohousing, experiences compared to conventional housing, and the benefits and disbenefits experienced more generally. For those
involved in the development process, questions will focus on the what has enabled or constrained the development of the project and what could facilitate development.

Because of the semi-structured nature of the interviews, the Department of Geography has been made aware of the general themes for the interviews, but has not been able to review the precise questions. Please be aware that if, at any stage, you are hesitant to answer a question you may decline or withdraw from the interview with no disadvantage yourself of any kind. You are also able to withdraw completely from the project for up to one month after your interview.

**What Data or Information will be collected and what use will be made of it?**

Audio recordings of interviews and focus groups will be transcribed. Photographs of sites may also be taken, but any images that potentially identify participants will be deleted. All data will be stored securely in a password protected file or a locked filing cabinet. Only my supervisor and myself will have access to the data. While personal details will be deleted at the end of the project, transcripts, images and audio files will be securely stored for a period of at least 5 years.

The transcripts will be analysed to address the aim of the research. A thesis and a summary report will be produced, and can be made available to participants if desired (please indicate on the consent form). A copy of both the thesis and findings will also be made available to BRANZ (Building Research Association of New Zealand) who have provided a scholarship for this research. The results of the project will also be available in the University of Otago Library (Dunedin, New Zealand). Direct quotations may be used in the final report, but very effort will be made to ensure that individual identities are not revealed through these quotations. However, please be aware that where someone knows a lot about the case study project or cohousing in Aotearoa New Zealand, they may be able to identify who participants are. We will do our best to minimise this risk.

**Can Participants change their mind and withdraw from the project?**

You may withdraw from participation in the project up to one month after your interview or focus group without any disadvantage to yourself.

**What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact:

**Dr Sophie Bond**
Department of Geography/ Te Ihowhenua
University of Otago
PO Box 56
Dunedin/Ōtepoti

Email: sophie.bond@otago.ac.nz

**Olivia Whyte (Student)**
Department of Geography/ Te Ihowhenua
University of Otago
PO Box 56
Dunedin/Ōtepoti

Email: whyol015@student.otago.ac.nz

University Telephone Number: 034793068 or 021 0231 7301

This study has been approved by the Department stated above. However, if you have any concerns about the ethical conduct of the research you may contact the University of Otago Human Ethics Committee through the Human Ethics Committee Administrator (ph +643 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
8.3 Appendix B Consent Form

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-

1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time without any disadvantage;

3. Personal identifying information (e.g. contact details, audio-tape recordings, images) will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years;

4. This project involves an open-questioning (semi-structured) technique. The general line of questioning includes resident and key stakeholders experiences in cohousing projects. The precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops. In the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind. I may also withdraw the information I have provided within one month of the date of the interview.

5. The results of the project will be made available to BRANZ (Building Research Association of New Zealand) but every attempt will be made to preserve my anonymity.

6. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

I agree to take part in this project.
Please indicate if you would like to receive any of the following documents: a transcription of your interview; a small summary report of the thesis; or the final thesis and with thorough results and findings. If you select ‘Yes’ to any of these options please provide an email address. It is important to inform you that there may be a delay in receiving the final summary and report due to University processes.

I would like to receive a transcript of my interview:  
- [ ] Yes  
- [ ] No

I would like to receive a small summary report:  
- [ ] Yes  
- [ ] No

I would like to receive the final thesis:  
- [ ] Yes  
- [ ] No

My email address is:  .............................................................

Thank you for taking part in this research project. Your involvement is highly appreciated.