THE FAMILY FRIENDLY HOME

A higher density adaptive reuse strategy for Wellington

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By April Valentine Tatnell

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Abstract

This thesis will explore what makes a place family-friendly and, how likely families with children will consider moving into high-density residences in the Wellington Region. With an increasing population and housing demand, Wellington housing must increase in density. Furthermore, Wellington must seek to provide higher-density housing that responds to the needs of all its population including families, rather than only the narrow market that high-density housing has previously been marketed to.

High-density housing has often been marketed to single professionals, young couples, and empty nesters, neglecting the idea that families with children may also wish to live comfortably in the inner-city. Therefore, this thesis seeks to understand the needs of families to provide a living environment that responds to a family’s needs at all scales from the housing unit, building, and urban scale. It aims to do this through identifying and understanding issues identified previously by families living in high-density and exploring ways that they can be resolved in a design outcome. The thesis also reviews case studies of high-density residences to identify potential design solutions. This information was used to inform a questionnaire and the resulting survey identified specific needs and preferences in family-friendly higher-density housing for families. Using all of this, a site was chosen in the Wellington Region and developed through an iterative design process to provide a proposal for the issues identified in this thesis.

Initial research in Chapter one to Chapter five have been presented at the 52\textsuperscript{nd} International Conference of the Architectural Science Association, in the paper titled ‘Regeneration of unused buildings within Wellington to attract family living, in response to the Wellington demographic’.

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CHAPTER 1: Introduction

This thesis explores international and local preferences for a family-friendly living environment. The aim of the study is to demonstrate how high-density residences can be family-friendly, creating an attractive housing option for families, and challenging the norm of the high-density housing market in Wellington, New Zealand. While this research responds directly to Wellington, this thesis also makes an argument for how these findings could be adapted for similar urban centres.

Background
Since colonization, suburban ideals have been entrenched in New Zealand (Marriage, 2010). This meant that many New Zealand houses were single-detached dwellings, with the house sited towards the front of the fenced section, and a yard at the back for family play. This ideal however, changed as towns became cities and pressures on residential land increased (Schrader, 2013). This led to the development of higher-density housing developments like semi-detached housing, flats, and apartments. These new housing developments were rejected by New Zealanders, partially because they symbolized “the congestion and, in some cases, the squalor of British housing” (Schrader, 2013). With rising transport costs and traffic congestion, commuting is becoming less desirable and inner-city living is becoming increasingly attractive (Carroll, Witten & Kearns, 2011). Despite New Zealand parents’ long-standing dream of the ‘quarter acre section’ (Ferguson, 1994), and the prevailing debate of suburban qualities as desirable places for children (Dixon & Dupuis, 2003), the number of families living in Wellington CBD is expected to increase by 18.1 percent by the year 2043 (.id, 2016).

In 2015 the Wellington City Council (WCC) created the Wellington Urban Growth Plan which aimed to “provide a framework to manage the city’s future growth while protecting [the] environment and heritage, and building on the things that make the city special” (WCC, 2015, p. 6). It sought to support transformational growth areas, liveable and vibrant centres, real transport choices, housing choice and supply, Wellington’s natural environment, and city resilience (WCC, 2015, p. 6). The WCC aim to keep the city compact with continued apartment developments in the central city and medium-density housing options in areas near the city centre. Furthermore, the WCC propose converting underused buildings in Wellington, into affordable apartments “as a way to tackle the capital’s growing housing crisis” (Devlin, 2018, para. 1).

The Wellington Urban Growth Plan intends to implement “a number of existing Council policies and action plans” (WCC, 2015, p. 14). These include the ‘Adelaide Road Framework’ (2008). This framework outlines the “long-term vision, key outcomes, and supporting action plan for the area’s long-term development” (WCC, 2008, p. 2). It aims to provide higher-density residential development, good quality public amenities and streetscape, safe and walkable streets, more employment opportunities, and improved public transport “which meets the

Fig 1.2 (Previous) Aerial photograph of Wellington showing current urban form
needs of all people living in, working in, and using the area” (WCC, 2008, p. 11). It also, aims to maintain and protect the heritage and character of the area. Although few families live in the Mt Cook area where the Adelaide Road Framework is located (WCC, 2008), the number of families anticipated to live there by 2043 is 810, a 3.43 percent increase from the calculated 2013 data (i.d, 2016). Therefore, providing family-friendly housing needs to be considered as part of the future developments of the Adelaide Road Framework area.

Working with the Adelaide Road Framework outlined above by the WCC, this thesis examines adaptive reuse to provide additional residential density in Wellington. As Degnon (2017) observes, “...adaptive reuse refers to the process of reusing a building for a purpose other than which it was originally built or designed. It is viewed as a means to revive or reinvent an old building that still maintains some relevance or historic significance” (p. 27).

In many towns and city centres there are several unused buildings (Remøy & Voordt, 2014) which provide opportunity for further housing in the city to accommodate increasing populations and housing demand. It is unclear exactly how many unused buildings are in Wellington as occupation of a building is the concern of the property owner. However, there is a record of buildings deemed unusable by the WCC due to earthquake or resilience issues. From this, it was found that there are 751 buildings in Wellington deemed unusable (Ministry of Business, Innovation and Employment, 2019). Rather than demolishing these buildings and starting fresh, adapting them provides many opportunities and benefits. In a study by Towers (2005), it was found that many of these unused or underused buildings provide the opportunity to be adapted for domestic use. Adaptive reuse provides, and supplies many benefits such as sustainability, and historical integrity. From a sustainability perspective, adaptive reuse provides a sustainable option to housing because of the “reduction of natural resource consumption, energy use and emissions” (Bullen, 2007, p. 22). Furthermore, it “enhances the longer-term usefulness of a building and is therefore a more sustainable option than demolition and re-building” (Bullen, 2007, p. 28).

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Fig 1.3 Diagram showing conversion of office spaces into urban lofts
Methodology
To achieve the aim of this thesis, the research sought to understand the needs of families to provide a living environment that responds to a family’s needs at all scales from the housing unit, building, and urban scale. It aimed to do this through identifying and understanding issues identified previously by families living in high-density and exploring ways that they can be resolved in a design outcome. Building on the literature review and the design criteria identified in the review, other high-density buildings in Europe and New Zealand were examined to understand how they might provide design solutions for the issues identified. Some of the case studies also incorporated an adaptive reuse strategy, which was examined to understand how they might also provide design solutions for this component of the thesis.

Because the scope of this thesis focused on Wellington, it was considered vital that this research understood the perceptions of the Wellington population regarding family-friendly high-density housing, as they could one day be living there. Using the criteria developed from the literature review a questionnaire was designed to understand how the Wellington population perceived the design criteria, and if through providing these, would it enable them to move into higher-density housing with their family.

Using all of this, a site was chosen in the Adelaide Road Framework area. This site, ‘The Tramway Hotel’, currently deemed unusable (MBIE, 2019). This building was chosen because of its heritage, proximity to a number of family-friendly amenities, and possibilities for being adapted into family-friendly higher-density housing.

Thesis structure
The thesis is organized as follows. Chapter two presents a review of literature in order to understand current issues of high-density housing for families and to identify what is needed to develop a viable family-friendly high-density housing proposal. Chapter three builds on the literature review by using the design criteria identified in the review to examine how other high-density buildings have successfully provided for family-friendliness.

In order to test the international research examined in chapters two and three, chapter four examines the perceptions of people living in the Wellington Region and what is required for them to consider moving into high-density with their family. It identifies themes and issues that are consistent with international literature and case studies, as well as new issues which emerge from this Wellington specific research.

Chapter five identifies and analyses a site within the area prescribed by the WCC’s Adelaide Road Framework and examines it against site qualities considered to be important in a family-friendly living environment at the urban scale identified in earlier chapters. Chapter six begins to consider how the current building on the site analysed in chapter five (The Tramway Hotel) could be adapted into family-friendly housing through iterative planning. Finally, Chapter seven reflects on the success of the design proposal in relation to the thesis objectives and identifies design limitations, areas for development, and further research.
CHAPTER 2: *Families in high-density*

**Chapter introduction**

This chapter presents a review of literature which identifies the design attributes and amenities that are required for a high-density family-friendly living environment. “Family” is defined as a household unit with child(ren) living at home, consequently, the perceptions and experiences of both children and parents are included in the review, in order to identify what children and parents require from their living environment. The literature review also sought to understand the reasons for these requirements and their impact on a family’s residential satisfaction.

**Issues of high-density for families at the unit scale**

The spatial organisation of the home is a significant part of the development towards a family-friendly living environment because it can influence a parent’s perceptions and experiences of the home (Appold & Yuen, 2007; Groc, 2007; Shepard & Matthews, 2016; Cho et al. 2017; Kerr et al. 2007). The spatial organisation of a home impacts on the provision of sufficient space for living and storage, adaptability and flexibility of spaces, floor plan configuration and relationship to other units in the building, and materiality and construction.

Providing sufficient space is vital because of the negative impacts of insufficient space on a family’s ability to function, and on overcrowding, which restricts a family’s ability to perform the various activities believed to hold families together (Appold & Yuen, 2007). Furthermore, insufficient space can cause adverse health, education and income issues, as well as place emotional strain on families affecting relationships in the household (Shepard & Matthews, 2016). An example of this was cited in a study by Carroll et al. (2011), where families required to downsize homes stated that the higher-density dwellings they had to move into did not provide sufficient storage space, or space for day-to-day activities, for example the kitchen being too small to prepare family meals.

At the unit scale, the literature defines what is needed to provide sufficient space in a home for the family. It also identifies the need for private outdoor space and the criteria for providing this. According to the ‘High-density housing for families with children guidelines’ (City of Vancouver, 1992). Providing sufficient space for family-friendly housing in high-density, involves the following:

- Minimum of two bedrooms (each large enough to accommodate a single bed, a dresser, a desk or table, and in children’s bedrooms, some floor space for playing).
- The design of the unit should provide for separation of conflicting uses.
- The bathroom should be larger than the minimum size so that a parent and child can be in it together.
- A generous entry area is highly desirable to permit room for toys and equipment, for dressing children on cold or rainy days, and for drying of wet shoes, boots, and outerwear (p. 10).

*Fig 2.1 (Previous) Photograph of child playing in high-density environment*
Child-friendly play areas are a critical in home with children because they provide children space to play (Carroll et al. 2011). These play areas should provide for the following:

- Preschool Children's Play Areas
  - there should be a minimum of 1.0 m² per bedroom, excluding the master bedroom
- Elementary and Teen Aged Children Play Area
  - there should be a minimum of 1.5 m² per bedroom, excluding the master bedroom

(City of Vancouver, 1992, p. 6).

Private outdoor space is another important attribute identified in the literature (Marcus & Sarkissian, 1986). There are three reasons for this: functionality, symbolism, and psychological. Functionally, private outdoor space provides a family with a space to grow a garden, dry washing, do minor repair jobs, and a place for pets and or children to play. The second is symbolism. Symbolically, private outdoor space is a space that can be personalized to make it our own, symbolizing individuality and home ownership. The final aspect is psychological. Psychologically, private outdoor space provides the family with a space to relax and provide relief from stressful work or activities within the house. According to the ‘High-density housing for families with children guidelines’ by the City of Vancouver (1992), private outdoor space should provide for a range of activities, as well as storage of equipment used for these activities. Furthermore, this space should be at least 1.8 m deep by 2.7 m wide, maximize sunlight access, and safety.

Some families, who had chosen to remain living in high-density apartments, had to adapt their home because of changes in their household, such as a new child. Family structures change over time, and it is not always known the direction they will take. In New Zealand, for example, there are a variety of family household types from couples without children (40.9%), couples with dependent children (33.6%), couples with adult children (7.6%), one parent families with dependent children (12.7%), and one parent families with adult children (5.0%) (i.d. 2013). Providing an adaptable dwelling layout can encourage families to either stay or move into higher-density housing if it provides an adaptable dwelling layout. An example of this is a family in Pearl, Portland, who asked the developer of their condo to “convert the unit’s second bathroom into a child’s bedroom” (Groc, 2007, p. 9), for their child. In this instance, the family could live more comfortably in their home because the apartment design was able to respond to their changing household needs. Providing the option for families living in high-density environments to adapt their home is critical because it “helps contribute to users’ comfort and choice, encourages social interactions without conflict, and builds a sense of control over space” (Cho et al., 2017, p. 625).

Issues of high-density for families at the building scale

The way apartments have been designed in the past can mean that doing household work, while children go outdoors to play, is not practical (Appold & Yuen, 2007). Furthermore, parents are scared to let their children go out and play unsupervised in an urban public space due to safety, security and traffic (Groc, 2007; Carroll et al., 2011). The relationship between the households was also found to be important because of the typically close proximity of high-density dwellings to other households. The requirements for each room vary, like communal spaces (e.g. living room, kitchen, and dining room) which are less private and private.
spaces (e.g. bedroom and bathroom) which require greater levels of privacy (City of Vancouver, 1992).

Play is such a critical part of children’s development in terms of physical, psychological and social well-being (Donovan, 2016). There are different types of play children can do, and which need to be considered. These can be categorized into the following:

- **Individual play** can include observing, sitting, thinking, pondering, daydreaming, visualization or other autonomous activities;
- **Social play** might involve interacting with others. Such social play activities include team games, role-playing, problem solving, imitation, creation and other related activities;
- **Active play** can include ball games, running, sliding, jumping, winging, rolling, hopping, spinning, bouncing, crawling or other physical activities;
- **Cognitive and creative play** provides the opportunity for imagination and problem solving, weighing up and considering the relationships between things. Activities can include digging, shaping, constructing, demolishing, exploring, discovering and other related activities (Donovan, 2016, p. 3).

Furthermore, the literature recommends that pre-school children under the age of six should be provided with a small play space adjacent to the building, that can be overlooked by the units in the building (Marcus & Sarkissian, 1986). Families with young children should be provided with housing on the floor level which is most easily accessible to the play space, allowing for better supervision and access by parents (Marcus & Sarkissian, 1986). For older children, Prezza et al. (2001), found through their research that an internal courtyard playground provided the most appropriate play space for children aged seven to 12. For children above the age of 10 it is important to provide a variety of activities and spaces for social interaction, space for multi-functional use, and more challenging play equipment Hart (2002) and Beer et al. (2003). According to Kytta’s research (2004, as cited in Whitzman & Mizrachi, 2012, p. 242) “objects such as dirt, leaves or sand that can be grasped, shaped and dug into; relatively flat and smooth surfaces that can be used for running, scooting, biking and playing games such as hopscotch; things that can be heard, smelled, tasted or touched as well as seen; and social gatherings for conversation, role playing or eavesdropping on adult business”, all contribute towards a child-friendly play area at the building scale.

The provision of communal space is also important to consider at the building scale. The City of Vancouver (1992) states that there “should be appropriate open space to meet the on-site needs of children and adults” (p. 4). To do this they suggest the following:

With children using an outdoor space, it is essential that the landscape materials used stand up to wear and tear. Initial plantings of trees and shrubs should be of sufficient size to withstand the rough and tumble of children’s play. Landscape should be designed to create varied spaces within a large common open space and to use a mixture of hard and soft surfaces. Materials should be selected to be interesting and safe (p. 5).
In addition to this, Marcus and Sarikissian (1986) state that this communal space should be easily accessible from the units to increase use by the residents, hence encouraging social interaction and creating a sense of community between residents.

The need for privacy (visual and acoustic) impacts on many aspects of high-density dwelling design. Kerr et al. (2007) found that the family-friendly home must be constructed of materials that reduce acoustics travelling to other units in the building. An example of this is placing carpet on floors where children will play (Kerr et al., 2007). Furthermore, services such as internal vents must be carefully considered because they can provide a means of sound travelling to other units in the building (Kerr et al., 2007).

**Issues of high-density for families at the urban scale**

At the neighbourhood scale, the connection of the home to the environment is critical to provide a family-friendly living environment. This includes connections to the main amenities used by families, such as public transport, car mechanic, family entertainment, work, and nature (Whitzman and Mizrachi, 2012). It is recommended that these connections are made to allow for safe independent travel by children (e.g. stop light crossings or pedestrian crossings, low traffic speeds), specifically on the travel routes most commonly used by children (Whitzman and Mizrachi, 2012). A study by Haigh, Ng Chock, and Harris (2011) found that areas that promoted physical activity tended to have increased physical activity. Furthermore, they found that, in higher-density environments, access to “local services (e.g. shopping, libraries), walking and traffic infrastructure (e.g. traffic volume and speed, the presence of footpaths), neighbourhood aesthetics (e.g. presence of parks and trees), and the availability of transport” (p. 3), influenced people’s level of physical activity living in that area. Additionally, MacDon-ald (2015) has stated that “crime is correlated with specific features of places” (p. 338), with high crime and perceived crime being the result of the built environment having “high rates of vacant or dilapidated housing, high residential turnover, unsupervised youths, poorly lit streets or poor visibility, high permeable access to streets, and land use such as liquor stores” (p. 338).

Studies by Rudner et al. (2011) and Whitzman and Mizrachi (2012) found that the aesthetics of a place impact on how children perceive the safety and attractiveness of the built environment. Perceptions of cleanliness and maintenance were particularly important for those areas commonly used by children, like the pedestrian routes taken to amenities and the amenities themselves. The design of the frontages of sites were important. Children felt that more permeable frontages, like a low picket fence or higher fence they could see through, made them safe.

Another important issue identified by children was the age-appropriateness of designated play areas. It was commonly noted that many designated play areas like playgrounds were designed for younger children and did not accommodate older children (Whitzman & Mizrachi, 2012, Rudner et al., 2011).

Humans are social beings and we are attracted to places where we can be social and connect with like-minded people. This is supported by Whitzman and Mizrachi’s (2012) research, where children were drawn to particular areas like playgrounds because they were spaces...
spaces where they could socialize and interact with other children. Although some of these spaces were run down due to wear and tear, and did not provide enough variance in play equipment, children cared more about the ability to socialize with their friends. In addition to this, it was found that other people who inhabit these spaces can influence children’s perceptions of safety and attractiveness towards inhabiting these spaces. For example, if people inhabiting the space made the children feel unsafe, they were unlikely to use that space (Rudner et al. 2011).

Because of their close proximity to amenities, it has been found that children living in urban environments have greater mobility independence in contrast to those children living in suburban environments (Whitzman & Mizrachi, 2012). However, the way these connections are designed can influence children’s perceptions. A study by Rudner et al. (2011) found that children are very observant of the transport environment. They are aware of traffic volumes, practicality of different crossings, and the public infrastructure. This study found that, in streets where volumes of traffic were high, children did not feel safe crossing the road. This was because children found the traffic moved too fast and did not stop for them to cross. The study concluded that overall children preferred quiet streets with low traffic volumes, closely followed by streets with defined crossings.

A recurring issue in the literature for parents living in high-density urban dwellings was their diminished sense of control (Fleming, Baum, & Weiss, 1987; Kerr, Gibson, & Klocker, 2018; Groc, 2007; Cho, Trivic & Nasution, 2017; Shepard & Matthews, 2016; Carroll, Witten, and Kearns, 2011). There are a number of areas within high-density living that can affect a parent’s sense of control. These include insufficient space, an adaptable dwelling layout, the inability to regulate social interactions in and around their home, safety and security, privacy, soundproofing.

A study conducted by Fleming et al. (1987), compared high-density living in an area of streets with stores and an area of streets without stores. The research examined how this difference impacted one’s sense of control. It found that “residents of the streets with stores had lower feelings of control than did residents of the streets without stores” (Fleming et al., 1987, p. 903) because of the increased social interactions that occurred on streets with stores, and with this the inability for residents living there to regulate these social interactions.

Some high-density housing typologies incorporate a mixed-use strategy. Although mixed-use buildings can be advantageous because they provide job opportunities, services, facilities, and shops within close proximity to residents, they can also create conflict (Cho et al., 2017). This is because these building types are used by both public and private groups, and so residents might experience a reduction in their sense of control as they are unable to manage who goes in and out of different spaces within the building. It is important to consider access in and out of spaces to define what is for public and private use, and private only use. Furthermore, it is crucial that these buildings have good management of communal functions, this includes, public amenities (e.g., lighting, rubbish bins, public toilets and signage) and their maintenance [which] has a strong influence on the way residents perceive their public space, convenience, way-finding and security. Inadequate provision of such
facilities, along with insufficient maintenance, may result in uninviting, underused or misused public spaces (Cho et al., 2017, p. 628).

Chapter conclusion
A common theme found through the literature has been subjectivity and one’s ability to regulate their living environment. Every individual has a different perspective of what constitutes a satisfactory living environment and this has been demonstrated in this chapter. It was found that children’s perceptions and requirements were different to parents. For children, the perceptions and attractiveness of an environment were influenced by how safe they felt in that environment, and how engaging and aesthetically pleasing the environment was. It was important that children lived in an environment that provided this. Ways that this can be achieved include providing safe walkways to amenities, permeable frontages on sites, maintaining the environment, and providing play areas that responded to various age groups. For parents/adults it was found that the perceptions and attractiveness of a certain environment were influenced mainly by how they could control their environment and the safety it provided for their children. This included the provision of: sufficient space, adaptability for change to accommodate changes in their household, a high level of privacy and sound proofing, and an ability to regulate social interactions and supervise children in and out of the home.
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Chapter introduction
This chapter presents four case studies of higher-density residential architecture from Europe and New Zealand completed in the last decade. Specific criteria drawn from the literature and the parameters of this thesis were used to select the case studies. These criteria are presented below. The purpose of this chapter is to identify examples from the case studies to inform the design phase of this thesis.

Selection criteria at the unit scale

**Sufficient space**
- Minimum of two bedrooms (each large enough to accommodate a single bed, a dresser, a desk or table, and in children’s bedrooms, some floor space for playing) (City of Vancouver, 1992, p. 10)
- The bathroom should be larger than the minimum size (City of Vancouver, 1992, p. 10). (1.9m x 2.1m (Department of Building and Housing (2011)))
- A generous entry area (large enough that it provides room for toys and equipment, for dressing children, and for drying wet clothes) (City of Vancouver, 1992, p. 10)
- Storage of 2.8m³ (City of Vancouver, 1992, p. 11)

**Child-friendly play area**
- Minimum of 1.0m² play space in pre-school children’s bedrooms (City of Vancouver, 1992, p. 10)
- Minimum of 1.5m² play space in elementary and teen-aged children’s bedrooms (City of Vancouver, 1992, p. 10)

**Private outdoor space**
- Should provide for a range of activities (sitting, tending plants, barbecuing, outdoor eating, quiet children’s play) and storage of equipment used in this area (City of Vancouver, 1992, p. 11).
- Minimum space of 1.8m deep by 2.7m wide (City of Vancouver, 1992, p. 11)

**Privacy**
- Separation of conflicting areas (communal spaces (living room, kitchen, and dining room) in the home separated from private areas (bedroom and bathroom) in the home) (City of Vancouver, 1992, p. 10)

**Adaptable dwelling**
- Space in the unit that can be adapted for another purpose that responds to the changing needs of the family (Cho et al., 2017, p. 625)

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Fig 3.1 *(Previous)* Internal view of Savonnerie Heymans communal space
Selection criteria at the building scale

Child friendly play area

- Provides for individual play (observing, sitting, thinking, pondering, daydreaming, visualization or other autonomous activities), social play (interacting with others, for example, team games, role-playing, problem solving, imitation, creation and other related activities), active play (for example, ball games, running, sliding, jumping, winging, rolling, hopping, spinning, bouncing, crawling or other physical activities), cognitive and creative play (opportunity for imagination and problem solving, weighing up and considering the relationships between things. Activities can include digging, shaping, constructing, demolishing, exploring, discovering and other related activities) (Donovan, 2016, p. 3)
- Visual access for the parent or caregiver from the unit (City of Vancouver, 1992, p. 6)
- Natural surveillance over common areas from other units (City of Vancouver, 1992, p. 6)
- Visual and physical access to at least one of the common areas (City of Vancouver, 1992, p. 7)
- Pre-school children under the age of six should be provided with a small play space adjacent to the building, that can be overlooked by the units in the building (Marcus & Sarkissian, 1986)
- For children above the age of 10 it is important to provide a variety of activities and spaces for social interaction, space for multi-functional use, and more challenging play equipment Hart (2002) and Beer et al. (2003)

Communal space/sense of community

- Communal space should be easily accessible from the units to increase use by the residents, hence encouraging social interaction and creating a sense of community between residents (Marcus and Sarikissian, 1986)
- Communal space should be provided for children and parents where individual units are unable to provide for certain activities City of Vancouver, 1992, p. 8)

Good security

- Locate entrances to maximise casual surveillance from units, semi-private and public areas (City of Vancouver, 1992, p. 8)

Privacy

- Visual privacy is achieved by separating building facades by 24.4m or by using architectural or landscaping form of screening (City of Vancouver, 1992, p. 10).

Soundproofing

- Acoustic privacy should be provided between units. Common walls between units and around shared area should have a Sound Class of 55 decibels, and floors between units should have an Impact Isolation Class of 55 decibels (City of Vancouver, 1992, p. 10).
- Communal and private areas in units should correspond to adjacent units (communal areas next to communal areas and private areas next to private areas) (City of Vancouver, 1992, p. 10)
Selection criteria at the urban scale

Access to family friendly amenities

- Public transport, kindergarten, school, grocer, and family entertainment (for example playgrounds and parks) (housing should be within 0.8km walking distance to kindergartens, schools and a grocer. It should also be within 0.4km walking distance to family entertainment and public transport) City of Vancouver, 1992, p. 1)
- Low traffic volumes (measured using typical traffic congestion) (Google, 2019)
- Pedestrian friendly streets (pedestrian walkways and defined street crossings)
- Child-friendly play areas that aren’t run down and provide different types of play and all age groups (Whitzman & Mizrachi, 2012, Rudner et al., 2011). Provides for individual play (observing, sitting, thinking, pondering, daydreaming, visualization or other autonomous activities), social play (interacting with others, for example, team games, role-playing, problem solving, imitation, creation and other related activities), active play (for example, ball games, running, sliding, jumping, winging, rolling, hopping, spinning, bouncing, crawling or other physical activities), cognitive and creative play (opportunity for imagination and problem solving, weighing up and considering the relationships between things. Activities can include digging, shaping, constructing, demolishing, exploring, discovering and other related activities (Donovan, 2016, p. 3).
Case Study 1: Savonnerie Heymans / MDW Architecture

Architect(s) – MDW Architecture
Location – Bisschopsstraat 9, 1000 City of Brussels, Belgium
Gross floor area – 6500 m²
Project year - 2008
Population density of Brussels – 377 people per km²
Occupancy density per person in Savonnerie Heymans – 100 m² (based on the interior unit plan which is analysed)

Project background
Savonnerie Heymans is situated on the site of a former soap factory (ArchDaily, 2012). One of the main aims of this project was to retain as much as possible of the existing industrial structure of the site. The architects achieved this by keeping the Savonnerie (soap factory), chimney and the post office. Each of these parts of the building were given a new use for the redevelopment of the site. The Savonnerie contains open lofts, the chimney filters the gases from the underground parking garage, and the post office houses triplexes (Mertens & Iraguha, 2016). The project aimed to create the sense of a “village” within the building complex. This was achieved by creating 42 units, ranging from studios, 1 to 6 bedroom apartments, lofts, duplexes and maisonettes.

Fig 3.2 Street view of Savonnerie Heymans

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Analysis at the unit scale

The analysis of the housing units within Savonnerie Heymans is limited to the available information on one, one-bedroom unit. The plan (Fig 3.3) shows how this unit provides for some of the selection criteria at this scale. In terms of sufficient space, this unit does not provide sufficient space as a whole. It does provide sufficient space in the bathroom because it provides more than the minimum bathroom space requirements by 0.7m$^2$ (Department of Building and Housing (2011). The unit provides a generous entry space with storage, however the amount of storage provided in this unit is insufficient, because it only provides 1.68m$^3$ of storage in contrast to the minimum requirements of 2.8m$^3$. This unit provides a generous private outdoor space (Fig 3.4) of 17.0m$^2$ allowing for a range of family activities however it does lack storage for the equipment used for these activities. Additionally, these private outdoor spaces known as loggias, provide residents with a space that can be used all year. The loggias have bioclimatic glass panels (Fig 3.5) that provide the units with warmth in the cooler months and act as a sound buffer, reducing the amount of noise entering and exiting the unit (Mertens & Iraguha, 2016).

**Fig 3.3** Floor plan of housing unit in Savonnerie Heymans (scale 1:100)
Analysis at the building scale

Savonnerie Heymans provides good security through forms of natural surveillance because some of the housing units have views towards the entrance of the building allowing them to monitor who is entering and exiting the site (Fig 3.6). Furthermore, all entrances into each housing unit are from within the block ensuring natural surveillance over who is entering and exiting the units. As a form of physical security, there is a gate at the entrance of the site to further control who can enter the site (Fig 3.6).

As previously mentioned, Savonnerie Heymans provides communal amenities to support family friendliness. These amenities comprise “a room for social meetings and events, a public Ludothèque (game library) and extensive public space: the “Mini-forest” garden, the 3D landscaped park and playground and the main promenade” (ArchDaily, 2012). The provision of these amenities enables the facility to respond to the needs of different aged children and adults. The play areas are each designed for different aged children. For example, Figure 3.7 and Figure 3.8 show an open outdoor space where children can play individually or with other children. Furthermore, there is seating and views from surrounding units (Fig 3.7, 3.8), allowing parents to supervise their children while they are out playing. Figure 3.9 shows the “Mini-forest” which provides a space for children and parents to interact with nature. Figure 3.10 and Figure 3.11 are of the 3D landscaped park and playground. This space provides for individual and social play and encourages active and creative play because this space is not a structured or conventional playground. Finally, Figure 3.12 shows a multi-level area with seating. This space can be used by parents to socialize or by older children who have outgrown the playground.
Fig 3.6 Floor plan of building in Savonnerie Heymans (scale 1:500)

Fig 3.7 Children playing socially in child-friendly play area

Fig 3.8 Children playing independently in child-friendly play area

Fig 3.9 Mini forest provides a space where families can interact with nature
Analysis at the urban scale

Savonnerie Heymans is situated in a residential area. Although there are limited family-friendly amenities located within close proximity, the building provides some of these to compensate for the lack in the neighbourhood, showing how family-friendly amenities can be provided for in close proximity when the wider urban context does not provide these. The traffic on the main street directly outside Savonnerie Heymans changes at different times of the day. It was found that typically, traffic speed here is low between 8am to 12pm, and again after 8pm. The main amenity that is provided in the area for family-friendliness is the transport hub. There is a pedestrian crossing to provide safe access to the public transport hub. In addition to these facilities the design of the immediate context supports the perception of safety for children because there are no boundaries to surrounding buildings and they link directly to the footpath.

Typical traffic:  
- Fast
- Slow

*Fig 3.10 3D landscaped park for social, independent and cognitive play*  
*Fig 3.11 3D landscaped park for social, independent and cognitive play*  
*Fig 3.12 Multi-level area with seating for socializing and older children*  
*Fig 3.13 Typical traffic on streets surrounding Savonnerie Heymans*
Summary of Savonnerie Heymans
In summary, Savonnerie Heymans case study demonstrated a number of ways that high-density dwellings can provide for the needs of the families living there. At the unit scale it has an example of a private outdoor area that provides a usable space at all times of the year. At the building scale, examples of child-friendly play areas that respond to a range of ages and different types of play are provided. Although at the urban scale Savonnerie Heymans does not have close family-friendly amenities, the facility provides for some of these in the building complex. It is located in close proximity to a public transport hub, providing a sustainable means of transport to access other amenities.
Case Study 2: E3 / Kaden Klingbeil Architekten

Architect(s) – Kaden Klingbeil Architekten
Location – Berlin, Germany
Gross floor area – 950 m²
Project year – 2008
Population density of Berlin – 3809 people per km²
Occupancy density per person in E3 – 49 m² (based on the interior unit plan analysed however unit sizes vary within the building)

Project background
E3 is a seven-storey timber building situated between concrete high-rises in inner-city Berlin. The purpose of the project was to create an energy efficient high-rise residence building which provided a healthy living environment. Unlike the other case studies, E3 was developed with a “client collective because issues like individual decision making, sustainability and special urban design features could only be called for by a critical client as opposed to a developer whose primary interest are the expected financial return” (Moore, 2016, p. 3). The building consists of seven apartments ranging in sizes from 120m² to 160m².
**Analysis at the unit scale**

Understanding the functionality of the units in E3 is difficult because of the limited information of unit without furniture. Therefore, to test how E3 provides for family-friendliness, furniture was placed into one of the units to test if it meets the criteria (Fig 3.16). Through doing this, it was found that most of the bedroom sizes in the unit did provide sufficient space for the required furniture, storage, and play space. In other areas of the unit, such as the bathroom, it was found that these spaces provided insufficient space because the main bathroom was 1m² below the minimum bathroom size. Interestingly, the en-suite in the master bedroom was 4.4m² larger than the minimum requirements, therefore, with a change in plan this issue could be resolved. Each unit is also provided with some private outdoor space (balcony), although they vary in size, each one meets the criteria, with the smallest private outdoor space being 6.1m². There is no defined storage in the private outdoor space, however, each unit is provided with an external storage located on the ground floor (Fig 3.18).

The unit also has a flexible floor plan, which is achieved through few interior load bearing walls. The only exception to this is the two concrete ductwork shafts. The benefit of this is that it provides residents with the freedom to change the layout of their apartment. To help with this, an architectural practice is located on the ground floor.

*Fig 3.16 Floor plan of housing unit in E3 (scale 1:200)*
Analysis at the building scale
E3 does little to provide a child-friendly play area for children living in the building. Although there is a communal green space on the ground level, it does little to encourage play of different types and for different age groups (Fig 3.20). The building provides natural surveillance over this space with views onto it from each of the units, however, this area has no barrier on the boundary between the complex and neighbouring properties to keep children within the grounds of the complex (Fig 3.18). E3 provides good security over the main entrance and communal space because all units are able to watch over these areas, however, natural surveillance from other units on the entrances of each unit is not provided (Fig 3.19). Soundproofing between units is provided by the concrete duct shafts, because they are enclosed in a dense material like concrete.
Fig 3.20 *Floor plan of building in E3 (scale 1:500)*
Analysis at the urban scale

E3 is located in a residential area, that is within close proximity to public transport, a supermarket, and a school, which were all found to be important to have in close proximity of a family-friendly home. Connections to these areas appear safe because the traffic around the building site is at the low end of the scale for traffic speed (Fig 3.24). Also, crossing streets to access these amenities is supported by family-friendly pedestrian crossings on the main streets (Fig 3.25). A significant issue with E3 and the urban context it is located in, is that it lacks spaces for children to play. Therefore, consideration of child-friendly play areas needs to be considered, for this building and neighbourhood, in order to make it more family-friendly.

Fig 3.21 Entrance to E3
Fig 3.22 Circulation in E3
Fig 3.23 Private outdoor space

Fig 3.24 Typical traffic on streets surrounding E3
Summary of E3
The E3 case study identified interesting ways of designing units in high-density to accommodate family-friendliness. These included the concrete ducting which helps to reduce sound travel between units. It also supports the adaptability of the units through providing few interior load bearing walls allowing residents to change the layout of their apartment to meet their needs. Provision for residents to store items normally put in a garage or shed, operates at the scale of the building. Some important amenities are located close to E3 and the access to these is safe.
Case Study 3: Wilton Close / Cymon Allfrey Architects

Architect(s) – Cymon Allfrey Architects
Location – Christchurch, New Zealand
Gross floor area – 3200 m²
Project year – 2008
Population density of Christchurch – 241 people per km²
Occupancy density per person in Wilton Close – 46 m² (based on interior unit plan analysed however unit sizes vary within the building)

Project background
The brief for this project was to “create a high density, low rise, apartment complex which provides an ‘entry level’, contemporary living environment for the inner-city dweller” (ArchDaily, 2014). It aimed to create a sense of community and privacy for residents of the building, as well as a sense of individuality.
Analysis at the unit scale
The plans located of the units in Wilton Close provided information of what function each room had, however they did not provide information regarding the placement of the furniture for these rooms. Therefore, to understand how these rooms met the criteria, furniture was placed in them (Fig 3.27). Through doing this, it was found that the rooms provided sufficient space because they exceeded the minimum space outlined in the criteria.

In comparison to the other case studies, Wilton Close provides residents with a large private outdoor space. The main private outdoor space is located along the boundary of the site, facing away from the internal courtyard space (Fig 3.30). The benefit of this is that it provides residents with a space to personalize as well as a space away from other residents in the building. A smaller private outdoor space is also provided at each entrance of the ground floor units. Raised garden beds are used to define the separation between private outdoor space and the communal courtyard (Fig 3.29).

![Floor plan of housing unit in Wilton Close (scale 1:100)](image-url)
Analysis at the building scale

Using a central courtyard design, a sense of community is created in Wilton Close because it provides a space where residents can openly interact, and host events with one another. Although there is no designed children's play area, there is space for children to play. Also, there are seats in this area for parents to sit down and watch their children play, or to socialize with other parents. Furthermore, this design scheme allows parents to supervise their children playing in this area from the comfort of their home. Security is provided to the building because of the passive surveillance provided by the units in the building onto entrance ways into the building, as well as gates at the entrances providing another level of security.

Soundproofing and privacy of units in the building is achieved through planning, locating the more public areas of the home away from private areas of the neighbouring units. As seen in Figure 3.30, private areas of the units are close to each other with the less private areas being further apart from each other. Another feature of the central courtyard that helps to provide privacy and ownership of space is the raised garden beds directly in front of the ground level units. This design feature helps distinguish communal from private space.
Fig 3.30 Floor plan of building in Wilton Close (scale 1:500)

Fig 3.31 Gate at entrance providing security

Fig 3.32 Gate at entrance providing security

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Analysis at the urban scale

Wilton Close is situated in a residential area in close proximity to a number of amenities such as shops, healthcare, and public transport. Connections to these areas appear safe because the traffic around the building site is at the low end of the scale for traffic speed (Fig 3.34). Also, crossing streets to access these amenities is supported by family-friendly pedestrian crossings on the main streets (Fig 3.35). The main issue with the location of Wilton Close is the lack of child-friendly play spaces. There are none in close proximity, and the building does little to encourage play.
Summary of Wilton Close
The Wilton Close case study identifies ways of providing individual and personal space in high-density dwellings. Raised garden beds in the internal courtyard area define private and communal space, and spaces located along the exterior of the building provide additional outdoor private space. At the urban scale, Wilton Close is in close proximity to a number of amenities which are safe to travel to. Although lacking in specific attributes to encourage play, there is a playground located nearby.
Case Study 4: Main East Side Lofts / 1100 Architects

Architect(s) – 1100 Architect
Location – Frankfurt, Germany
Gross floor area – 14800 m²
Project year – 2015
Population density of Frankfurt – 3000 people per km²
Occupancy density per person in Main East Side Lofts – 93 m² (based on the interior unit plan analysed however unit sizes vary within the building)

Project background
Pre-war, this building’s intended use was a factory, however, after World War I the design was never fully realized, and the building was instead used as a hospital, and later as housing for workers (ArchDaily, 2017). This adaptive reuse project was composed of two parts: the renovation of the existing building, and a contemporary addition which “interprets the volume, rhythm, and proportions of the original building, but reimagines them in a contemporary language with new materials” (1100, n.d.).
Analysis at the unit scale

Evaluation of the interior units from the Main East Side Lofts was limited to the available information on one, one-bedroom unit. The plan (Fig 3.37) shows how this unit provides for some of the selection criteria at this scale. In terms of sufficient space, this unit is inadequate. While the bedroom is large enough to accommodate a bed, storage and play space, the bathroom is larger than the minimum bathroom requirements, and there is storage next to the entrance of the unit and extra storage in the kitchen. The private outdoor space does not meet the space requirements outlined in the criteria. A feature of Main East Side Lofts is the large floor to ceiling heights. This was recognized when adapting the building and was used effectively to create a mezzanine floor in some of the units, creating more rooms in a unit (Fig 3.38 and Fig 3.39). In terms of soundproofing and privacy, this was largely provided through the deep and dense building exterior. The benefit of this building construction was that it has the ability to reduce sound transmission and reduce visibility into the units (Fig 3.40 and Fig 3.41).

Fig 3.37 Floor plan of housing unit in Main East Side Lofts (scale 1:100)
Analysis at the building scale
Evaluating this building in terms of the relationships between the housing units was difficult because of the sparse information that could be found. The information available demonstrated that the building does create a sense of community through the central courtyard space, promoting interaction between residents. Amenities, such as offices and a bakery, that create a sense of a village in the building are also provided. To control the number of people entering the building some of the amenities have entrance ways from the street, so that people do not have to go through the building to use these amenities, therefore, providing greater control of non-residents’ access to the building.
Fig 3.42 *Floor plan of building in Main East Side Lofts (scale 1:500)*

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Fig 3.43 *Elevation of Main East Side Lofts*
Analysis at the urban scale

Main East Side Lofts is situated in an area surrounded by residential and industrial buildings. It is within close proximity to nature (promenade), public transport, and general stores. Connections to these areas appear safe because the traffic around the building site is at the low end of the scale for traffic speed (Fig 3.45). Also, crossing streets to access these amenities is supported by family-friendly pedestrian crossings on the main streets (Fig 3.46). The issue with the location of Main East Side Lofts is the lack of child-friendly play spaces. There are none in close proximity, and the building does little to encourage play.

Fig 3.45 Typical traffic on streets surrounding Main East Side Lofts
Summary of Main East Side Lofts
Main East Side Lofts highlights a possible solution for an adaptive reuse strategy by retaining the old and adding in the new through referencing the old building form and features. Although analysis of the unit and building was difficult because of the limited information available, it did highlight possible strategies of privacy/soundproofing. At the urban scale, Main East Side Lofts was found to be in close proximity to a number of family-friendly amenities and the access to these also appeared to be safe, however it did not provide areas of play for children.
Chapter conclusion
This chapter has highlighted ways that other case studies have achieved aspects of family-friendliness, at the unit, building, and urban scale. Collectively, the case studies demonstrated how adaptability can be achieved through an open plan layout and minimizing the number of interior load bearing walls. To create privacy and soundproofing in the unit, private spaces such as bathrooms and bedroom should be separated from the public spaces such as the living, dining and kitchen.

The case studies also revealed how adaptive reuse can maintain the original building materials to provide character. A sense of community can be created through the provision of communal spaces or circulation designed to encourage interaction between residents. The case studies also revealed how child-friendly play areas could be provided through a playground, as well as other ways, such as an open area where children are able to creatively use the space how they choose. To be successful, however, a child-friendly play area needs to meet certain criteria, by providing views from the housing units, allowing parents to watch over their children while they play.

Finally, at the urban scale the case studies showed that if the surrounding area does not provide amenities needed for a family-friendly environment these can be provided for in the building. Further, if neither the building or the area itself provide these amenities it is important to connect residents to amenities, and this can be done through public transport.
CHAPTER 4: *Survey*

**Chapter introduction**

A main driver of this research is to propose a higher-density living environment that families can enjoy and want to live in. To do this however, it is important to understand what families require in their living environment, and what attracts them to living there. As found in the literature review, different people and families require different things. What attracts people to live in different dwelling types and neighbourhoods can be the result of their lifestyle and their current stage in life. Therefore, in order to provide a viable higher-density family-friendly housing strategy for the Wellington region, it is important to understand what Wellingtonians believe makes a dwelling and a neighbourhood family-friendly, and, furthermore, if it is provided, how likely they would consider moving there. Consequently, a survey was created to find the answers to these questions, because to date there has been no research done in the Wellington region to answer these questions. A copy of the survey questionnaire can be found in Appendix B.

**Method**

The anonymous survey was designed informed by the findings of the literature review and case studies. Human Ethics approval was obtained from the Victoria University of Wellington Human Ethics Committee. The survey was conducted using the online survey software Qualtrics. Notification of the survey was sent out on the 20th of July 2018 through methods of email, face-to-face, and online post. The survey was open to all people in the Wellington region over the age of 16 years of age and ran till the 20th August 2018. Because the aim of the survey was to gain a greater understanding of the perceptions of people living in the Wellington Region, there were no other restrictions on participants. Further, including people from various backgrounds would increase the ability of the research to explore whether or not people’s experiences and backgrounds influenced their perceptions of higher-density dwellings and to help the researcher understand what different family types required from, and what would attract them to, higher-density. The survey recieved a total of 212 completed responses from people of various backgrounds, as the following shows.

**Survey structure**

*Section A*: Participants were asked to answer questions about the dwelling they live in. They were first asked to identify what best describes their household type from those listed. This comprised various household typologies including and excluding children. Because of recruitment methods used for this survey, there was some bias of younger, university students. The percentages of the different household typologies were as follows:

---

**52**
The percentages of the different types of neighbourhood that people lived in were as follows:

**Household types**

- Household of young adults (e.g. university students) (50.47%)
- Couple with child(ren) living at home (17.45%)
- Other (14.62%)
- Single parent/caregiver with child(ren) living at home (6.60%)
- Couple with child(ren) not living at home (4.25%)
- Household with child(ren) and extended family (3.30%)
- Other household with child(ren) (1.89%)
- Single parent/caregiver with child(ren) not living at home (1.42%)

**Neighbourhood types**

- Neighbourhood with predominantly low-rise buildings (1-2 storeys) (75%)
- Neighbourhood with predominantly mid-rise buildings (3-4 storeys) (14.15%)
- Neighbourhood with predominantly high-rise buildings (5+ storeys) (10.85%)
The percentage of the dwelling types people lived in were as follows:

Of those who participated in the survey, most people owned the dwelling they lived in (68.9%), while less people rented (31.1%).
**Section B:** The second section of the survey focused on finding what participants considered to be important aspects for a dwelling which is family-friendly.

![Family-friendly attributes of a dwelling](chart)

Of those attributes that they identified from the list given, they were then asked, how likely would they consider living in a dwelling that provided those attributes, and in what dwelling type (low-rise building (1-2 storeys), mid-rise building (3-4 storeys), high-rise building (5+ storeys)) they would live in. From this it was found that there was a correlation between the importance of a family-attribute of a dwelling identified and how willing people were to move into higher-density. Additionally, the survey results identified that people were more likely to move into low-rise high-density housing than mid-rise or a high-rise high-density dwellings even if their preferred attributes were present (refer to Appendix B).

**Section C:** The third section of the survey asked participants to identify what amenities were important in a family-friendly neighbourhood.

Like Section B, participants were then asked how likely they would consider moving into a neighbourhood which provided access to these amenities if the neighbourhood had predominantly low-rise buildings (1-2 storeys), mid-rise buildings (3-4 storeys), high-rise buildings (5+ storeys).
storeys). It was found that Wellingtonians were more likely to move to a low-rise high-density neighbourhood rather than a medium or high-rise high density neighbourhood (refer to Appendix A).

Section D: The final section of the survey asked for demographic information from the participants. The results of this section of the survey were as follows:

**Amenities for a family-friendly neighbourhood**

<table>
<thead>
<tr>
<th>Amenities</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>18.0%</td>
</tr>
<tr>
<td>Supermarket or food stores (e.g. grocer, dairy)</td>
<td>16.0%</td>
</tr>
<tr>
<td>Schools</td>
<td>14.9%</td>
</tr>
<tr>
<td>Access to natures (e.g. forests, beaches etc)</td>
<td>13.2%</td>
</tr>
<tr>
<td>Health services</td>
<td>11.93%</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>10.63%</td>
</tr>
<tr>
<td>Work</td>
<td>5.75%</td>
</tr>
<tr>
<td>Family entertainment</td>
<td>3.92%</td>
</tr>
<tr>
<td>General stores (e.g. The Warehouse, Kmart)</td>
<td>3.57%</td>
</tr>
<tr>
<td>Car mechanic</td>
<td>1.92%</td>
</tr>
<tr>
<td>Other (please specify)</td>
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</tr>
</tbody>
</table>

**Age**

<table>
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<td>35-44</td>
<td>12.26%</td>
</tr>
<tr>
<td>45-54</td>
<td>4.72%</td>
</tr>
<tr>
<td>55-64</td>
<td>1.89%</td>
</tr>
<tr>
<td>65+</td>
<td>1.89%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0.47%</td>
</tr>
</tbody>
</table>
Participants had experience living in the Central Business District (CBD)/inner city (13.21%), suburbs (37.26%), both inner city and suburbs (46.70%), and other (2.83%).

Results

Relationship between household type and attributes that make a home family-friendly

Neighbourhood types

- Both inner city and suburbs (46.70%)
- Suburbs (37.26%)
- Central Business District (CBD)/inner city (13.21%)
- Other (2.83%)

Individual annual income before tax

- $30,000 or less (44.34%)
- $30,001-$50,000 (16.04%)
- $50,001-$70,000 (9.91%)
- $70,001-$100,000 (9.91%)
- $100,001-$150,000 (5.19%)
- $150,001 or more (1.42%)
- Unknown (6.6%)
Chapter conclusion
What was found through the analysis of participants’ backgrounds, and experiences in different living environments, was that perceptions can be subjective (refer to Appendix C and its findings). Through examining peoples’ household type it was found that families with child(ren) living at home require housing attributes that give them privacy. Furthermore, the importance of having space for children to play safely. Although participants may not have explicitly identified ‘child friendly play area’ they identified the need for outdoor space and good security which are considered important design features for a child friendly play area. Dwelling types also had a significant influence on peoples’ perceptions of what housing attributes made a home family-friendly. The housing attributes people considered important for a family-friendly home were reflective of the lifestyle these dwelling typologies promote such as the standalone house which promotes privacy compared to higher-density dwellings with multiple dwellings in the one building that try to provide a sense of community.

At the neighbourhood scale, amenities considered important to have in close proximity to the family-friendly home were similar across survey respondents. There were varying ratings of these attributes, however, there was a consensus that those amenities most important were, public transport, food stores, and schools.

Most household types, but especially those with children, had experience living in a stand-alone house. Participants were more likely to in low-rise higher-density housing than in medium or high-rise buildings. This suggests that Wellingtonians believe that low-rise high-density is more family-friendly than medium or high-rise high-density housing. The reason for this could be associated to the negative relationship between high-rise high-density environment and family-friendliness passed down through history.

Overall, what this survey has highlighted is that people’s experience in different environments can influence their perceptions of what makes a home family-friendly. The survey has highlighted the importance of understanding the people you are designing for, in order to design a home that responds to their needs. Because of this, it would be considered important to also examine the needs of children living in higher density from their perspective which this survey does not.
Chapter introduction
This chapter presents the site for this thesis, the Tramway Hotel. Analysis of the site is conducted in this chapter in order to see how the site provides attributes and amenities for a family-friendly neighbourhood. As noted in Chapter 1, the WCC has developed a ‘Wellington City Urban Growth Plan’. This plan intends to implement a number of existing Council policies and action plans” (WCC, 2015, p. 14). These include the ‘Adelaide Road Framework’ (2008). This document provides the specific policy context for the chosen site on Adelaide Road. Adaptive reuse of this building has been proposed for sustainability and heritage reasons.

Adelaide Road Framework
The Adelaide Road Framework covers an area that “extends from Rugby Street (on the south side of the Basin Reserve), south to the John Street/Riddiford Street intersection, and is bordered by Wallace Street in the west and the boundary of Government House to the east” (WCC, 2008, p. 2). The WCC also conducted further research beyond this boundary to understand how the framework would support major institutions, recreation and sporting facilities and transport networks (2008), which are of “critical importance to the future development of the Adelaide Road area” (WCC, 2008, p. 2).

According to the WCC there is “significant potential for further intensification and redevelopment, previous development in the area has been ad-hoc, resulting in poor urban form and a low level of ‘amenity’ and sense of place in other words not very attractive” (2008, p. 5). This is supported by the feedback which the WCC from the community. This feedback identified the following as important to improve the quality of Adelaide Road:

- Improving the Adelaide Road corridor – eg reducing congestion, ensuring a good public transport system, better parking provision, safer for pedestrians and cyclists, street plantings
- Increasing walkability, pedestrian and cycle friendliness
- ‘greening up’ the area, making it more attractive and creating more public places
- Creating more of a mix of shops and businesses
- Creating more of ‘community’ feel to the area
- Ensuring new development is of high quality and supports the aims of the long-term vision
- Minimising the effects of increased residential development and traffic congestion
- Protecting and employment and service role of the area
- Minimising the impact of new development on existing residential areas and valued heritage character areas/buildings (p. 10)

Fig 5.1 (Previous) Current photograph of site
The Adelaide Road Framework proposes an area with lots of potential for future family-friendly housing. Currently though the findings of the literature review indicate that it is not family-friendly because there are many unused or underused buildings, is aesthetically unattractive, and does not provide child-friendly play spaces. However, the intention apparent in the artist’s impressions and the policy proposals for the development in the Adelaide Road Framework suggest a future environment that promotes family friendliness.

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Fig 5.4 *Map of Mt Cook outlining Adelaide Framework area*
Site

Adelaide Road provides employment opportunities and a range of services which are beneficial in a family-friendly environment. Furthermore, “it is close to the central city, Wellington Hospital, the Newtown shops, the Basin Reserve and Massey University’s Wellington campus” (WCC, 2008, p. 1). Consequently, a site was chosen on this road (‘The Tramway Hotel’, corner of Adelaide Road and Drummond Street (114-116 Adelaide Road)). The first building that occupied this site was the original ’Tramway Hotel’, which was “named for the nearby tramway stables and workshop, but was planned in 1877, in advance of the launch of the steam tram service from the railway station to the southern end of Adelaide Road” (WCC, 2017).

Fig 5.5 Urban analysis of ‘The Tramway Hotel’
Fig 5.6 Photograph of Wellington Regional Hospital in the area

Fig 5.7 Photograph of supermarket in the area

Fig 5.8 Photograph of a school in the area

Fig 5.9 Photograph of public transport in the area

Fig 5.10 Photograph of car mechanic in the area

Fig 5.11 Photograph of play area in the area

Fig 5.12 Photograph of safe pedestrian crossing directly outside ‘The Tramway Hotel’

Fig 5.13 Photograph of family safely walking in the area

Fig 5.14 Photograph of pedestrian crossings in areas with higher traffic levels for safe crossing
**Fig 5.15** Map of public transport routes

**Fig 5.16** Typical traffic on streets surrounding The Tramway Hotel
Original building materials
On the 30th December 1898, this first building was destroyed by a fire which lead to the planning of the new Tramway Hotel in 1899 by James O’Dea. This new and improved design of the Tramway Hotel comprised two storeys, using concrete for the foundations, floors and yard, and the steps cornices. Brick was used for the external wall construction, while timber was used for much of the joinery. Totara was used for wall plates, ground floor joists, door and window frames. Rimu and Matai were used for the rafters, struts, hangers, ceiling joists, first floor joists, partition studs and plates, valleys, trimmers, skirting, window and door architraves, facias for spouting, and matai for the flooring (WCC, 2017).

Current condition of building
Currently, the building is not in use because it has been listed as an earthquake prone building (MBIE, 2019). The building is run down and does require a lot of work to make it a liveable building. Windows have been boarded and views into the building aren’t possible to assess the internal conditions. According to an artist’s impression in the Adelaide Road Framework (2008) there is evidence of plans to retain this building, hence, another reason to consider this building for the site of this thesis.
**Value of the building**
The Tramway Hotel is listed by the WCC on the heritage schedule of the Wellington District Plan (map 6, no 397). A heritage building holds great significance to a city, town, or area because they,

provide the community with a sense of continuity and the ability to identify with their city through protecting evidence of its past in the existing environment. Evidence of heritage in the environment provides us with a sense of time, of where we have been and where we are now, and gives us the opportunity to shape our future. The Māori saying, “Me huri whakamuri ka titiro whakamua” (In order to plan for the future, we must look to the past) encapsulates this principle (WCC, 2012 p. 1).

The Tramway Hotel holds great value because it is a rare example of a typical late Victorian hotel and it is of great significance to the history of the site because of its association with liquor licensing laws, and the recent gentrification of Newtown. The building also holds some “historical value for its association with Charles Plimmer, a member of an early Wellington settler family, and with the McParland’s, a local family of bakers/publicans” (WCC, 2017).

**Adapting the original building**
The ‘Heritage List’ (WCC, 2012) in the Wellington District Plan does not list any significant building elements that must be retained when adapting the building. The ‘Heritage Rules’ (WCC, n.d.) state that resource consent applications to alter a heritage building must consider the extent to which the work:

- retains the main determinants of the style and character of the building or object and in respect of buildings, particularly the street elevation. The Council seeks to ensure that modifications to street elevations are kept to a minimum, and if possible not altered at all. If necessary, preference shall be given to altering rear or secondary elevations.
- respects the scale of the original building or object. The Council seeks to ensure new work is not usually dominant, particularly where rooftop additions are proposed.
- is sympathetic in form, proportions, materials, colours and the patina of materials of the existing building or object.
- avoids the loss of historic fabric and the destruction of significant materials and craftsmanship.
- maintains the relationship of the building or object with its setting.
- respects the historic or other values for which the building was listed (p. 5-6)

Consequently, the proposal for adapting The Tramway Hotel will retain most of the exterior façade, particularly the street façade. There are no limits to the ability to alter the interior of the building, as long as alterations do not have a significant impact on the exterior façade of the building.
Fig 5.19 Plans of the ‘Tramway Hotel’ (scale 1:200)
Sun study
The relationship of indoor and outdoor space, especially to accommodate children’s play is important to achieve a successful family-friendly dwelling. Sun is an important aspect of this. Consequently, a sun shading analysis (Fig 5.20) of the selected building was undertaken. This analysis shows how the building provides for daylight and shading at different times during the summer and winter solstice. As can be seen from the results the outdoor area at the back of the building does not provide sufficient daylight. Therefore, different massing models were tested (Fig 5.21) to see what form would provide the best daylight strategy for the outdoor space.

**Summer solstice**

- 10:00 AM
- 1:30 PM
- 5:00 PM

**Winter solstice**

- 10:00 AM
- 1:30 PM
- 5:00 PM

*Fig 5.20 Sun and shading analysis of building currently on site*
Fig 5.21 (Above + Opposite) Sun and shading analysis massing forms
Sun shading test
The sun shading test revealed possible form solutions for providing maximum daylight in the outdoor space. This test found that the outdoor space facing north received the most daylight (study 1, 5, and 6). Study 1 tested how the outdoor space would perform if the entire outdoor space faced north. In this test the outdoor space received good daylighting in the summer solstice, however, in the winter solstice the outdoor space received little daylighting because of the shading cast by the neighbouring building. Study 5 explored locating the outdoor space to face north and east to receive more daylighting in the winter solstice. The problem with this iteration was that it lacked shading. Therefore, study 6 tested how providing an outdoor area than ran through the building from north to south might work to provide maximum daylight, as well as providing shading. It was found that this provided the best option because it provided areas of daylight and shade.

Chapter conclusion
The site of the ‘Tramway Hotel’ provides an ideal site for this thesis, because of the Adelaide Road Framework that has been but in place for the area by the WCC. Although the site does not provide for all the family-friendly attributes and facilities considered important from the literature review and survey, the Adelaide Road Framework provides information of future development in the area that will make it a family-friendly place to live. The only issue, with this plan is the lack of consideration for child-friendly play spaces, therefore, it is imperative that a child-friendly play space is incorporated into the design in the following chapter.
CHAPTER 6: Design

Introduction
This chapter considered how the Tramway Hotel could be adapted into family-friendly higher-density housing. Specific criteria drawn from the literature review and survey were used to develop the design criteria used in this chapter. These criteria considered the importance of each criterion and the building scale of the Tramway Hotel, which is a smaller scaled building compared to those referenced in the literature review and survey. Prior to this, initial explorations were done and can be referred to in Appendix A.

The main issue identified in the site analysis was the lack of child-friendly play areas, therefore, incorporating this into the design of the building was critical. Tests were done to define where different play areas could go in the building, and their relationship to the units. Case studies of play areas were also analysed because earlier case studies did not provide examples of play.

Design criteria for the development of the design are as follows:

**Design criteria at the unit scale**

**Sufficient space**
- Minimum of two bedrooms (each large enough to accommodate a single bed, a dresser, a desk or table, and in children’s bedrooms, some floor space for playing) (City of Vancouver, 1992, p. 10)
- The bathroom should be larger than the minimum size (City of Vancouver, 1992, p. 10). (1.9m x 2.1m (Department of Building and Housing (2011))
- A generous entry area (large enough that it provides room for toys and equipment, for dressing children, and for drying wet clothes) (City of Vancouver, 1992, p. 10)
- Storage of 2.8m³ (City of Vancouver, 1992, p. 11)

**Child-friendly play area**
- Minimum of 1.0m² play space in pre-school children’s bedrooms (City of Vancouver, 1992, p. 10)
- Minimum of 1.5m² play space in elementary and teen aged children’s bedrooms (City of Vancouver, 1992, p. 10)

**Privacy**
- Separation of conflicting areas (communal spaces (living room, kitchen, and dining room) in the home separated from private areas (bedroom and bathroom) in the home) (City of Vancouver, 1992, p. 10)

Fig 6.1 (Previous) Interior view from Unit three overlooking play area
Design criteria at the building scale

Child friendly play area
- Provides for individual play (observing, sitting, thinking, pondering, daydreaming, visualization or other autonomous activities), social play (interacting with others, for example, team games, role-playing, problem solving, imitation, creation and other related activities), active play (for example, ball games, running, sliding, jumping, winging, rolling, hopping, spinning, bouncing, crawling or other physical activities), cognitive and creative play (opportunity for imagination and problem solving, weighing up and considering the relationships between things. Activities can include digging, shaping, constructing, demolishing, exploring, discovering and other related activities (Donovan, 2016, p. 3)
- Visual access for the parent or caregiver from the unit (City of Vancouver, 1992, p. 6)
- Natural surveillance over common areas from other units (City of Vancouver, 1992, p. 6)
- Visual and physical access to at least one of the common areas (City of Vancouver, 1992, p. 7)
- Pre-school children under the age of six should be provided with a small play space adjacent to the building, that can be overlooked by the units in the building (Marcus & Sarkissian, 1986)
- For children above the age of 10 it is important to provide a variety of activities and spaces for social interaction, space for multi-functional use, and more challenging play equipment Hart (2002) and Beer et al. (2003)

Communal space/sense of community
- Communal space should be easily accessible from the units to increase use by the residents, hence encouraging social interaction and creating a sense of community between residents (Marcus and Sarikissian, 1986)
- Communal space should be provided for children and parents where individual units are unable to provide for certain activities City of Vancouver, 1992, p. 8)

Good security
- Locate entrances to maximise casual surveillance from units, semi-private and public areas (City of Vancouver, 1992, p. 8)

Privacy
- Visual privacy is achieved by separating building facades by 24.4m or by using architectural or landscaping form of screening (City of Vancouver, 1992, p. 10).

Soundproofing
- Acoustic privacy should be provided between units. Common walls between units and around shared area should have a Sound Class of 55 decibels, and floors between units should have an Impact Isolation Class of 55 decibels (City of Vancouver, 1992, p. 10).
- Communal and private areas in units should correspond to adjacent units (communal areas next to communal areas and private areas next to private areas) (City of Vancouver, 1992, p. 10)
Design phase one
The first phase of the design process considered how the Tramway Hotel could be adapted into housing units through a massing exploration. Iterations were done to consider which layout of the unit forms would best provide for good security through natural surveillance from the units onto the entrances into the building. They also considered how they would provide surveillance over the communal areas. Good security was considered to be one of the most important attributes of a family-friendly home according to the survey, hence, why this such an important attribute to provide for in this building.

Iteration one
The first iteration explored where units could be placed in the walls of the Tramway Hotel. It considered how each unit could be provided with their own entrance using the entrances of the current building. However, it was found that Unit three had no natural surveillance from other units in the building and did not provide surveillance over the level one communal space.

Iteration two
The second iteration explored how the units could be accessed through the communal space which can be viewed from other units in the building. However, none of the units provide surveillance over all of the communal spaces.

Iteration three
The third iteration realized issues in the previous iterations and provided surveillance over entrances to the building, and surveillance over all of the communal spaces.

Ground level plans
Scale 1:500

Level one plans
Scale 1:500

Fig 6.2 Exploration of unit placement in the Tramway Hotel
Design phase two
Using the chosen design (iteration three) from the first design phase, the second design phase tested how the units could function by creating different room functions in each unit.

Iteration one
The first iteration explored where each room could go in each unit. It aimed to provide security by locating rooms and windows towards the building entrances and communal spaces. It also aimed to provide privacy between the units by corresponding private rooms (e.g. bedroom, bathroom), and less private rooms (e.g. kitchen, living, dining). Because communal spaces in a home are more frequently used during the day, these spaces were placed on level one to maximise daylight and provide greater surveillance over the communal space.

Iteration two
Upon review, it was identified that there were some functionality issues with iteration one, therefore, development of the unit interiors was done. Issues from iteration one included: location of storage in the communal space and how it interrupted the flow between the spaces, and the separation of the bathroom and toilet and how this could become one space to improve flow and increase space. By making these changes the flow in the units improved and surveillance onto the communal space increased.
Iteration one

Ground level plan
Scale 1:200

Level one plan
Scale 1:200

Fig 6.3 Test planning of unit interiors
Section AA
Scale 1:200

Fig 6.4 Testing the natural surveillance provided by units onto building entrances
Iteration two

Ground level plan
Scale 1:200

Level one plan
Scale 1:200

Fig 6.5 Developed plan of unit interiors
Fig 6.6 Natural surveillance provided by units onto building entrances
Fig 6.7 Interior perspective of Unit 2

Fig 6.8 Interior perspective of Unit 3
Design phase three

The third phase of the design process examined case studies that address child-friendly play spaces. This was done because the previous case studies did not provide specific child-friendly design solutions that could be implemented into the design of the communal space. These case studies were tested against the criteria of child-friendly play spaces identified in the literature review. The criteria included:

- **Individual play** can include observing, sitting, thinking, pondering, daydreaming, visualization or other autonomous activities;
- **Social play** might involve interacting with others. Such social play activities include team games, role-playing, problem solving, imitation, creation and other related activities;
- **Active play** can include ball games, running, sliding, jumping, winging, rolling, hopping, spinning, bouncing, crawling or other physical activities;
- **Cognitive and creative play** provides the opportunity for imagination and problem solving, weighing up and considering the relationships between things. Activities can include digging, shaping, constructing, demolishing, exploring, discovering and other related activities (Donovan, 2016, p. 3).

**Case study 1: OB Kindergarten and Nursery / HIBINOSEKKEI + Youji no Shiro**

*Architect(s)* - HIBINOSEKKEI and Youji no Shiro  
*Location* - Nagasaki, Nagasaki Prefecture, Japan  
*Project year* - 2015

OB Kindergarten and Nursery was designed to explore the way children move through space, and the relationship between the body and the building (ArchDaily, 2015). It incorporates a variety of spaces that provide for the different types of play identified in the literature review. Firstly, it provides a quiet space with a large chalk board for children to draw on, allowing them to be creative (Fig 6.9). It also provides netted tubes for children to climb up and down (Fig 6.10), as well as a pole to slide down (Fig 6.11), providing a creative and playful way for children to move between spaces.

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**Fig 6.9 Large chalk board for independent and creative play**
Case study 2: Swarovski Kristallwelten / Snøhetta
Architect(s) – Snøhetta
Location - Austria
Project year - 2015

Swarovski Kristallwelten explored people's senses, and how their design could impact different human senses (ArchDaily, 2015). Like the previous case study, Swarovski Kristallwelten incorporated the idea of movement and how movement through space can be playful. Play elements that were included were, hanging ropes that allowed people to playfully move through space horizontally (Fig 6.12). A netted tower that encouraged people to move vertically through space in a playful and abstract manner (Fig 6.13). It also provided creative and colourful seating for people to relax and observe (Fig 6.14), as well as small trampoline like features for people to actively play in the space (Fig 6.15).
Fig 6.12 Hanging ropes for playful horizontal movement

Fig 6.13 Netted tower for playful vertical movement between spaces

Fig 6.14 Colourful seating for observing

Fig 6.15 Trampoline like features for jumping
Case study 3: Woods of Net / Tezuka Architects

Architect(s) - Tezuka Architects
Location - Japan
Project year - 2009

Woods of Net is a permanent pavilion in Japan. It is a hand knitted pavilion designed for children to crawl in, jump on, roll around, and swing on. The design reflects the softness of the forest and blurs the line between inside and outside. It attracts children and parents, because children play in the netted structure and the parents sit around it on the wooden structure (Fig 6.16 and Fig 6.17) (Basulto, 2009). This case study provides an example of a double height space that provides for play on both levels as well as play between the levels where children can move through the netted form (Fig 6.18).
Design phase three
Findings from the case studies led to an exploration of possible design elements in order to provide for the different types of play. Individual play explored playful design elements for sitting, relaxing, and observing. It tested how seating in the communal area could be playful by reinterpreting a swing. Another design element that was explored was the idea of a netted hammock.

Social play explored spaces that could encourage social play between residents. This included a grassed area for ball games, and a small tower where children could role-play and provide a space away from the main play area to socialize.

The exploration of design elements for active play were largely influenced by Swarovski Kristallwelten. It explored how people can playfully move through space through incorporating hanging ropes and a trampoline. These design elements encourage residents to move through the communal area in an unconventional and playful way.

Finally, cognitive and creative play explored design elements that allowed children to be creative, such as a chalk board to draw on, and a sand pit where children could create different forms using the sand.

Individual play

Fig 6.19 Exploration of design elements for individual play
Social play

Fig 6.20 Exploration of design elements for social play

Active play

Fig 6.21 Exploration of design elements for active play
Cognitive and creative play

Fig 6.22 Exploration of design elements for cognitive and creative play

Design phase four
The literature review identified that play spaces should provide for different ages of children. It identified that preschool children should be provided with a play space adjacent to the units or somewhere that can be easily overlooked by the units (Marcus & Sarkissian, 1986). For mature children above the age of 10 it is important to provide more challenging play equipment for multi-functional use and that encourages social interaction (Hart (2002) and Beer et al. (2003)). Because of this, the following explorations were done to test where different play areas could go in relationship to the units, as well as a space for parents to socialize.
Fig 6.23 Mapping areas in communal space
Fig 6.24 Mapping areas in communal space
Design phase five
Part of adapting the Tramway Hotel was to recognize the history of the building and its prior use. The bar was the feature of the building, therefore, when adapting the building it was critical that this space was retained. However, it was important that this space was family-friendly, and because of this, the space was adapted into a café opposed to a bar.

Iteration 1
Ground level plan
Scale 1:200

Fig 6.25 Plan of cafe

Section AA
Scale 1:100

Fig 6.26 Section of cafe
Fig 6.27 Interior perspective of cafe

Fig 6.28 Interior perspective of cafe
Iteration 2

Ground level plan
Scale 1:200

Fig 6.29 Plan of cafe

Section AA
Scale 1:100

Fig 6.30 Section of cafe
Fig 6.31 *Interior perspective of cafe*

Fig 6.32 *Interior perspective of cafe*
**Design proposal**

The following are drawings and renders of the final design proposal. Development of this design was firstly done through initial explorations testing how the Tramway Hotel could be adapted into housing. These initial explorations were presented to critics in the field and through this, issues of the initial design explorations were identified (refer to Appendix A). Using the findings of the literature review, case studies, survey, and site, design criteria for the design was created. Further, comments received from the reviews was taken into consideration (refer to Appendix A).

The design sets in place the attributes required for a family-friendly home in a higher-density environment. Divided into a café, three units, and a communal space, this design provides a strategy of how unused buildings can be adapted into higher-density family-friendly housing, while recognizing the historical significance of a building.

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**Fig 6.33 Site plan**
Fig 6.34 Ground level plan of final design proposal
Fig 6.35 Level one plan of final design proposal
Level one plan (scale 1:100)

Fig 6.35 Level one plan of final design proposal
Section AA (scale 1:100)

Fig 6.36 Section AA of final design proposal
Fig 6.37 *Perspective of adult communal area*
Fig 6.38 Perspective of pre-school play area
Fig 6.39 Perspective of pre-school play area
Fig 6.40 Perspective of circulation in communal area
Fig 6.41 Perspective of mature play area
CHAPTER 8: Conclusion

Summary
This thesis aimed to propose a higher-density housing strategy that families in the Wellington Region, and similar contexts could enjoy. The literature review in Chapter 2 highlighted issues that families living or who had lived in high-density had experienced from there time there. This included:
- Sufficient space
- Child-friendly play area
- Private outdoor space
- Privacy
- Adaptable dwelling
- Child-friendly play area
- Communal space/sense of community
- Good security
- Privacy
- Soundproofing
- Child-friendly access to amenities
- Low traffic volumes

It also highlighted the need to understand who you are designing for, and the impact it can have when this is not done. The survey of the Wellington population found that peoples’ perceptions were influenced by their experiences. What they perceived to be family-friendly was influenced by this. The survey also highlighted that Wellingtonians prefer to live in low-rise high-density environments opposed to medium or high-rise environments. The most important family-friendly dwelling attribute is a healthy living environment, and public transport is the most important amenity to have in a family-friendly neighbourhood. This information helped to create design criteria for the design proposal and site selection. The Tramway Hotel is an unused building on Adelaide Road in Mount Cook which provides access to most of the key amenities that were found to be important in a family-friendly neighbourhood, namely public transport, supermarket/grocer, and schools. In addition, it provided safe walkways for children to independently commute to places they required like schools and public transport. The case studies in Chapter 3 along with the literature review in Chapter 2 informed the development of design criteria as it provided possible solutions to the issues identified and the attributes required for a family-friendly home.

Evaluation of design proposal
At the unit scale, the design proposal provides sufficient space because it allows for the required furniture in each of the rooms, as well as storage and play space. Additionally, each unit is provided with extra storage on the ground level for other equipment, or as a space to work on small projects. There is also a bicycle shed located on the ground level for bike storage. Privacy is achieved by separating the private areas (e.g. bedrooms, bathroom) from the common areas (e.g. kitchen, living, dining).
At the building scale, the design proposal provides a child-friendly play area through multiple play spaces that accommodate the needs of pre-school and mature children, as well as a space for adults to interact. The pre-school play area is located in view of all the units, while the mature play area is in view of two of the units. Security was provided in the building by locating units to maximise natural surveillance over entrances into the building and units, and over common areas. Privacy and soundproofing were achieved by corresponding similar spaces of the units to neighbouring units.

At the urban scale, the site provides safe access to public transport, supermarkets, and schools. Traffic in the area is at the low end of the scale for traffic speed making commuting for children safe. Traffic analysis derived from Google is limited however as this information is based on typical traffic surrounding the site and it can change. The main issue of the site is the lack of play spaces, therefore, it was critical that this was provided for in the building.

As part of the adapting the Tramway Hotel, it was vital to recognize the building’s historical significance. The bar was significant to the building therefore, it was important to retain this. However, because this building needed to be family-friendly, it was decided that this space would be adapted into a café.

**Future research**

The design proposal for this thesis started to identify the idea of the body in relationship to space, and how it can become playful. The design proposal has started to explore this in the communal areas of the building, however, it would be interesting to see how this could be adapted into the units as well.
Reference list


**APPENDIX A: Initial designs**

**Part one**
Before the final design criteria was defined, a series of initial design explorations were done to explore how the Tramway Hotel could be adapted into family-friendly higher-density housing. Part one of the initial tests were done prior to the first review.

*Iteration one:*
Ground level plan *(scale 1:200)*

![Ground level plan](image)

Level one plan *(scale 1:200)*

![Level one plan](image)
Iteration two:

Ground level plan (scale 1:200)

Level one plan (scale 1:200)
**Iteration three:**
Ground level plan (*scale 1:200*)

![Ground level plan](image)

Level one plan (*scale 1:200*)

![Level one plan](image)
Iteration four:
Ground level plan (scale 1:200)

Level one plan (scale 1:200)
Iteration five:
Ground level plan (scale 1:200)

Level one plan (scale 1:200)
Part two
After the first review, some of the issues identified regarding the design were that by trying to build units in the existing building form, it was restricting the design. Therefore, the following iterations consider what happens if only the street façade is retained. Another issue that was raised was privacy. Because the building is adjacent to a footpath privacy was a significant issue. It was suggested that the units could be set back from the building exterior to improve privacy. By doing this bedrooms could be located on the ground floor, allowing common areas to receive more daylight by locating them on level one.

Iteration one: retaining only the street façade
Ground level plan (scale 1:200)

Level one plan (scale 1:200)
Iteration two: setting back the units from the building exterior

Ground level plan (scale 1:200)

Level one plan (scale 1:200)
Exploration of play elements

Having explored a couple iterations using the comments received in the first review, as well as a quick exploration of play elements that could be used in the play area, these were presented at the second review. At this review critics stated that locating bedrooms on the ground level was a good idea to maximise daylight in common areas of the units, and that locating bedrooms on the ground level adjacent to the footpath was not a major issue for privacy because design elements such as curtains can provide privacy for these rooms. A suggestion that was made, was to challenge the design to work with the current building structure. Additionally, suggestions were made to design the building around the play area, allowing it to flow between units.
APPENDIX B: Survey results

Question 1 - Are you 16 years old or over?

Yes

No

Question 2 - Which of the following best describes your household?

Couple with child(ren) living at home
Couple with child(ren) not living at home
Single parent with child(ren) living at home
Single parent/caregiver with child(ren) not living at...
Household with child(ren) and extended family
Other household with child(ren) (please specify)
Household of young adults (e.g. university students)
Other (please specify)
Question 3 - Which of the following best describes your neighbourhood?

- Predominantly low-rise buildings (1 - 2 storeys)
- Predominantly mid-rise buildings (3 - 4 storeys)
- Predominantly high-rise (5+ storeys)

Question 4 - Which of the following describes dwelling types that you live in and have lived in? (tick all that are applicable)

- Standalone house
- Duplex, townhouse, unit or apartment joined to one or more other houses, townhouses, units or apartments (1 - 2 storeys)
- Unit or apartment joined to one or more, units or apartments (3 - 4 storeys)
- Unit or apartment joined to one or more, units or apartments (5+ storeys)
- Mobile dwelling, for example caravan, boat etc
- Other (please specify)
Question 5 - Do you rent or own your own home? (select 'Rent' if another household member pays the rent for your home, and 'Own' if another household member owns the home)

- Rent
- Own
- Other (please specify)

Question 6 - Which of the following do you think makes a home family-friendly? (tick all that are applicable)

- Generous space
- High quality space
- Adaptable dwelling layout
- Healthy living environment
- Privacy
- A high level of sound proofing
- Child friendly play area
- Access to a private green area (e.g. lawn, garden)
- Access to outdoor space (e.g. balcony)
- Access to communal green space (e.g. lawn, garden)
- Sense of community
- Good security
- Other (please specify)
**Question 7** - If a home provided **GENEROUS SPACE**, how likely would you live there if it was...

- Extremely likely
- Likely
- Neutral
- Unlikely
- Extremely unlikely

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

**Question 8** - If a home provided **QUALITY SPACE**, how likely would you live there if it was...

- Extremely likely
- Likely
- Neutral
- Unlikely
- Extremely unlikely

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 8 - If a home provided QUALITY SPACE, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 9 - If a home provided an ADAPTABLE DWELLING LAYOUT, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 10 - If a home provided a HEALTHY LIVING ENVIRONMENT, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 11 - If a home provided a GOOD LEVEL OF PRIVACY, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 12 - If a home provided a HIGH LEVEL OF SOUND PROOFING, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 12 - If a home provided a HIGH LEVEL OF SOUND PROOFING, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 13 - If a home provided a CHILD FRIENDLY PLAY AREA, how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 14 - If a home provided ACCESS TO A PRIVATE GREEN AREA (e.g. lawn, garden), how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 15 - If a home provided ACCESS TO PRIVATE OUTDOOR SPACE (e.g. balcony), how likely would you live there if it was...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 14 - If a home provided ACCESS TO A PRIVATE GREEN AREA (e.g. lawn, garden), how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?  [b] in a MID-RISE building (3 - 4 storeys)?  [c] in a HIGH-RISE building (5+ storeys)?

Question 15 - If a home provided ACCESS TO PRIVATE OUTDOOR SPACE (e.g. balcony), how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?  [b] in a MID-RISE building (3 - 4 storeys)?  [c] in a HIGH-RISE building (5+ storeys)?

Question 16 - If a home provided ACCESS TO COMMUNAL GREEN SPACE (e.g. lawn, garden), how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?  [b] in a MID-RISE building (3 - 4 storeys)?  [c] in a HIGH-RISE building (5+ storeys)?
Question 16 - If a home provided ACCESS TO COMMUNAL GREEN SPACE (e.g. lawn, garden), how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?
[b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?

Question 17 - If a home provided a SENSE OF COMMUNITY, how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?
[b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?

Question 18 - If a home provided GOOD SECURITY, how likely would you live there if it was...

[a] in a LOW-RISE building (1 - 2 storeys)?
[b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?
Question 19 - Is there anything else which you think would POSITIVELY affect the family-friendliness home?
Question 20 - Is there anything else which you think would NEGATIVELY affect the family-friendliness of a home?

- No access to outdoors
- Poor accessibility
- Poor visibility to child play areas
- Proximity to non family-friendly amenities
- Inadequate ventilation
- No sense of ability to personalize
- Windows you cannot see out of (e.g. too high)
- Inability to adapt to family’s changing requirements
- Poor natural lighting and minimal sunlight hours
- No place to work
- Difficulty identifying the entrance
- Fast moving traffic near green space or children’s...

Question 21 - What amenities are important to have within close proximity to a home which is family friendly? (tick all that are applicable)

- Public transport
- Kindergarten
- Schools
- Supermarket or foodstores (e.g. grocer, dairy)
- General stores (e.g. The Warehouse, Kmart)
- Health services
- Car mechanic
- Family entertainment
- Work
- Access to nature (e.g. forests, beaches etc)
- Other (please specify)
Question 22 - If a neighbourhood provided PUBLIC TRANSPORT, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?  
- [b] in a MID-RISE building (3 - 4 storeys)?  
- [c] in a HIGH-RISE building (5+ storeys)?

Question 23 - If a neighbourhood provided KINDERGARTENS, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?  
- [b] in a MID-RISE building (3 - 4 storeys)?  
- [c] in a HIGH-RISE building (5+ storeys)?
Question 23 - If a neighbourhood provided KINDERGARTENS, how likely would you live there...

- in a LOW-RISE building (1 - 2 storeys)?
- in a MID-RISE building (3 - 4 storeys)?
- in a HIGH-RISE building (5+ storeys)?

Question 24 - If a neighbourhood provided SCHOOLS, how likely would you live there...

- in a LOW-RISE building (1 - 2 storeys)?
- in a MID-RISE building (3 - 4 storeys)?
- in a HIGH-RISE building (5+ storeys)?

Question 25 - If a neighbourhood provided SUPERMARKETS OR FOOD STORES (e.g. grocer, dairy), how likely would you live there...

- in a LOW-RISE building (1 - 2 storeys)?
- in a MID-RISE building (3 - 4 storeys)?
- in a HIGH-RISE building (5+ storeys)?
Question 25 - If a neighbourhood provided SUPERMARKETS OR FOOD STORES (e.g. grocer, dairy), how likely would you live there...

[a] in a LOW-RISE building (1 - 2 storeys)? [b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?

Question 26 - If a neighbourhood provided GENERAL STORES (e.g. The Warehouse, Kmart), how likely would you live there...

[a] in a LOW-RISE building (1 - 2 storeys)? [b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?

Question 27 - If a neighbourhood provided HEALTH SERVICES, how likely would you live there...

[a] in a LOW-RISE building (1 - 2 storeys)? [b] in a MID-RISE building (3 - 4 storeys)?
[c] in a HIGH-RISE building (5+ storeys)?
Question 27 - If a neighbourhood provided HEALTH SERVICES, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 28 - If a neighbourhood provided CAR MECHANIC, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 29 - If a neighbourhood provided FAMILY ENTERTAINMENT, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 30 - If a neighbourhood provided WORK, how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?

Question 31 - If a neighbourhood provided ACCESS TO NATURE (e.g. forests, beaches etc), how likely would you live there...

- [a] in a LOW-RISE building (1 - 2 storeys)?
- [b] in a MID-RISE building (3 - 4 storeys)?
- [c] in a HIGH-RISE building (5+ storeys)?
Question 32 - Are there any other amenities which POSITIVELY affect whether or not a neighbourhood is family-friendly?

Options for play on bad weather days
Local libraries, daycare
Outdoor recreation
Leisure (gyms, pools, etc)
Family-friendly cafes and restaurants
Pedestrian crossing, speed bumps, lower speed limits
Petrol station
Community groups/amenities
Playgroups/playgrounds of various kinds

Question 33 - Are there any other amenities which NEGATIVELY affect whether or not a neighbourhood is family-friendly?

Police station
Main transport hubs (i.e. train station, bus depot)
Amenities that attract negative behaviour
High speed roads
Airport
Question 34 - Which of the following age groups best describes you?

- 16 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65+
- I do not wish to answer this

Question 35 - Which gender do you identify with?

- Male
- Female
- Transgender
- Other
- I do not wish to answer this
Question 36 - Which ethnic group(s) do you identify with? (tick all that are relevant?)

- Chinese
- Indian
- Tongan
- Other (please specify)
- I do not wish to answer this
Question 37 - Which area of the Wellington Region do you live in?

<table>
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<tr>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aro Valley</td>
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<td>Berhampore</td>
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<tr>
<td>Broadmeadows</td>
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<tr>
<td>Brooklyn</td>
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<tr>
<td>Churton Park - Glenside</td>
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<td>Crofton Downs</td>
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<td>Grenada North - Tawa - Takapu Valley</td>
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</tr>
<tr>
<td>Grenada Village - Paparangi - Woodridge - Horokiwi</td>
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<tr>
<td>Haitaitai</td>
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<tr>
<td>Island Bay - Owhiro Bay</td>
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<tr>
<td>Johnsonville</td>
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<td>Kaiwharawhara - Khandalla</td>
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<td>10%</td>
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<tr>
<td>Kelburn</td>
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<tr>
<td>Kilbirnie</td>
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<tr>
<td>Kingston - Mornington - Vogeltown</td>
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<td>Melrose</td>
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<tr>
<td>Miramar</td>
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<td>Mt Cook</td>
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<tr>
<td>Mt Victoria</td>
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<tr>
<td>Newlands - Ngauranga</td>
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<td>Newtown</td>
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<td>Ngaio</td>
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<tr>
<td>Northland</td>
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<tr>
<td>Ohariu - Makara - Makara Beach</td>
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<tr>
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<td>Rongotai - Moa Point</td>
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<td>Roseneath</td>
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<tr>
<td>Southgate - Houghton Bay</td>
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<td>Te Aro</td>
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<tr>
<td>Thorndon - Pipitea</td>
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<tr>
<td>Wellington CBD</td>
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<td>Wadestown</td>
<td>10%</td>
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<tr>
<td>Wilton</td>
<td>10%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>10%</td>
</tr>
</tbody>
</table>
Question 38 - Which of the following types of neighbourhoods do you currently live or have lived in previously (tick all that are appropriate?)

- Central Business District (CBD)/inner city
- Suburbs
- Both inner city and suburbs
- Other (please specify)

Question 39 - What is your annual income before tax?

- $50,001 - $70,000
- $70,001 - $100,000
- $100,001 - $150,000
- $150,001 or more
- I do not wish to answer this
## APPENDIX C: Survey Analysis

### Relationship between household type and what attributes that make a home family-friendly

<table>
<thead>
<tr>
<th></th>
<th>Couple with child(ren) living at home</th>
<th>Couple with child(ren) not living at home</th>
<th>Single parent/caregiver with child(ren) living at home</th>
<th>Single parent/caregiver with child(ren) not living at home</th>
<th>Household with child(ren) and extended family</th>
<th>Other household (e.g. university students)</th>
<th>Other (please specify)</th>
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</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>30</td>
<td>7</td>
<td>8</td>
<td>1</td>
<td>7</td>
<td>3</td>
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<td>High quality space</td>
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<td>6</td>
<td>1</td>
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<td>Adaptable dwelling layout</td>
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<td>6</td>
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<td>3</td>
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<td>Healthy living environment</td>
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<td>16</td>
<td>3</td>
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<td>Privacy</td>
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<td>14</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>112</td>
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<tr>
<td>A high level of sound proofing</td>
<td>18</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>65</td>
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<tr>
<td>Child friendly play area</td>
<td>37</td>
<td>7</td>
<td>9</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>79</td>
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<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>38</td>
<td>8</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>22</td>
<td>9</td>
<td>9</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>78</td>
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<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>19</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>76</td>
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<tr>
<td>Sense of community</td>
<td>33</td>
<td>8</td>
<td>10</td>
<td>3</td>
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<td>98</td>
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<tr>
<td>Good security</td>
<td>49</td>
<td>11</td>
<td>15</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>129</td>
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</table>
For all household types, the housing attribute that was considered to be most important for all was a healthy living environment. However, the other attributes were considered more important than others across the different household types. For couples with child(ren) living at home, good security (n=53), privacy (n=38), and access to a private green area (n=38) were considered important. For couples with child(ren) not living at home privacy (n=12), high quality space (n=11), and good security were important (n=11). For single parents/caregivers with child(ren) living at home good security (n=15), privacy (n=14), and access to a private green area (n=11) were important. For single parents/caregiver with child(ren) not living at home privacy (n=3), sense of community (n=3), and good security (n=3) were important. For households with child(ren) and extended family good security (8), generous space (n=7), child friendly play area (6), and privacy (n=6) were important. For households of young adult’s good security (n=129), privacy (n=112), and access to private green area (n=100) were important. What this information reveals is that what household types require is reflective of their household type. For example, families with child(ren) living at home, they require housing attributes that give them privacy, which was found to be an important attribute for families living in high-density. Furthermore, the importance of having space for children to play safely. Although participants may not have explicitly identified ‘child friendly play area’ they identified the need for outdoor space and good security which are considered important design features for a child friendly play area.

Relationship between experience living in different dwelling types and what attributes make a home family-friendly

For all participants who had experience living in the different dwelling types listed, it was found that again a healthy living environment was considered to be most important. However, the other attributes were considered more important than others across the different dwelling types. For people who had experience living in a standalone house, good security (n=193), privacy (n=174), and access to private green area (n=154) were important. For people who had experience living in a duplex, townhouse, unit or apartment joined to one or more other houses, townhouses, units or apartments (1-2 storeys), good security (n=100), privacy (n=85), and sense of community (n=83) were important. For people who had experience living in a unit or apartment joined to one or more, units or apartments (3-4 storeys), good security (n=48), privacy (n=47), access to outdoor space (n=36), and sense of community (n=36) were important. For people who had experience living in a unit or apartment joined to more, units or apartments (5+ storeys), good security (n=51), privacy (n=46), and sense of community (n=39) were important. Finally, for people who had experience living in a mobile dwelling, privacy (n=10), access to private green area (n=9), and good security (n=9) were important. What this information reveals is that depending on what dwelling type people had experience living, the housing attributes they considered important for a family-friendly home were reflective of the lifestyle these dwelling typologies promote such as the standalone house which promotes privacy compared to higher-density dwellings with multiple dwellings in the one building that try to provide a sense of community.
Which of the following describes dwelling types that you live in and have lived in? (tick all that are applicable)

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>Standalone house</th>
<th>Duplex, townhouse, unit or apartment joined to one or more other houses, townhouses, units or apartments (1-2 storeys)</th>
<th>Unit or apartment joined to one or more, units or apartments (3-4 storeys)</th>
<th>Unit or apartment joined to more, units or apartments (5+ storeys)</th>
<th>Mobile dwelling, for example caravan, boat etc</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>什That describes your current and past living situations? (tick all that are applicable)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standalone house</td>
<td>130</td>
<td>25</td>
<td>32</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Duplex, townhouse, unit or apartment joined to one or more other houses, townhouses, units or apartments (1-2 storeys)</td>
<td>118</td>
<td>28</td>
<td>35</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unit or apartment joined to one or more, units or apartments (3-4 storeys)</td>
<td>106</td>
<td>28</td>
<td>24</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unit or apartment joined to more, units or apartments (5+ storeys)</td>
<td>224</td>
<td>58</td>
<td>62</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mobile dwelling, for example caravan, boat etc</td>
<td>174</td>
<td>47</td>
<td>46</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>93</td>
<td>29</td>
<td>30</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>125</td>
<td>25</td>
<td>26</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>154</td>
<td>35</td>
<td>37</td>
<td>9</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>123</td>
<td>36</td>
<td>33</td>
<td>8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>109</td>
<td>27</td>
<td>30</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sense of community</td>
<td>152</td>
<td>36</td>
<td>39</td>
<td>8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Good security</td>
<td>193</td>
<td>48</td>
<td>51</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>13</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Relationship between dwelling ownership and what attributes make a home family-friendly

In terms of house ownership and whether people owned or rented where they were living, it was found that the two groups through a healthy living environment was most important, followed by good security, then privacy. However, what followed this was slightly different across the two groups. For people who rented, access to a private green area (n=130), sense of community (n=126), and generous space (n=114) were important. For people who owned the place they were living in, access to private green space (n=64), sense of community (n=64), and child friendly play area (n=57), were important. What this information reveals is that there was little difference between peoples perceptions of family-friendly housing attributes.

<table>
<thead>
<tr>
<th>Which of the following do you think makes a home family-friendly? (tick all that are applicable)</th>
<th>Do you rent or own your own home? (select ‘Rent’ if another household member pays the rent for your home, and ‘Own’ if another household member owns the home)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>Rent 114 Own 53 Other (please specify) 4</td>
</tr>
<tr>
<td>High quality space</td>
<td>Rent 102 Own 45 Other (please specify) 5</td>
</tr>
<tr>
<td>Adaptable dwelling layout</td>
<td>Rent 82 Own 43 Other (please specify) 5</td>
</tr>
<tr>
<td>Healthy living environment</td>
<td>Rent 205 Own 88 Other (please specify) 6</td>
</tr>
<tr>
<td>Privacy</td>
<td>Rent 143 Own 75 Other (please specify) 4</td>
</tr>
<tr>
<td>A high level of sound proofing</td>
<td>Rent 90 Own 34 Other (please specify) 5</td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>Rent 98 Own 57 Other (please specify) 4</td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>Rent 130 Own 64 Other (please specify) 3</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>Rent 99 Own 55 Other (please specify) 5</td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>Rent 87 Own 40 Other (please specify) 4</td>
</tr>
<tr>
<td>Sense of community</td>
<td>Rent 126 Own 64 Other (please specify) 3</td>
</tr>
<tr>
<td>Good security</td>
<td>Rent 171 Own 79 Other (please specify) 4</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Rent 7 Own 7 Other (please specify) 3</td>
</tr>
</tbody>
</table>

Relationship between age and what attributes make a home family-friendly

For people aged 16 to 24, a healthy living environment (n=98) was considered most important, followed by good security (n=91), then privacy (n=83). For people aged 25 to 34, healthy living environment (n=57) was considered most important, followed by good security (n=46), then privacy (n=43). For people aged 35 to 44, a healthy living environment (n=25) was considered most important, followed by by sense of community (n=17) and good security (n=17), then access to a private green area (n=16). For people aged 45 to 54, a healthy living environment (n=9) was considered most important, followed by sense of community (n=8), then child friendly play area (n=7), and access to a private green area (n=7). For people aged 55 to 64,
a healthy living environment (n=4), adaptable dwelling layout (n=4), privacy (n=4), sense of community (n=4), and good security (n=4) were equally important. Finally, for people aged 65 and over, a healthy living environment (n=3), privacy (n=3), access to a private green area (n=3), and good security (n=3), were equally important. What this reveals is that a healthy living environment was the most important housing attribute for a family friendly home according to the younger half of the sample, and it was considered equally important to other attributes for the older half of the sample. For people aged 16 to 34, they had roughly similar perceptions of what attributes make a family friendly home. For the other age groups, they had similar perceptions of what attributes were required for a family-friendly home, but were rated differently in terms of importance.

<table>
<thead>
<tr>
<th>Which of the following do you think makes a home family-friendly?</th>
<th>16 - 24</th>
<th>25 - 34</th>
<th>35 - 44</th>
<th>45 - 54</th>
<th>55 - 64</th>
<th>65+</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>57</td>
<td>34</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>High quality space</td>
<td>51</td>
<td>27</td>
<td>11</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Adaptable dwelling layout</td>
<td>45</td>
<td>21</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Healthy living environment</td>
<td>98</td>
<td>57</td>
<td>25</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Privacy</td>
<td>83</td>
<td>43</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>A high level of sound proofing</td>
<td>37</td>
<td>25</td>
<td>11</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>50</td>
<td>31</td>
<td>10</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>62</td>
<td>33</td>
<td>16</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>52</td>
<td>31</td>
<td>13</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>40</td>
<td>28</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sense of community</td>
<td>59</td>
<td>37</td>
<td>17</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Good security</td>
<td>91</td>
<td>46</td>
<td>17</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
**Relationship between gender and what attributes make a home family-friendly**

For males, a healthy living environment (n=62) was considered most important, followed by good security (n=47), then privacy (n=46). For females, a healthy living environment (n=130) was considered most important, followed by good security (n=116), then privacy (n=98). What this reveals is that gender does not have a significant influence of peoples perceptions of what housing attributes make a home family-friendly.

<table>
<thead>
<tr>
<th>Which gender do you identify with?</th>
<th>Male</th>
<th>Female</th>
<th>Transgender</th>
<th>Other</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>34</td>
<td>75</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>High quality space</td>
<td>34</td>
<td>62</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Adaptable dwelling layout</td>
<td>27</td>
<td>56</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Healthy living environment</td>
<td>62</td>
<td>130</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Privacy</td>
<td>46</td>
<td>98</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A high level of sound proofing</td>
<td>30</td>
<td>48</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>28</td>
<td>73</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>37</td>
<td>85</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>30</td>
<td>75</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>28</td>
<td>54</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sense of community</td>
<td>36</td>
<td>88</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Good security</td>
<td>47</td>
<td>116</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Relationship between ethnicity and what attributes make a home family-friendly**

For NZ Europeans, a healthy living environment (n=134) was considered most important, followed by good security (n=120), then privacy (n=103). For Māori, a healthy living environment (n=17) was considered most important, followed by sense of community (n=12), then privacy (n=11) and good security (n=11). For the one Samoan who did the survey, they considered generous space, privacy, child friendly play area, access to outdoor space, access to communal green space, and sense of community important. For Chinese, they considered a healthy living
environment (n=5) and good security (n=5) as most important, followed by generous space (n=4) and privacy (n=4). For Indians, they considered generous space (n=5), a healthy living environment (n=5), and access to a private green area (n=5) to be most important, followed by sense of community (n=4) and good security (n=4). For the one Tongan who answered the survey, they considered a healthy living environment, privacy, access to a private green area, access to communal green space, sense of community, and good security to be equally important. What this information reveals is that different ethnic groups perceive what makes a family friendly home differently. However, the reason for this is unclear and requires further research.

<table>
<thead>
<tr>
<th>Which of the following do you think makes a home family-friendly? (tick all that are applicable)</th>
<th>NZ European</th>
<th>Māori</th>
<th>Samoan</th>
<th>Chinese</th>
<th>Indian</th>
<th>Tongan</th>
<th>Other (please specify)</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>68</td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>High quality space</td>
<td>72</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Adaptable dwelling layout</td>
<td>60</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Healthy living environment</td>
<td>134</td>
<td>17</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Privacy</td>
<td>103</td>
<td>11</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>A high level of sound proofing</td>
<td>48</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>68</td>
<td>9</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>81</td>
<td>13</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>72</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>62</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Sense of community</td>
<td>83</td>
<td>12</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Good security</td>
<td>120</td>
<td>11</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Other (please specify)</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
**Relationship between annual income before tax and what attributes make a home family-friendly**

<table>
<thead>
<tr>
<th>What is your annual income before tax?</th>
<th>$30,000 or less</th>
<th>$30,001-$50,000</th>
<th>$50,001-$70,000</th>
<th>$70,001-$100,000</th>
<th>$100,001-$150,000</th>
<th>$150,001 or more</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous space</td>
<td>51</td>
<td>22</td>
<td>12</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>High quality space</td>
<td>42</td>
<td>12</td>
<td>22</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Adaptable dwelling layout</td>
<td>34</td>
<td>15</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Healthy living environment</td>
<td>89</td>
<td>30</td>
<td>33</td>
<td>20</td>
<td>10</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Privacy</td>
<td>71</td>
<td>28</td>
<td>20</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>A high level of sound proofing</td>
<td>32</td>
<td>11</td>
<td>17</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Child friendly play area</td>
<td>47</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>5</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Access to a private green area (e.g. lawn, garden)</td>
<td>55</td>
<td>21</td>
<td>15</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Access to outdoor space (e.g. balcony)</td>
<td>41</td>
<td>22</td>
<td>19</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Access to communal green space (e.g. lawn, garden)</td>
<td>40</td>
<td>9</td>
<td>15</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Sense of community</td>
<td>54</td>
<td>22</td>
<td>21</td>
<td>14</td>
<td>4</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Good security</td>
<td>75</td>
<td>27</td>
<td>28</td>
<td>15</td>
<td>7</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

For people earning $30,000 or less annually before tax, a healthy living environment (n=89) was considered most important, followed by good security (n=75), then privacy (n=71). For people earning $30,001 to $50,000 annually before tax, a healthy living environment (n=30) was considered most important, followed by privacy (n=28), then good security (n=27). For people earning $50,001 to $70,000 annually before tax, a healthy living environment (n=33) was considered most important, followed by good security (n=28), then high quality space (n=22). For people earning $70,001 to $100,000 annually before tax, a healthy living environment (n=20) was considered most important, followed by good security (n=15), then sense of community (n=14). For people earning $100,001 to $150,000 annually before tax, a healthy living environment (n=13) was considered most important, followed by high quality space (n=12), then good security (n=11), then access to outdoor space (n=9), then access to communal green space (n=6), then sense of community (n=6), then privacy (n=4), then access to a private green area (n=3), then generosity (n=2), then good security (n=2), then a high level of sound proofing (n=1), then child friendly play area (n=0).
living environment (n=10) was considered most important, followed by access to a private green area (n=8), then good security (n=7). For people earning $150,001 or more annually before tax, generous space (n=3), a healthy living environment (n=3), access to a private green area (n=3), sense of community (n=3), and good security (n=3) were considered equally important. What this information reveals is that for people of all income types, a healthy living environment and good security are important.

**Relationship between household type and amenities required in a family-friendly neighbourhood**

Which of the following best describes your household?

<table>
<thead>
<tr>
<th>Household Type</th>
<th>Couple with child(ren) living at home</th>
<th>Couple with child(ren) not living at home</th>
<th>Single parent/caregiver with child(ren) living at home</th>
<th>Single parent/caregiver with child(ren) not living at home</th>
<th>Household with child(ren) extended family</th>
<th>Other household with child(ren) (please specify)</th>
<th>Household of young adults (e.g. university students)</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>40</td>
<td>11</td>
<td>14</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>110</td>
<td>38</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>33</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>65</td>
<td>26</td>
</tr>
<tr>
<td>Schools</td>
<td>43</td>
<td>11</td>
<td>12</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>93</td>
<td>35</td>
</tr>
<tr>
<td>Supermarket or food stores (e.g. grocer, dairy)</td>
<td>38</td>
<td>10</td>
<td>14</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>102</td>
<td>39</td>
</tr>
<tr>
<td>General stores (e.g. The Warehouse, Kmart)</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>Health services</td>
<td>33</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>71</td>
<td>30</td>
</tr>
<tr>
<td>Car mechanic</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Family entertainment</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Work</td>
<td>14</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>Access to nature (e.g. forests, beaches etc)</td>
<td>35</td>
<td>10</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>87</td>
<td>28</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Relationship between household type and amenities required in a family-friendly neighbourhood

For couple’s with child(ren) living at home, access to kindergartens (n=43) was considered to be most important, followed by public transport (n=40), then supermarkets or food stores (n=38). For Couples with child(ren) not living at home, access to public transport (n=11) and schools (n=11) were considered most important, followed by access to supermarkets or food stores (n=10), health services (n=10), and access to nature (n=10). For single parents/caregivers with child(ren) living at home, access to public transport (n=14) and supermarkets or food stores (n= 14) were considered most important, followed by access to schools (n=12), then health services (n=8). For single parents/caregivers with child(ren) not living at home, access to supermarkets or food stores (n=3) was considered most important, followed by public transport (n=2), health services (n=2), car mechanic (n=2), and access to nature (n=2). For households with child(ren) and extended family, access to public transport (n=7), kindergartens (n=7), supermarkets or food stores (n=7), and health services were considered equally important. For other household types with child(ren), access to public transport (n=4), supermarkets or food stores (n=4), and access to nature (n=4), were considered equally important. Finally, for households of young adults, access to public transport (n=110) was considered most important, followed by access to supermarkets or food stores (n=102), then schools. What this information reveals is that all household types had similar perceptions of what amenities were important to have in a family-friendly environment, although the rating of the amenities they identified were similar.

Relationship between age and amenities required in a family-friendly neighbourhood

For participants aged 16 to 24, access to public transport (n=98) was considered most important, followed by supermarkets or food stores (n=93), then schools (n=84). For those aged 25 to 34, access to public transport (n=57) was considered most important, followed by supermarkets or food stores (n= 52), then schools (n=50). For those aged 35 to 44, access to supermarkets or food stores (n= 24) was considered most important, followed by public transport (n=23), then schools (n=21). For those aged 45 to 54, access to public transport (n=10) was considered most important, followed by schools (n=9) and supermarkets or food stores (n=9). For those aged 55 to 64, access to public transport (n=4), schools (n=4), supermarkets or food stores (n=4), health services (n=4), and access to nature (n=4) were considered equally important. Finally, for those aged 65 and over, access to supermarkets or food stores (n=4) and health services (n=4) was considered most important, followed by public transport (n=3), schools (n=3), work (n=3), and access to nature (n=3). What this information reveals is that all age groups have similar perceptions on what amenities are most important to have in a family-friendly neighbourhood. What was interesting to note however, was that for the participants aged 55 and over, health services were something they considered important more so than the participant under the age of 55.
<table>
<thead>
<tr>
<th>What amenities are important to have within close proximity to a home which is family-friendly</th>
<th>16 - 24</th>
<th>25 - 34</th>
<th>35 - 44</th>
<th>45 - 54</th>
<th>55 - 64</th>
<th>65+</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>98</td>
<td>57</td>
<td>23</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Kindergartens</td>
<td>58</td>
<td>39</td>
<td>15</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Schools</td>
<td>84</td>
<td>50</td>
<td>21</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Supermarket or food stores (e.g. grocer, dairy)</td>
<td>93</td>
<td>52</td>
<td>24</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>General stores (e.g. The Warehouse, Kmart)</td>
<td>22</td>
<td>14</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Health services</td>
<td>67</td>
<td>40</td>
<td>15</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Car mechanic</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Family entertainment</td>
<td>22</td>
<td>18</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Work</td>
<td>32</td>
<td>17</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Access to nature (e.g. forests, beaches etc)</td>
<td>75</td>
<td>41</td>
<td>21</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Relationship between gender and amenities required in a family-friendly neighbourhood

In terms of gender, it was found that males considered access to public transport (n=62) to be the most important, followed by supermarkets or food stores (n=56), then access to schools (n=50). For females, access to public transport (n=129) was considered most important, followed by supermarkets or food stores (n=126), then schools (n=118). What this information reveals is that gender has little influence on people’s perceptions of what make a neighbourhood, family-friendly.
Relationship between ethnicity and amenities required in a family-friendly neighbourhood

For NZ Europeans, access to public transport (n=133) was considered most important, followed by supermarkets or food stores (n=126), then schools (n=119). For Māori, access to schools (n=17) was considered most important, followed by public transport (n=16), then supermarkets or food stores (n=15). For the one Samoan who did the survey, access to public transport, schools, supermarkets or food stores, health services, and access to nature were important. For Chinese, access to supermarkets or food stores (n=6) was considered most important, followed by work (n=5), then public transport (n=4). For Indians, access to public transport (n=4), schools (n=4), supermarkets or food stores (n=4), health services (n=4), and access to nature (n=4) were all equally important. Finally, for the one Tongan who did the survey, access to public transport, schools, supermarkets or food stores, health services, and access to nature were all important. What this information reveals is that for most ethnic groups amenities like supermarkets or food stores, public transport, and schools was important. However, what was interesting was that Chinese participants did not consider access to school or even kindergartens important and were in fact considered least important.

<table>
<thead>
<tr>
<th>What amenities are important to have within close proximity to a home which is family friendly?</th>
<th>Male</th>
<th>Female</th>
<th>Transgender</th>
<th>Other</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>62</td>
<td>129</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>36</td>
<td>83</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Schools</td>
<td>50</td>
<td>118</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Supermarket or food stores (e.g. grocer, dairy)</td>
<td>56</td>
<td>126</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>General stores (e.g. The Warehouse, Kmart)</td>
<td>14</td>
<td>26</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Health services</td>
<td>34</td>
<td>100</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Car mechanic</td>
<td>5</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Family entertainment</td>
<td>16</td>
<td>28</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Work</td>
<td>24</td>
<td>42</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Access to nature (e.g. forests, beaches etc)</td>
<td>49</td>
<td>99</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Relationship between types of neighbourhoods people live and have lived in, and amenities required in a family-friendly neighbourhood

For participants who had experience living in the CBD/inner, access to supermarkets or food stores (n=26), was considered most important, followed by public transport (n=25), then schools (n=18) and health services (n=18). For those who had experience living in the suburbs, access to public transport (n=73) was most important, followed by supermarkets or food stores (n=69), then schools (n=68). Finally, for those who had experience living in the CBD/inner city and the suburbs, access to public transport (n=92) was considered most important, followed by supermarkets or food stores (n=87), then schools (n=80). What this information reveals is that whether people have lived in the CBD/inner city or the suburbs, their perceptions of amenities to have in a neighbourhood that is family-friendly is relatively the same.
Relationship between annual income before tax and amenities required in a family-friendly neighbourhood

For the participants who earned $30,000 or less annually before tax, access to public transport (n=84) was considered most important, followed by supermarkets or food stores (n=80), then schools (n=69) and access to nature (n=69). For those who earned $30,001 to $50,000 annually before tax, access to public transport (n=30) and supermarkets or food stores (n=30) were considered equally important, followed by schools (n=30). For those who earned $50,001 to $70,000 annually before tax, access to public transport (n=33) and supermarkets or food stores (n=33) was equally important, followed by schools (n=29). For those who earned $70,001 to $100,000 annually before tax, access to public transport (n=20) and schools (n=20) were equally important, followed by supermarkets or food stores (n=18). For those who earned $100,001 to $150,000 annually before tax, access to public transport (n=11) was considered most important, followed by schools (n=9) and supermarkets or food stores (n=9). Finally, for those who earned $150,001 or more annually before tax, access to public transport (n=3), supermarkets or food stores (n=3), health services (n=3), and access to nature (n=3) were all equally important. What this information reveals is that annual income before tax does not have a significant influence on people’s perceptions of what amenities make a neighbourhood family-friendly.
<table>
<thead>
<tr>
<th>What is your annual income before tax?</th>
<th>$30,000 or less</th>
<th>$30,001-$50,000</th>
<th>$50,001-$70,000</th>
<th>$70,001-$100,000</th>
<th>$100,000-$150,000</th>
<th>$150,001 or more</th>
<th>I do not wish to answer this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>84</td>
<td>31</td>
<td>33</td>
<td>20</td>
<td>11</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>48</td>
<td>19</td>
<td>22</td>
<td>16</td>
<td>7</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Schools</td>
<td>69</td>
<td>30</td>
<td>29</td>
<td>20</td>
<td>9</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Supermarket or food stores (e.g. grocer, dairy)</td>
<td>80</td>
<td>31</td>
<td>33</td>
<td>18</td>
<td>9</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>General stores (e.g. The Warehouse, Kmart)</td>
<td>22</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Health services</td>
<td>58</td>
<td>22</td>
<td>22</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Car mechanic</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Family entertainment</td>
<td>17</td>
<td>8</td>
<td>14</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Work</td>
<td>30</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Access to nature (e.g. forests, beaches etc)</td>
<td>69</td>
<td>21</td>
<td>26</td>
<td>16</td>
<td>6</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>