

# Housing affordability and urban liveability in Christchurch

## **To what extent are tiny houses the solution to affordability and liveability in Christchurch?**

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## Executive summary

This research project explores housing affordability options in Christchurch, with a focus on tiny housing as a potential solution to the housing crisis in the city. The research looks at affordability, liveability and accessibility of tiny housing in Christchurch and studies how much size people need to live. Methods of analysis applied for this study is a mixed methods approach of quantitative and qualitative to explore tiny housing solutions and to find out what people believe are essential functions of a house. The results of the survey and interviews show that house sizes vary at different life stages of individual needs and people believe that there needs to be a variation of house sizing to suit different lifestyles. Our research leads us to conclude that tiny houses are not the solution to New Zealand housing crisis. However, tiny houses will contribute to the solution to some degree, we propose that a variation of housing is the key to solving this issue. We have created a hierarchy of needs pyramid that can be used for future research into New Zealand housing affordability crisis. All areas researched in this report are important functions of this pyramid. Our research also identifies essential areas for further investigation in terms of tiny housing as a solution and the following recommendations are made:

- Examine long-term environmental, economic and health impacts (mental & physical) compared to conventional housing
- Degree of satisfaction and challenges faced by long-term tiny house occupants
- The extent that tiny houses contribution to long-term housing affordability crisis
- Liveability indicators for tiny house living
- The relationship between size of living space and subjective wellbeing by gender
- International tiny house examples
- More advocacy around environmental outcomes
- Legal requirements – consenting processes
- Transportable lifestyles
- Tiny houses with families
- How much size different demographic groups really need.

## Table of Contents

Introduction	4
Literature review	4
Methodology	7
Discussions	8
Affordability	8
What does housing affordability in the city mean and why does it matter?	8
How can tiny houses become a form of supported housing affordability?	10
Liveability aspects	10
What does urban liveability mean and how to measure it?	10
What indicators should be used for assessing the liveability of tiny housing in Christchurch?	11
Accessibility aspects	13
Is tiny housing accessible to the residents of Christchurch?	13
Is there readily available information on tiny housing?	13
Is there land that is available and accessible for people to home their tiny houses?	15
What financing options are currently available to purchase a tiny house?	15
Upholding Te Tiriti o Waitangi	15
Results and discussion of the survey and interviews	18
What are the legal requirements on the size of a house?	21
Do age groups have different house sizes?	22
Limitations	23
Conclusion	23
Hierarchy of needs	24
Recommendations	25
Acknowledgments	25
References	26

## Introduction

Thriving cities need people. People who live and work in the city spend money and support local businesses, and ultimately, enhance the agglomeration of both knowledge and culture. Christchurch City, home to roughly 370,000 people is the city which was devastated by the 2011 earthquake. Around 16,000 properties were severely damaged and over 9,000 were inhabitable throughout greater Christchurch, with over 90% of dwellings receiving some sort of damage. Housing solutions in Christchurch must consider affordability, demographic changes, environmental challenges and health standards as well as supporting the growth and revitalisation of the city. We are investigating whether tiny houses could be the solution to encourage people back to the city centre and can live in safe, healthy, affordable homes. We ask what affordable is for the people of Christchurch, what makes a liveable home and how accessible the tiny housing solutions is, while considering the relationship between housing outcomes and Te Tiriti o Waitangi.

## Literature review

Studies	Authors	Aims/areas of studies	Key points/Findings
A State of Liveability: An Inquiry into Enhancing Victoria's Liveability	Victorian Competition & Efficiency Commission (2008)	Using effective guidelines to measure and evaluate liveability by using indicators  Used both International and National measures.	Public responses and comments are important prior to developing and presenting the final report to the government.
Liveable, Healthy, Sustainable: What Are the Key Indicators for Melbourne Neighbourhoods?	Lowe et al. (2013)	An overview of current academic and policy literatures on liveability indicators which were being planned to inform many projects including the current framework of Community Indicators Victoria.  A diverse range of subjective and objective liveability indicators are used in 11 policy areas.	The validation of these indicators to ensure their effectiveness when implementing urban policy and planning.

Measuring Liveability: A Critique Measuring Liveability	Shekhar (2020)	Reviews the previous studies conducted worldwide in relation to indicators influencing the liveability of a neighbourhood, city and country.	The suitable methods for each city or country vary depending on many factors and limitations related to the different connotations in a unique geographical setting.
We are building bigger 40 years on	Statistics New Zealand (2016)	Shows an increase in average house sizes. Compares the average house sizes in New Zealand in 1974, 2004, 2016.	In 1974, the average floor size was 110 square metres. In 2016 the average was 182 square metres.
The Economic Psychology of everyday life	Webley (2000)	Provides a psychological approach to home-buying.	House sizing is fully dependent on the wants/needs of the buyer. This can be determined by different life stages, incomes and future life plans.
A Stocktake of New Zealand's Housing	Johnson, Howden-Chapman & Eaquab (2018)	A central government document that discusses tenants' rights and the housing issue in New Zealand.	Overcrowding is an issue in New Zealand. Many people, particularly Maori and Pasifika are living in houses too small. Overcrowding is identified by room to person ratio, living in the house.
A principles framework for taking action on Māori/Indigenous Homelessness in Aotearoa/New Zealand	Lawson et al. (2019)	Interviews conducted with Māori experts identified three pathways as creating opportunities for action against Māori homelessness <ul style="list-style-type: none"> <li>• Te Tiriti o Waitangi</li> <li>• Whānau Ora</li> <li>• Housing First</li> </ul>	Must be anchored in rights-based and culturally aligned practice empowered by Māori worldviews, principles and processes  Intervention strategies for homelessness is often an individualised approach at the expense of collective interventions
Looking Māori Predicts Decreased Rates of Home Ownership: Institutional Racism in Housing Based on	Houkamau & Sibley (2015)	Survey to see whether Māori faced institutional racism in New Zealand's home lending industry based merely on their appearance	Looking more stereotypically Māori decreases the likelihood of having a mortgage application approved by a bank or financial institution

Perceived Appearance			
Auckland's Housing Affordability Problem (2014)	Brebner (2014)	<p>Investigation of urban planning tools in addressing housing affordability problems in Auckland</p> <p>Problems of definition between "housing affordability" and "affordable housing"</p> <p>Benchmarks for measuring housing affordability</p> <p>Implications for lack of affordable housing</p> <p>Tools for solving housing affordable problems</p>	<p>Holistic approach to address housing complexities is required</p> <p>Supply-side issues have been addressed, but whether it is enough to improve housing problems is unknown</p> <p>One demand-side factor has not been addressed (NZ's low average income)</p>
Renting in New Zealand: perspectives from tenant advocates	Chisholm et al. (2017)	Examine difficulties in housing situation experienced by tenants in NZ	<p>Poor quality and insecure housing, high rents</p> <p>Lack of autonomy &amp; difficulty in legislative rights assertion</p> <p>Lack of organizations to support tenants &amp; funding for tenant advocacy</p>
Housing affordability inquiry	New Zealand Productivity Commission (2012)	<p>Inquiry to evaluate the factors influencing affordability of housing</p> <p>Examine potential opportunities to increase housing affordability</p>	Obstacles to housing affordability include land supply, problem with achieving scale in new house construction, costs and delays in regulatory process
Planning for tiny houses	Shearer et al. (2018)	<p>Reports on the development of tiny house planning resource for Australia</p> <p>Assists planners, policy makers and community to better understand</p>	Tiny houses have high potential to be a catalyst for infill development in the 'missing middle', either as tiny house villages, or by altering land use planning frameworks to allow both homeowners and tenants to situate well

		tiny house movement for greater choice of housing supply and diversity	designed tiny houses on suburban lots
Housing pressure in Christchurch	Ministry of Business, Innovation & Employment (2013)	Study statistical information for the greater Christchurch area on homelessness, case studies with sample of people who experienced housing problems since the earthquakes	A loss of housing stock and drop in available new rental housing  Increased purchase prices and rents  Declined in rental units of lower prices  Increased demand for emergency or temporary housing & support for low incomes
Are Tiny Homes Here to Stay? A Review of Literature on the Tiny House Movement	Ford & Gomez-Lanier (2017)	Review of tiny house literature  Examine tiny house communities through environmental, social and economic considerations (examination of sustainability of tiny house movement)	Tiny houses seem to have long-term promise for temporary housing, transitional housing, guest homes, alternative to hotel accommodations for travellers

## Methodology

This research project used both quantitative and qualitative methods for data collection. The mixed methods approach of systemic literature review, online survey and targeted interviews were carried out. The mixed methods approach enabled the data collection and analysis process to be more comprehensive and complete than using separate quantitative and qualitative method (Creswell & Plano Clark, 2018), particularly for our research project because some of the data gap in the existing literature could be completed through the survey and targeted interviews. The systemic literature review was carried out for the housing affordability, liveability, and accessibility in terms of the Treaty of Waitangi regarding Māori housing perspectives. The online survey was conducted to gain public opinions on housing sizes while targeted interviews were performed to find out peoples’ desired housing conditions and to establish the overall thoughts of house sizing in New Zealand; and to understand what Ngāi

Tahu, as mana whenua of the Christchurch area are doing to address the housing crisis, as well as gathering opinions on the suitability of tiny housing from a large development company.

As researchers for this project, our positionality drives our personal interest in finding potential solutions to housing affordability in Christchurch. One of our team members, Madi Simons, who is of Māori descent, works for Ngāi Tahu Property, a Māori development and investment business. Her work looks at supporting Rūnanga (sub-tribes) in their housing aspirations in terms of investment opportunities and papakāinga; while the others (Sophie Canute, Kal Goeyinsup, Khemaksone Phetpasak) are non- Māori members. Canute grew up in South Auckland where housing conditions remain inadequate for the population. Her academic background in political science, history and law contributes to this housing project through her social science view. Kal Goeyinsup and Khemaksone Phetpasak are from Thailand and Laos, respectively. Goeyinsup's background was in business development prior to working for Virgin Airlines. Goeyinsup has a strong interest in housing affordability seen from a business perspective while Phetpasak has an academic background in environmental science and sees the housing project through this environmental lens.

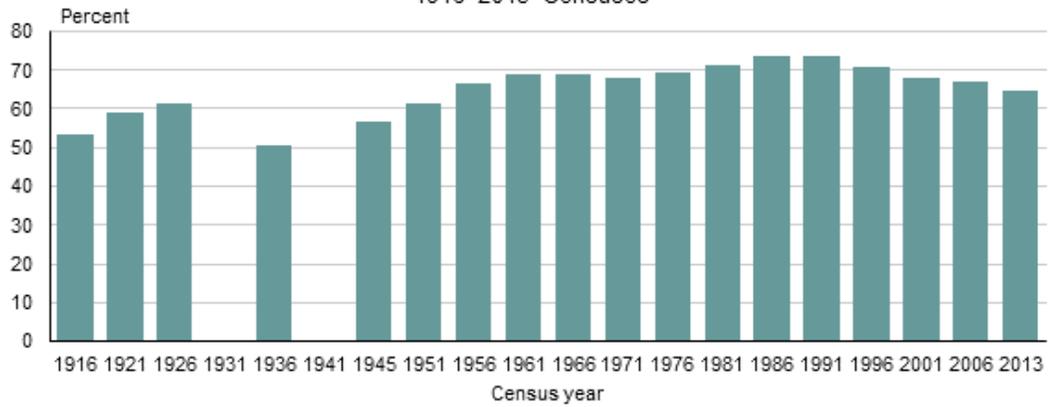
## Discussions

### Affordability

#### **What does housing affordability in the city mean and why does it matter?**

The United Nations Development Programme (UNDP) estimates that two-thirds of the world's population will live in cities by 2050. Ensuring safe and affordable housing for all is fundamental to building resilience for cities, societies and economies (UNDP, 2020). Importantly, many studies found that there is a strong connection between poor housing conditions and health issues (Chisholm et al., 2017). In New Zealand, several factors, for example, increased housing prices, poor transport access, land supply, housing legislation, planning policies, has made homeownership unachievable (The New Zealand Planning Institute, 2007). This is critical not only for the growing middle-class population, but also for the upper-income distribution as housing costs have significantly increased while wages remain relatively unchanged (The New Zealand Planning Institute, 2007; New Zealand Productivity Commission, 2012). This uncertainty of housing markets and the decreasing affordability of housing have forced young buyers into rental markets. Statistics New Zealand (2015a) and New Zealand Productivity Commission (2012) have reported that homeownership had fallen from 75% in 1986 to around 65% of households in 2013, the lowest point since the 1950s. Conversely, the percentage of people living in renting dwellings increased from around 25% in 1986 to 36% in 2013, a rise of 46% (Statistics New Zealand, 2015b), See Figure 1 and 2 for details. Moreover, as pointed out by Chisholm et al. (2017), 44% of New Zealanders who live in rental facility pay over 30% of their income for housing costs which are more than double the proportion of those who live in the home they own.

**Percent of households owning their home**  
1916–2013 Censuses



Note: Census not held in 1931 and 1941.

Source: Statistics New Zealand

**Figure 1: Proportion of homeownership 1916-2013 census years**

**Number of households renting<sup>(1)</sup> their home**  
1916–2013 Censuses



1. Those who paid rent. Those who occupied a dwelling rent-free are excluded.

Note: Census not held in 1931 and 1941.

Source: Statistics New Zealand

**Figure 2: Number of households renting their home 1916-2013 census years**

## **How can tiny houses become a form of supported housing affordability?**

The tiny house movement has been evolving on a global scale, particularly where unaffordable housing is an ongoing problem, for example in the US, New Zealand and Australia (Shearer et al., 2018). Many studies suggest that tiny houses may be a solution for urban infill development without disrupting the existing infrastructure (Ford & Gomez-Lanier, 2017; Shearer et al., 2018). Due to their small size, the construction and operation costs of tiny houses are relatively low when compared with traditional houses. This coupled with the mobile nature of many tiny houses make them a feasible solution for many individuals in different contexts. Also, tiny houses are built to provide temporary housing as guesthouses and as a transitional accommodation option for many people while saving for a traditional home, and providing shelters for the homeless (Ford & Gomez-Lanier, 2017).

In Christchurch, the post-earthquake migration outflows coupled with the rapid growth in the purchase and rental prices, housing remains an ongoing problem. Ministry of Business, Innovation & Employment (MBIE) (2013) reports that the average property price in Christchurch increased by 7.5% between 2012 and 2013 compared to a national increase of 6.3% over the same period. Furthermore, the same report found that within the greater Christchurch region, the average weekly rentals have risen more significantly than purchase prices and at a faster rate than in other regions across New Zealand, including Auckland (MBIE, 2013). Because of such increase, both house and rental prices, have significant effects on the financial wellbeing of many tenants (MBIE, 2013).

Although tiny houses may not be suitable for all, they appear to provide promising alternative to a range of demographics in Christchurch. This is particularly important as tiny houses provide access to affordable housing in the city (Ford & Gomez-Lanier, 2017; Shearer et al., 2018). Generally, Christchurch has a full potential for tiny houses to evolve. Recently, tiny house village development in Christchurch's residential red zone led by the Canterbury Tiny House Society, was proposed. This organisation was established in 2017 and has been working closely with Christchurch City Council (CCC) to incorporate tiny houses into the regulatory framework (Canterbury Tiny House Society, 2020). Given these points, Christchurch is in a better position than other cities in terms of legality for tiny housing incorporation.

## **Liveability aspects**

### **What does urban liveability mean and how to measure it?**

Generally, the common usage of the term "liveability" has been used to measure the quality of life concepts in urban space (Senlier et al., 2013). According to the Economist Intelligence Unit (2011), liveability is defined as one of the determinants for quality of life, while Shamsuddin et al. (2012) suggested that high quality of living will influence health conditions, residents' lifestyle and stability of the built environment.

The definition of liveability used in this report proposed by the Victorian Competition and Efficiency Commission (VCEC): “Liveability reflects the wellbeing of a community and comprises the many characteristics that make a location a place where people want to live now and in the future” (VCEC, 2008). The definition covers a wide range of common features of a liveable place such as community and economic strength, infrastructure, employment and incomes, amenity and place, environment, leadership and good governance and transport which involves three key dimensions of liveability; the economy, social-wellbeing and environment (Hart, 1999; National Research Council, 2017).

**The drivers of liveability:** VCEC (2008) suggests that the effective interaction of the main drivers of liveability including economic strength and markets, governments and human rights, will result in a high standard of liveability.

**Measuring liveability:** The need to measure liveability is to help urban planners to measure how to make urban places become liveable. Subjective and objective evaluation methods are being used for both international and domestic measures. Both have pros and cons (Shekhar, 2020).

#### **International measures**

- Economist Intelligence Unit’s (EIU) ranking of cities
- Mercer Human Resource Consulting’s worldwide quality of living survey

**Domestic measures** – community indicators are developed at the local and regional scale (Victoria Community Indicators Program, 2006)

- Canterbury Wellbeing Index
- He Tohu

#### **What indicators should be used for assessing the liveability of tiny housing in Christchurch?**

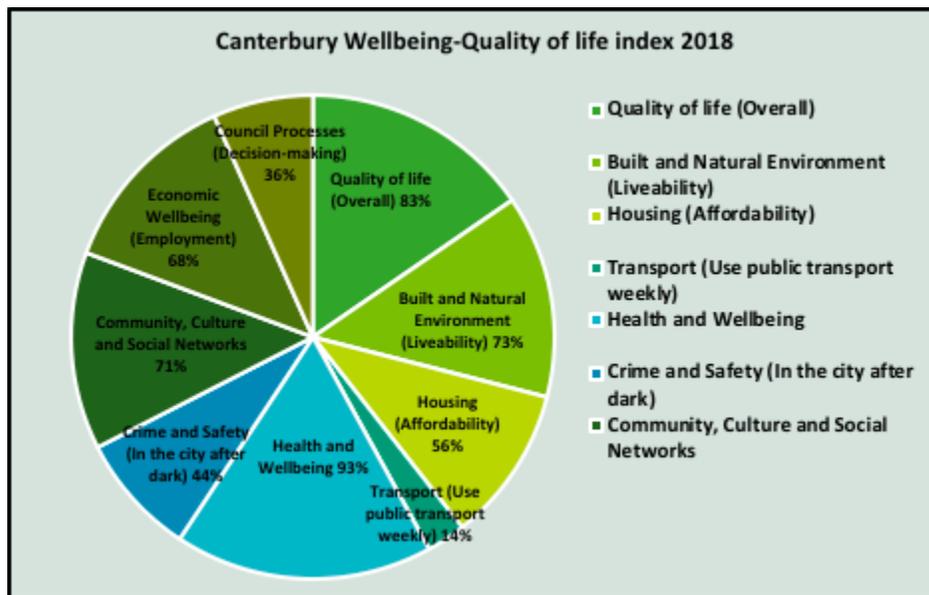
In New Zealand, with the expectation of higher demand in tiny houses and a possibility of growing in tiny housing communities, many aspects of housing including liveability need to be considered before deciding. The indicators influencing liveability of a neighbourhood and community may differ in each given environment. The indicators in social, economic and environmental aspects that may influence the liveability of tiny housing communities will be identified in this report.

Lowe et al. (2013) identified a diverse range of subjective and objective liveability indicators being used for Place, Health and Liveability Research Program which include crime and safety, housing, employment and income, transport, environment, etc. According to our community

partner: Kyle Sutherland of the Canterbury Tiny House Society, the following exceptional indicators are recommended.

**Liveability indicators for conventional housing & developed liveability indicators for tiny housing**

Economic		Social		Environmental	
Conventional housing	Tiny housing	Conventional housing	Tiny housing	Conventional housing	Tiny housing
Employment & income	Debt reduction	Crime & safety	Health & wellbeing	Public open space	Sustainability
Food & other local goods	Space & design	Education	Minimal lifestyle	Water Quality	
	Costs & other housing options	Health & social services			
		Transport			
		Leisure and culture			



**Figure 3: Summary of quality of life survey conducted by Neilson (2018)**

However, Lowe et al. (2013) suggests considering some concerns when assessing liveability indicators related to Local Government Policy and levels/scales of areas being measured.

There is no single indicator or set of indicators that will work for assessing the liveability of tiny housing (Sawicki & Flynn, 1996). Instead, indicators vary with the certain interests of residents in the community (Committee, O. I. D. N. F., & Committee, O. G., 2002). Therefore, the indicators should be best selected for within the context of a particular decision or set of decisions wherever needed.

## **Accessibility aspects**

### **Is tiny housing accessible to the residents of Christchurch?**

Accessibility is defined as 'the degree to which a product, device, service, or environment is available to as many people as possible, the ability to access and benefit from some system or entity' (Definitions, 2020). In this context the product is a house, in particular, a tiny house and to be available means to be able to use or obtain this product. A particularly important aspect of accessibility is the inclusion of benefiting from such access.

### **Is there readily available information on tiny housing?**

The most reliable source of information is the Christchurch City Council (CCC) Tiny House information for CCC document as well as the Canterbury Tiny House Society, a group which engages with the community to share and increase knowledge around tiny houses (CCC, 2018). By accessing the information below the people of Christchurch have two tiny house options you could easily visit, and three more businesses which would deliver to Christchurch, ranging from \$43k to \$155k in price and 6m x 2.4m to 13mx 5m in size.

Business	Location	Delivery Options	Minimum price model (with bathroom and kitchen)	Maximum price model	Financing options
Parkhomes	Christchurch	South Island	No minimum size or price specified	8m x 3.1m = \$120k	Financing available through stadium finance, 20% deposit required
Unit2go	Papakura	North Island	6m x 2.8m = \$44,400	13mx 5m = \$150k	Financing options available, no deposit also available
Tiny House Builders	Kaikati	Nationwide	8m L x 4.2m H = \$115k-\$125k	Size not specified = \$155k max	Has finance information, but no option through them
Build Tiny	Kaikati	Nationwide	Only prebuilt options – but an average build is 8ml x 2.4w x 4.2h = \$120k		Has finance information, but no option through them
Mihaus	Christchurch	South Island	6.6m x 2.5 m = \$85k	7.8m x 2.7m = \$119k	Financing available through stadium finance, 20% deposit required
Absolute Tiny Houses	Auckland	Nationwide	6m x 2.4m = \$43,990	10.8m x 2.4m = \$140k	Has finance information, but no option through them
House me	Auckland	No delivery information	7.4m x 3m = \$43k	12.5m x 3m for \$79,500	Has their own financing option and can borrow up to \$70k

**Table 1: Google search options for available tiny houses to purchase in Christchurch.**

### **Is there land that is available and accessible for people to home their tiny houses?**

Within the Central Ward of Christchurch City, available residential land is very seldomly available and when it is, it is extremely expensive. To date, Ngāi Tahu Property generally focuses on commercial buildings due to price factor and this product representing best value and use (personal communication with Wayne Vargis, 2020). The most likely way for tiny housing to be possible in a city with limited land is through urban infill and intensification of the city. Intensification is already occurring, post-earthquake new housing infill in existing areas was at a low of 27%, this is compared to 58% in June 2018. Experts believe there is plenty of space being wasted by disconnected driveways, and uncoordinated space saving efforts (Harre, 2018).

### **What financing options are currently available to purchase a tiny house?**

Options are very similar to that of an apartment, each bank has their own rules and criteria especially for anything under 50 square metres (Mortgage Rates NZ, 2016). A key consideration with many small buildings, including tiny houses, sleepouts and apartments is whether they can be easily sold, which fluctuates with changes in the housing environment. The average house price in Christchurch is \$450,000 and most lenders still require a minimum deposit of 20% which is \$90,000, a tiny house could possibly be a better alternative than repaying a mortgage (Estate New Zealand, 2019). Other options such as rent to buy, hiring a house and upgrading from smaller cabins to bigger houses over time.

### **Upholding Te Tiriti o Waitangi**

The Independent Māori Statutory Board discusses the rights and obligations of the Government in relation to housing under Te Tiriti o Waitangi. (Independent Maori Statutory Board, 2018) Te Tiriti is identified as having two key roles within the housing system; firstly, Treaty settlements with the Crown, where Government resources are shared with Māori at an iwi, hapū and whānau level as an attempt to make up for the injustices Māori faced due to breaches to Te Tiriti. Secondly, the overarching obligation that guarantees equality of access to Māori as equal citizens under the terms of Te Tiriti. Meaning, Māori should have an equal access to resources such as information, financing, land and comfort in their living.

### **Ngāi Tahu – Mana whenua of Christchurch**

The household is the building block of our tribal economy, and the catalyst for growing a vibrant kainga. Moving people along the housing continuum reduces the long-term liability to the Crown, improves household outcomes, builds communities and is morally and fiscally the right course to take. It is found home ownership was linked to better health, crime, and educational outcomes – which carries on intergenerationally (personal communication with Wayne Vargis, 2020).



**Figure 4: Te Rūnanga o Ngāi Tahu aspires to move whānau along this housing continuum**

Currently Ngāi Tahu Property does not see tiny houses as a solution, more a band-aid to a wider systemic problem facing New Zealand and Māori with respect to housing affordability. A shift in housing supply responsiveness will improve housing affordability by ensuring the highest and best use of land (personal communication with Wayne Vargis, 2020).

Through the shared equity program to support whānau into homes, Ngāi Tahu recognised the importance of space for all participants. Papakāinga typology would be the only time Wayne Vargis would recommend the use of tiny housing for Māori to increase density on seldomly available Māori Land. Within the Christchurch district plan there are very specific zones where papakāinga planning rules apply, these are generally the lands surrounding the four marae which are more rural locations. Housing options may be more available, but this hinders one's access to schooling, health facilities and the economy. Although tiny housing may be suitable, in this instance financing become difficult as insurance and guarantors on a shared title is extremely difficult under the Personal Property Securities Act and the Housing Act (personal communication with Wayne Vargis, 2020). A study in Auckland found Māori are discriminated against and experienced institutional racism within the home lending industry based merely on appearing more Māori and therefore not gaining equal opportunity and access to the rest of the New Zealand population (Houkamau & Sibley, 2015).

NAME	LOCATION	SIZE (Land)	HOUSES	TPOLOGY	ZONING & OWNERSHIP	ONSITE FACILITIES	PROXIMITY TO CULTURAL FACILITIES	PROXIMITY TO RESOURCES
<b>TURNER WHAANAU PAKAINGA</b>	29 King Street, Ngaruawahia, Waikato	1,032m <sup>2</sup>	1  Roughly 18 people living there at any time	Single house, 10 bedrooms, 1 large bathroom (marae like facilities)	General Freehold  Donna Flavell, James Wilson, Miriam Turner, Rangitamoana Wilson	Power, water, sewage  Mussel fritter whānau business, industrial kitchen	7-minute drive to Tūrangawaewae marae	2-minute drive to closest health centre  3-minute drive to closest school  3-minute drive to closest supermarket
<b>TAI TAPU PĀ</b>	21 Forbes Road, Tai Tapu, Christchurch	1263m <sup>2</sup> 1109m <sup>2</sup> 1164m <sup>2</sup> 895m <sup>2</sup>	4 houses which can be completely private for on sale but currently no fences, so it acts as a communal area in the middle, currently 28 people living there	Stand alone, 4, 5-bedroom homes	4 separate titles  General Freehold	Power, water, sewage  School just across the road,  Communal vegetable garden, pool, whānau business (Māori consultancy)	30 minutes' drive to Wairewa Marae  35-minute drive to Rāpaki Marae  3 hours 15 minutes to marae whānau mostly whakapapa to	6 minutes to closest supermarket  6 minutes to closest health centre  Walkable to closest school
<b>WHARE ORA PAKAINGA HE KOROWAI TRUST</b>	Kaitaia	20,000m <sup>2</sup>	9 homes relocated from Glen Innes  2 Tiny houses  Home to 17 adults and 40 children	Stand alone, 1,2,3-bedroom homes	General Freehold	Health Centre  Early childhood centre  Trades Night School  Orchard  Retail store (Diary)  Marae	On site	One site

**Table 2: Intergenerational Māori Housing Solutions**

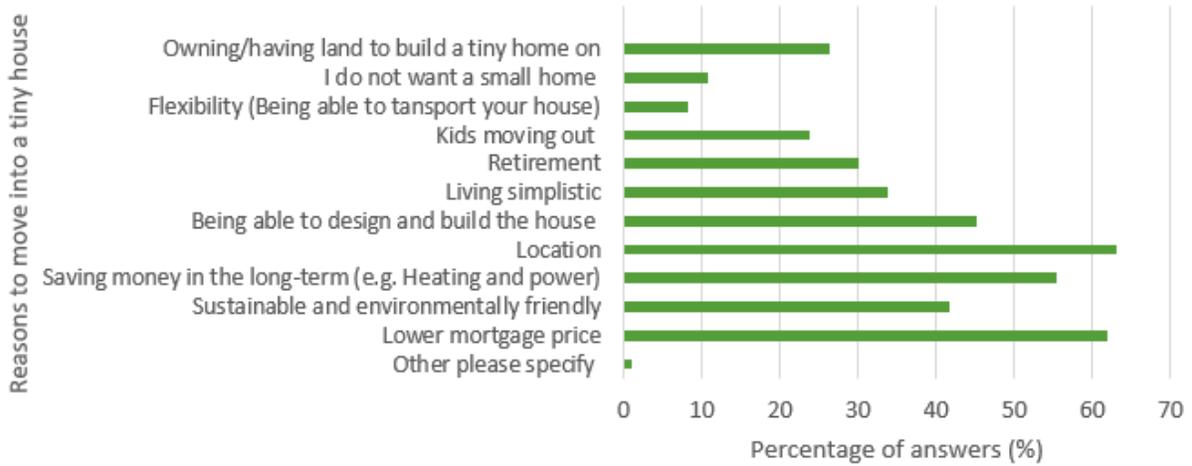
## Results and discussion of the survey and interviews

The housing survey was open for two weeks and 265 responses were collected. Due to the implications of COVID-19 this survey was only open online and because of the ages in our research group, over half of our respondents were in the 18-24 age group. This does limit the results slightly because this data is being used to support existing research on house sizes and the needs in different life stages. We were unable to collect data from any respondents under the age of 18, however, this will not directly impact the results. An interesting observation is that 73% of respondents identified as female, most respondents (72%) are of New Zealand European descent.

One of the questions within the survey questioned peoples' ideal living conditions and the results, as suspected, varied depending on age groups, family sizes and aspirations. Moreover, it was a surprise that the leading response in ideal living conditions was a two to three-bedroom house. Only 12 out of 303 responses mentioned their ideal living conditions were a tiny home. Due to COVID-19 restrictions we only targeted people we knew by an online link to the survey. If this link was posted on the Tiny House Community page these numbers would have been much higher, however, the aim of this survey was not specifically focused on tiny homes but space. Therefore, there was no specific target audience set as long as there were respondents from each age group.

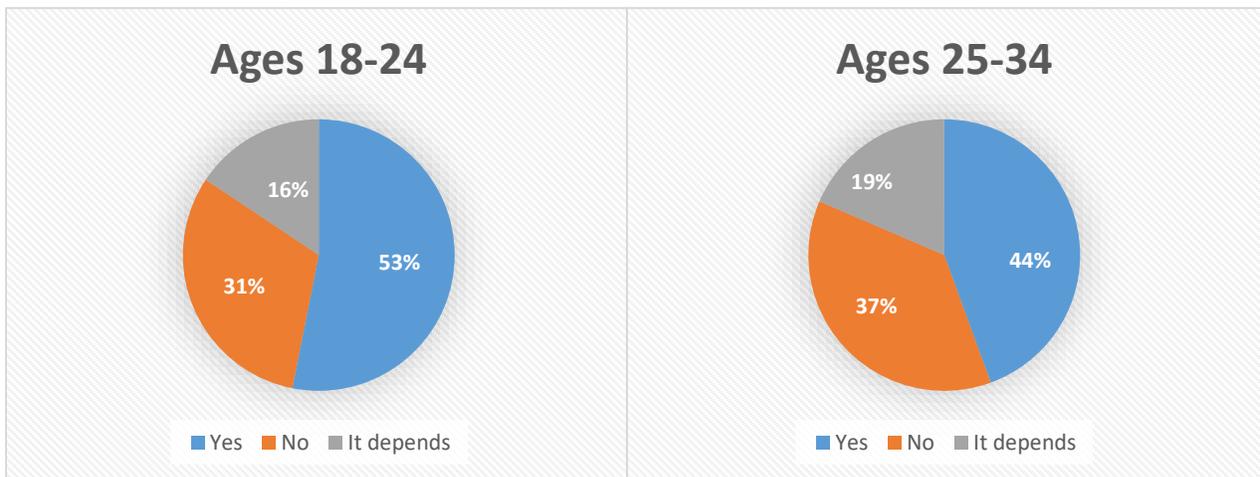
The purpose of this project was to establish whether tiny houses could contribute to New Zealand's housing crisis in terms of liveability and affordability. One question asked respondents what factors would influence them to move into a tiny home. Leading reasons to convert to tiny house living were location, lower mortgage price and saving money in a long term (heating, power). The options that were least popular were 'I do not want a small home' and 'flexibility of the home (being able to transport it)'. Only 10% of the respondents answered that they did not want to live in a small house, and this is not surprising based on 119 people saying their ideal living conditions were a big house. However, based on this result only 31/119 people would not consider living in a tiny home. This response recognises that people are open to listening or converting to the tiny house lifestyle based on specific conditions.

## Reasons people would convert to tiny home living



**Figure 5 – Reasons to move into a tiny house**

The survey concluded with an open question that asked people to leave any thoughts about house sizing and a few prompts were included. The prompts asked whether house sizing is too big in New Zealand and whether people could live smaller and not deprive themselves of the essential functions of a home. The results have been split into age groups to meet different life stages.



**Figure 6: 18-24 House sizing responses**

**Figure 7: 25-34 House sizing responses**

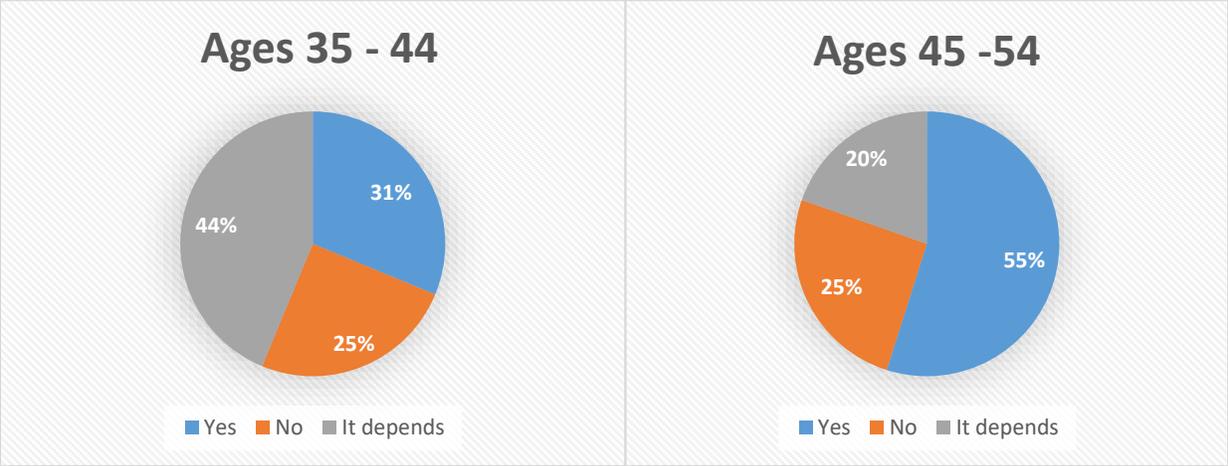


Figure 8: 35-44 House sizing responses

Figure 9: 45-54 House sizing responses

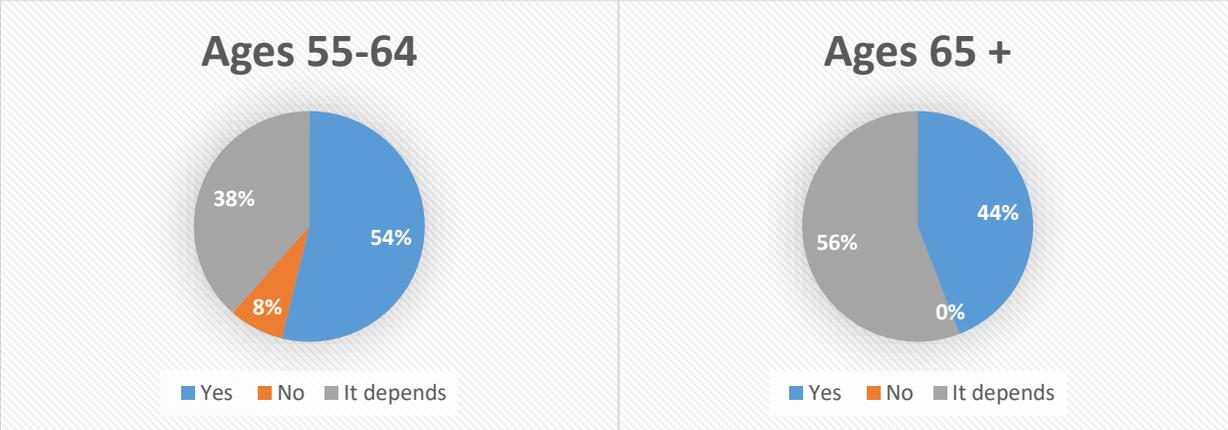


Figure 10: 55-65 House sizing responses

Figure 11: 65+ House sizing responses

As shown in Figures 6-11, the results vary depending on age group. A commonality in all age groups shows that many people believe house sizing is too big in New Zealand. An interesting observation is that as the respondents get older, they believe that house sizing is not too big. Figure 11 is of particular interest because not one respondent over 65 believes that house sizes are not too large, the majority of these answers commented on how house sizes reflect the needs of the occupants. Other responses in this age group included not wanting to downsize even though they are retired because they enjoy having their own space.

## What are the legal requirements on the size of a house?

Housing Improvement Regulations Act 1947 outlines the legal, minimum space requirements in a dwelling. The enactment mentions following are necessary when building a house/apartment:

Section	Spaces	Size requirement
5.1(c)	Space intended for a bedroom	<ul style="list-style-type: none"> <li>• Cannot be smaller than 4.5sq m</li> <li>• Minimum height requirement of 1.5m</li> </ul>
5.1 (F)	Adequate clothes washing facilities when housing two or more people	<ul style="list-style-type: none"> <li>• When living with two or more people an area must be dedicated for washing clothes</li> </ul>
7.1-2(a-b)	A Kitchen/Kitchenette	<ul style="list-style-type: none"> <li>• No smaller than 1.5sq m x 3sq m for one person</li> <li>• For two people 1.5msq x 3msq</li> <li>• The space must also have room for food storage, ventilation, have enough space to prepare and cook food using the methods of boiling and baking</li> </ul>
8	Living room or space to use as a living room	<ul style="list-style-type: none"> <li>• No smaller than 9sq m for one person</li> <li>• No smaller than 11sq m for two persons</li> </ul>
9.1 – 9.4	A bathroom/lavatory, and A toilet or private area for people to go to the toilet	<ul style="list-style-type: none"> <li>• No minimum size requirements</li> <li>• Must have an opening window</li> <li>• Must have either a functioning bath or shower</li> <li>• Hot water supply/cylinder</li> <li>• Separate requirements if the house cannot have a functioning toilet</li> </ul>

## **Do age groups have different house sizes?**

### **Children**

In many areas of New Zealand, overcrowding and child poverty are significant problems in New Zealand (Statistics NZ, 2019). Goux & Maurin (2003) identify that overcrowding happens when houses are too small for the families living in them. Due to low or lack of income, these families are not able to upgrade their house to fill the needs of the family. A lack of housing space can be detrimental to the child's health (mental and physical), education and their family utility function (Goux & Maurin, 2003). As shown in the survey results, people responded saying they will buy bigger homes to match the needs of their family. Family sizes vary, therefore, house sizes need to have different options to fulfil these needs.

### **Adults**

In psychology, the space needed for adults is dependent on personal life stages and aspirations. When a younger, adult couple are looking to buy a house it is usually because they are expecting or wanting to start a family (Van Wissen & Dykstra, 1999). The ideal house would provide the facilities and functions that they required for their family and their budget (Webley, 2000). Having kids makes people crave security and buying a house apparently achieves that (Van Wissen & Dykstra, 1999). However, the survey indicated that middle aged adults still aspire to have spare rooms and spaces for grandchildren and children to come back and stay. The survey results show that this age group are willing to downsize to retire.

### **Retirees**

When people retire, they are expected to downsize because they do not need the space and sometimes do not have the finances to continue in a bigger home (Burton et al., 2003). This study shows that retired people do not have a reduced need for household functions and neglects hobbies and family visits. Retired people spend the most time in their home and are more likely to want more physical space to keep them occupied (growing gardens is popular in this age group). Also, the needs of a 65-year-old compared to a 92-year-old can look very different, depending on health, relationships, life decisions and aging (Burton et al., 2003). Retired and elderly have different needs, some elderly live in caring facilities where they only have a small room to themselves and others still have functioning facilities and are still completely independent. The needs and wants are variant on the individuals and living conditions cannot be expected to be the same for such a large age group.

## Limitations

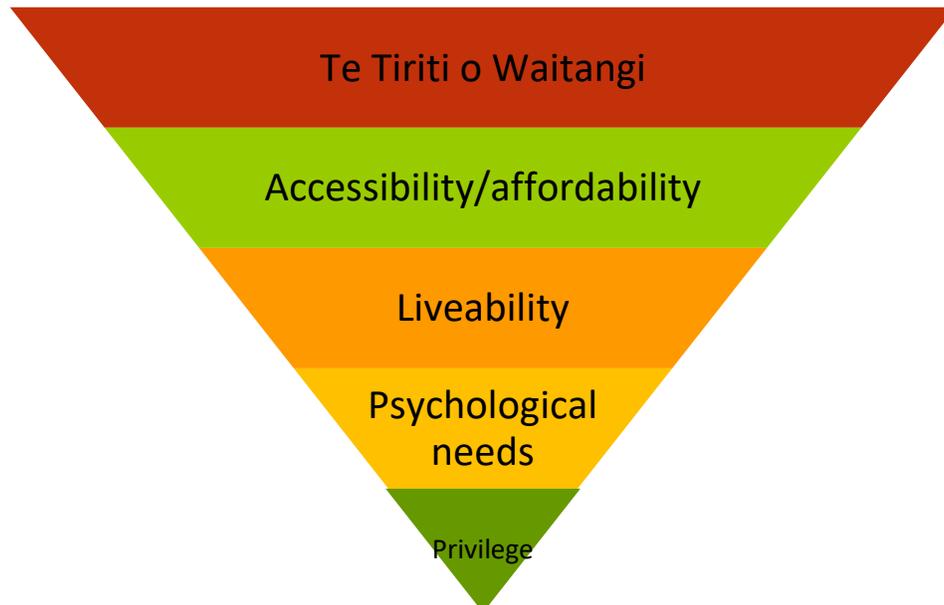
The main limitations of this project are outlined as follows:

- **Community engagement:** due to the COVID-19 pandemic lockdown imposed at the time of our project, we were unable to engage with our community partners. This also prevented us from conducting face-to-face interviews with our targeted audience where we could enrich our learning experience and building network.
- **Group work difficulties:** the start of our research project was hindered by the lockdown that prevented us from working together as a group. Despite the great work and efforts we have put into our project, it was slightly difficult. As we all worked independently on our separate sub-questions, connecting all the components of the report together was challenging and online meetings sometimes did not convey all the information we communicated, resulting in us having to work more than we originally planned to.
- **Lack of tiny house models in Christchurch:** as the research project was about exploring whether tiny housing could be a potential solution to housing affordability in Christchurch, we could only visit one private tiny house to see and feel how it was like when living in one. It would have been more beneficial for our group members and those who were interested in tiny houses to have the opportunity to walk in and feel how it was like to live in one.

## Conclusion

Ultimately, we believe 'variety' is the solution to housing affordability and liveability in Christchurch. Tiny housing will be affordable, liveable and provide enough space for some people and their families but not for everyone. There is not a one and only solution to the housing crisis in Christchurch, because it is not a one size fits all problem to start with. However, we have learnt about tiny houses from this project, it has included more remarkable aspects to be considered than just affordability, liveability and accessibility. The other valuable aspects of tiny house concept are the benefits of reducing an individual's environmental impacts and lowering ecological footprints that should be taken into consideration as a sustainable option for overall housings. We believe tiny housing should be considered as a typology to address housing issues, along with an array of others. Indeed, further research is needed to uncover what housing solutions would have to incorporate to be a suitable solution for both housing affordability issues and climate emergency situations.

## Hierarchy of needs



Due to tiny housing not being the single solution we originally set out to find, we decided to produce a hierarchy of needs. This is essentially the requirements housing typologies must take into consideration to be at a base level, a suitable housing solution. Te Tiriti o Waitangi can also be communicated as legislation and law. Legislation must be inclusive and ensure the fundamental right to shelter. Accessibility and affordability are as equally as important. Accessibility, the housing is an achievable goal because you can access information, land and financing. At a basic level this is access to an education. Affordability means the financial pressure of homeownership does not act as a burden, rather at an expense which is worth it. Liveability refers to healthy standards, that people have the right to warmth and safety. Psychological needs are the adjustment from house to home that people want the ability to individualise a space, add a study, and have a bigger kitchen. Lastly, privilege identifies that there are people who will be in the position to have choices and do not have to settle for the bare minimum. We believe all solutions should take these needs into consideration to ensure a base level of suitability.

## Recommendations

Based on our experience with this project, the following recommendations are provided for those who are interested in pursuing similar studies in the future. Two aspects should be taken into consideration in parallel with all the recommendations provided here: population growth and climate change.

- Examine long-term environmental, economic and health impacts (mental & physical) compared to conventional housing
- Degree of satisfaction of and challenges faced by long-term tiny house occupants
- The extent that tiny houses contribution to long-term housing affordability crisis
- Liveability indicators for tiny house living
- The relationship between size of living space and subjective wellbeing by gender
- International tiny house examples
- More advocacy around environmental outcomes
- Legal requirements – consenting processes
- Transportable lifestyles
- Tiny houses with families
- How much size different demographic groups really need.

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- Wayne Vargis – Our Industry Expert Community partner
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