Māori housing need, stock, and regional population change in Te Tai Tokerau

Research Needs, Landscape and Future Proofing

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1. INTRODUCTION

Te Puni Kōkiri, Ministry of Social Development and Housing New Zealand have commissioned a set of five reports to establish the extent of Māori housing need in Te Tai Tokerau, in order to support the effective allocation of funding to address serious housing need and to support methods which can be applied to other regions for a similar purpose.

Four substantive reports were prepared using existing datasets, in order to provide comprehensive baseline data and analysis to support further work, not only about housing, but also concerning demographic trends and wellbeing data. The reports covered:

- Māori housing supply and demand, identifying the alignment between stock supply and Māori housing demand.
- Māori housing-related wellbeing, using Integrated Data Infrastructure (IDI) data, to explore how housing circumstances in Te Tai Tokerau are associated with different health, economic and social outcomes that impact on both private and public costs.
- Demographics of Māori in Te Tai Tokerau. The report has two components: the changing profile of Māori housing and tenure with a focus on movements by territorial authority, previous location, age, cohort and socio-economic characteristics; and a similar analysis by iwi affiliation.
- Condition of the housing stock used by Māori in Te Tai Tokerau. The report examines data concerning cold, damp housing and dilapidation and significant disrepair.

This report recommends future research requirements of government agencies to assist them to getter target their resources and support whānau of Te Tai Tokerau. It uses the findings of the four substantive research components outlined above to set out those research requirements.

This report is structured as follows:

- A summary of the key findings in the four substantive reports and implications for action.
- Research gaps and research topics identified in the four substantive reports.
- The critical implications of 2018 census data collection for future research for Māori and Iwi.
- Concluding comments.

2. KEY FINDINGS AND IMPLICATIONS FOR ACTION

This section summarises the key findings from the four reports. The final section suggests key strategic areas for action in order to address the housing shortcomings identified in these reports.

2.1 Māori housing supply and demand

This research investigated Te Hiku rohe's household demographics, housing stock, housing affordability, housing market outcomes including crowding and housing stress, the intermediate housing market, the relative size of the different housing sub-markets, and the relative level of housing need.

There are 3,450 households identifying as Māori in the rohe. There are 9,760 private dwellings in the rohe, although a relatively large proportion, 24% (2,380) were unoccupied in 2013. In part, this reflects the high number of holiday homes in the area, but there may be other reasons for this relatively high unoccupied rate.

The rohe has experienced a strong rise in housing costs, like most of the country. Housing costs have increasing faster than household incomes. Declining affordability has affected both renters and aspiring home-owners. The income required to affordably pay the lower quartile rent increased from 87% of the median household income in 2001 to 101% in 2018. The ability of households to buy at the lower quartile house price followed a similar trend. In 2001, mortgage costs represented 89% of median household income and this increased to 104% in 2013. Overall, 55% of Māori renters were in 'housing stress'. Housing stress is defined as a household paying more than 30% of their household income in housing costs.

Only 5% of Māori renters could affordably buy a house at the median-price in 2013. This decline in housing affordability has meant that fewer people can afford to own a home. Māori home ownership rates have fallen to 44% in 2018; this is considerably lower than for non-Māori.

Housing need is a measure of the total number of renter households that require some help to meet their housing needs. The measure includes financially stressed renter households, households living in social and emergency housing (HNZC, council and third sector providers), individuals who are homeless or living in crowded housing. The overall level of housing need among households in Te Hiku rohe is 43% of all households and 75% of renters. Housing need

is greater for Māori than non-Māori households. The relative level of need is also higher in Te Hiku rohe when compared to Te Tai Tokerau as a whole.

2.2 Māori housing-related wellbeing

Using IDI data, this research examined health, economic and social outcomes associated with different housing circumstances of Māori in Te Tai Tokerau. The total study population was 40,500 individuals.

The housing circumstances of individuals were examined by placing the population into seven housing groups:

- Owner: Individuals living in owner-occupied private dwellings.
- Renter: Individuals living in rented private dwellings.
- No heating: Individuals living in private dwellings which use no fuel for heating.
- No telecommunications: Individuals living in private dwellings which have no access to telecommunications; i.e., mobile phone, telephone, fax, internet.
- Overcrowded: Individuals living in private dwellings which are overcrowded and in need of an extra bedroom to cater for all occupants.
- Severely overcrowded: Individuals living in private dwellings which are severely overcrowded and in need of at least two extra bedrooms to cater for all occupants.
- No fixed abode: Individuals living in mobile dwellings, improvised dwellings or sleeping rough.

The largest group were renters, around 23,500 individuals, followed by owners, 17,000 individuals. Individuals could be part of more than one group, e.g., living in rented accommodation that is overcrowded.

The study established the net fiscal impacts of individuals based on their housing group. Net fiscal impact was estimated as the net fiscal cost or benefit of each housing group, based on tax paid, welfare payments (excluding pensions), health costs and corrections costs.

Only those living in owner-occupied housing had a net fiscal benefit. Other housing groups had net fiscal costs ranging from -$3,260 to -$6,060 annually. Individuals living in severely overcrowded housing had the largest net fiscal cost, of -$6,060 annually.

Overcrowding can occur in both owned and rented housing. It is the most significant housing issue for Te Tai Tokerau. Overcrowding not only has implications for the housing conditions in which people live, but can lead to other negative outcomes in health and education.

2.3 Demographics of Māori in Te Tai Tokerau

This research analysed patterns and trends in housing tenure, by itself and combined with mover status, employment status and age. In two parts, it compares the three territorial authorities of Te Tai Tokerau, Māori with non-Māori, and Iwi with Iwi.

The decline in home ownership and rise in renting for both Māori and non-Māori and all Iwi are similar to overall national trends, and consistent over the period 2001-2013 for the three territorial authorities examined. However, home ownership levels are lower for Māori (and Iwi) compared to non-Māori, and renting levels are higher. The three characteristics commonly associated with the highest levels of home ownership for both Māori and non-Māori are: aged 65 years and older and not employed (likely retired); having lived in the region at least five years prior to a census; and being employed and aged 25 years and over.

For both Māori and non-Māori, living in Far North and Kaipara districts offers advantages in terms of home ownership over living in Whangarei. The highest levels of renting are among those who have arrived in Te Tai Tokerau within the previous five years, and disproportionately so for those living in Whangarei. Although patterns and trends for Māori and non-Māori are similar, ethnic gaps (between Māori and non-Māori) for Far North District have increased since 2001, while they have remained more-or-less stable in Kaipara District, and fractionally reduced in Whangarei District. Overall, differences in housing tenure are much lower between territorial authorities than between Māori and non-Māori.

A cohort analysis using census data reinforces the conclusion that home ownership is declining and renting is increasing. Whereas earlier-born (older) cohorts, both Māori and non-Māori, achieved high levels of home ownership by age 50, later-born (younger) cohorts are not achieving home ownership by the same age or at the same levels as their predecessors.

Similar analysis by iwi affiliation found that a small number of Iwi dominated the highest and lowest levels of each tenure type. Stayers (people living in the same territorial authority at two consecutive censuses) are particularly advantaged in terms of home ownership, and recent arrivals the most disadvantaged, although overseas arrivals fare relatively well. Most Iwi living in Far North District, and Mataawaka and Other Local Iwi living in Kaipara District, were

among the more advantaged. Dominating the least advantaged were five Iwi living in Whangarei District: Ngāpuhi, Ngāti Kahu, Te Aupōuri, Other Local Iwi and Te Rarawa. However, differing from the findings by ethnic group (which indicate that differences in housing tenure are lower between territorial authorities than between Māori and non-Māori), the iwi analysis suggests that the overriding element differentiating housing tenure for Iwi in Te Tai Tokerau is location of residence rather than Iwi.

2.4 Condition of the Housing Stock used by Māori in Te Tai Tokerau

This research established the condition of Te Tai Tokerau housing lived in by Māori. The most recent BRANZ House Condition Survey (HCS) of Northland houses was done in 2015/16. However, this was a limited sample of fewer than 40 of the total NZ sample of 560 houses. Due to the limited sample, an updated analysis was conducted of the condition of 250 houses surveyed in Northland in 2006. The vast majority of that stock was inhabited by Māori.

The 2006 Tai Tokerau House Condition Survey was undertaken as part of the evaluation of the Rural Housing Programme implemented by Housing New Zealand for rural housing in Northland, the East Coast and the Eastern Bay of Plenty. The survey was intended to provide a baseline for future measurement of changes in the quality of the housing stock in those areas.

To provide some insight into the possible current profile of Te Tai Tokerau stock the 2006 data were updated by undertaking the following:

- An update of costs to repair dwellings to ‘as new’ to 2018 figures.
- Application of up-dated costs to the condition ratings as recorded in the 2006 survey on an individual component, house-by-house basis.
- Adjusted for results for housing stock size using latest available census data.

This analysis found that the average cost to bring the surveyed houses to ‘as new’ condition increased by 47.3% from 2006 to 2019. To bring all houses in Te Tai Tokerau meshbocks estimated to be in poor and serious condition (HC Score <3.0) to ‘as new condition’, the total cost would be around $205 million.

2.5 Implications for Action

The prevalence and fiscal cost of overcrowding, combined with the poor condition of many rural dwellings in Te Tai Tokerau suggests that immediate action is required to:

- Upgrade the housing stock; and
- Reduce over-crowding through increasing the supply of affordable, right-sized housing.

Increasing the supply of affordable new-builds can raise the overall quality of the stock as well as relieve the problems associated with unaffordable housing costs and overcrowding. In some cases, it may be more cost-effective to focus on new supply, rather than significant upgrades and retrofits of dwellings in poor condition. The widespread and extensive housing problems among Māori in Te Tai Tokerau suggest that action needs to be taken quickly to increase housing supply. This could be done through a number of ways including partnering among government, non-government organisations and Iwi. Actions need to avoid depleting the amenity currently provided by dwellings in poor condition, and where practicable and in accordance with whānau preferences, dwellings can be repaired. However, overall stock numbers need to be increased. Without an increase, overcrowding will increase and the condition of current stock will decline further, due to the impacts of overcrowding on the physical dwelling. Furthermore, some dwellings may be so dilapidated that they cannot be adequately repaired. In those cases it would be more cost-effective and deliver better wellbeing outcomes to rebuild on the same, or another site, as agreed with the household.

A stepped process to address poor condition dwellings might look something like this:

1. Reducing overcrowding (often a manifestation of homelessness) through:
    - Affordable new-build provision to allow partial or full transfer out of overcrowded dwellings. There may be opportunities for the provision of accessory dwelling units to viable but overcrowded units, through prefabricated structures such as THE SNUG (Annex A).
    - Subsequent triage of previously overcrowded dwellings to identify upgrade potential.
    - Replacement of non-upgradable dwellings with new builds.
2. Up-grade existing stock identified as viable in triage in 1-above.

3. RESEARCH GAPS AND PROPOSED RESEARCH TOPICS

Research gaps and proposed research topics are described in this section. The reports have identified a lack of data and information to address key policy questions concerning housing need, affordability, supply and quality in Te Tai Tokerau. In addition, there are opportunities to update analysis, use new indicators and develop improved methodologies and frameworks to collect and analyse Māori housing data in Te Tai Tokerau. Infobox 1 sets out the proposed research topics, rationale and data sources. Further discussion of the research gaps and proposed topics is developed in the sub-sections below.

Infobox 1: Proposed Research Topics

Topic	Rationale	Data sources
Unoccupied dwellings	There is a relatively high proportion of unoccupied dwellings in Te Tai Tokerau. There has been no systematic investigation of characteristics, distribution and reasons for unoccupied dwellings, and the nature of their impacts on housing supply for Māori.	Census Councils Primary research
Renters in housing need	A high proportion of Māori renters are in housing need. This research would increase understanding of challenges faced by Māori renters in housing need in Te Tai Tokerau and potential solutions to address housing need.	Census BUD IDI Primary research
Low income renters accessing affordable private rentals	Over half of Māori renter households pay more than 30% of their household income in housing costs. This research is needed in order to develop affordable housing solutions within Te Tai Tokerau housing markets.	Census IDI Primary research
Overcrowding	Overcrowding is a significant issue in Te Tai Tokerau. Māori living in overcrowded or severely overcrowded dwellings have poorer outcomes than other Māori. Understanding the drivers of overcrowding and severe overcrowding in Te Tai Tokerau and Te Hiku rohe will help in developing appropriate responses to address overcrowding. Since census and IDI data are limited, primary research will be needed.	Primary research
GP visits and hospitalisations	There tends to be an inverse relationship between the average number of GP visits and hospitalisations per year. Primary research as well as more detailed analysis of IDI data will be required to assess health, social and fiscal impacts.	IDI Primary research
Tenure and housing quality	Tenure data give no indication of the relative quality of housing. There is opportunity to use new census housing quality indicators in association with tenure data.	Census
House condition	Analysis of the costs of bringing poor condition dwellings to 'as new' condition was based on 2006 data. This analysis could be tested, and new data obtained, through a pilot to collect objective data on the condition of New Zealand houses.	Primary research with BRANZ, MBIE, Statistics NZ

3.1 Māori housing supply and demand

Three topics for further research have emerged from the analysis of Te Hiku rohe's household demographics, the housing market and the relative level of housing need. Those are:

- Characteristics of and reasons for unoccupied dwellings.
- Renters in housing need.
- The ability of low income private renters to access affordable and suitable housing.

Unoccupied dwellings

Both Te Hiku rohe and Te Tai Tokerau as a whole have a relatively high proportion of unoccupied dwellings. The latest data, from the 2013 census, showed 2,380 dwellings were unoccupied in Te Hiku rohe. Investigating the characteristics of unoccupied dwellings (e.g. condition, location, valuation and ownership), as well as the reasons why the dwellings are unoccupied would assist in understanding the nature of the supply side of the market and consequently assist in identifying potential policy responses.

The implications of unoccupied stock can be significant, not only for dwelling supply, but also for community safety and cohesion. While the number of unoccupied dwellings clearly reflects the number of holiday homes in the area, there may be other reasons for non-occupation, including: vacant for sale or between tenancy; vacant for repairs or upgrading; dilapidation; abandonment; underutilised Māori land; or land banking.

This work would draw on a variety of secondary data sources including:

- Mesh block census data to investigate location and the patterns and changes in numbers and locations of unoccupied dwellings over time.
- Council data such as rating data and data on dilapidated dwellings. Accessing these data would require discussion with relevant councils.

This work could also include primary data collection in local housing markets with iwi, councils, housing providers, property investors and real estate agents.

Renters in housing need

A higher level of housing need was identified among Māori households compared to non-Māori households, and in Te Hiku rohe compared to Te Tai Tokerau as a whole. Further analysis of Māori renters in housing need, including their locations, income and employment status, is required to understand the challenges faced by this group and potential solutions to address housing need. A combination of secondary data sources including the census, business demography data series (BUD) and IDI data could be examined. In addition, research with Māori renters in housing need, local housing providers and service providers will be required.

Low income renters accessing affordable private rentals

Research on the ability of low income Māori renters to affordably access suitable housing in the private rental market would contribute to developing affordable housing solutions. This research would include analysis of the characteristics and distribution of affordable rentals, barriers to accessing affordable rentals, and the characteristics of Māori low income private renter households. Secondary data sources such as the census and IDI would be used, in combination with primary research on local rental housing markets and with low income private renters.

3.2 Māori housing-related wellbeing

This research examined health, economic and social outcomes associated with seven housing groups. Findings reveal two priority areas for further research:

- Drivers of overcrowding and severe overcrowding.
- The relationship between general practice (GP) visits and hospitalisation.

Overcrowding

Overcrowding is a significant issue in Te Tai Tokerau. This research and other research show that Māori living in overcrowded or severely overcrowded dwellings have poorer outcomes than other Māori. Understanding the drivers of overcrowding and severe overcrowding in Te Tai Tokerau and Te Hiku rohe will help in developing appropriate policy and programme responses to address overcrowding.

Information on this topic can only be sourced from census or IDI. However, these data are limited as they only enable determination of whether a household is overcrowded or severely overcrowded. There is no information about why these houses are overcrowded. Primary data

gathering, for example through case studies, interviews and surveys, would be required to identify the range of drivers and their impacts.

GP visits and hospitalisations

The research found that there tends to be an inverse relationship between the average number of GP visits and hospitalisations per year. This means that individuals who visit the GP less tend to visit the hospital more, and as a consequence tend to incur higher health costs. Further investigation of relationships between household and housing characteristics, the use of GPs and hospitals, and associated health, social and fiscal impacts would strengthen understanding of the impacts of housing circumstances of Māori living in Te Tai Tokerau on their health, economic and social outcomes. This work would also contribute to knowledge about particular housing circumstances that contribute to outcomes that generate public fiscal costs or benefits.

Information on this topic can only be sourced from the IDI datasets on PHO enrolment, NNPAC (non-admitted patients) and public hospital events (admitted patients). More detailed study of IDI data could be done to gauge the type of health events and whether they could have been treated by a GP. In addition, primary data gathering for example, through case studies, interviews and surveys, would be required.

3.3 Demographics of Māori in Te Tai Tokerau

This report provided detailed data on ownership and renting levels in Te Tai Tokerau pertaining to Māori and non-Māori as well as different age groups and household types. Other research indicates that both house condition and amenity are associated with owned or rented housing and can impact on the wellbeing of both old and young. However, tenure data give no indication of the relative quality of the housing and are likely to disguise a lot of variation in housing quality.

Housing quality indicators were not used in the 2013 census, but the 2018 Census asked three new questions regarding housing quality, about dwelling dampness, dwelling mould and access to basic amenities. Analysis of these data would support government when formulating responses to housing inequalities.

This report provides a sound framework for future work on tenure data to which the new housing quality indicators could be added. Future analysis could examine housing tenure for Te Tai Tokerau Māori, Iwi and non-Māori, by the following variables:

- 5 year age group
- workforce status
- current territorial authority of residence
- territorial authority of residence five years ago
- dwelling dampness
- dwelling mould
- access to basic amenities.

3.4 House condition data

An updated analysis of the condition of Te Tai Tokerau housing lived in by Māori was conducted using the best available data, obtained from 250 houses surveyed in the 2006 Tai Tokerau House Condition Survey. That analysis found that it would cost a considerable amount, around $205 million, to bring all houses in Te Tai Tokerau estimated to be in poor and serious condition to 'as new condition'.

This analysis could be tested, and new data obtained, through a pilot to collect objective data on the condition of New Zealand houses. BRANZ, the Ministry of Business, Innovation and Employment (MBIE) and Statistics NZ are working on this pilot project, which provides an opportunity to address some of the challenges with the current BRANZ HCS process, from participant recruitment through to data collection and sharing.

The pilot housing survey includes:

- Trialling new survey content based on the HCS, but condensed to reduce data collection time, and with some amended and new content.
- A new digital survey management and data collection tool.
- Recruitment of households through the 2018/19 General Social Survey (GSS), a national survey of 8,000 households, administered by Statistics NZ.

The pilot survey aims to assess up to 800 houses nationwide. The connection to the GSS provides new opportunities and avenues for analysis, with the combination of data from the independent house assessment and GSS data on occupant perceptions and wellbeing. The project runs from April 2018 to March 2020.

The pilot survey will be evaluated to help inform the future direction of the HCS. As part of the evaluation, BRANZ will consult with stakeholders to further understand data needs and

explore opportunities for broadening the reach and utility of the HCS. This could include, for example, exploring models of cofunding/codesign, enabling flexibility in sampling areas and sizes. An increased sample would be required if there is to be detailed analysis at a regional level, for rohe or for Māori households nationally or regionally.

4. THE CENSUS IS CRITICAL[1]

The data analysis presented in the reports demonstrates the profound importance of the census for understanding distributional dynamics in New Zealand at the sub-national level and for sub-populations. For Māori as a population group and for Iwi and Hapū as cultural and organisational forms, robust data is critical for forward planning in relation to both Māori rights of citizenship and the exercise of rangatiratanga.

Māori generally support and see value in census data and share with others an interest in ensuring there is high quality data collection. In particular, Māori are concerned that high quality ethnicity, Māori descent and iwi affiliation data are collected and made available for use in planning and Māori development (Kukutai and Cormack 2019). Data about hapū affiliation are not collected in the census, although the Iwi and Iwi-Related Groups Statistical Classification does include a few Hapū.

It is notable that the data which are least robust relate to dwelling condition and has had to be collected outside both the census and the array of public statistical collections (see *Condition of the housing stock used by Māori in Te Tai Tokerau*). We have already noted the importance of Te Puni Kōkiri encouraging the collection of dwelling condition statistics through the emerging partnership between BRANZ condition surveying and Statistics New Zealand's General Social Survey. Another important source of dwelling condition data for Māori is Te Kupenga Māori Social Survey 2013, which asked about housing quality (see in particular, Kukutai, Sporle and Rata, 2018).

In this section we want to highlight two issues around the census that the government needs to address. The first relates to the 2018 census. The second relates to future censuses.

[1] Thanks to Tahu Kukutai for her helpful comments on this section.

4.1 The 2018 Census

Future research and analysis commissioned by government will rely on data gathered in the 2018 census, however, there are significant flaws in that data, which will affect its usefulness. The census is the only source of data that allows analysis at the individual unit level for some of government's information needs, particularly where ethnicity, Iwi, regional, rohe and mesh block level data are sought. It is in the collection of ethnicity, Māori descent and iwi affiliation data that the 2018 census particularly falls short.

In the 2018 census, full or partial data was only collected for 90 percent of the population, compared to 94.5 percent in the 2013 census (Stats NZ 2018a). For Māori, the reduced coverage could be higher, as undercounts in previous censuses were higher for the Māori population than for non-Māori. The strong focus on internet-based data collection is likely to exacerbate the Māori undercount, since Māori are less likely than the European ethnic group to have internet access at home. Among Māori, the likelihood of being missed out of the census is higher for young adults, men and those living in particular areas. The undercount is especially of concern for those wishing to use census data relating to Māori living in Te Tai Tokerau, which has shown lower coverage in past censuses (Kukutai and Cormack 2019). The extent of the Māori undercount will not be known until the results of the Post Enumeration Survey, which checks the coverage of the population, are released.

The quality and utility of Iwi data is particularly affected, as Statistics NZ has reported that iwi affiliation data will not be of sufficient quality for release as official statistics (Stats NZ 2019). Te Mana Raraunga (Māori Data Sovereignty Network) critically notes that the census is the only source of reliable socio-economic and demographic data about different Iwi. The lack of Iwi data impacts on the ability to build up information over time, and consequently has serious implications for developing robust and comparable Iwi statistics needed for forward planning (Te Mana Raraunga 2019).

Problems with the 2018 census inevitably mean that administrative data sets will become more important and used as substitutes for census data relating to Iwi and Māori. Yet, as Kukutai and Cormack (2019) observe, iwi affiliation is only collected in some administrative data sets and that which is collected can be of poor quality.

Despite problems of coverage and quality, existing administrative data, as well as data from the 2013 census, are being used to replace individuals' data missing from the 2018 census.

This practice is done for both Māori descent and Māori ethnicity variables (Stats NZ 2018b). Kukutai and Cormack (2019:142-143) warn that this practice will "make it very difficult for data users to make sense of the data, particularly as it relates to Māori and other groups with higher census non-response".

A further problem with the use of administrative data is that Statistics NZ has created around 526,000 census records from administrative data records for individuals who did not complete the census. Of those, 357,000 were unable to be added to a household. Instead they have been added to mesh blocks and are not included in a household. This practice will limit the ability of researchers using census data to examine the Māori population in terms of households.

Statistics NZ (2019) has identified those unable to be added to the 2018 census records from administrative data; they are overwhelmingly men in the 18-24 age group, for which there is typically poor administrative address information. Young women in that age group are also affected, but not as much. Again, this will impact on the ability of researchers using census data to conduct research about Māori, particularly young people.

Not only 2018 census data are affected by these shortcomings. There may be impacts on postcensal surveys such as the 2018 Te Kupenga Māori Social Survey, which rely on the census for sampling.

The limitations of official data concerning Māori ethnicity, Māori descent and iwi affiliation data could impact on research conducted about Māori and Iwi in relation to housing, wellbeing and other characteristics in several ways:

- Poor quality data on iwi affiliation, Māori ethnicity and Māori descent will impede analysis across a wide range of variables.
- There are no data sources, other than the census, for some characteristics, such as te reo Māori. For te reo Māori, Statistics NZ plans to fill gaps in individuals' missing data by using responses from their 2013 census forms.[2]
- Reduced ability to track changes for Iwi and Māori over time using the 2013 and 2018 censuses.
- Lack of data about Māori households, due to the addition of Māori individual records that are unconnected to households.

[2] Tahu Kukutai, pers. comm. 21 May, 2019.

- Lack of data about young Māori, particularly young men, due to limitations of administrative data that are used to replace individuals' missing data from the 2018 census.
- Inability to access and analyse granular data for a rohe and at a mesh block level due to small numbers of iwi affiliation or Māori data records.
- Greater reliance on administrative data instead of census data. Administrative data may be of poor quality and of limited usefulness.

4.2 Future censuses

The public and political commentary around the inadequacy of the 2018 census has largely portrayed the problems as arising from poor implementation of the online interface. The use of an online interface certainly was a problem and it will continue to be problematic for all populations marginalised in the digital divide. Those tending to be excluded by the digital divide include Māori, older people, rural dwellers, low income people and those for whom English is a second language. For those reasons alone, Te Puni Kōkiri needs to actively question the use of a digital interface as the primary means of census interface and, if that interface is to continue, actively advocate for a multi-type interface that ensures that people can provide their enumeration data in a timely, effective and robust manner.

There is, however, a more fundamental reason for the problems encountered in the 2018 census. The previous discussion noted these, but we wish to highlight them here. That is, a fallacious view that adequately robust data can be gathered through other sources such as administrative databases and the costs of five-yearly, or even ten-yearly census enumerations can be avoided. That view was apparent in the 2012 decision by Cabinet approving the so-called Census Transformation Strategy. That strategy was to consider three options for the future of the census:

- A 5-yearly census but "significantly modernised" – the nature of that modernisation was largely undefined.
- A 10-yearly census, possibly supplemented by large scale intermediary surveys, and
- A so-called administrative census.

On reporting on the Census Transformation Strategy in 2013, it was noted that a 2018 census was probable but by no means certain.

We do not intend to detail the content to the myriad of discussion papers around the Census Transformation Strategy. The key Statistics New Zealand documents can be found at

http://archive.stats.govt.nz/Census/census-transformation-nz/census-transformation-papers.aspx.

Our analysis of those papers, overseas experience related to initiatives with moving away from census enumeration, and the experience of the 2018 census concludes that jurisdictions most likely to successfully move away from census enumeration have a range of characteristics including:

- Longstanding population register processes and national identity numbers;
- Comparatively high levels of homogeneity both ethnically and in relation to other population characteristics including the demographics of ageing;
- Higher population densities including relatively concentrated rural hinterlands;
- Low residential mobility; and
- Lower rates of inward and outward migration.

Those characteristics are simply not evident in New Zealand. This country does not have population register processes and national identity numbers. It is characterised by a high degree of mobility and heterogeneity, complicated by geographical dispersion. Heterogeneity and geographic diversity are manifest in small population sizes, which are challenging to sample surveying approaches. Statistics New Zealand's tests of administrative data show significant problems of robustness and under-enumeration of small populations, vulnerable populations and mobile populations. Importantly, unlike most other jurisdictions, the use of the New Zealand census does not simply reside in issues around citizenship and residence, but also in the exercise of sovereignty by Iwi and the Crown's Treaty of Waitangi obligations.

We recommend that Te Puni Kōkiri dedicates time to review Statistics New Zealand documents and subsequent commentary[3] and engages in the governmental review about the future of the census. Te Puni Kōkiri would find strong technical support from the likes of BERL, as well as others involved in this project and outside of it, particularly Tahu Kukutai, Donna Cormack and Andrew Sporle. Obviously, too, Te Puni Kōkiri will be engaging with Te Mana Raraunga.

[3] See in particular Kukutai and Cormack (2019), and Te Mana Raraunga (2019).

5. CONCLUSIONS

The reports provide a picture of housing in Te Tai Tokerau, based on various secondary data including censuses and the IDI. Together they show that large proportions of Māori households are stressed and in serious housing need. Declining affordability affects both renter and owner-occupier households. Home ownership levels are lower for Māori compared to non-Māori, and renting levels are higher. Within Te Tai Tokerau, Te Hiku rohe is shown to be worse off with regard to a number of housing indicators including unoccupied dwellings and housing need.

Considerable urgent investment is needed to improve the quality of both rental and owner-occupied stock. The updated analysis of house condition found that it would cost around $205 million to bring all houses in Te Tai Tokerau estimated to be in poor and serious condition to 'as new condition'.

Overcrowding is a significant issue regardless of tenure. We have suggested that immediate action is required to reduce over-crowding through increasing the supply of new build, affordable, right-sized housing. In conjunction with new builds, upgrading of existing stock should be done where viable.

These reports provide a baseline for further research and analysis concerning housing, demographic trends and wellbeing. The methods used in the four reports, and potentially refined in future research for Te Tai Tokerau, can be applied to analysis of housing markets and housing need for other regions.

The range of research gaps that have been identified show the need for a combined, cross-government approach to generating evidence and solutions. Those identified gaps relate to unoccupied dwellings, renters in housing need, low income private renters accessing affordable and suitable housing, overcrowding, GP visits and hospitalisations, housing quality indicators and house condition data. These gaps highlight a lack of information about Māori housing in Te Tai Tokerau and particularly in Te Hiku rohe, the need for updated data and a need to develop an improved methodology to collect and analyse Māori housing data. Filling the gaps will inform policy and actions across sectors to improve housing for Māori in Te Tai Tokerau.

While the proposed research projects are discrete activities, the clear connections and synergies among them should be leveraged to increase knowledge for action. For example:

- Combining analyses of overcrowding, and GP and hospitalisations data with analysis of tenure and housing quality indicators could enhance understanding of health, wellbeing and social outcomes for Māori households.
- Research on Māori renters in housing need could be linked with analyses of overcrowding, housing quality indicators and house condition data, to examine other aspects of their housing experience.
- Analysis of tenure and housing quality indicators could combine with house condition data to provide comprehensive understanding of the condition and performance of Te Tai Tokerau housing.

A key limitation on future research is the flaws in 2018 census data, and potentially in data sets such as the IDI which are used in conjunction with 2018 census data. We have suggested that Te Puni Kōkiri, Ministry of Social Development and Housing New Zealand work with Statistics New Zealand and other government agencies to ensure a high quality census process for Māori in the future.

With regard to the new house condition survey pilot, Kay Saville-Smith has had preliminary discussion with BRANZ about ensuring an adequate sample of Māori households is included, and that this extends to adequate samples within the rohe of interest. These initial discussions provide a basis for government agencies to work on obtaining robust house condition data to improve housing quality and supply.

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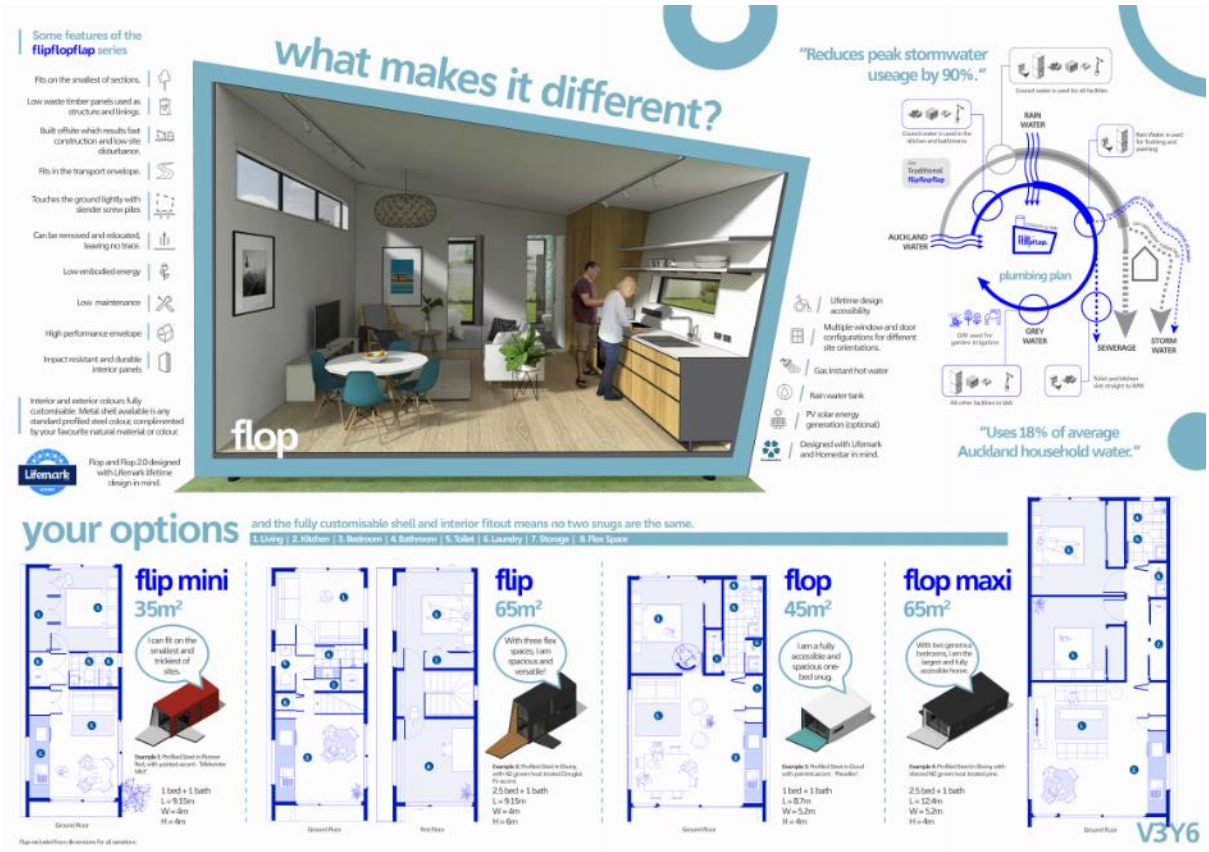
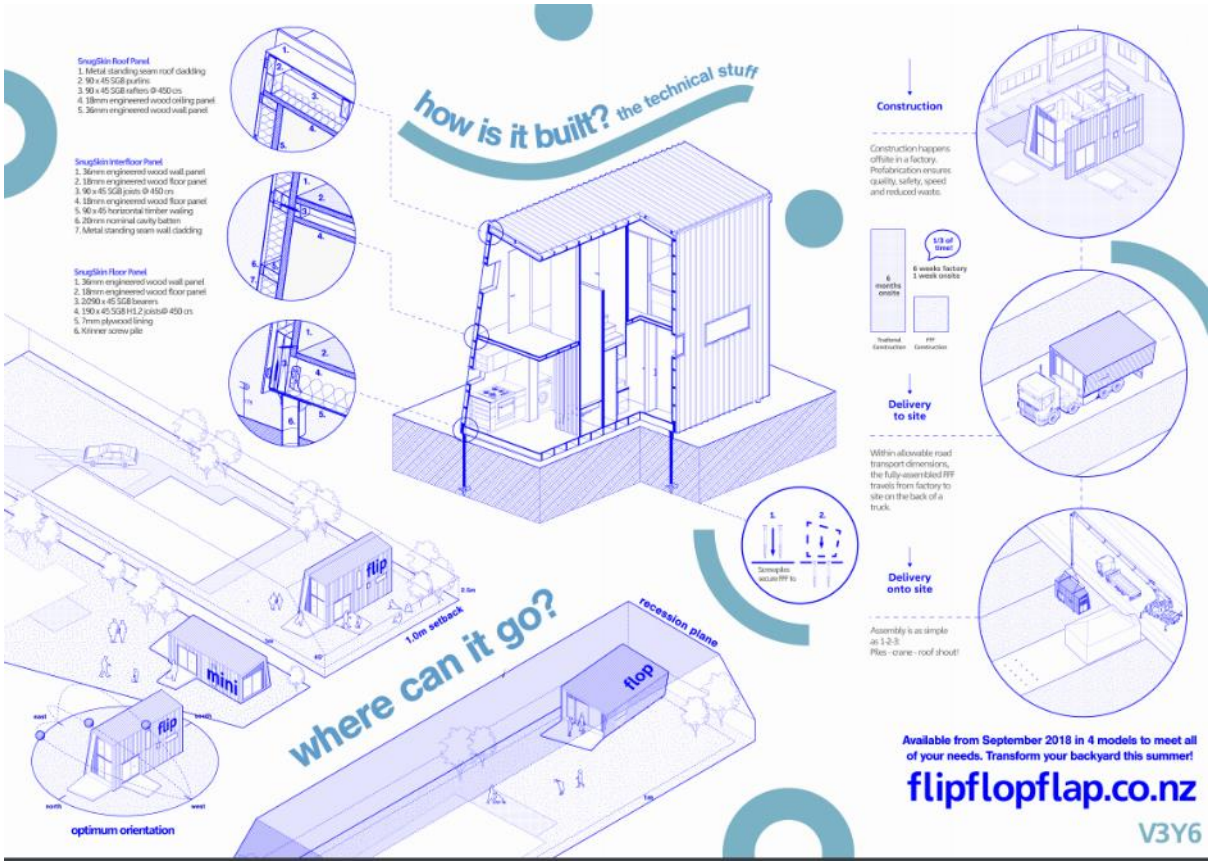
ANNEX A: SOME ACCESSORY DWELLING UNIT DESIGNS FROM PREFAB NZ

SNUG design competition 6 March 2018. See the full set at:

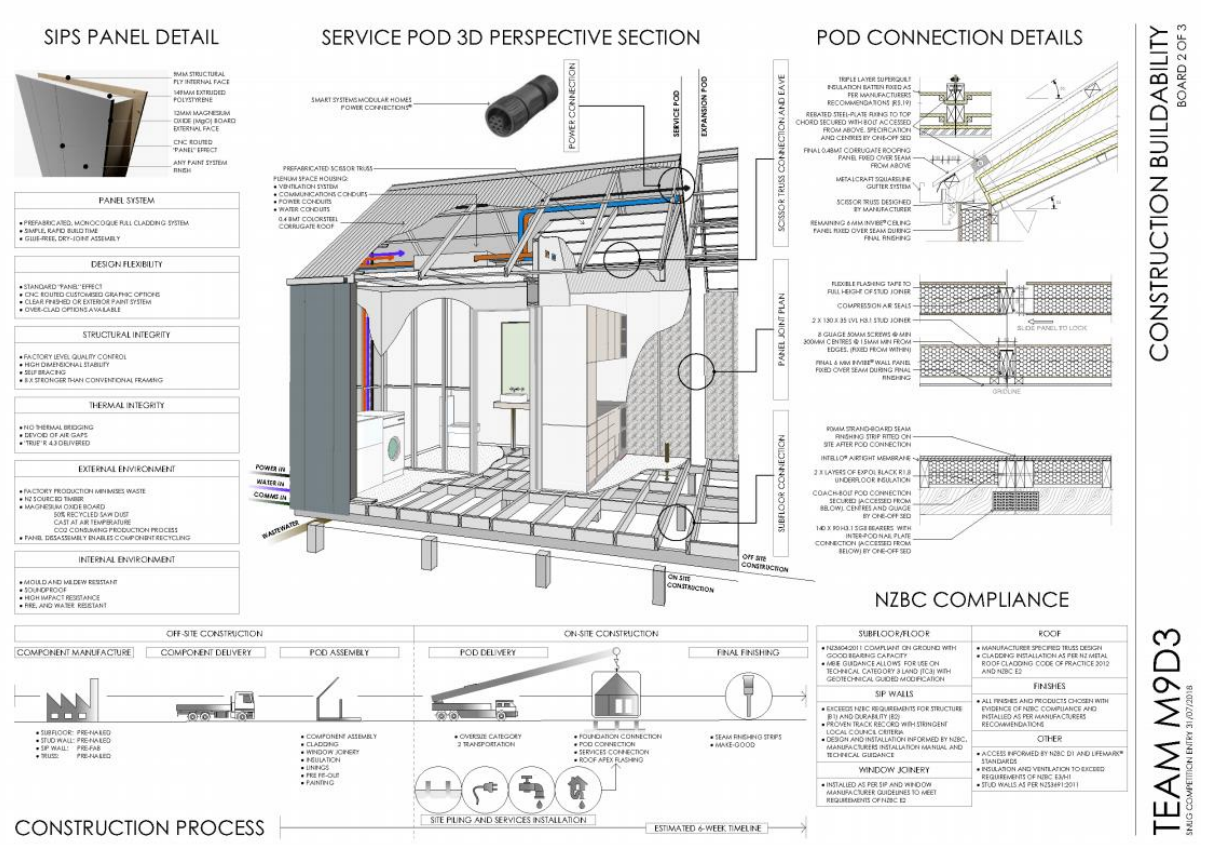
http://www.prefabnz.com/Projects/Detail/snug-design-competition




how is it built? the technical stuff
Construction
Delivery to site
Delivery onto site
where can it go?
recession plane
1.0m setback
optimum orientation
Available from September 2018 in 4 models to meet all of your needs. Transform your backyard this summer!
flipflopflap.co.nz
V3Y6


flip.
flop.
flap.
what is it?
flipflopflap. the most liveable & rentable SNUG in Auckland
why is it the most rentable in Auckland ?
Situation 1
Situation 2
Situation 3
Captial
Land
sell it, buy it, take it away !!!
V3Y6

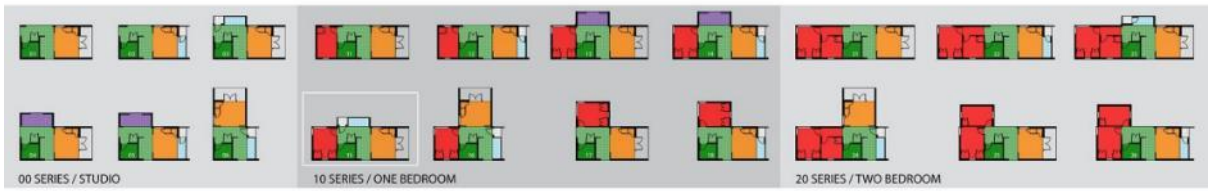
Kowae Snug http://www.prefabnz.com/Images/Assets/12422/1/Kowae.pdf


SIPS PANEL DETAIL
SERVICE POD 3D PERSPECTIVE SECTION
POD CONNECTION DETAILS
PANEL SYSTEM
DESIGN FLEXIBILITY
STRUCTURAL INTEGRITY
THERMAL INTEGRITY
EXTERNAL ENVIRONMENT
INTERNAL ENVIRONMENT
NZBC COMPLIANCE
OFF-SITE CONSTRUCTION
COMPONENT MANUFACTURE
COMPONENT DELIVERY
POD ASSEMBLY
ON-SITE CONSTRUCTION
POD DELIVERY
FINAL FINISHING
CONSTRUCTION PROCESS
SITE PILING AND SERVICES INSTALLATION
ESTIMATED 6-WEEK TIMELINE
CONSTRUCTION BUILDABILITY
BOARD 2 OF 3
TEAM M9D3


HOME SNUG
BASE PALETTE
DESIGN OPTIONS
BASE LEVEL FINISH
LUXE LEVEL FINISH
ENERGY MANAGEMENT
STUDIO
1 BEDROOM
1/2 BEDROOM
WATER SNUG
LUXE PALETTE
ADAPTABLE DESIGN
BOARD 3 OF 3
TEAM M9D3

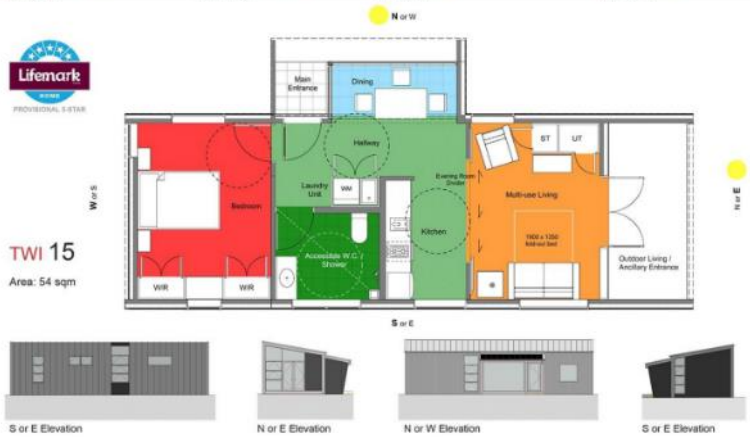
Whare Iti Snug

// Typical North elevation in suburban yard setting: Indoor and outdoor living space



// Twenty Te Whare-iti plan variations within 30 - 65 m² size range. - Every plan has a mirrored option

E8B2



// Kitchen and multi-use living / bedroom adjoin but can be divided at night if guests arrive.

E8B2

Essential Qualities of Te Whare-Iti Houses

Construction/Buildability

- Houses completely prefabricated, allowing showroom type purchase and eliminating weather delays.
- 4.5m standard module width allows easy transport to site.
- All Te Whare-iti (TWI) variants can be craned over existing houses from street or yard in one or two lifts.
- Cross Laminated Timber construction gives strength, simplicity and speed of construction.
- Structure is 100% low-embodied energy NZ grown pinus radiata. Roofing and most of the cladding colour-coated NZ steel, balance of cladding is painted plywood.
- Our manufacturing partner is a major player in timber product supplies with ample resources and a current programme geared to produce high volume complete buildings.

Regulatory standard conformance/Compliance

- Matrix score for TWI 15 facades is 6, which comfortably complies with E2/AS1 acceptable solution.
- The elongated TWI plans are well suited to back yards and side yards as narrow as 9m while conforming to all Auckland City H3.6 .4 Minor Dwellings bulk and location rules. Can also suit some H4 and H5 Residential settings.
- TWI passes H1 test for thermal efficiency: roof system R3.88; wall system R2.89; floor system R3.84.

Cost affordability

- Our QS estimates the delivered on-site cost per m2 for each pod to average $2500 except for the highly fitted out services module (SM) at $3680. These are start up rates. Volume production will progressively reduce costs and the QS calculation shows that TWI houses will sell at 15% less than these figures ie:
  - TWI 00 series eg TWI 01 Studio living sleeping house (SM +multi-use module) (39m2) $104K
  - TWI 10 series eg TWI 11 One bedroom house (SM + Small bedrm + multi-use module) (51m2) $120K

  [Services connection costs on site will vary and are not included here]
- All TWI modules have strong integral CLT shells and whole house retains potential to be craned off site for reuse elsewhere in future, preserving ongoing value of the investment for buyers.

Flexibility/Adaptability

- Six standard modules create a family of 40 different house plans (20 layouts + 20 mirrored ones).
- Buyers can shop online and optimise their plan to suit their backyard views, sun, access direction, privacy & budget.
- Every module (except services core) is capable of living and/or sleeping and/or occupational use.
- The kitchen and laundry joinery is modular and standardised to two different cabinet configurations, with options for a range of ply / HPL finishes and appliances.
- Floor finishes can be CLT polished, carpeted or have resilient sheet marmoleum etc to suit individual preferences.

Functionality/Fit for purpose

- TWI 15 has been rated by Lifetime Design Ltd as achieving a 5 star Lifemark rating. Other TWI plans expect 5 also.
- TWI house CLT floors can be set low over a site flat site slab or rest on piles on a sloping site where at least one of the two possible entrance modules will have a level threshold.

Design/Aesthetics

- The simple monopitch form of Te Whare-iti allows a small building to have wall and roof elements comparable in scale and pitch with traditional suburban houses of many eras, despite more contemporary materials and detailing.

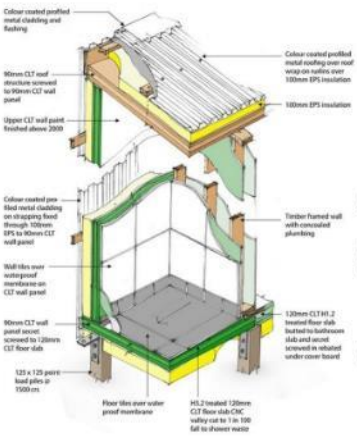
Sustainability/Efficiency

- Every plan has bays with full height glazing on two adjacent facades for optimising house siting and orientation for passive solar gain.
- Insulation values for walls, floor and roof exceed minimum standards for Auckland region. Thermal mass pavers, dry laid on site, bring the entry and solar harvesting module floors up flush with balance of CLT floor slabs.
- Cross-flow ventilation aided by high window remote opener ensures summer comfort.
- Monopitch roof plane is intended to be oriented between NW and NE and accommodate PV panels for self sufficient generation if preferred.

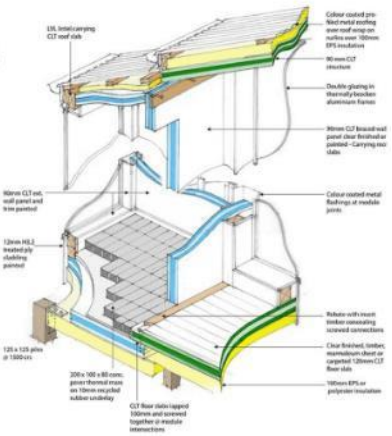
Innovation/Point of difference

- The simplicity of the modules hides a clarity of purpose – they fit together neatly, to create variations.
- The living expansion module can serve as a complying minimum 8m2 outdoor living space allowing that end of the house to project over a steep backyard slope as an integral deck.
- Services and structural fixings all concealed in internal walls and on outside of external wall and roof slabs leaving interior spaces clear of clutter and making lining of CLT unnecessary.
- Apart from the bathroom, CLT interior surfaces will be clear sealed, whitewashed or low VOC acrylic painted.

Construction Details



// Bathroom assembly



// Sun-space assembly

// 8m² integral outdoor space for steep site.

// Varied functions for multi-use module.

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