Life in Medium Density Housing in Tāmaki Makaurau / Auckland

Kathryn Ovenden and Melanie McKelvie

September 2024

Technical Report 2024/6

aucklandcouncil.govt.nz

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Policy, Planning and Governance

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ISSN 2230-4525 (Print)
ISSN 2230-4533 (Online)

ISBN 978-1-991146-54-0 (Print)
ISBN 978-1-991146-55-7 (PDF)

The Peer Review Panel reviewed this report
Reviewed by 2 external reviewers
Approved for Auckland Council publication by Name: Alison Reid Position: Team Manager Economic and Social Research and Evaluation
Name: Lisa Dunshea Position: Manager Urban Design, Tāmaki Makaurau Design Ope
Date: 5 September 2024

Recommended citation
Ovenden, K. and M. McKelvie (2024). Life in medium density housing in Tāmaki Makaurau / Auckland. Auckland Council technical report, TR2024/6

Note: This technical report is accompanied by the summary report titled Life in medium density housing in Tāmaki Makaurau / Auckland summary.

Cover image credit
Medium density housing in Auckland. Photograph by Ryan Crawford

Acknowledgements

A study of this complexity and scale requires the combined skills and knowledge of many people.

The authors would like to thank all the survey participants for their time and consideration in completing the survey. To the 20 households who also participated in the in-home immersions, we are exceptionally grateful that you shared your homes with us.

We would also like to thank the peer reviewer Dr Sian Thompson for taking time to review this lengthy document and providing helpful feedback.

We are also grateful to several Auckland Council staff:

- Dr Ashton Eaves, Kyle Balderston and Brian Osborne for your work in identifying suitable properties to include in this study
- Brian Osborne for quality assurance, processing of Electoral Roll data, and assorted complex problem solving
- Dr Jane Horan for leading the in-home immersions research; Ron Lui and Eva Peng for your photographic skills and research support
- Ron Lui, Eva Peng, Valeriia Sukhorukova and Ryan Crawford for establishing a process to analyse consented plans, and then sourcing and undertaking this analysis
- Valeriia Sukhorukova and Ryan Crawford for an assortment of detailed research tasks including processing photos, coding open responses and formatting charts
- Louise Goodwin, Ron Lui and Valeriia Sukhorukova for graphic design throughout this document
- Louise Goodwin for graphic design of the summary report
- Susan Ensor, Nicole Miller, Chris Butler, Rebecca Greaves, Jeff Fahrensohn, Mike Moodie, Corina Faesenkloet and Kyle Balderston for their feedback on sections of the draft report, and
- Alison Reid for editing this report.

Executive summary

Introduction

Enabling the development of medium density housing (MDH) is an important part of Auckland Council's work to deliver a quality compact urban form, in the face of both ongoing population growth and need for more housing, and a changing climate. The population of Tāmaki Makaurau / Auckland is expected to reach 2,230,800 by 2053, an increase of around 520,800 people from 2023.

Over the last 10 years there has been a shift in the types of housing being consented in Auckland, from predominantly low density typologies (i.e. standalone houses) to large numbers of medium and high density typologies (i.e. apartments, terraced houses and duplexes). For example, in 2023, 62 per cent of new dwellings consented in Auckland were 'townhouses, flats, and units'. This relatively recent, and rapid, supply of medium and high density housing across Auckland is not only increasing housing options for Aucklanders but also transforming the built environment.

Auckland Council is responsible for the review, approval and monitoring of residential housing under the Auckland Unitary Plan (AUP) and the Building Act 2004. The former influences the location and design of housing, and the latter influences the design and construction of housing in Auckland. The *Auckland Design Manual* (ADM) is a companion document to the AUP and provides non-statutory best practice guidance.

During 2023, Auckland Council's Economic and Social Research and Evaluation team and the Tāmaki Makaurau Design Ope (Auckland Council's urban design unit) undertook a comprehensive mixed method study to investigate how Aucklanders are experiencing living in recently built MDH. The purpose of the study was to understand whether MDH is meeting the day-to-day needs of households living in it, what is working well and what could be improved. The results of this study provide a snapshot of Aucklanders' experience living in MDH delivered at a time of rapid intensification, under a particular policy and regulatory setting.

The study considered how households use the rooms and spaces in their home, as well as how they experience aspects such as the size of rooms, temperature of their home, the amount of storage, and perceptions of their privacy. The findings of the study also build on Auckland Council's monitoring of the AUP, which looks at whether the Plan is enabling quality outcomes for residential development.

The results of this study will be shared with everyone in the MDH sector, from regulators to developers, to bring about improvements to the future delivery of MDH in Tāmaki Makaurau/Auckland, so that this form of housing better meets the diverse needs of a growing population, including the needs of households with children.

Key research findings

Medium density housing is meeting some of the needs of some households. Smaller households of one or two adults were more likely to report aspects of their home are 'meeting' or 'more than meeting' their needs than were larger households with children. This pattern of more positive responses from smaller households without children is found across many of the aspects considered in this study (e.g. storage, size of spaces, privacy). To better meet the needs of a wider range of households, the study found that greater diversity in MDH is needed.

The average size of homes was found to be smaller than best practice guidelines. Over half of the 110 consented plans analysed as part of this study had internal floor areas smaller than the ADM recommended minimums (which themselves are smaller than other New Zealand and Australian best practice guidance). Nor was the allocation of floor area to different spaces always aligned with best practice guidelines. The floor area of living spaces tended to be smaller, while the floor area for bathrooms was greater than ADM recommendations.

The ADM and AUP apply the same minimum unit areas to all housing typologies including standalone houses, duplexes, terraced houses and apartments. This is not a good indicator of usable space, due to differences in circulation requirements. For example, 2- and 3-level homes require stairs and hallways, whereas single-level homes (often apartments) do not.

Storage is inadequate for many households. Over half of all the participants reported that they had insufficient storage for general household items (e.g. vacuum cleaner), linen, kitchen equipment and food, and occasional items (e.g. suitcases). For example, some kitchens were not fit for purpose because they did not have a pantry, which resulted in participants adding cupboards to dining spaces or garages. In turn, this can restrict the use of the dining spaces for dining and garages for carparking. The study also found that the functionality of outdoor living spaces as spaces for living activities (e.g. dining, play, socialising) can be reduced when they are used for storage of items that are not able to be stored within the home.

Lounges were found to be 10m² smaller than best practice guidance. The arrangement of furniture in lounges can be restricted in terraced houses and duplexes due to a narrow room width, the location of power points, doors and windows, and a need to leave space for people to move around furniture or access other spaces in the home. This is compounded when lounges are also used for storage.

The flow-on effects of insufficient built-in storage and inflexible lounges has a greater impact on larger households, which tend to be those with children. Smaller households have greater ability to mitigate these effects through using 'spare bedrooms' for storage and living activities.

Nearly a quarter of participants have more bathrooms than they need. Over half of the consented plans for 2- and 3-bedroom homes analysed showed one bathroom and/or WC (a separate toilet) per bedroom, which is one more bathroom or WC than is recommended by the ADM. It was also found that these 'spare bathrooms' were often being used for storage or drying laundry.

Upper levels of terraced houses and duplexes are too hot in summer. The combination of large windows, small window openings, solar orientation,[1] reduced natural ventilation and minimal shade provision (e.g. eaves, established trees) are resulting in homes that are too hot in summer. Participants were dissatisfied with hot temperatures as they cause uncomfortable sleeping conditions, and this could have heat-related health implications. Participants reported making changes to cool their homes such as keeping curtains closed and windows open, purchasing free-standing fans and air-conditioning units, and installing ceiling fans, heat pumps and air-conditioning units. These changes have a financial cost (installation cost as well as ongoing running costs) and they can also take up storage space which prevents other uses (e.g. ducting for air conditioning in wardrobes prevents storage of clothes). Such units may also be contributing to an urban heat island effect.[2] The occurrence of hot homes may increase as our climate changes and Auckland experiences warmer temperatures.

Nearly half of all the participants living in terraced houses and duplexes have made changes to improve privacy within their home. This included keeping curtains and blinds closed during the day, using furniture to block views and adding film or frosting to windows. Such changes can diminish the positive safety benefits of people overlooking public and semi-public spaces.

Outdoor living spaces are highly valued but are often too small. The participants placed high value on having an outdoor living space but almost half of those with an outdoor space reported the size of their space was not meeting their needs. Some participants had made changes to their outdoor spaces to increase functionality, to improve privacy and to provide more shade and greenery.

Many households have more cars than is provided for in their off-street parking spaces. Due to a lack of parking spaces within a property, cars are often parked on streets (including illegally on berms and footpaths), at very specific angles and positions on driveways, and in front yards. This results in properties and neighbourhoods that participants reported as being unsafe for pedestrians, a security concern for cars, and as generally unpleasant. Some participants reported needing to use a car as non-car transport modes do not meet their needs.

Only half of households with a garage use it for carparking and garages are important multi-functional spaces. For those households with a garage and at least one car, half used it for purposes other than parking their car including storage, exercise, as a study and for other living activities.

Some households were not able to have friends and whānau visit or do other things that were important to them. Having friends or whānau visit, hosting parties and doing hobbies were important activities for many participants. However, due to a lack of space (including storage for hobby equipment) and visitor carparking, many households reported that they were not able to do these activities comfortably, or at all.

[1] Solar orientation is the direction windows face in relation to the sun. For example, north-facing windows will receive sun all day and will, therefore, contribute to heating of a room significantly more than a south facing window.

[2] The urban heat island effect refers to when a city (or parts of a city) experiences warmer temperatures than nearby rural areas, due to the ability for surfaces in each environment to absorb and hold heat.

Method

The study has six components:

1. A rapid literature review of relevant housing literature.
2. Geospatial analysis of Auckland Council consents and rating data to identify recently built MDH:
    a. 17,789 MDH properties that had received a Code Compliance Certificate (CCC) between November 2016 and September 2022 were identified.
3. Online surveys completed by participants living in MDH in Auckland:
    a. 8978 households were invited to participate in a 20-minute online survey in early 2023. We received 1337 responses from 1243 households.
4. Analysis of consented plans:
    a. 57 design attributes were analysed from consented plans for 110 properties whose households had participated in the survey.
5. 2-hour in-home immersions:[3]
    a. 41 participants across 20 households.
6. Collation of selected best practice guidance from New Zealand and Australia to benchmark research results as well as legislative context of MDH delivery.

[3] In-home immersions are a research technique that draws from ethnographic methods of active participant observation and participant-led interviewing.

Life in Medium Density Housing
in Tāmaki Makaurau / Auckland

Chapter 1

Introduction

Kathryn Ovenden and Melanie McKelvie

September 2024, Technical Report 2024/6

Overview of the Life in Medium Density Housing in Tāmaki Makaurau / Auckland report

The *Life in Medium Density Housing in Tāmaki Makaurau / Auckland* study was undertaken by Auckland Council's Economic and Social Research and Evaluation team and Tāmaki Makaurau Design Ope (TMDO) in 2023.The primary purpose of the research was to investigate how Aucklanders are experiencing living in recently built medium density housing (MDH).

The results of this research will support everyone involved in the delivery of housing in Auckland (including Auckland Council, central government, developers) to improve future MDH, and ultimately the wellbeing of Aucklanders, through consenting processes, design guidance and land use planning. It will also enable better informed choices by Aucklanders looking to live in MDH.

This study involved a number of methods including a rapid literature review, geospatial analysis to identify recently developed MDH across the Auckland region, an online survey of 1337 participants living in MDH, analysis of the consented plans of 110 properties whose residents participated in the survey, and 20 in-depth in-home immersions which collectively provides a comprehensive view of how people experience their MDH.

This report is divided into 10 chapters and 13 appendices:

Main report:

- Chapter 1: Introduction
- Chapter 2: Legislation and policy context
- Chapter 3: Research method and sample
- Chapter 4: Indoor spaces for living
- Chapter 5: Storage, laundries and bathrooms
- Chapter 6: Outdoor living spaces
- Chapter 7: Indoor environment
- Chapter 8: Carparking and vehicle storage
- Chapter 9: Shared facilities
- Chapter 10: Discussion and recommendations

Appendices:

- 1: References
- 2: NPS-UD and Auckland Regional Policy Statement objectives and policies
- 3: Survey invitation letter and reminder postcard
- 4: Survey consent form
- 5: Survey questionnaire
- 6: Standalone houses excluded from the sample
- 7: Survey sample characteristics
- 8: In-home immersion screener survey
- 9: In-home immersion discussion guide
- 10: Design attributes for analysis of consented plans
- 11: Map of broad geographic study areas
- 12: Study limitations
- 13: Codes for open ended responses

Each chapter is provided as a separate PDF and can be accessed on the Knowledge Auckland website. A summary report with key findings is also available on the Knowledge Auckland website.

Contents

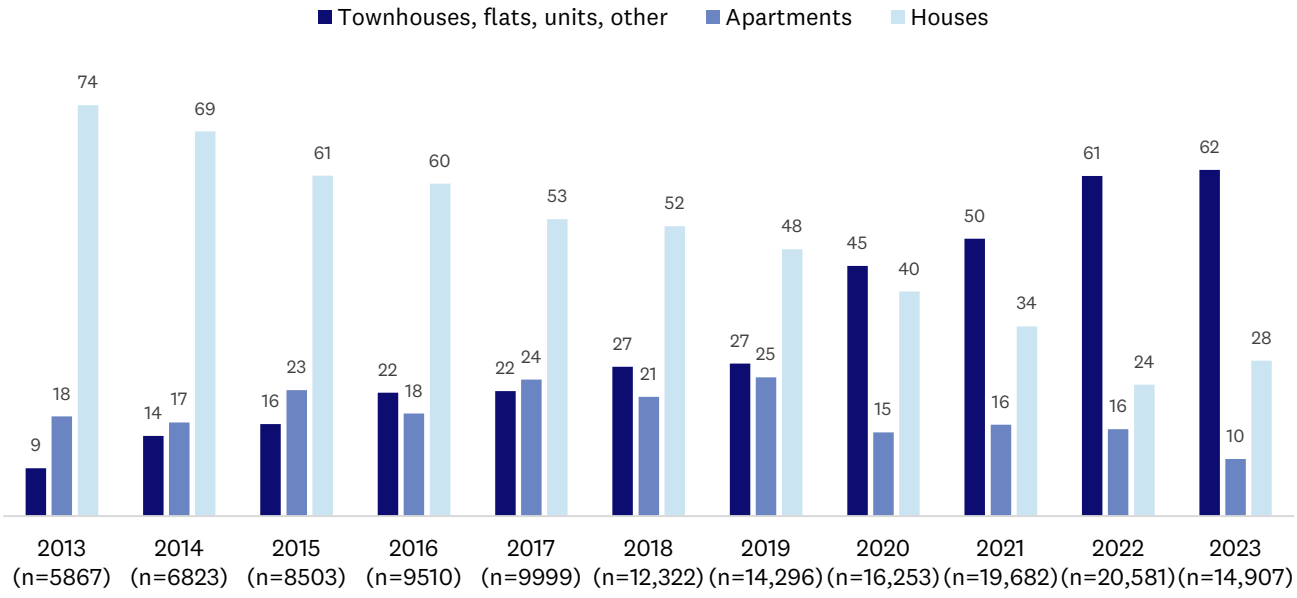
1 Background

Tāmaki Makaurau / Auckland has an ongoing need for more housing as the population continues to grow. Auckland's population is expected to reach 2,230,800 by 2053, an increase of around 520,800 people from 2023.[1]

Auckland Council is committed to a quality compact approach, which enables development in areas easily reached by public transport, walking and cycling, and nearby services and facilities including employment and open spaces. Through the Future Development Strategy, Auckland Council directs future development in locations that means Auckland can protect its natural environment, be adaptive to climate change, and reduce greenhouse gas emissions. Increasing housing density is a key land use planning tool with which we can support the delivery of housing to meet the needs of our growing and diverse population, while also achieving the benefits of a compact urban form.

Over the past 10 years, Auckland has seen a shift in the types of housing that are being consented, and until just recently a year-on-year increase in the numbers of dwellings consented. The chart below in Figure 1 demonstrates a considerable increase in consents for 'townhouses, flats, units, other' (as defined by Stats NZ) and a decrease in consents for 'houses' during that time. This trend is anticipated to continue, due to demand for housing from a growing population and associated policy changes that direct Auckland Council to enable intensification (e.g. National Policy Statement on Urban Development (NPS-UD)).

Figure 1: Proportion of different building typologies consented in each year (%)



Source: Stats NZ Building consents data

Much of the housing being constructed is in existing urban areas that could be classified as 'brown field'. This involves replacing existing standalone houses with terraced housing, duplexes and low-

[1] Source: https://knowledgeauckland.org.nz/publications/auckland-council-population-projections-total-auckland-march-2023/

to mid-rise apartment buildings (i.e. medium density housing). The homes being constructed tend to have a smaller floor area than those being replaced and less outdoor space.

There is, however, a significant knowledge gap in terms of how well recently built medium density housing (MDH), approved under the Auckland Unitary Plan (AUP), is meeting the needs of residents, and if the expectations outlined in the AUP of a 'quality built environment' are being realised.

Auckland Council is responsible for the review, approval and monitoring of residential housing under the AUP and Building Act 2004, which influences the location, design and construction of MDH in Auckland. Given the increasing amount of MDH being developed in Auckland, it is important to ensure that it is providing living environments that are functional, meets people's everyday needs and support their wellbeing.

Auckland Council's Section 35 monitoring[2] report, undertaken in 2022, noted a range of issues and identified that a key limitation in their ability to assess how effective the AUP is in delivering 'a quality built environment' in respect of people's health, safety, wellbeing, choices, accessibility and travel was the lack of resources to conduct resident surveys. Their report stated such surveys "would have revealed residents' lived experiences and attitudes towards perceptions of quality and (would) help quantify what is a reasonable benchmark for 'high quality built environment'".

As discussed in Section 2 of this chapter, research completed to date on MDH has included specific geographic locations (such as post-occupancy evaluations at Hobsonville Point and Stonefields), attitudes towards MDH from surrounding neighbours, and some smaller scale and limited research into the satisfaction of residents. However, we found no research that explored how residents experience daily life in their homes.

This research, undertaken by Auckland Council's Economic and Social Research and Evaluation team in partnership with Auckland Council's Urban Design Unit (known as the Tāmaki Makaurau Design Ope (TMDO)), aims to contribute towards filling this knowledge gap.

1.1 Defining 'medium density housing'

There is no agreed definition in Aotearoa New Zealand for the term 'medium density housing'.

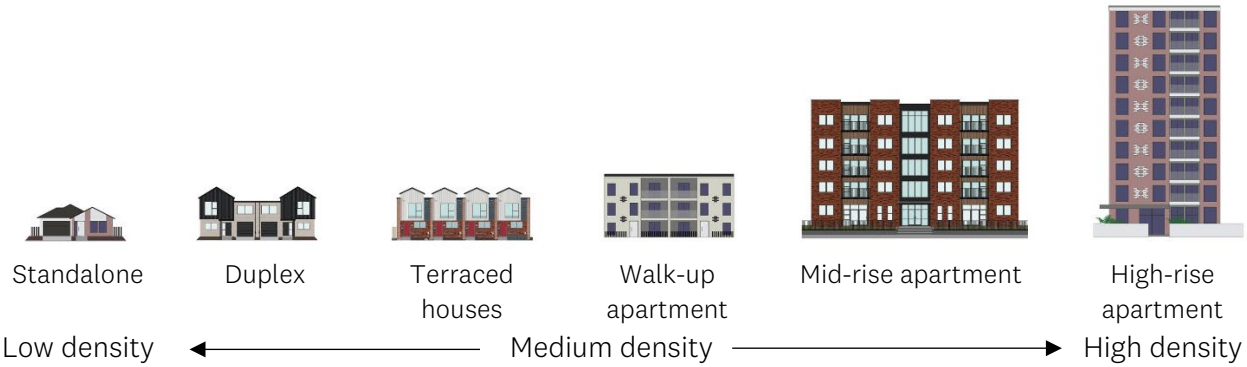
One way to define housing density is by measuring the number of dwellings in a geographical area. The definition of 'medium density' when taking this approach varies throughout New Zealand. For example, in the Waipa District, medium density is defined as 12 to 15 dwellings per hectare, but in Wellington this number of dwellings per hectare would be considered low density (Bryson & Allen, 2017).

[2] Under Section 35(2)(b) of the Resource Management Act, every local authority is required to monitor the effectiveness and efficiency of the policies, rules or other methods in its regional policy statement or its plan, and to publish the results every five years. This requirement applied to the Auckland Unitary Plan from November 2021. Refer to Chapter 2 of this report for details on the Auckland Unitary Plan and s35 monitoring.
https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/unitary-plan/docsunitaryplanmonitoringtechnical/b2.3-quality-built-environment-technical-report.pdf

Taking another approach, the Building Research Association of New Zealand (BRANZ) defines medium density housing as "multi-unit dwellings (up to 6 storeys)" (Bryson & Allen, 2017).

For this study, we adopted a typology-based definition. This determines 'low density' as including standalone dwellings, and 'high density' as including apartments over seven storeys, with medium density being everything in between (e.g. 2-4 storey terraced houses, 2-3 storey duplexes, 2-6 storey apartments) (Figure 2).

Figure 2: Housing typologies across different densities



1.2 Research objectives

The primary aim of this study is to assess how well recently built MDH is meeting the day-to-day needs of households who reside there and to assess satisfaction with a range of design attributes (e.g. temperature, amount of storage and perceptions of privacy).

More specifically, this research aims to:

- identify recently built medium density homes across the Auckland region
- assess household satisfaction with a range of design elements, and reasons for and impacts of satisfaction
- investigate design elements that work well, and not so well, for different household compositions, household sizes, and demographic groups (e.g. life stages, different abilities)
- explore participants' likes/dislikes of their homes and modifications to improve shortcomings
- explore activities that can/cannot be accommodated within the home and why
- identify any differences in satisfaction and design attributes across housing typology and areas in the Auckland region
- compare actual design attributes, household experiences, design best-practice guidelines (e.g. Auckland Design Manual) and design requirements in the AUP.

The results of this study will be used by Auckland Council to investigate ways in which MDH can better meet Aucklanders' changing needs and achieve a quality compact urban form that supports their wellbeing. This could be achieved in several ways including advocacy with the design community, updated design guidance on the Auckland Design Manual, and supporting changes to the AUP and other legislation.

This study does not explore households' options and choices about where they choose to live, in what housing typology, or whether they buy, lease or rent. Nor does it explore aspects of housing markets such as the role of landlords, investors or development companies in the lived experience of MDH. It is acknowledged that these aspects provide important context to these findings.

2 Complementary literature

Previous research on medium density housing in Aotearoa New Zealand has included post-occupancy evaluations/surveys (POE/POS) of developments in Tāmaki Makaurau such as Hobsonville Point (Haarhoff et al., 2019) and Stonefields (Mein et al., 2012). POE studies tend to focus on liveability of the neighbourhood (in contrast to the dwellings) by including indicators such as sense of place, safety and walkability (Boarin et al., 2018). Research has also been undertaken by Auckland Council on a master planned housing development at Addison in Auckland (Reid et al., 2019).

A series of publications by BRANZ reports on the liveability of MDH in New Zealand (Allen et al., 2020; Allen & O'Donnell, 2020b, 2020a, 2020c). The research behind these reports included a survey of 500 New Zealand residents (172 lived in Auckland), a literature review, and focus groups with staff from Auckland Council, Wellington City Council and Christchurch City Council. The research concludes that the survey participants' satisfaction with their medium density home is high and that they perceive their home to be as equally as liveable as a standalone home – but that there are opportunities to improve. The small sample size of the survey is only able to provide high-level insights about the experience of living in MDH in Auckland.

Attitudinal studies of people living in MDH have also been undertaken in New Zealand (such as Bryson, 2017; Nuth, 2020; Opit et al., 2020). These studies focused on perceptions among people residing, and not residing, in MDH. These studies show that acceptance of MDH as a viable housing form in New Zealand is increasing, although concerns surrounding MDH developments persist (Allen, 2016). Concerns include MDH not accommodating the needs of 'Kiwi families' and becoming 'slums' as a result of only attracting short-term occupants (Opit et al., 2020). These negative perceptions are reflected in media articles about housing intensification (e.g. 1 News, 2023; Hassan, 2016; Killick, 2022).

Investigating how people choose where to live is out of scope for this study; however, it is acknowledged that many factors impact where and how people live. In New Zealand, standalone homes continue to be reported as the preferred housing typology but interest in higher-density living is increasing (Bryson, 2017; Gjerde & Kiddle, 2022; Opit et al., 2020). Housing location that affects access to urban amenities (e.g. transport options, green spaces, services) plays a large role in housing choice (Allen, 2016; see also, Yeoman and Akehurst, 2015). Housing intensification is seen to provide benefits such as housing affordability, greater access to urban amenities, and facilitating a lifestyle with little reliance on cars (Carroll et al., 2011).

Research in Australia has explored cultural norms of households with children living in high-density typologies (i.e. apartments) and the prejudice they can experience for living in an 'inappropriate' form of housing (Kent et al., 2024; Kerr et al., 2021; Raynor, 2018). This norm is also present in New Zealand and research by Opit et al. (2021) reports that households with children can have positive experiences living in MDH. However, apartments in Australia, and in Tāmaki Makaurau, are reported to not be designed to accommodate the needs of households with children, both by architects and through policy (Andrews et al., 2019; Carroll et al., 2011; Cook et al., 2023; Tucker et al., 2021).

Research focused on understanding the lived experience of households in MDH in locations comparable with Auckland, that considered design details of the home and had sufficient rigour to draw conclusions (e.g. representative sample size) was not found in the literature. This research aims to contribute towards filling this gap.

3 This report

This report is aimed at a wide audience, including housing developers, architects, planners, urban design professionals, housing researchers and public policy professionals, as well as the wider Auckland public. It presents results from a comprehensive mixed-method study that included the identification of MDH across Auckland, a survey of 1413 Aucklanders living in MDH, 20 in-home immersions with households who had completed the initial survey, and a desktop exercise to extract specific design attributes from the consented plans of 110 homes.

Following this introductory chapter, Chapter 2 provides a detailed overview of the complex legislative context within which MDH is delivered in Auckland. Relevant urban design guidelines from New Zealand and Australia are also introduced and are referred to throughout the report. Some further details are provided in Appendix 2.

Chapter 3 outlines the broad research method and sample characteristics, particularly housing typology, household composition and household size. The chapter includes a series of maps showing the distribution of estimated MDH across the Auckland region, who was invited to participate in the survey, and who participated. Further information is available in Appendices 3 to 10.

Chapters 4 to 9 present results from the research. These research results are accompanied by AUP requirements, s35 monitoring, best practice design guidelines, and the specialist urban design and landscape architecture observations from staff in Auckland Council. Each chapter ends with a summary. Chapter 4 is the largest as it discusses indoor spaces for living – namely, kitchens, dining areas, lounges and bedrooms. Chapter 5 explores storage, laundries and bathrooms. Chapter 6 focuses on outdoor living spaces. Chapter 7 considers aspects of the indoor environment such as temperature, ventilation and privacy. Chapter 8 is about the storage of vehicles – namely, carparking and bike storage. Chapter 9 discusses aspects of homes shared with neighbours such as rubbish collection and communal outdoor living spaces, as well as perceptions of safety.

The report ends with a discussion and recommendations chapter (Chapter 10).

3.1 Presentation of study results

As mentioned above, Chapters 4 to 9 present results from a survey, in-home immersions and analysis of 110 consented plans. These are presented separately, by topic. Some further details on how these results are presented in this report are outlined below.

Survey results

Results from the survey are presented by three bases of analysis:

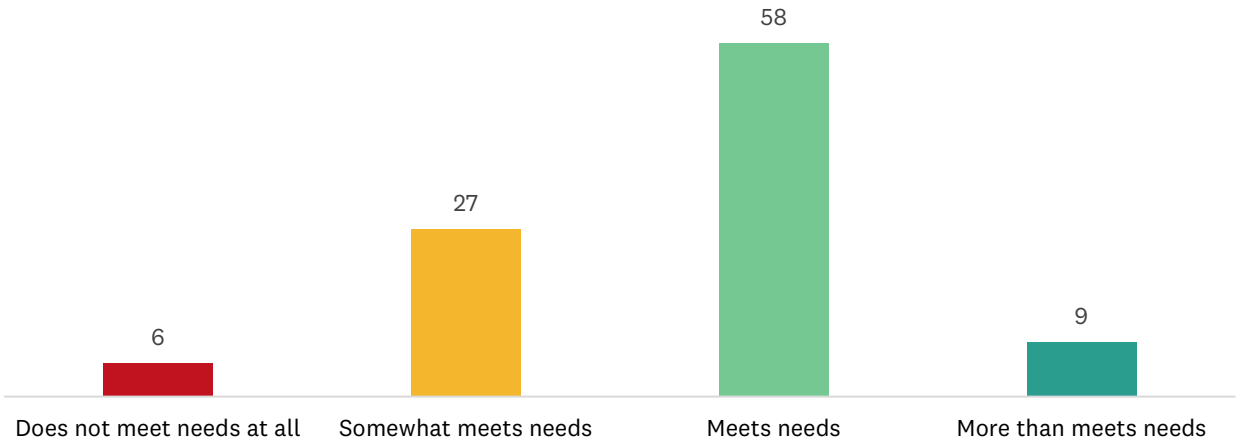
1. participants
2. properties

3. household composition.[3]

We used all the participants as the base of analysis when reporting on participant perceptions, such as satisfaction with, or rating of the impact of, aspects of their home, their feelings of safety, etc. As discussed in Chapter 3, some properties returned more than one survey response, as was encouraged in the invitation letter. All responses are included when results are presented at the participant level (see Figure 3 for an example).

Charts tend to exclude 'not applicable' or 'missing' responses for ease of readability. Percentages displayed in charts are calculated excluding 'not applicable' or 'missing' responses, and the values sum to 100 per cent (except for multiple response questions). As shown in the example chart below (Figure 3), percentages are calculated from 1335 survey responses, as two participants did not answer the question or chose 'not applicable'.

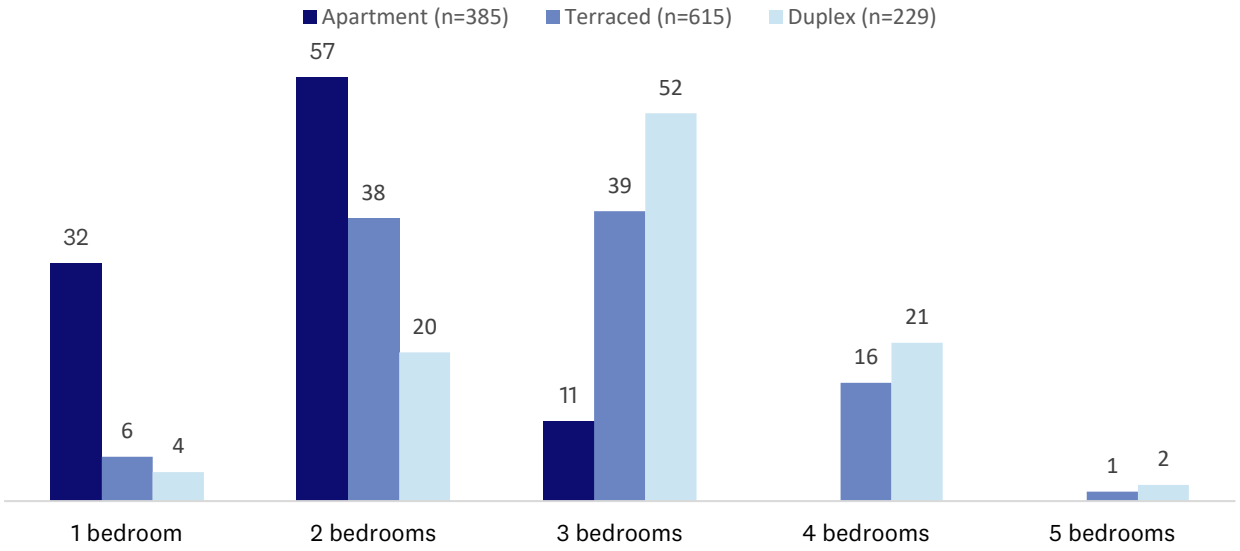
Figure 3: Example chart displaying results by participant (n=1335) (%)



Other results that relate to aspects of the property, such as the number of cars owned by members of the household or the number of bedrooms in a home, are reported at the property level (Figure 4). Survey responses were received from a total of 1243 properties, of which 91 returned two survey responses, two returned three responses, and one returned four responses (totalling 1337 survey responses). For those properties that returned more than one survey response, responses from one participant only were chosen at random to represent the property. These charts also tend to exclude 'not applicable' or 'missing' responses. The chart below excludes responses from 14 properties which have missing data for the number of bedrooms in the home.

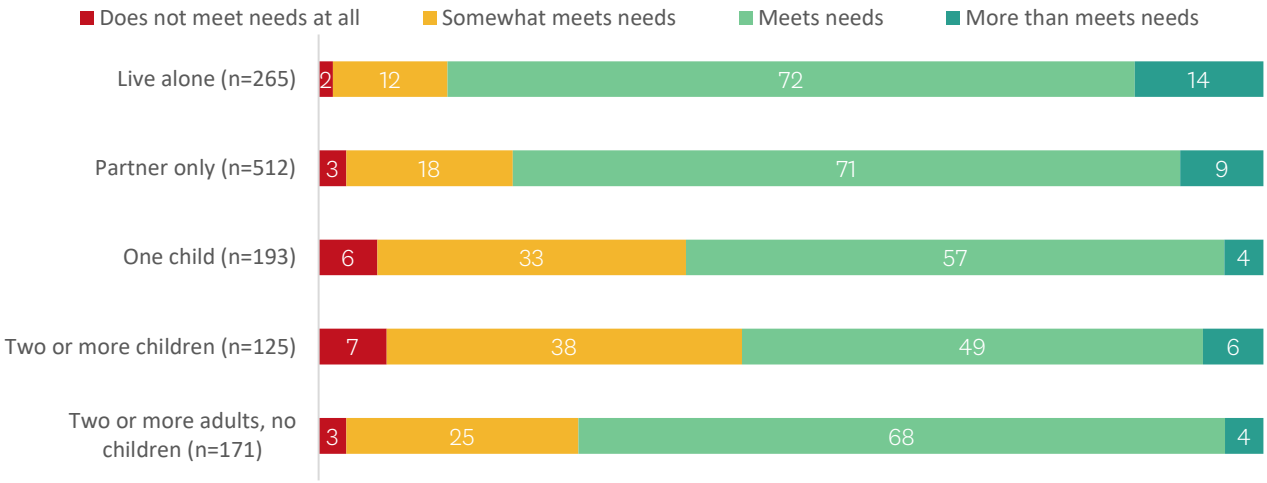
[3] See Chapter 3, Section 4 Household composition.

Figure 4: Example chart displaying results by property (%)



In some instances we present results by 'household composition'. Using participants' responses to questions related to who they lived with, we constructed five household types: live alone; partner only; one child (with one or more adults); two or more children (with one or more adults); and two or more adults, no children. Each type is described in more detail in Chapter 3, and an example chart of these different household compositions is given in Figure 5.

Figure 5: Example chart displaying results by household composition (%)



Quotes

Verbatim quotes from survey responses are shown throughout the report to provide further context. These comments were in response to open-ended questions that asked participants to describe what they liked and disliked about their home, and what makes it comfortable and uncomfortable to do activities of importance to them at home. Percentages referred to are of all those who made a comment for each relevant question.

Some quotes are presented alongside floor plans (drawn based on the consented plans of the home) or Google Street View imagery collected in a way that does not identify the exact location of participants.

In-home immersions

Preliminary results from the in-home immersions are presented in this report. A comprehensive report with complete results is forthcoming. We have used verbatim quotes, photos and annotated floor plans from participants' homes. The floor plans were constructed by members of the Tāmaki Makaurau Design Ope, using a combination of consented plans, photos of the home and research notes. Floor plans are often presented alongside photos to provide broader context of the space.

All photos included in this report have been reviewed by participants and edited to protect participant confidentiality (e.g. pixilating licence plates, photos on walls). We have their full permission to use them.

Photos

In addition to photos from the in-home immersions, this report contains photos from different sources including real estate listings, Google Street View imagery, Nearmap satellite imagery, and photos taken by Auckland Council staff in TMDO. All images are from the Auckland region and were taken within the last two years.

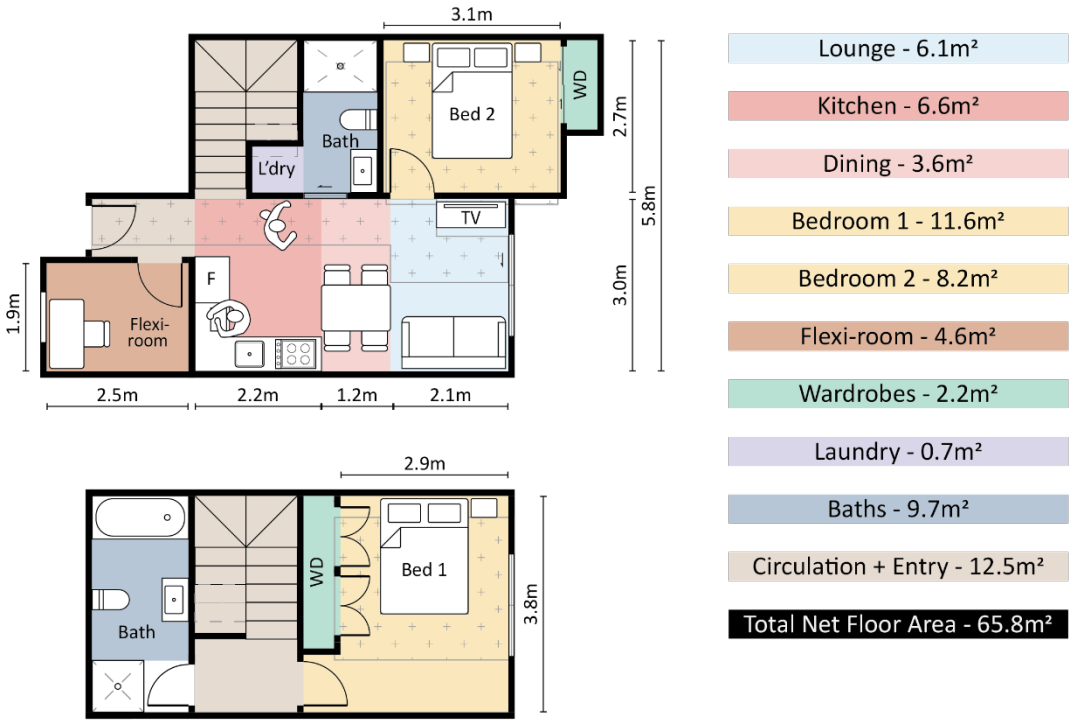
Floor and site plans

The report also includes floor and site plans. In some cases, these are from the consented floor plans that we analysed and may be accompanied by images and quotes from participants living in the home. In other cases, plans are demonstrating best practice design guidelines and may be fictional.

Figure 6 is an example floor plan. The colours for different spaces and rooms are consistent across all plans in the report. Some plans show floor areas and/or dimensions, whereas others that show only a portion of a home may exclude these dimensions. All floor plans are drawn to scale and use standard-sized furniture (including queen beds) and appliances.

The example floor plan does not include all the spaces and facilities present on floor plans presented throughout this report. In addition to what is shown on the floor plan below are balconies, ground-level outdoor living spaces (and landscaping details), garages and WCs (water closets; i.e. separate toilets).

Figure 6: Example floor plan



Note: WD = wardrobe, F = fridge, P = pantry (not included in example above), HWC = hot water cylinder (not included in example above)

The next chapter in this report explores the legislative context within which MDH is delivered in Auckland.