

Life in Medium Density Housing  
in Tāmaki Makaurau / Auckland

## Chapter 10

# Discussion and recommendations



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## **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
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- Chapter 7: Indoor environment
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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.

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# 1 Discussion

The primary purpose of the study was to investigate how Aucklanders are experiencing living in recently built medium density housing (MDH),<sup>1</sup> with the intention of using the results to bring about improvement to future MDH. The findings of this research will be shared with the MDH development community (i.e. developers, architects, planners, urban designers, professional organisations and central government) as well as within the Auckland Council group, to ensure that opportunities and potential design solutions to improve the lived experiences of MDH households are explored across the entire planning, design and delivery system.

The results presented in this report demonstrate that experiencing life in MDH is multi-faceted, and that MDH is working better for some households than others. The study offers explanations as to why this may be and suggests how MDH could better meet the needs of a wide range of Auckland households. A quality compact approach is a core direction in Auckland Council's Future Development Strategy. For the outcomes resulting from this direction to be realised (e.g. adaptive to climate change, protect the natural environment, equitable infrastructure investments), MDH must meet the needs of a diverse range of households.

Recently built MDH is not always achieving the intention in the *Auckland Unitary Plan* (AUP) of housing meeting the day-to-day needs of households. MDH may better meet these needs if it was to, for example, include built-in storage (e.g. for food, linen), have living spaces with layouts that accommodate standard sized furniture, and maximise spaces that can be used in different ways (e.g. provision of flexi-rooms or larger lounges instead of additional bathrooms). Overcoming the issues identified in this study are critical to mitigate poor wellbeing outcomes (e.g. overcrowding, social isolation) that can result from households living in homes that cannot accommodate their needs.

The rest of this chapter discusses the key findings from the study.

## **MDH is working well for some households and improvements are required to work for others**

This study found that recently built MDH in Tāmaki Makaurau is meeting some of the needs of some households. Households of one person living alone or living with a partner only were more likely to report aspects of their home are 'meeting' or 'more than meeting' their needs, compared with households with children. This general trend of more positive responses from smaller households, particularly those without children, is echoed across the results reported throughout this report.

A quarter of households who participated in the survey live with at least one child, 39 per cent of households comprise of two adults (partners), and 22 per cent of participants live alone.<sup>2</sup> The

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<sup>1</sup> In this study, recently built MDH is defined as having received a CCC after November 2016 (when AUP became operative in part) and is a terraced house, duplex or apartment (as defined by the participants). See the Executive Summary at the beginning of this report for more detail.

<sup>2</sup> See Chapter 3: Research method and sample for a discussion on household composition.

remaining 14 per cent of households have two or more adults and no children (e.g. these households may be flatmates, adult children living with parents, or elderly parents living with their adult children). That only a quarter of households have children, along with differences in satisfaction, could be interpreted to mean that current MDH in Auckland would need improvement to better accommodate the needs of households with children.

MDH and higher density housing is not fundamentally unable to meet the day-to-day needs of households with children, and by extension low density housing is not always able to meet these needs either. Households with children live in higher density housing in many other places around the world. Design limitations of the MDH considered in this study, such as storage capacity for household items and only one dedicated space for living activities, can result in households relying on spare bedrooms and garages (if they have them), and outdoor living spaces to make their home function.<sup>3</sup> Households with children are less likely to have spare bedrooms and could benefit from additional or larger living spaces even more than households of adults (because adults may have greater capacity to utilise third-places or have interests that result in spending time out of their home).<sup>4</sup>

The arrangement of rooms and general inability of MDH to enable significant modifications to the home (e.g. extensions to add additional bedrooms or living spaces) restricts its ability to accommodate changes in the needs of a household (e.g. additional household members or changing mobility). This limitation could generate a higher turnover in MDH compared with lower density homes, which may have greater ability to accommodate such changes. As a result, there is a need for a diverse range of MDH to be constructed with regard to numbers of bedrooms,<sup>5</sup> and the inclusion of dedicated spaces that can be used for a range of activities (e.g. study to work from home, hobby, exercise, play space).<sup>6</sup> Evidence shows that there is demand for a range of housing types including medium and high density typologies (Yeoman & Akehurst, 2015)<sup>7</sup>. However, without greater variation, the number of Aucklanders who can comfortably reside in MDH may be restricted, and lower density homes, which exist in a wider variety, will continue to be required.

Achieving a quality compact urban form is reliant on an increasing proportion of new development being of medium and high density housing typologies. Having sufficient diversity within these higher density housing typologies will be key to accommodating the diverse needs of Auckland households and achieving this outcome.

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<sup>3</sup> As discussed in Chapter 4: Indoor spaces for living, Chapter 5: Storage, laundries and bathrooms, and Chapter 6: Outdoor living spaces.

<sup>4</sup> A 'third-place' is a place outside the home ('first-place') or work place ('second-place') where people spend time with others, such as a café or community centre.

<sup>5</sup> In this study, 89 per cent of apartments were reported to have one or two bedrooms, while 77 per cent of terraced houses and 72 per cent of duplexes had two or three bedrooms. See Chapter 4, Section 2.

<sup>6</sup> In this study, 93 per cent of MDH had only one indoor living space (see Chapter 4, Section 1.2) and spare bedrooms were important spaces to accommodate a range of activities.

<sup>7</sup> Respondents undertaking a discrete choice modelling exercise chose from a range of dwelling types. Of those who could afford to buy or rent in the exercise, just over half (52%) chose detached dwellings as their final choice, 25% chose an attached dwelling (a joined unit), 15% chose a low-rise apartment, and 8% chose a high-rise apartment.

## **A range of issues creates challenges for meeting the day-to-day needs in MDH**

The AUP assessment matters intend to ensure homes are meeting the day-to-day needs of households by being a sufficient size. This report demonstrates that spare bedrooms and creative use of other rooms unintended as spaces for living (e.g. garages, spare bathrooms) are critical in MDH meeting the day-to-day needs of households. There are a range of issues, described below, resulting in this outcome. Resolving the identified issues is anticipated to better enable MDH to meet the day-to-day needs of households (as intended in the AUP) and to aid households in using spaces in their home as intended (such as using their garage for car parking instead of as a space for living) and as desired (such as being able to host friends and whānau).

### **Limited built-in storage reduces the functionality of spaces for living**

A key finding of this study was that storage is inadequate for many households, and requirements for storage impacts on almost every space within a home. Over half of all participants reported that they have insufficient storage for general household items, linen,<sup>8</sup> kitchen equipment and food,<sup>9</sup> and for occasional items.

Some kitchens were not fit for purpose as they did not have a pantry, which resulted in participants adding cupboards to dining spaces or garages. This can reduce the use of the dining spaces for dining and garages for carparking. Results from the in-home immersions found that storage in many kitchens was insufficient, difficult to access, or culturally inappropriate (e.g. Feng Shui practice is to store rice in a container outside of a cupboard). Furthermore, some approaches to food storage were possibly not food safe (e.g. food being stored in a cupboard alongside a hot water cylinder). This resulted in households adding storage furniture (e.g. shelving, cupboards, freezers) to their dining space, lounge and sometimes their garage. The space occupied by this furniture meant that other items, such as dining tables or sufficient seating for the household, were unable to fit in dining spaces and lounges, and garages were unable to be used for carparking.

Analysis of consented plans found that, on average, homes had close to a cubic metre less built-in storage per bedroom than the *Auckland Design Manual* (ADM) recommended minimum – and the ADM generally recommends storage volumes half that of other design guidance considered in this study.<sup>10</sup> The in-home immersions uncovered the impact of lacking built-in storage: linen is stored in wardrobes and suitcases in hallways, while many households have added storage cupboards into spare bedrooms and garages. Participants also shared how they use spare bathrooms and the largely unused bathtubs for storage.

These results demonstrate how a lack of dedicated built-in storage for household items is resulting in household items being stored in ways that impacts the useability of other spaces. Wardrobes storing linen, for example, have less capacity to store clothes and shoes, resulting in additional storage

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<sup>8</sup> See Chapter 5: Storage, laundries and bathrooms.

<sup>9</sup> See Chapter 4, Section 1.2.2 Kitchens.

<sup>10</sup> See Chapter 5, Section 1.1, Section 2.1 and Section 3.1 for more details on design guidance considered for household storage, laundries and bathrooms, respectively.

requirements. When bedrooms and garages are used for storing, for example, suitcases and as places for extra storage cupboards, then it is difficult for these rooms to also provide a space for sleeping or storing vehicles, respectively.

The average size of a ground-level outdoor living space in the consented plans analysed was 34m<sup>2</sup> for terraced houses, which is larger than the 20m<sup>2</sup> AUP minimum.<sup>11</sup> However, outdoor living spaces were found in some in-home immersions to have storage sheds containing suitcases and other household items, reducing the functional size and in some cases usability of this outdoor space for living activities (e.g. socialising, play). Storage for shoes and bikes, and drying laundry were also accommodated for in outdoor living spaces. Built-in indoor storage and dedicated laundry facilities appropriate for different typologies (e.g. service courtyard for terraced houses or communal laundries in apartment buildings) may better suit these needs and enable outdoor living spaces to function as spaces for eating, socialising and play.

The size of outdoor living spaces, dining spaces, lounges and garages in the MDH included in this study are found to be unable to accommodate both the added storage and their intended functions. Overall, this study finds that in-built storage provision in MDH is inadequate for the basic requirements of most households, with day-to-day items being stored in unintended spaces, thus affecting the functionality of those spaces.

### **The design of lounges can result in limited functionality and additional spaces are required to accommodate activities important to the household**

Most homes (89%) were reported by survey participants to have one indoor living space comprising a kitchen, lounge and dining space. Satisfaction with the size of lounges and dining spaces is greater in households without children, who are more likely to have a spare bedroom that can accommodate other activities. Households without a spare bedroom may place a greater demand on their lounges and dining spaces to accommodate a wide range of activities, which the spaces are struggling to accommodate, resulting in lower satisfaction ratings.

As is discussed in Chapter 4: Indoor spaces for living, lounges are often found to only afford watching TV, eating, and play by young children due to the room's size and shape and location of power points, doors and windows. In addition to infringement by added storage, these spaces are often unable to accommodate furniture positioned in ways to facilitate conversation or social activities such as board games, hobbies (e.g. musical instruments, computer games, crafts), exercise or play by older children. Consequently, such activities are performed elsewhere in a home, such as in a spare bedroom, outdoor living space or garage.

Dining spaces were reported by over a third of survey participants to 'somewhat' or 'not at all' meet the needs of the household. The in-home immersions found that eating meals together as a household in a dining space was important for a small number of participants but the majority preferred to eat meals in their lounge watching TV. However, dining spaces continue to be important as spaces for hobbies (e.g. board games and Lego), having a conversation, and acting as an extension

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<sup>11</sup> See Chapter 6: Outdoor living spaces.



of the kitchen bench. Dining spaces, compared with lounges, tended to have greater flexibility in how furniture could be arranged and the activities they could accommodate. This way of using dining spaces is unlikely to be a reality for only households living in MDH and encourages a reconceptualisation of ‘dining spaces’ as being multi-functional spaces rather than assuming they are solely for dining around a table in design guidelines.

Large proportions of participants reported that having friends and whānau visit is important to them.<sup>12</sup> However, it was not always easy to do this due to a lack of space, and some reported a lack of visitor carparking. This finding highlights a risk to wellbeing (social, mental, physical and spiritual) and a potential shift in the demand of other spaces to accommodate activities (e.g. public spaces, communal spaces or third-places). For example, some in-home immersion participants described hosting guests elsewhere, such as at a family member’s larger standalone home or a restaurant.

### **Spare bedrooms, flexi-rooms and garages are multi-functional spaces critical to a well-functioning home**

Spare bedrooms and flexi-rooms are reported by participants to accommodate a diverse range of activities, including being used as a guest bedroom, study/office space, teenager hang-out space and media room, and for hobbies, exercise, drying laundry and storage. This diversity of uses may be due to bedrooms and flexi-rooms having a door that allows them to be separated from other spaces or members of the household, unlike lounges in open plan layouts.

Just over half (53%) of the participants living in a terraced house or duplex reported having a garage in their home. Of those with at least one car and a garage, only half (50%) reported storing at least one car in their garage. Garages are reported to be used for storage, exercise, laundry and hobbies. Of the five in-home immersion households with a garage, only the two homes with a larger garage used this space for a car. All garages were used for storage (for food and kitchen appliances, shoes, clothing, garden equipment, bikes, wheelie bins, sports equipment) and other activities (e.g. laundry, exercise, hobbies, hang-out space).<sup>13</sup>

The overall size, number and arrangement of rooms in MDH may be indicating to prospective households that additional bedrooms, flexi-rooms or a garage are necessary to overcome limitations on activities they expect to be able to undertake in the home, due to the small size and inflexibility of the lounge. In-home immersion participants showed how the arrangement of furniture to accommodate the activities important to them in their lounge was challenging due to the location of power points, windows and doors, and the need for circulation space (e.g. hallways, staircases and access to outdoor living spaces). Households with children were more likely to have reported that the number of indoor living spaces ‘does not meet the needs at all’ or ‘somewhat meets the needs’ compared with households without children. Only 11 per cent of participants overall reported having a second living space (i.e. a flexi-room) and households with children were more likely to have no spare bedrooms that could be used as a living space. The provision of larger lounges or additional living

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<sup>12</sup> See Chapter 4, Section 1.4.3 for a discussion of activities in the home.

<sup>13</sup> See Chapter 4, Section 1.4.2 and Section 1.5.5 for a discussion of uses of garages as spaces for living, and Chapter 8, Section 1.4.4 for uses of garages for carparking.

spaces could be a solution to this and may not necessarily require an increase in total floor area if better design of circulation space and storage solutions are also considered.

### **Greater bathroom amenity than recommended in best practice guidance is creating ‘spare bathrooms’**

Analysis of the 110 consented plans found that over half of the 2-bedroom homes have two bathrooms or a bathroom and a WC (i.e. two toilets, and one or two showers/baths).<sup>14</sup> Similarly, over half of the 3-bedroom homes have either three bathrooms, or two bathrooms and a WC (i.e. three toilets and at least two showers/baths). This is more bathroom amenity than is recommended by all three of the New Zealand best practice guidance considered in this study.<sup>15</sup> Furthermore, the *Public Housing Design Guidance* states that “if these standards are exceeded, i.e. additional bathrooms are proposed to be provided, HUD-New Supply would strongly encourage early engagement to ensure that the development still represents value for money.”<sup>16</sup>

In-home immersion households with surplus bathrooms – for example, the participant who lives alone in a 1-bedroom apartment with a flexi-room and two bathrooms (i.e. two toilets and two showers) – shared how they were using their spare bathrooms as spaces for storage or drying laundry. The quarter (23%) of the survey participants who reported that the number of bathrooms in their home is ‘more than meeting’ their needs may have spare bathrooms which they are using in ways similar to the in-home immersion households.

The floor area consumed by additional bathroom amenity, and the relative expense in fitting out a bathroom, could perhaps be better allocated to other purposes, such as storage or a flexi-room, to partially mitigate the issues previously described with lounges.

### **The allocation of floor area does not align with best practice guidelines, and the size of spaces for living are not meeting the needs of close to half of the survey participants in households with children**

Forty-seven per cent of the households with one child and 53 per cent of the households with two or more children reported that the size of their lounge ‘does not meet’ or ‘somewhat meets’ the needs of their household. Thirty-eight per cent of all survey participants reported that the size of their kitchen and 41 per cent reported that the size of their dining space ‘does not meet’ or ‘somewhat meets’ the needs of their household. Consented plan analysis found that the average floor area of kitchen, lounge and dining spaces are smaller than the ADM minimum recommendation guidelines, by 7m<sup>2</sup> on average for 2-bedroom homes and 11m<sup>2</sup> on average for 3-bedroom homes. This finding helps to explain the notable proportion of participants who reported that the sizes of their kitchens, lounges and dining spaces are less than ‘meeting the needs’ of their household.

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<sup>14</sup> See Chapter 5, Section 3 Bathrooms.

<sup>15</sup> ADM recommends one bathroom for 2-bedroom homes and two bathrooms for 3-bedroom homes (ADM does not distinguish between a bathroom and a WC). The *Public Housing Design Guidelines* and *Kāinga Ora Design Guidelines* recommend one toilet and one shower for 2-bedroom homes, and two toilets (including one WC) and one shower and one bath for 3-bedroom homes.

<sup>16</sup> Ministry of Housing and Urban Development. (2023). *Public Housing Design Guidance for Community Housing Providers and Developers*, Section 4.6.1.

The consented plan analysis found that the net floor area of homes is similar to the ADM recommended net floor area.<sup>17</sup> Two-bedroom homes average 59.6m<sup>2</sup> (62m<sup>2</sup> is recommended) and 3-bedroom homes averaged 77.6m<sup>2</sup> (82m<sup>2</sup> is recommended). On the surface, this may seem to conflict with finding that kitchen, lounge and dining spaces combined are on average 10m<sup>2</sup> smaller than guidelines. The difference, however, can be attributed to the floor space allocated to bathrooms (which is on average 3m<sup>2</sup> greater than the ADM recommendation), as well as slightly larger bedrooms (1m<sup>2</sup> greater than recommended) and wardrobes (1m<sup>2</sup> greater than recommended).

In undertaking an analysis of consented plans and comparing these to design guidelines, it was noted that most design guidelines do not include circulation space (e.g. hallways, staircases) and that circulation space takes up a large proportion of floor space in narrow multi-level houses. Analysis also found that circulation space accounts for varying proportions of total floor area across housing typologies as multi-level homes have staircases and typically greater lengths of hallways than single-level homes.<sup>18</sup> The AUP defines a minimum net internal floor area for studios (30m<sup>2</sup>) and one or more bedrooms (45m<sup>2</sup>), but it does not clearly define how staircases in homes are measured (i.e. if staircases are counted twice, once for each level, or once for the entire home). Developing tailored standards and design guidance for each MDH typology would address this issue and is consistent with the Section 35 (s35) monitoring that found that “the generic set of residential standards that apply to standalone homes as well as terraces and apartments are inadequate for complex medium to large scale developments.”<sup>19</sup>

It is acknowledged that increasing the size and/or quality of fitout in a home comes at a financial cost. There is a risk that policy requiring larger or higher quality homes reduces housing affordability. In other words, housing affordability (as an indicator of economic wellbeing) is traded-off with social, cultural and environmental wellbeing. However, not all changes that improve how well homes meet the needs of households come at a financial cost and the value of good design also has economic benefits. For example, making the best use of space within the home, designing spaces to accommodate standard sized furniture, integrated storage solutions, and having fewer or smaller bathrooms to allow for an increase in space for living may be cost-neutral or even cost-positive, and if they improve usability and satisfaction, are also likely to improve initial and/or resale values.

## **The challenge of managing heat without compromising privacy or contributing to an urban heat island effect**

A quarter of the participants living in terraced houses (28%) and duplexes (24%) reported being ‘somewhat’ or ‘very’ dissatisfied with the temperature inside their home in summer.<sup>20</sup> Overheating is a challenge for MDH, with reports of homes costing twice as much to cool over summer as they do to heat in winter, in addition to the high cost of retrospectively installing mechanical ventilation systems (Gibbens, 2024). The temperature of terraced houses is challenging to regulate in summer,

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<sup>17</sup> When including only the spaces for which there is guidance in the ADM (i.e. kitchen, lounge, dining space, bedrooms, bathrooms, wardrobes). The ADM lacks guidance for circulation space (i.e. hallways and staircases), flexi-rooms and garages.

<sup>18</sup> Note that staircases are counted twice when calculating gross floor area, once for each storey.

<sup>19</sup> Auckland Council. (2022). *Auckland Unitary Plan, Section 35 Monitoring*, B2.3 A quality built environment, page v.

<sup>20</sup> See Chapter 7: Indoor environment.

as they typically have only two sides with openable windows, compared with four or more sides of a standalone house. Large windows with small openings, a lack of eaves and poor consideration of solar orientation and solar gain all contribute to higher than desirable internal summer temperatures.

<sup>21</sup> Australian design guidance is more sophisticated in the management of temperature (particularly cooling) within the home compared with New Zealand guidance, and there are opportunities to use many of these approaches in improving guidance in Auckland, particularly considering expected impacts from climate change.

Modifications to improve summer temperature were the most reported change that participants had made to their home. Over half the participants who had made at least one change to their home in terraced houses (54%) and duplexes (60%) had made changes to improve temperature.

Modifications reported in the survey included installation of heat pumps or air conditioning units (often in second or third levels, which are the hottest areas in the home and also typically where the bedrooms are located) and changes to window coverings (including installation of blinds/curtains or window tinting). In-home immersion participants showed that blinds were often drawn in some rooms as a way of managing heat. Eight of the 14 households living in terraced houses/duplexes had retrofitted a heat pump or air conditioning unit into the upper level of their home, particularly in bedrooms, to cool the room so they could sleep comfortably at night.

Reliance on heat pumps and air conditioning units as active mechanisms to cool homes in summer suggests that MDH are not being designed in ways that enable passive temperature management. Marriage (2022) claims the H1 Energy Efficiency clause in the Building Code, which regulates energy efficiency of a build, can result in overheating when applied to MDH. This is of concern from the perspectives of wellbeing, household outlay and ongoing running costs, as well as climate resilience. Auckland is expected to experience hotter temperatures as our climate changes,<sup>22</sup> and there is a risk of heat resulting in detrimental health outcomes. Reliance on active mechanisms to cool homes not only has a high power cost (both financial and demand on the power grid) but also releases warm air into the neighbourhood, exacerbating heat impacts for others. Further investigation into how this situation may contribute to urban heat island effects and design solutions, including consideration of green space, are recommended. Design solutions such as those required in Australian best practice guidance could include building and window orientation, window sizes and openings, sun shading and solar control devices.

## **Perceptions and experiences of privacy within a home are variable**

High proportions of households said they were 'somewhat' or 'very' satisfied with privacy inside their home, and notable proportions reported they had made changes to their homes to improve visual privacy.<sup>23</sup> In-home immersion participants showed how they close blinds/curtains as a way of improving privacy in upstairs bedrooms, kitchens, dining spaces and lounges where windows were

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<sup>21</sup> The amount of heat received passively from the sun in New Zealand is greatest on a large north-facing window, which receives the greatest number of hours of direct sunlight, compared with a small north-facing window or a large south-facing window.

<sup>22</sup> Auckland's temperature is expected to increase by about 0.6°C by 2040 (Pearce et al., 2020).

<sup>23</sup> See Chapter 7, Section 3 Visual privacy.

visible from a shared or public space (e.g. vehicle or pedestrian accessway or street). In-home immersion participants described being uncomfortable and ‘on display’, leading to the permanent use of window coverings and/or frosted windows to improve internal privacy. Section 35 monitoring reported residents are closing blinds in their lounge or dining space when this room overlooks a street. This is interpreted in the s35 report to be in efforts to improve privacy and notes how this behaviour compromises the attractiveness of the street frontage and passive surveillance benefits.

Having windows that overlook public or shared spaces permanently covered with blinds/curtains/frosted glass and similar treatments, undermines the intended benefits of those windows providing opportunities for passive surveillance. The Crime Prevention Through Environmental Design (CPTED) principle of passive surveillance may be new to households moving into MDH from lower density standalone houses. Careful consideration of how such principles are applied is warranted to ensure that the intended outcome of wider public safety is achieved without compromising household comfort and feelings of privacy. A more considered design approach through the inclusion of landscape buffers or elevation of the private space to transition from public/semi-public to private spaces could mitigate participants’ privacy concerns and encourage window coverings to be open during the day, providing the benefit of passive surveillance without negatively impacting interior privacy.

It is recommended that further consideration is given to how the interface between the windows of homes and public spaces (e.g. streets), semi-public spaces (e.g. shared accessways) and neighbouring properties is better managed to ensure adequate privacy for households while also providing for passive surveillance.

## **Outdoor living spaces are highly valued, but functionality can be compromised**

The ADM and AUP acknowledge that outdoor living spaces are an important component of MDH to offset smaller indoor living spaces and as a key component in delivering a high-quality built environment. The simple existence of an outdoor space being a part of their homes was a theme in participants’ comments when describing what they like about their home.<sup>24</sup> However, this study found that the functionality of outdoor living spaces can be compromised due to a lack of privacy, poor access from indoor living spaces, limited space, and the space available being consumed by site facilities and storage. Overcoming these issues is anticipated to better enable households to use their outdoor living space as a space for ‘living’ outdoors.

A third (32%) of participants reported being ‘very dissatisfied’ or ‘somewhat dissatisfied’ with privacy in their outdoor living space. Those living in attached homes (i.e. terraces houses and duplexes) were more likely to be ‘very dissatisfied’ compared with those living apartments. Participants reported making changes to their outdoor living space to improve privacy, such as increasing the height of fencing or adding screens to permeable pool fencing.

Greater consideration to the indoor-outdoor flow could better enable outdoor living spaces to act as an effective extension of the (limited) indoor living space. Outdoor living spaces are ideally accessed

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<sup>24</sup> See Chapter 6: Outdoor living spaces.

via the living areas of a home. While the lack of direct connection of ground-level outdoor living spaces to indoor living spaces was an issue for only a small proportion of survey participants (12%), when this was an issue for the in-home immersion households, it had a large impact on how the household experienced living in their home.<sup>25</sup>

The in-home immersions found that some households use their outdoor living spaces for storage of household items such as shoes, suitcases and sport equipment. This use of space, in addition to site facilities such as external heat pump units and washing lines, can reduce the space remaining for activities such as play, dining and having a conversation. Outdoor living spaces could be improved by better accommodating household storage and other site facilities either inside the home or in dedicated service areas separate from the outdoor living space.

In addition to the functional size of the outdoor living space being compromised by site facilities, consented plan analysis shows that while many spaces were greater than the 20m<sup>2</sup> minimum required by the AUP, satisfaction for the size of the outdoor living space is low. Forty-three per cent of participants reported the size of their outdoor living spaces is ‘somewhat’ or ‘not at all meeting’ the needs of the household. Households with children were more likely to have reported that the number and size of outdoor living spaces ‘somewhat’ meets the needs of the household, than households without children. Private outdoor living spaces in MDH may not be practically able to be of a size that enables households to do the activities they would like to do outdoors. Instead, homes as part of a complex or apartment building may benefit from having a communal outdoor living space, and all households may benefit from greater provision of public open space. The larger size of these communal outdoor living spaces could enable social gatherings and more active activities (e.g. sport, play). The *New South Wales Apartment Design Guide* and the *Apartment Design Guide for Victoria* both have minimum requirements for communal living spaces.<sup>26</sup>

## **Carparking is creating issues**

There appears to be a mismatch between the design of MDH and delivery of transport amenity (i.e. private carparking, street parking and public transport). This mismatch was also found by research investigating a master planned community in Takanini (Reid et al., 2019).

There has been a general reduction in the number of carparking spaces provided for each medium density home since the removal of carparking minimum standards in the AUP in all residential zones (regardless of public transport provision or walking and cycling infrastructure),<sup>27</sup> and through the efforts of developers to deliver affordable housing because carparking and access for cars (e.g. driveways) takes up land and floor area, and both are expensive. The purpose of this change is to enable development particularly in locations where non-car transport modes (i.e. walking, cycling and public transport) provide access to employment, services and amenities.<sup>28</sup> However, most (96%)

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<sup>25</sup> See Chapter 6, Section 2.3 Environmental aspects of outdoor living spaces.

<sup>26</sup> See Chapter 9, Section 5.

<sup>27</sup> This change to the AUP was the result of the National Policy Statement on Urban Development 2020.

<sup>28</sup> Source: <https://environment.govt.nz/assets/Publications/Files/car-parking-factsheet.pdf>

households were reported by participants to have a least one car, and 49 per cent of households had two or more cars.<sup>29</sup>

Fifty-seven per cent of the households who had participated in the survey have more cars than off-street car parks.<sup>30</sup> Half (53%) the terraced houses and duplexes were reported to have a garage, and only half (50%) the households with a garage and at least one car reported using their garage for car parking. As described earlier, garages are important spaces for storage, laundry and other activities, which limits the remaining space in garages for car parking. Having more cars than off-street car parks and only half the garages being used for car parking is resulting in cars being parked on public roads, shared driveways and front yards in undesirable ways (i.e. parking on berms and footpaths, and blocking shared driveways). This is negatively impacting the security of vehicles from theft and vandalism, the ability for visitors to park nearby (and therefore the ability to host visitors), the loss of landscaped areas to car parking, and the pedestrian experience (including safety) of the housing complex/shared accessways and the neighbourhood.

Some participants mentioned needing a car due to a lack of public transport, suggesting that if barriers to using public transport were mitigated, the number of cars owned by a household could decrease. There are many possible barriers to shifting transport modes, such as the non-existence of a service that goes to the desired location at the right time, safety concerns, or it taking longer than private car (see Ovenden & Allpress, 2024). Improving the perception of public transport in areas where MDH has already been established, and enabling more development in locations where the provision is planned or is already established, could reduce the need for multiple cars in each household. Improved parking management could also help reduce the adverse impacts on wellbeing, walkability, safety and amenity from poor parking behaviours.

Resolving this mismatch in provision of transport amenity for MDH will require a collaborative effort between those in the transport and housing sectors.

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<sup>29</sup> See Chapter 8, Section 1 Cars and car parking. Note that the survey did not collect data on participants' share of different transport modes. This could be investigated by further research.

<sup>30</sup> Off-street car parks can include, for example, garages, carports, car pads, basement car parks or outdoor car parks.

## 2 Recommendations

The findings from this study are recommended to be used by all stakeholders in the MDH sector, such as developers, design professionals and the Auckland Council group, to bring about improvements to the future delivery of MDH in Tāmaki Makaurau / Auckland, so that MDH can best meet the diverse needs of a growing population, including the needs of households with children and multi-generational living.

Several recommendations for Auckland Council emerge from these findings.

### **Auckland Design Manual**

The ADM is being updated to reflect the changing design approach to MDH under national legislation. It is recommended that the ADM is also updated to address the issues identified in this report, including:

1. Separate guidance for different MDH typologies (duplexes, terraced houses and apartments), to reflect their different spatial arrangements, number of levels and functional needs such as storage.
2. Guidance to address the privacy needs of households in MDH, particularly in their living spaces and bedrooms, while also considering CPTED outcomes.
3. Guidance for outdoor living spaces to consider activities (e.g. dining, play), green space, shade, privacy, site facilities, and visual and aural privacy.
4. Guidance for communal living spaces, both indoor and outdoor, to allow for a broader range of activities that are difficult to undertake in small private living spaces.
5. Guidance to address homes overheating, including the role of legislation such as the Building Act 2004.
6. Guidance to ensure that pedestrian access along shared accessways is protected from parking so that walking and other active modes of transport are as easy, accessible and safe as private vehicle usage.

### **Auckland Unitary Plan**

7. It is recommended that the findings and recommendations of this research are taken into consideration when the AUP review commences in 2026. This includes incorporation of relevant ADM design guidance set out above, through policies, standards, matters of discretion and assessment criteria.

### **Policy/strategy**

It is recommended that Auckland Council consider the broader benefits and impacts of MDH at a neighbourhood scale, including:

8. The effects of new development, including MDH, on microclimates, including factors such as water-sensitive design, urban heat island effect (including tree canopy, building orientation, surface treatment and shade provision), and air quality.



9. Integration of land use and how people get around Auckland in a sustainable way that meets our emission targets, particularly focusing on non-private-car modes.
10. Consideration of carparking in public spaces including streets and neighbourhoods, given ongoing reduced private supply.

**Advocacy**

11. It is recommended that consideration be given to repeating the approach of this study within the next 5 years to continue to capture the lived experiences of MDH households.

It is recommended that Auckland Council works with central government and other agencies to improve the lived experiences of MDH households. Enacting these recommendations will require a coordinated commitment between Auckland Council, including CCOs, and the development sector.