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Preferences for medium density housing in New Zealand

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Abstract. Medium density housing (MDH) typologies are not widely used in New Zealand in comparison with other places. With current pressures to build housing in the places people want to live, interest in these forms of housing has surged. Government regulators and housing agencies, as well as many private developers, understand that MDH can help use land and infrastructures more efficiently and create liveable neighbourhoods. Nevertheless, there are still strong preferences amongst housing consumers for standalone dwellings. In an increasingly diverse society, little seems to have changed in the forms of MDH that housing providers create. The study reported in this paper interrogates the needs and preferences of people who have previous experience of living in MDH as well as those who may be considering it. Interview respondents were selected around four demographic dimensions; gender, ethnicity, whether they are property owners or renters and their prior experience of living in MDH. The interviewees were invited to provide their preferences around eight different MDH characteristics, first unconstrained by financial costs and then a second time, where costs were limited. As a pilot study, the number of respondents is small. Nevertheless, the results can be seen to illuminate the most important MDH characteristics across the diverse respondent group as well as areas where they differ. The findings will be of interest to other housing researchers and housing providers.

1. Introduction

Demand has exceeded the supply of new housing in Aotearoa New Zealand for more than a decade, resulting in a shortfall that is currently estimated at between 40,000 and 70,000 homes [1, 2]. This has created a housing crisis of sorts, which has manifested in several key aspects across society, including in long waiting lists with social housing providers, increasing lack of housing affordability and in people living in poor conditions due to a lack of incentive to redevelop older housing stock. Even poor housing is snapped up in the current buoyant market.

Responding to this, central and local governments have each taken steps to enable more housing to be built in the most impacted areas of the country. The National Policy Statement on Urban Development, launched in 2020, promotes increased residential densities in urban centres and directed local governments to ease restrictions on intensive forms of housing located along transport corridors [3]. More recently, the government has legislated to allow up to three residential units to be built as of right on any residential lot in the five cities where current housing needs are the greatest [4]. While some consider this legislation to have ridden roughshod over local government efforts to manage environmental quality through regulatory planning, it also reflects the urgency with which the problem is being addressed. Considerable effort then, has gone into stimulating the property development industry to increase housing supply in order to address the current housing crisis.

On the consumer side, government has taken steps to limit financial speculation, which has been identified as a key factor in the dramatic rise in the cost of housing and to assist first time homebuyers, who have been shut out of the market as prices have risen. These changes, which have been implemented over the past three to four years, have had some effect and construction of new housing in New Zealand is at an all-time high [5]. Nevertheless, the gap in meeting the housing needs for all New Zealanders has continued to grow.

Creation of new housing is largely dependent on the efforts of private developers, many of whom operate on a relatively small scale and approach this primarily as a business activity. Housing developed in this context is produced as a commodity, where the developer aims to build at a low enough cost and to sell at a high enough price to generate sufficient profit to make it worth their while [6]. This leads most developers to continue to work with housing products that have been known to sell successfully in the past. Consequently, housing continues to be produced according to models developed some time ago, when society and the population were less diverse than they are today [7, 8]. Particularly in a market dominated by high consumer demand, there is little incentive for developers to vary from previous examples. Demand for housing models popularised last century remains high, influenced at least in part by the fact there are few alternatives to choose between. Concerns about increased risk that a project would not sell appears to continue to disincentivise housing innovation.

From the middle of last century there has been some interest in higher density housing in New Zealand. However, the prevailing typology remains the stand alone dwelling, synonymous with the 'kiwi quarter acre dream'. It is generally accepted that, despite this, more and more people will be living in medium density housing in coming years. Indeed, Yeoman and Akehurst [9] found that only half of the people they interviewed would choose to live in a detached dwelling, even with the financial means to do so, whereas the other half would prefer to live in housing at a range of higher densities in central locations. Intensification within established urban areas can optimise use of existing infrastructures and stimulate development of new collective systems. It can also help preserve productive rural land and natural ecosystems. It would, in fact, be impossible to meet the current need for housing by simply continuing to build low density housing in peripheral areas of New Zealand cities. In light of the strong incentives to create more medium density housing, understanding people's perspectives and experiences around these forms is an important part of ensuring that, when delivered, such housing is well-liked [10].

Not only is New Zealand's population increasing in numbers, it is also becoming more diverse, through immigration and by the personal choices people make in an evolving social context. People's lifestyle preferences, their family sizes, their cultural backgrounds and socioeconomic circumstances all influence their specific housing needs. Housing needs and preferences are also understood to change over time [11]. It would be appropriate to ask whether the market can respond to the diverse circumstances in order that people´s housing needs and preferences can be met. As demand for housing has never been higher than it is today, the current research was motivated to understand people's preferences for medium density housing, a format that many stakeholders see as the key to addressing the shortfall in housing efficiently and sustainably.

2. Literature review

Housing studies that have previously been undertaken can be grouped into three categories; those that investigate housing choice (reasons for choosing), those that look at housing experience, and those interested in housing preferences. In an earlier review, Wildish [12] suggested that while housing choice relates to the real decisions and trade-offs that people make, housing preference has a more aspirational and long-term orientation. Conceptually, research on housing experience, including experiences of satisfaction and dissatisfaction, can be seen to occupy a middle ground between housing choice and housing preference. Similarly, in making their choices around where to live, people draw on their lived experiences. Experiences of satisfaction and dissatisfaction can help to refine people's preferences and may indicate how they will act in future housing decision-making.

Limitations in studies of housing choice (people's reasons for choosing to buy or rent their home) include the notion that choices will reflect people's (constrained) preferences at the time. Research participants may not clearly remember their decision-making processes, and their preferences may also have changed during intervening periods. Nevertheless, it is also interesting that in Dodge's study, which included questions related to both housing choice and constrained housing preferences, ratings of past priorities were found to be consistent with people's currently stated preferences [10]. This suggests that people's housing preferences remain relatively stable over time. An additional limitation of housing choice studies is that people are constrained by what is actually available on the market at the time they choose. Planning constraints in many cities can also make it difficult to determine what true consumer housing and travel preferences are, given that the housing formats that can be built may be limited [10]. Different approaches would be necessary if we are interested in exploring demand for a broader variety of housing options than currently exists, such as new forms of medium density housing [9].

Housing preferences have previously been explored using various research methods. Most of this work has looked at unconstrained preferences and so neglecting the influence of financial cost on people´s decision making [12, 13]. These studies have simply sought to illuminate preferences through direct questions, or by ranking various housing characteristics in a speculative manner. However, recently there has been more interest in looking at how people's preferences might be affected when their financial means are restricted. For example, Haarhoff, Beattie & Dupuis [14] stressed that unconstrained aspirations do not reflect real life conditions that people face when making housing choices and James and Saville-Smith [15] noted that housing demand involves not just a desire for a form of housing, but also a willingness and ability to pay for that housing.

Preferences given in constrained circumstances also enable the trade-offs that people are willing to make to be identified. One approach to studying constrained preferences was utilised by Ivory, Burton & Harding [16], who invited participants to select among different levels of quality in a set of housing characteristics, with different costs assigned to each level. Such an approach creates challenges around the costing of housing characteristics, given that they are disaggregated from the cost of the whole house. The study authors noted that establishing the most appropriate values for each feature and quality level proved to be challenging, given variability found in financial markets and the need to simplify the tool for easy comparisons by respondents and the researchers. While offering a greater degree of realism in comparison with research that solely considers unconstrained preferences, the approach is still experimental, insofar as it is based on hypothetical choice sets and preferences being explored. This can then lead to the potential that it disconnected further from people´s preferences that research looking at housing choice or housing experience [9].

3. Research methodology

The current study was designed to capture preferences held by Māori and non-Māori residents and non-residents of medium density housing for eight different housing characteristics. After reviewing the attributes and constraints of the methods utilised in other studies, a methodology based around interviews with people about their housing preferences was developed. The interviews were arranged in three parts, with each part emphasising one of the three focus areas identified through the literature: housing choice, housing experience (satisfaction) and housing preference. The third area was seen to hold the greatest potential to expand the forms of housing people have to choose from. Some earlier housing preference studies have also included discrete choice experiments, where participants have been asked to choose between hypothetical housing options [10, 16, 17]. Ivory, Burton & Harding [16] took a more complex approach where they created an exercise around five housing qualities, asking participants to choose between different standards in each of these categories with a constrained budget.

For the third part of our interviews, covering housing preferences, an approach similar to Ivory, Burton & Harding [16] was developed, although with greater complexity. We settled on the following housing and neighbourhood characteristics: unit size, housing typology, distance from city centre, distance from local amenities, outdoor space, orientation to the street, sunlight, and parking. Orientation to the street was included in order to represent visual and aural privacy. Visual and aural privacy, along

with the other chosen qualities, have been identified as being important in housing decision-making. Recognising that some studies have combined destination accessibility into a single variable, while others have separated them (closeness to shops and businesses, work, schools, the city centre etc.), we chose to include both distance to city centre, as a proxy for accessibility to work/study, and distance to local amenities as variables in the current study. Several other attributes were considered, with the final number limited to eight in order to keep the exercise manageable for the respondent and the interviewer.

3.1. Interview props

Two sets of cards were created, with three or four options for each of the eight neighbourhood and housing characteristics. The two sets of cards differed only with one set including a points value for the specific characteristic. The preference exercise was carried out twice with each participant during the interview; first using the set of cards without point values to explore participants' unconstrained preferences – their "dream home". Following discussion of their choices, a set of cards with the point values added was presented to challenge their earlier preferences in an environment constrained by cost.

Ivory, Burton & Harding [16] noted that participant decision-making must be reasonably grounded in order to validate the research findings. Dodge [10] and Holmes [17] included price as a variable, while Ivory, Burton & Harding [16] and Yeoman & Akehurst [9] went a step further, restricting participants' choices based on what they could afford given the financial information they had provided. We opted to restrict each participant to an identical limit of 70 points (representing a house purchase price of approximately NZD700,000).

Disaggregating housing qualities from the house as a whole made pricing these qualities a challenging task. Therefore, we consulted with two property valuers in the process of assigning values to each of the variables used in the constrained choice exercise. The valuations were tested by comparing costs against recent sales in several Wellington suburbs. Although values were assigned based on realistic costings, the decision was made to assign a points value rather than a dollar value for each of the variables. This was done for two main reasons. Firstly, interviewees included both renters and home owners, and in advance we considered the possibility that some renters would not be in a financial position to buy a house, so a way of representing both purchasing price and renting price of the housing variables was needed. Secondly, because financial information was not requested, it would be difficult to create a suitable constraint for participants in the manner earlier studies had done.

3.2. Participant recruitment

Dodge [10] noted that minority groups were underrepresented in previous studies of housing preferences and the current study was conceived to address this gap, with equal representation of Māori and Pākehā. In addition, while we have not sought to include a representative sample, we did aim to vary the demographic characteristics of participants to achieve diversity in the areas that were important for our analysis. Sixteen separate respondent types were identified around the four dimensions of ethnicity, gender, owner/non-owner and resident/non-resident of MDH. We chose to interview both residents and non-residents of medium density housing. We felt that this offered the opportunity for comparisons between residents of different typologies, based on a standard format interview (as opposed to basing such comparisons on studies with different methodologies). The experiences of both residents and non-residents of medium density housing are important for the future of medium density housing, insofar as medium density residents have valuable direct experience of this housing typology, and research with those not living in medium density housing can help us understand whether or not those who do not currently live in medium density housing would consider such housing, and what barriers exist to choosing medium density housing.

Recruitment of interview participants was conducted through social media platforms, including the Neighbourly website, and by placing hard copy advertisements on various noticeboards inviting interested parties to contact the researchers. A brief discussion was had with each, either by phone or email, to elicit their key demographic characteristics. Those that fitted with one of the still available demographic classifications were then invited to a more in-depth interview about their housing preferences and choices.
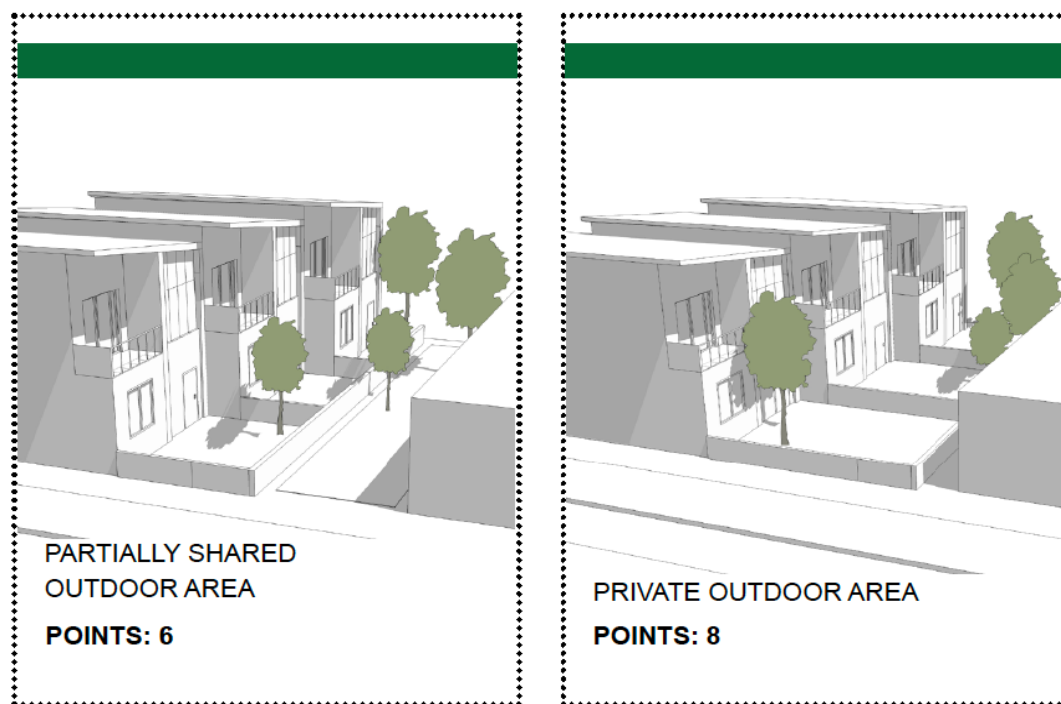
Figure 1: Example of cards used to prompt people's constrained preferences for eight housing characteristics.

4. Findings and discussion

Interviews, each lasting 50-60 minutes, were conducted with 15 respondents. We were unable to recruit a participant in the male/Māori/standalone dwelling/owner-occupier category, leaving just seven Māori participants. As noted, the housing preference exercise revealed first the characteristics that participants would find attractive should they choose to live in medium density housing and secondly, the characteristics they would be willing to compromise on with the imposition of financial constraints.

4.1. Key preferences

Across the 15, only three respondents selected a large unit size, even in unconstrained circumstances. The three that did select a large unit size were of Māori and Samoan heritage and each explained that their selections had to do with their family needs and desires. One currently had a family of four and the others, while single, suggested that they would from time to time want to host extended family and whanau. Of the other 12, two preferred a small dwelling size while the others opted for a medium sized dwelling. Size was one housing characteristic that participants were willing to re-evaluate in constrained circumstances. Across all 15 respondents, not one 'large' dwelling remained in the list once their preferences were constrained. Six respondents were willing to move from a medium sized unit down to small and even one of the large family participants was able to reduce from large to small. When this was interrogated during the interview, this person noted that the family hosting responsibilities may simply need to fall on others in the area, but he was willing to give away dwelling size in order to keep other amenities, particularly access to sunlight.

There were also strong preferences for standalone dwellings, with 11 participants preferring this typology. Only four participants, one of whom was an owner/occupier, and split evenly by gender and ethnicity (Māori/non-Māori), preferred a dwelling type that is more commonly associated with medium density housing, an apartment or attached unit. For a female participant, the attraction of the standalone had mainly to do with security and safety. She explained that she felt safer as a single woman living in

a standalone house where she could call on the neighbours if something were to arise. On further discussion it seemed that the sense of security derived from knowing the neighbours for a long time, rather than the dwelling typology itself. More objectively perhaps, the preference for standalone dwellings was seen, in combination with other expressed preferences, to reflect strong preferences for privacy and autonomy amongst the respondents. This could be read into several of the characteristics we investigated, including the relationship of the dwelling to the street, where only one person elected to locate her preferred dwelling along the street frontage, and outdoor area, where seven of the 15 preferred a large outdoor space. Indeed, seven respondents preferred the trifecta of a standalone house, with maximum size outdoor living area and offset relationship with the street. Another four people nominated two of these characteristics as their preferred dwelling, the standalone house and offset relationship with the street.

Through the interviews it became clear that being able to enjoy a sense of privacy was a key factor in the housing choices they made, in both unconstrained and constrained conditions. Several participants spoke of their desire for the ability to go outside and sit on the sundeck without having the feeling that others could look at them from their own spaces. Still others expressed the view that they would lose privacy simply by being closer to neighbours. One of these was a male participant, currently living in medium density housing, who said "….privacy, well you kind of lose privacy coming to these places, eh?". Some of our respondents were already living in attached and apartment dwellings and spoke about the transitions they had to make to living closer to neighbours. They identified a sense of being overlooked by neighbours living above them and by people walking along the street, with one acknowledging that she had not considered this aspect of living in MDH before moving there. While she was reconciled with the adjustments she had to make to her own expectations, she also noted that privacy would now be a stronger factor in her consideration of where to live in the future. However, these less than ideal privacy circumstances were not felt universally amongst participants living in medium density dwellings. One noted that the privacy in her apartment building was "pretty good" and that people passing by her apartment on their way to a communal area were generally not nosey or intrusive toward her.

Within the dwelling, it was also considered to be important for residents to be able to have own space and sense of tranquillity; whether that could be by shutting the door on the rest of the complex, by having a separate bedroom or wing of the unit in an intergenerational situation, or with a standalone dwelling. Noise and sound privacy were frequently mentioned. Each participant in this study raised the issue of sound interference during their interview, either because of experience with, or trepidation around, living in medium density housing. Several acknowledged the benefits of living in the urban settings that medium density housing is typically located in, but also wanted to be able to shut out accompanying noise so they could sleep when they wanted. Notions of unwanted sound, either experienced or anticipated, were described using clear examples but the interviews also led to a sense that people simply did not like knowing that there is someone through the adjacent wall or above or below them because this made them feel like they are not alone. While some participants actually liked knowing that there were other people around, others felt that it would be like sharing your space with someone else and that it wasn't very private.

Sunlight was another amenity valued by those we interviewed. In their unconstrained preferences, all but one chose 'good access to sunlight', while the other nominated that she would prefer moderate sunlight. When it came to revisiting their preferences in a constrained circumstance, only four people were willing to have access to sunlight reduced. This was the smallest number of people willing to change a single housing characteristic amongst the eight we included in the exercise. Many respondents made their selections in this category having had poor experiences previously of living in sunless or dark houses. Representative of these was a Māori woman, who owns the apartment she was living in, who stated that "knowing what I know now from living in my apartment block at the bottom of the back, good sunlight is important to me." Another Māori apartment dweller advised that "…you just can't compromise on sun. Especially not in an apartment." However, others were more pragmatic, recognising that sunlight access would naturally be reduced in contemporary medium density housing.

The only respondent willing to have less than good sunlight access – and left himself open to poor access in a constrained environment – noted that he could always go out of his dwelling to find sunlight. He was also willing to compromise on outdoor living space area, as he saw that his dwelling was only needed to keep his things in and to make meals. Consequently, he felt willing and able to conduct his life in the public realm. Overall though, his experiences and preferences were in the minority here, with other preferring to enjoy the sun in the privacy of their own dwellings.

Finally, car parking was, surprisingly, the most desirable housing characteristic amongst the group we spoke to. Thirteen people preferred covered, internal access car parking, with the other two opting for on-street and off-street arrangements. One male owner occupier of a medium density unit summed it up when he said that he "would never buy a place without covered parking." It was interesting to consider the strong preferences for car parking convenience even amongst those who did not seem to have a need to use their cars regularly, based on other selections. For example, only two of those wanting covered car parking could expect to use their cars daily for work because of their preferred distance to city centre and another two could expect to use their car to access local amenities because of their choices. Other available preference choices suggested that people could walk or use public transport to access these activities.

4.2. Implications for practice

Although the number of participants was small, and therefore difficult to confidently scale the findings beyond those we spoke to, the importance of several design characteristics became clearly evident. These characteristics are all influenced by the way the site is planned and individual units relate to each other more than they may be by the design and layout of individual dwellings. These findings confirm the important role site planning plays in the success of medium density housing developments.

Not unexpectedly, many of those we spoke to described their preferred homes as a place of refuge, expecting it to provide a place to sit in the sun and to feel private from others. Some had come to this expectation following previous poor experiences of privacy and sunlight access. The standalone house was considered to provide these features and yet this is a dwelling typology that is not closely associated with MDH in New Zealand. One of the challenges for practice then is to recreate the qualities of the stand-alone dwelling in a denser configuration. Compact suburbia layouts, where standalone dwellings occupy sites as small as 200m2 (up to 50du/h) could respond to this challenge. Similarly, zero lot line site layouts, where one or more walls of a dwelling are placed on the shared boundary, enabling the previously useless sideyard spaces to be aggregated. The key to success with both approaches is to positively design the spaces between dwellings, to ensure they are useful for residents and read effectively as open spaces.

Table 1: Key preferences identified through the research, along with possible implications for design

Preference	Possible MDH response
Privacy from neighbours & passers-by	Refine stand-alone typology for MDH, similar to 'compact suburbia' Zero lot line site planning Prioritise resident privacy in design Careful use of screening Careful attention to acoustic performance of walls and floors
Sense of individuality	Building details important / roof shape, porches, doors Make surfaces available for residents to customise
Good access to sunlight	Consider how structures within the site will shade others Challenges for privacy gradient when 'public' frontage faces onto street Sunny common areas aimed at offsetting lack of sun to individual units deemed inadequate
Car parking	Site location in close proximity to work, goods and services does not appear to diminish preferences for car and for parking within the site Design car parking areas for flexible use

5. Conclusions and further research

The current demand for housing in New Zealand presents a golden opportunity to create new housing that is shaped to accommodate the needs and preferences of an increasingly diverse population. Recent efforts by central and local governments have made it easier to build housing at density in wider areas of the cities with the highest need for housing. Reports in popular and academic media have identified the need for, and potential benefits of, medium density housing. While the stand-alone dwelling remains the most popular residential type, in the year ended March 2022 the number of multi-unit dwellings in New Zealand was equal to the number of stand-alone houses. Production of medium density housing has increased in response to current and backlogged demand nationwide, and particularly in the country's largest cities. It is also important that this housing achieves the social, economic and environmental opportunities that come with living closer to one another and it is therefore timely to ask whether the design and layout of MDH is meeting the preferences of those who may choose to live there. This paper has reported on one aspect of the answer, namely to articulate what these preferences are.

Interviews were conducted with 15 people, each representing a specific demographic type taken along the four dimensions of Māori-non-Māori ethnicity, gender, owner-renter, and experienced-not experienced with medium density housing. The interviews were conducted in three parts; firstly to gain understanding of the participant's previous housing choice, and secondly to discuss their housing experiences. The third part of the interview, to examine housing preferences, took place in the context of a preference scoring activity. The activity invited people to select their preferred option in each of eight housing characteristics. They were then asked to modify their selections in response to a constraint, meant to represent a financial limit. The exercise helped identify the most important design attributes as well as those less important, as determined by willingness to compromise. The exercise was in itself useful, enabling some analysis by the authors but equally important was the discussion around the housing preference exercise.

The discussions were wide ranging, touching upon experiences around neighbourhood relations, effects of noise on liveability and preferences for open space and access to local shops and services. In the space limited by the required length of this paper, we have discussed several of the most important and most interesting housing preferences. With strong preferences, primarily in an unconstrained

setting, for standalone dwellings, the challenge for housing providers would be to recreate the sense of separation, leading to individual identity and sense of privacy for the residents, in order to attract more people into MDH as well as to respond to their specific preferences. We have speculated around two possible approaches, one being a compact suburbia approach and the other a zero lot-line site layout. The two approaches could work in tandem with the key to success being the quality of the intermediate spaces. These spaces should enhance people's privacy and help meet their outdoor living needs.

The people we spoke to also expressed strong preferences for the ability to welcome the sun into their dwelling, and to a lesser extent, into their outdoor living areas. Medium density housing development should therefore be designed to ensure that each unit across the site can access sunlight, even in the depths of winter. This can challenge designers, where topography or adjacent development limits the amounts of sunlight that can reach the site. Efforts should be made to limit the extent to which entire dwellings face south or become shaded by other parts of the same development, these circumstances should be more manageable for the design team. Local government should also feel encouraged to consider sunlight access, and not only light, as part of building regulation.

Finally, people identified the importance they place on storing their motorcars, on site and covered. This was surprising, given that many had also nominated preferences for living close to their work/school and within walking distance to local services and shops. Storing cars, while important to residents, would also seem to be a low value use for the site. In response, practice could look to design car parking spaces to be multifunctional, perhaps providing outdoor recreation space when not required for the car.

It has also been suggested that the key to addressing these preferences, alongside otherwise good design practices, is the site planning and layout aspect. Spaces between buildings, whether to enable separation for identify and privacy, or to be used for outdoor activities by residents, need to have primary consideration. Perhaps even greater priority than the dwellings themselves. The spaces between or peripheral to the individual units may also need to be carefully designed to accommodate vehicle storage and manoeuvring. Clever and responsive design can add value for the benefit of residents to what would otherwise be largely dead space within a development site.

Further research is needed to extend the data collected in this project. The research team considers this to have been an effective pilot for a more extensive effort to speak to current and future residents of medium density housing. Research is also needed to analyse medium density dwelling and site layouts; an activity that could help identify shortcomings and innovations in design, considered in the context of the findings of the research into people's housing preferences.

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