Study Report SR379 [2017]

Medium-density housing supply and demand analysis

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ISSN: 1179-6197

Preface

New Zealanders increasingly are living in multi-unit dwellings rather than stand-alone houses. At present, about 29% of all new dwellings are multi-units. Most of these are low rise, below 3 storeys. This project contains forecasts of medium-density housing (MDH), which is a subset of multi-units and is further defined in the report. The ability of the industry to supply new volumes of MDH is also considered in the forecasts.

This project is one within the BRANZ programme of work on enabling the industry to provide MDH. The main findings are that new MDH supply is currently about 6,800 units per year, demand remains strong and is increasing. Despite supply constraints, growth in MDH units is expected to be about 5% per year for the next 9 years. About 48% of these new MDH units are expected to be in Auckland.

Acknowledgements

We would like to thank the numerous external and internal stakeholders who contributed to this study.

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Reference

Page, I. (2017). *Medium-density housing supply and demand analysis*. BRANZ Study Report SR379. Porirua, New Zealand: BRANZ Ltd.

Abstract

This report summarises the findings of research into the supply and demand for medium-density housing (MDH) in the New Zealand market. The principal types of MDH are illustrated. The drivers of demand are discussed and the capacity of the industry to provide MDH is outlined. The main findings are that MDH units are being built at a rate of about 6,800 per year. This number is expected to grow at about 5% per year through to 2025. By then, MDH will represent about 35% of all new dwellings.

The two main types of MDH units are light-framed units horizontally attached up to 3 storeys in height and concrete/steel-framed units vertically attached 3–6 storeys in height. The former is forecast at about 74% of new MDH and the latter about 26% of new MDH.

The supply side is constrained, especially in Auckland, by shortages of skilled labour, including site management, and council inspection services. Even so, the capacity to build new housing in Auckland is expected to expand by another 30% over the 3 years to December 2018.

Keywords

MDH, medium-density housing, housing supply, housing demand, affordability, multi-units

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Executive summary

Multi-unit dwellings are projected to be an increasing share of new dwelling construction. The main driver for this is the rising price of land, particularly in the main centres. This project is part of a programme of work on medium-density housing (MDH). The project sets out to provide forecasts of demand for new MDH and includes breakdowns by type and location.

The forecasts consider the industry's ability to supply new dwelling units. Due to capacity constraints, there is a backlog of unmet demand that is projected to be met over the next few years.

BRANZ (Bryson & Allen, 2017) has defined MDH as multi-unit dwellings below 7 storeys in height above ground level.

These are the main findings:

- Detached housing is the predominant new housing type, but multi-units have increased their share in recent years and are currently 29% of all dwelling units nationally. In Auckland, the percentage for multi-units is higher, at 43%.
- MDH is a subset of multi-units and, as defined above, makes up 23% of all new dwellings. The size of the new MDH market in 2017 is estimated at 6,800 units per year and is projected to grow at about 5% per annum over the next 9 years. By then, they would number about 10,400 per year and would represent 33% of all new dwellings. Auckland would then have about 51% of the New Zealand new MDH total.
- The two main categories of MDH are horizontally attached occupancies and vertically attached occupancies. The former is mainly flats and terraced housing of up to 3 storeys. The latter category includes some 3–4 storey terraced housing but predominantly apartments, which are defined as having ceiling/floors in common with other occupancies. They usually have walls in common as well.
- Horizontally attached units are projected to account for 73% of all MDH in 5 years' time, while vertically attached units are projected to account for 23%.
- Vertically attached units in the MDH group are 2–6 storeys and are built mainly of concrete and steel. Horizontally attached MDH (1–3 storeys) is almost all timber or light steel-framed construction.
- Flats and terraced housing are potentially a main first-home choice in the main centres. This is based on their relative affordability compared with apartments (vertically attached units), which are usually more expensive on a $\$/m^2$ basis.
- New dwelling numbers in Auckland are predicted to peak in 2021 at about 13,100 units. This 30% increase on current levels is a challenge for the industry. Sufficient skilled labour is expected to be available on site, but managers, designers and council inspectors may be hard put to meet this level of work.

1. Introduction

This project is part of the work programme at BRANZ on enabling the industry to deliver medium-density housing (MDH). The project provides estimates of the demand for MDH by type and region and some analysis of affordability. It also provides case studies, mainly from developers, of what types of household are in the market for MDH. Thus, it combines quantitative analysis with qualitative research on the perceptions of those in the industry.

There are two distinct aspects of housing supply: current supply and future supply. Current supply includes all available housing stock for purchase or rental, issues associated with the state of this stock and market forces affecting its procurement by potential renters, buyers and investors. Future supply includes all housing that is in the consent pipeline as well as that which could potentially be built as the result of the convergence of market forces and housing demand. Both sides of housing supply are considered in this report.

Housing demand results from a combination of housing needs and housing preferences. Housing needs largely can be determined by identifying demographic trends and projections and synthesising these alongside tenure trends and projections. In contrast, housing preferences are subjective and changeable, ultimately resulting in housing choices through a process of trade-offs. Housing preferences refer to the idea that the houses that people 'need' are not necessarily the houses that people choose. In this report, the part of demand that is presented relates to the quantifiable aspects of housing needs. This is rather than relating to the complete – and much more complex and unpredictable – picture of housing demand, which includes housing preferences.

The demand forecasts are modified by the industry capacity to supply, and hence the forecasts are effective supply. Supply capacity is analysed from a survey of building work put in place plus anecdotal reports, which indicate constraints on supply in most locations.

MDH is a common and established housing form in large international cities, in forms such as terraced housing and apartment buildings of up to 6 storeys. These types are common in Sydney and Vancouver, cities with which ours are often compared (Environmental Management Services, 2015). However, until recently, MDH types have not been common in New Zealand, where the detached house and garden on a 1,000 m^2 section has been the dominant housing form.

1.1 Literature review

MDH is not new to New Zealand. Examples can be found that were built in the late 19th century, and there are many blocks of flats and grouped houses that were built in the 1930s. This present study is the latest supply and demand research to be done that looks specifically at MDH in recent years.

Examination of previous studies dating from 2000 (Auckland Regional Council, 2003; Grimes, 2007; Grimes & Aitken, 2006a, 2006b; Grimes, Aitken, Mitchell & Smith, 2006; Harrison Grierson, 2008; Mead & McGregor, 2007; Ministry for the Environment, 2016; Murphy, 2016; Sharam, Bryant & Alves, 2015; Watson, 2013) show the circumstances that have created the need for this study. They describe both rising prices and the growth of MDH as an alternative to traditional housing options, two trends that go

hand in hand. Increasing difficulties with the supply of traditional stand-alone houses have added to the demand for attached types. At the same time, social changes – in the reducing size of households, particularly – have led to more people wanting alternatives to the 3-bedroom detached house on a large section in the suburbs.

The state of the market in the early years of this century, the background to this study, is revealed by Grimes and Aitken (2006b). The research found real construction costs had remained broadly stable since 1991 but land prices had increased dramatically. Between 1981 and 2004, the real price of vacant residential sections rose by 286% on average across New Zealand. The increase in Auckland City was almost 700%. Other areas were not exempt. In the Queenstown-Lakes region, where the growth of tourism and the influx of newcomers put pressure on the housing market, real house prices (adjusted for inflation) rose by 244%. Real prices in Rodney and Thames-Coromandel rose by around 200%. However, not all regions shared high land and house price increases. Ten territorial local authorities experienced real house price falls between 1981 and 2004, and four experienced real land price falls. Areas with negative or low real price rises were predominantly in rural North Island or southern South Island regions. By 2004, New Zealand had experienced an extended period of price rises, reflecting urbanisation, economic reform and global changes. Prices continued to rise in the following years and have yet to stop.

A report by the Department of the Prime Minister and Cabinet (2008) found that real house prices had increased by 80% since 2002. The report identified population growth, lower interest rates and increasing availability of credit as factors that boosted demand. The tax system had encouraged investors into housing, putting further pressure on prices. The report acknowledged that supply responses in the housing market tend to be slow since it takes time to turn undeveloped land into new houses or to subdivide land. Nevertheless, the construction industry built over 120,000 additional dwellings between 2001 and 2006. The report observed that rising prices contributed to lower home ownership rates and constrained the housing market choices available to a growing group of New Zealanders. By 2006, only 29% of renting couples and 2% of renting individuals could afford a lower-quartile price house in their region and pay a maximum of 30% of their income in mortgage repayments. A growing group that could not afford a mortgage on a house and would be ineligible for state housing assistance would need secure long-term tenure arrangements in the private rental market.

These nationwide studies indicated what was to come: an increasingly difficult housing market for many New Zealanders as prices continued to rise.

1.1.1 Auckland studies

Much of the research on prices, supply and demand has solely examined the Auckland region. Auckland is the largest single region of New Zealand and, arguably, has experienced the most dramatic changes in housing. However, nationwide studies continue to be an area that would benefit from additional attention from future supply and demand analyses.

Many of the studies considered in this report have been commissioned by Auckland local authorities, principally Auckland Regional Council and, from 2010, its successor, Auckland Council.

A 2003 study by Auckland Regional Council observed that the stand-alone dwelling was by far the most common type in the Auckland region, accounting for 78% of

permanent private dwellings in 2001. This proportion had not changed since 1991 (Auckland Regional Council, 2003). The 3-bedroom house remained the most common type of home, despite growing numbers of very small and very large households. Both these ends of the scale were increasing faster than medium-sized households, reflecting more single people and more multi-generational households. The correlation between dwelling size and the size of the household was weak. Many households appeared to be living in dwellings that had more bedrooms than household members. Larger dwellings of 4 or more bedrooms were increasing at a faster rate than the 3-bedroom house. At the same time, smaller dwellings of 1 and 2 bedrooms were increasingly occupied by larger households. Conversely, larger dwellings increasingly were occupied by smaller households. This study indicates problems of overcrowding and of inequality. Large households were forced into housing types designed for the traditional nuclear family, while some small households enjoyed more room than they needed.

In 1999, Auckland Regional Council adopted the Auckland Regional Growth Strategy, which promoted nodal-based intensification in the form of terraced and apartment-type housing around transport hubs, town centres and along important corridors. A later study (Mead & McGregor, 2007, p. 1) found that, because of this strategy and market effects, the intensive housing segment grew rapidly over the 10 years to 2006. By this time, it represented 35% of the total urban housing market in the Auckland region and over 60% in Auckland city. In this period, the character of intensification also shifted from infill housing being the main form to terraced housing on brownfield land to redevelopment of established areas with mid-rise to high-rise apartments. MDH effectively became an instrument of housing policy – a means of achieving intensification and avoiding further outward growth of the city (Mead & McGregor, 2007).

A 2007 paper by Grimes summarised and synthesised results from several studies dealing with the impacts of land availability, housing supply and associated planning infrastructure on New Zealand house prices (Grimes, 2007). Grimes found that restrictions on land supply around Auckland – partially a result of that city's planning infrastructure – were instrumental in raising land costs. The consenting processes in Auckland also limited supply responsiveness. Across New Zealand, regions with high supply responsiveness were found to have relatively small price spikes following demand shocks.

Grimes et al. (2006) examined constraints to expansion of Auckland's housing supply. Since 2000, increased demand for housing outstripped increases in supply, resulting in major increases in land and house prices. Demand was increased by positive net immigration, higher incomes and higher employment, coupled with strong ability to borrow to finance property purchases. At the same time, a number of factors constrained supply, including the limited supply of land and delays in the consents process.

Policy also affected the supply of land for intensification. A 2008 study observed that land supply in the Auckland region was governed by the growth concept, a crucial element of the Auckland Regional Growth Strategy (Harrison Grierson, 2008). This was premised on the idea of a compact city form, with growth focused in and around centres and along transport corridors, limiting sprawl and protecting arable land at the peripheries. The city was constrained by the Metropolitan Urban Limit, which divided the region between urban and rural land uses, containing growth within its urban borders. This policy was intended to protect the rural edges of the Auckland region

from sprawl but also limited land supply. This created incentives for more efficient land use within Auckland's urban areas but also could lead to inefficient allocation of land, price increases and delay in the rate of release of residential land. A later discussion paper (Gray & Hill, 2010) found the Auckland Regional Growth Strategy appeared to have had little impact on the pattern or quality of urban development. Intensification had occurred but not in the right places or of sufficient magnitude to challenge the region's suburban housing culture.

Recent studies have noted increasing problems both in Auckland and in the rest of New Zealand. A paper by the Chief Economist of Auckland Council observed that the median house price in metropolitan Auckland was about 10 times greater than the median household income (Parker, 2015). Increases in prices had benefited a large number of owner-occupier households and landlords in Auckland but disadvantaged those who did not own their own property but who wanted to buy in Auckland. Parker considered the housing affordability problem to be driven by the market signalling the need to transform the housing stock to accommodate up to 1 million more people over the next 30 years. He suggested a number of supply and demand drivers.

The demand issues included:

- people buying land in the expectation of profit from Auckland's future success as a world-class city
- inelastic supply and high costs (because creating new homes is slow and expensive)
- natural population growth putting pressure on prices
- strong migration driven by a worldwide trend for people to move to major regional cities
- a tax system that allowed investors to pay less income tax when they invest in loss-making properties but pay no tax on capital gains.

Supply drivers included:

- planning constraints
- design requirements such as building height limits, minimum apartment sizes and floor to ceiling heights
- environmental performance requirements.

A paper for the Reserve Bank observed that low housing supply responsiveness can result in volatile house price inflation and increases in house prices that appear to be semi-permanent (Watson, 2013). Supply tends to be slow to respond to increased demand, particularly in Auckland, where population growth is strong and, as noted above, land supply is constrained by regulation. Expectations of continuing land scarcity and population pressures in Auckland may underpin expectations that Auckland house prices will continue rising in the future. However, Watson warned, rising house prices have a tendency to overshoot and then ultimately to reverse substantially. A change in the balance between population growth and new housing supply could lead to a significant and sustained fall in real house prices.

The emphasis of this research has been on house supply and prices, and it is from these studies that this update by BRANZ was developed.

1.2 Definitions of medium-density housing

For the purposes of this report, the definition of MDH is as follows:

- 6 storeys or fewer in height above ground level.
- No constraints on MDH land density or on the project size.
- MDH types included include duplexes, flats, attached townhouses, terraced housing and apartments.

Statistics New Zealand (2015) has three categories of multi-unit housing construction in its building consent series. All three fall partly or wholly into the MDH definition:

- Apartments – these have a floor/ceiling in common with any occupancy and may also have an inter-tenancy wall in common with an adjacent occupancy.
- Townhouses/flats/terraced housing – these have a wall in common with other occupancies but no adjacent vertical occupancy.
- Retirement villages – these are a mix of the other two categories. They have a mixture of apartments and flats/townhouses/terraced housing. They also include some detached houses, which that are not included in the MDH definition.

Forecasting is based on these categories with survey data providing a guide to the percentage of units in each category that are MDH.

Apartments of 6 storeys or fewer fall within the MDH definition, and about 60% of new apartments (in number of units) are within the definition, the rest being in high-rise buildings. Constructions of 3 storeys and below are typically built with light timber framing. Those of 4 storeys and above are typically built with concrete and/or steel framing with concrete floors, timber partitions and inter-tenancy walls. Some apartments, with a basement garage area below ground level, have 6 storeys above, and these are included in our definition of MDH. Similarly, 6-storey developments with commercial use at the ground level and apartments above are included.

Townhouses/flats and terraced housing are a varied group that includes every dwelling type that is not vertically attached to another occupancy. The distinction between them can be somewhat blurred. For the purposes of this report the following definitions are used:

- Townhouses are small attached 2-storey houses or duplex 2-storey houses.
- Flats are a row of single or 2-storey units. They have a continuous roof ridge line and commonly consist of two or more units.
- Terraced housing consists of a row of 2 or 3 storey units, consisting of 3 or more units per building. The roof lines are individual to each unit.

The walls separating tenancies of townhouses, flats and terraced housing are typically built of precast concrete partitions or double timber stud walls, with lightweight materials used for wall partitions and upper floors.

Retirement village building consents are usually a mixture of terraced housing or flats (estimated at 55%) and apartments (40%). There are also a small number of detached houses (5%) in these villages. Very few of the village apartments are over 6 storeys in height, so they mainly fall into the MDH category.

Examples of the MDH typologies are shown in Figure 1 to Figure 9. Figure 1 is a common type of layout for a retirement village where small units are adjacent in single

long rows of housing. Figure 2 consists of 8 units, described as studio apartments with some shared kitchen facilities.

Figure 3 shows semi-detached houses. Figure 4 and Figure 5 are 2-storey terraced housing with different arrangements for garaging, with rear facilities in the latter.

Figure 6 is 3-storey terraced housing with the common arrangement of the garage taking most of the ground floor. These MDH typologies use timber framing for the walls and floors and are horizontally attached using either a double stud wall or concrete panels.

Figure 7, Figure 8 and Figure 9 are apartments with both vertical and horizontal tenancies. Their main structural framing is concrete and steel, with concrete floors.

Figure 1. 1-storey flats.

Figure 2. 2-storey flats.

Figure 3. Semi-detached terraced housing.

Figure 4. 2-storey terraced MDH with garages.

Figure 5. 2-storey terraced or flats MDH (garages accessed at back).

Figure 6. 3-storey terraced MDH.

Figure 7. 4-storey MDH apartments (concrete/steel construction).

Figure 8. 5-storey building – ground floor commercial, 4 levels of apartments above.

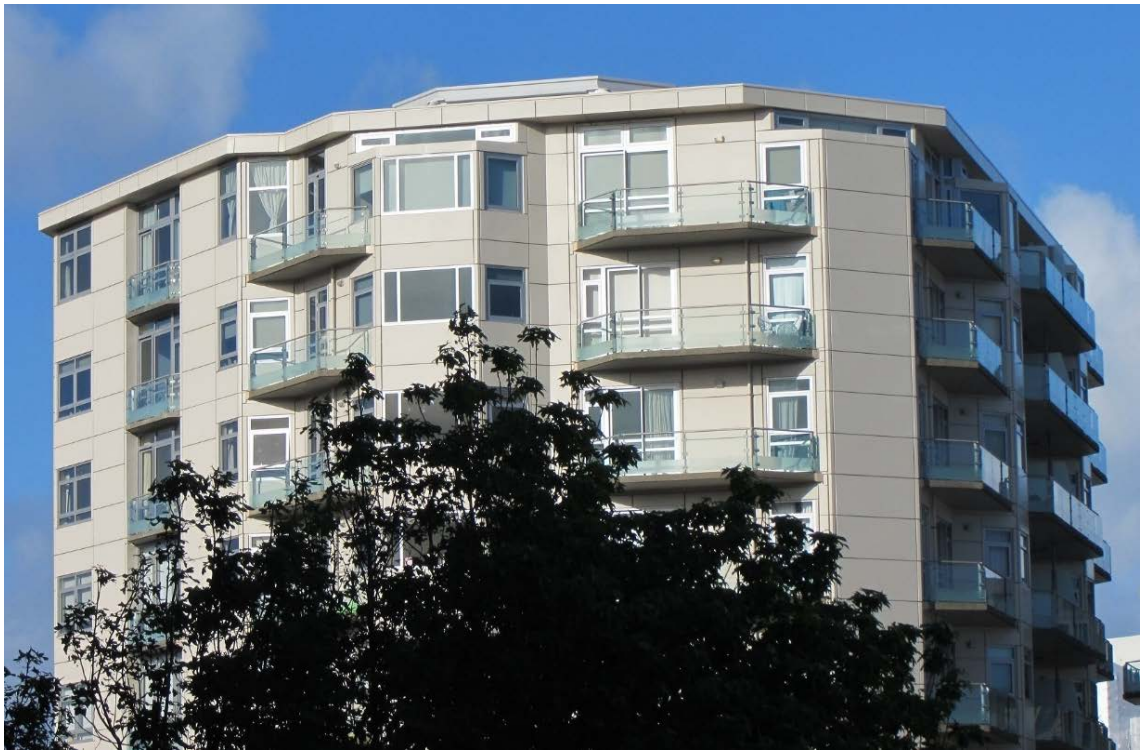


Figure 9. 6 -storey MDH apartment building.

2. MDH future supply forecasts

This section presents forecasts for new housing and MDH. They are based on the National Construction Pipeline (NCP) Report (MBIE, BRANZ & Pacifecon, 2016). A small upward adjustment in the new dwelling numbers was applied to the NCP forecasts to allow for subsequent higher than expected migration numbers. This adjustment is described further in Appendix A.2.

The NCP forecasts use household formation scenarios from Statistics New Zealand. A medium to high scenario was used. To this was added demolition replacements and demand for second homes (i.e. holiday homes, weekday apartments).

The forecasts are for number of new dwelling units for detached and multi-unit numbers by regional council out to 2021. The NCP forecasts of multi-unit are broken down into apartments, retirement villages and townhouses/flats/terraces – the categories Statistics New Zealand uses, as described above.

Table 1 contains the forecasts extended out to 2025. The table shows approximately 30,000 dwelling units nationally at the end of 2016, continuing to 34,500 in the following 3 years. Multi-units as a percentage increase through to 2025, reflecting housing intensification in the cities.

Table 1. National building consent forecasts for new housing.

Building consents for residential units												
Calendar year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	actual	<----------		----------->BRANZ forecasts based on MBIE forecast								
			Number of units									
Detached	18359	19038	21310	21904	22430	22909	22368	20246	19127	18642	17570	17100
Apartments	1721	2539	2307	2571	2848	3140	3305	3220	3270	3423	3462	3612
Retirement village units	1917	1899	1952	2120	2288	2457	2517	2386	2356	2397	2355	2387
Flats/townhse/terraces	2720	3656	4401	4905	5435	5994	6310	6148	6246	6538	6613	6902
	24717	27132	29970	31500	33000	34500	34500	32000	31000	31000	30000	30000
			Multi-units percentage share									
	26%	30%	29%	30%	32%	34%	35%	37%	38%	40%	41%	43%
			Multi-units breakdown %									
Apartments	27%	31%	27%	27%	27%	27%	27%	27%	28%	28%	28%	28%
Retirement village units	30%	23%	23%	22%	22%	21%	21%	20%	20%	19%	19%	19%
Flats/townhse/terraces	43%	45%	51%	51%	51%	52%	52%	52%	53%	53%	53%	54%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

The NCP forecasts take account of the industry capacity to supply, which is assumed to be capped at 13,000 dwelling units per year in Auckland. The logic of this cap is not discussed in the NCP report but is based on several factors, as follows:

- The previous peak in Auckland supply was 12,000 units per annum in 2004, some of which were office conversions. This level is taken as near the upper limit of capacity for the region.
- Discussion with several builders of detached and low-rise housing indicated they will struggle to expand significantly in the next 2–3 years due to skill shortages and some material constraints. Apartment builders are also under resource constraints in Auckland with the commercial building sector in an expansion phase (currently running at about 15% growth annually). These two segments compete for resources.

- Industry training organisations are under some pressure to train more young people for work in the industry. This takes time to achieve.
- Inward migration of industry skills continues, but it takes time for these workers to adjust to local Building Code requirements. Councils in the main centres are finding difficulty in obtaining trained inspectors, both locally and from overseas.
- Building firm owners are wary of boom-bust cycles, which have occurred in the past. They prefer steady workloads extended over several years rather than boom times for a 1–2 year period. Their preference is to not expand their business significantly over a short period, even assuming extra resource is available.

For these reasons, the ability and wishes of the industry to respond to unmet demand is limited, and actual supply of some new housing demand is deferred. The level of unsatisfied demand is estimated at about 32,000 dwellings units nationally by mid-2018. The forecasts allow for this backlog to be met over several years.

The forecasts in Table 1 average about 31,900 new dwelling units per year to 2025. This includes about 26,000 units per year in underlying demographic demand after mid-2018 plus 5,900 units per year in catch up.

Detached housing is projected to decline in favour of multi-units, apartments and terraced housing. In Auckland, apartments up to 6 storeys are permitted on the fringe of the 10 metro centres and within the 33 town centres. This is set out in the finalised Unitary Plan (Auckland Council, 2016). The Unitary Plan is expected to encourage growth in new apartments. Retirement village units are projected to level out, after an upturn in recent years. The reasons for this are discussed in Appendix A.5. Flats/terraced housing enjoy good growth, driven by better affordability than other multi-unit types, due to lower construction costs.

MDH demand is a subset of the numbers in Table 1 and is shown in Table 2. Figures are derived by applying the percentages shown in Table 2 to the category numbers in Table 1.

Table 2. MDH forecasts.

Forecasts of MDH units by type													
Calendar year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	actual	<----------		----------> BRANZ forecasts								
Apartments	998	1473	1338	1474	1614	1759	1829	1760	1766	1826	1823	1878
Retirement village units	1438	1424	1523	1670	1820	1973	2041	1954	1948	2000	1984	2029
Flats/townhse/terraces	2339	3144	3961	4442	4951	5495	5819	5704	5829	6139	6246	6556
	4775	6041	6822	7586	8385	9227	9689	9418	9543	9965	10052	10463
Percentage of housing types that are MDH												
Apartments		58%	58%	57%	57%	56%	55%	55%	54%	53%	53%	52%
Retirement village units		75%	78%	79%	80%	80%	81%	82%	83%	83%	84%	85%
Flats/townhse/terraces		86%	90%	91%	91%	92%	92%	93%	93%	94%	94%	95%
All dwelling units		22%	23%	24%	25%	27%	28%	29%	31%	32%	34%	35%

Planning in the three main centres encourages apartment units in the CBD and the metro centres. About half the new units will be 6 storeys or fewer.

Retirement village complexes vary significantly from detached or semi-detached villas to flats, terraced housing and apartments. Quite low-density villages, outside our MDH definition, are common at present, particularly in semi-rural areas. However, more of these villages are being built in the suburbs of the main cities, and the percentage of these within the MDH definition is projected to rise.

In the flats/townhouses/terraced housing group, currently about 90% are in the MDH definition. The other 10% are detached townhouses, closely spaced. The proportion of townhouses in this group is expected to gradually decrease through to 2025.

In total, the MDH group has significant growth over the next 9 years, averaging 5% growth per year and up 53% on current construction starts by 2025, from 2016.

The regional forecasts for MDH consents are in Table 3, and the percentage shares are in Appendix A.2. The three main centres have most of the MDH units (about 76%).

Table 3. MDH consents regional forecasts.

Forecasts for MDH consents BRANZ forecasts										
Calendar year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Auckland Region	3144	3541	3964	4416	4695	4619	4737	5005	5108	5379
Waikato/BoP regions	893	1007	1130	1261	1342	1323	1359	1438	1469	1549
Wellington Region	477	542	612	687	736	730	754	802	824	874
Canterbury Region	1704	1818	1924	2023	2026	1873	1801	1779	1692	1655
Other regions	604	678	757	840	891	874	893	941	958	1006
TOTAL	6822	7586	8385	9227	9689	9418	9543	9965	10052	10463

Currently, Auckland has 33% of new dwelling unit consents and is projected to have 43% of the national total by 2025. For new MDH units, Auckland currently has 46% of the national total, and this is projected to increase to 51% by 2025 (Table 4).

Table 4. Auckland-only consents forecasts.

Auckland dwelling consents forecast										
Calendar year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
All dwelling units	10026	11057	11908	12788	13127	12491	12405	13120	13000	13000
Multiunits	4283	4786	5332	5913	6258	6130	6260	6798	6695	7022
MDH units	3144	3541	3964	4416	4695	4619	4737	5005	5108	5379

2.1 Types of MDH construction

This section provides a breakdown of MDH by horizontally and vertically attached units. As described earlier, the attachment refers to separate occupancies. Horizontally attached units often extend to 3 levels.

The reason for the distinction in this report between vertically and horizontally attached occupancies is that this affects the type of structure. Horizontally attached units are almost always constructed from light timber framing or light steel framing. They may have either concrete panel or double stud walls between occupancies. The methods of construction are similar to detached housing, and labour skills are readily transferable between the two. Vertically attached units often have concrete and structural steel framing with concrete floors for acoustic reasons, and this usually occurs at 3 storeys and above. The method of construction, and the firms doing this work, differ from traditional residential construction.

It is apparent from Table 5 that most new construction types are horizontally attached units, and these will be mainly light timber framing and light steel framing up to 3 storeys. However, the vertically attached sector is forecast to grow by 38% over the next 9 years.

Table 5. MDH construction types.

MDH by type of construction													
Calendar year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	actual	<----------		----------						-> BRANZ forecasts		
Vertically attached (1)	1501	1971	1871	2058	2251	2449	2543	2444	2448	2526	2517	2588
Horizontally attached (2)	3274	4070	4951	5527	6134	6777	7146	6974	7095	7439	7535	7875
	4775	6041	6822	7586	8385	9227	9689	9418	9543	9965	10052	10463
Retirement village units are assumed to be spread as follows:												
		Vertically attached				Horizontally attached			Total			
		35%				65%			100%			
(1) Vertically attached units are apartments plus a percentage of retirement village units as above.												
They are usually attached horizontally, as well as vertically, to other occupancies.												
(2) Horizontally attached units are flats/ terraced housing plus a percentage of retirement village units as above.												
They have the same occupancy on all levels up to 3 storeys and do not have attachment to other units vertically.												

2.2 Required labour to deliver future housing supply

The Ministry of Business, Innovation and Employment (MBIE) has produced forecasts of the future demand for building industry labour (MBIE, 2016). Their forecasts are based on the National Construction Pipeline Report (MBIE et al., 2016) forecasts of all work activity. Since that report has demand forecasts restricted by the industry's ability to supply, the skill demand forecasts are probably on the low side.

The forecasts allow for the age structure of the current workforce and make assumptions on retirement rates. The labour numbers in Table 6 are for all building and civil work, not just MDH. Table 6 indicates quite modest growth rates in overall demand for the skills listed. Carpenter demand growth rates are quite low and reflect the dwelling activity forecasts, which are for a peak in work in 2018 and then a slight decline. The other skills shown in the table are more intensively used in non-residential work than residential, and the workload forecasts for those sectors are for continuing growth to 2021.

Table 6. Demand for skills for all building work.

Demand for skills MBIE forecasts												
	Number of persons											
	Auckland	incr to	Waikato	incr to	Wellngtn	incr to	Canterby	incr to	Rest	incr to	All NZ	incr to
	at 2015	2021	/BOP	2021	at 2015	2021	at 2015	2021	of NZ	2021	at 2015	2021
			at 2015						at 2015			
Designers	2222	551	1123	90	560	52	1315	-244	1606	155	6827	605
Carpenters	3787	1296	1871	37	1513	145	3255	-954	3810	61	14236	584
Plumbers	3252	1232	1491	109	1167	149	1708	-400	2335	192	9953	1282
Electricians	5780	1866	2569	196	1669	207	2524	-375	4154	385	16696	2279
Bldg labourers	3437	206	1644	27	970	9	2478	-86	2924	132	11454	289
% annual growth in demand to 2021												
Designers		3.8%		1.3%		1.5%		-3.4%		1.5%		1.4%
Carpenters		5.0%		0.3%		1.5%		-5.6%		0.3%		0.7%
Plumbers		5.5%		1.2%		2.0%		-4.4%		1.3%		2.0%
Electricians		4.8%		1.2%		2.0%		-2.6%		1.5%		2.2%
Bldg labourers		4.2%		1.0%		1.6%		-3.7%		1.3%		1.3%

Source: MBIE (2016).

At present, about 29% of new dwellings are multi-units. This is projected to increase to 36% by 2021 (see Table 1), so the type of work within each skill group will alter

slightly. The amount of MDH also grows quite strongly at 5% per annum, so it is apparent labour will need to be diverted from other forms of buildings.

Workers will need to be better organised in their work, since they are likely to be doing their jobs on a larger scale than for detached housing. There will be more fixed deadlines and a need to coordinate better with other trades on the more confined sites of MDH construction.

Section 4.2 discusses the future planning for skills.

2.3 Affordability and MDH types

There are a variety of factors influencing demand for new housing. These include demographics, housing preferences, housing investment incentives and affordability. Migration and household formation are discussed in Appendix A.2. Housing as an investment is an obvious driver of demand but mainly has been directed at existing housing. Affordability is a major factor in housing ownership, affecting household formation rates and the type of housing likely to be built. This aspect is discussed below.

A simple measure of affordability for owner-occupiers is the new dwelling price to household income ratio. Traditionally, the affordable level is assumed to be around 3:1 for the average household, but a higher ratio may be affordable, depending on the amount of deposit. An alternative measure of affordability is that mortgage repayments should not exceed 40% of take-home household income.[1]

Table 7 shows these two measures for new housing by region. Three dwelling types are shown – detached houses, apartments and flats/terraced housing.

The price is based on average consent values with an adjustment for other costs (such as land, consultants, fees and charges, financing costs and the developer's profit). The adjustment is a multiplication factor of 1.8 for new detached houses, 3.0 for new apartment consent values and 2.0 for flats/terraced housing consent values. The case studies in Appendix B for typical selling prices in $/m^2 have been used to determine the multiplication factors.

The first panel in Table 7 is for actual consent values in the June 2016 year. It shows that, in all regions, all three housing types are unaffordable for the median household at average dwelling prices, using the price-to-income ratio as a measure of affordability.

The other measure in the top panel – percentage of after-tax income spent on repayments – indicates that new flats and terraced housing are affordable in all regions, while apartments are affordable only in Wellington.

The second panel uses the same-sized dwellings in all regions and the regional $/m^2 rate for June 2016. This reduces the dwelling costs in Auckland and the rest of New Zealand but increases them in the other two regions, when compared to the first panel. The annual repayments as a percentage of income changes accordingly but is not greatly different from the first panel. Flats and terraced housing are affordable in all regions, and the other dwelling types are generally not affordable.

[1] http://www.interest.co.nz/property/home-loan-affordability

Table 7. Income to price ratios for new dwellings.

Household income to price ratios								
		Selling price ($000) (1) June 2016						
Median HH Income		1.8	3.0	2.0	= factor up	Price:Income ratio		
	at Jun16 (2)	House	Apartmt	Flat/TH/Terrace		House	Apartmt	Flat/Terrace
Auckland	89600	767	1188	454		8.6	13.3	5.1
Wellington	93200	618	319	344		6.6	3.4	3.7
Canterbury	85800	673	813	484		7.8	9.5	5.6
Rest of NZ	78000	626	515	392		8.0	6.6	5.0
		Annual repayments (3) ($000)				% of after tax household income (4)		
Auckland		43.5	67.4	25.8		61%	94%	36%
Wellington		35.1	18.1	19.5		47%	24%	26%
Canterbury		38.2	46.1	27.5		56%	67%	40%
Rest of NZ		35.5	29.2	22.3		57%	47%	36%
		Standardised selling price ($000) (5)				Standard floor sizes are: sqm		
		House	Apartmt	Flat/TH/Terrace		House	Apartmt	Flat/TH/Terrace
Auckland		689	964	409		209	100	110
Wellington		702	455	383				
Canterbury		709	934	498				
Rest of NZ		650	463	369				
		Annual repayments (3) ($000)				% of household income		
Auckland		39.1	54.7	23.2		55%	76%	32%
Wellington		39.9	25.8	21.7		53%	35%	29%
Canterbury		40.2	53.0	28.3		59%	77%	41%
Rest of NZ		36.9	26.3	20.9		59%	42%	34%
(1) Factor up average consent values by 1.5 or 3 or 2 to allow for other costs of the developer.								
(2) From the www.interest.co.nz website, accessed on 16th August 2016.								
(3) Assume a 20% deposit and 5% mortgage rate for 25 years.								
(4) After tax income is		80%	of gross.					
(5) Standardised price uses the standard floor sizes (average of last 3 years in all regions), and June16 qtr								
	$ per sqm rate for each dwelling type and region.							

A reduction in dwelling size affects affordability. For example, a 30% reduction in June 2016 average house sizes (to around 140 m^2) is affordable in all regions. Halving the size of the Auckland and Canterbury apartments (to about 50 m^2) makes them affordable. Affordability also changes with a change in the amount of deposit.

The second affordability measure (repayments as a percentage of income) is considered a better measure for two reasons:

- Percentage of income spent on housing is a better measure, since it allows for changes in mortgage repayments, which change with interest rates. In the current period of low interest rates, the capital amount that is affordable has risen. The measure also ensures a significant proportion of income is available for other living costs.
- The price-to-income ratio benchmark of 3:1 was set in the 1970s and 1980s – a period of significantly higher mortgage interest rates. With current low mortgage rates, a higher price-to-income ratio is more appropriate as a measure.

Table 7 is a snapshot at mid-2016 of median incomes and average prices. There will be a range of affordability outcomes for different types of households buying different types of new MDH.

Interest rates are expected to rise, but not until 2018,[2] affecting affordability but only by a small amount, given current monetary policy and low inflation in the world economy. However, at over 6% per year, building costs[3] are rising faster than incomes. Since mid-2016, affordability would have declined.

[2] http://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Monetary%20policy%20statements/2017/mpsfeb17.pdf
[3] http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=d91a07a0-a13f-4983-9380-81f28e98fd3c

3. Current supply for multi-units and MDH

This section discusses stock numbers for MDH, recent trends in the supply of multi-units and MDH and some cost data. Further details are provided of multi-unit type and cost in Auckland, due to the concentration of new units there.

3.1 Stock numbers of multi-units and MDH

As stated earlier, multi-units are dwellings physically attached to at least one other dwelling unit. Their total numbers are estimated at approximately 312,000 in 2016 (see Table 8, and see Table 15 for the derivation of stock numbers). MDH is a subset of multi-units. Unfortunately, Statistics New Zealand does not record them as a separate category. Instead, BRANZ has estimated their number, deriving a total of 127,000 units at present. Multi-units are about 17% and MDH about 7% of the total stock of dwellings.

Table 8. Estimated stock numbers.

Multi-unit and MDH stock numbers At September 2016		
		As % of all stock
Estimated stock of multi-units at December 2016.	312,000	17%
Estimated stock of MDH at December 2016.	127,000	7%
Estimated total stock all dwellings	1,826,000	

Multi-units as a percentage of total stock by region, at Census time, were higher in Auckland and Wellington than the national average (see Figure 10). The shares are estimated to have increased by 1–2% in each region since then.

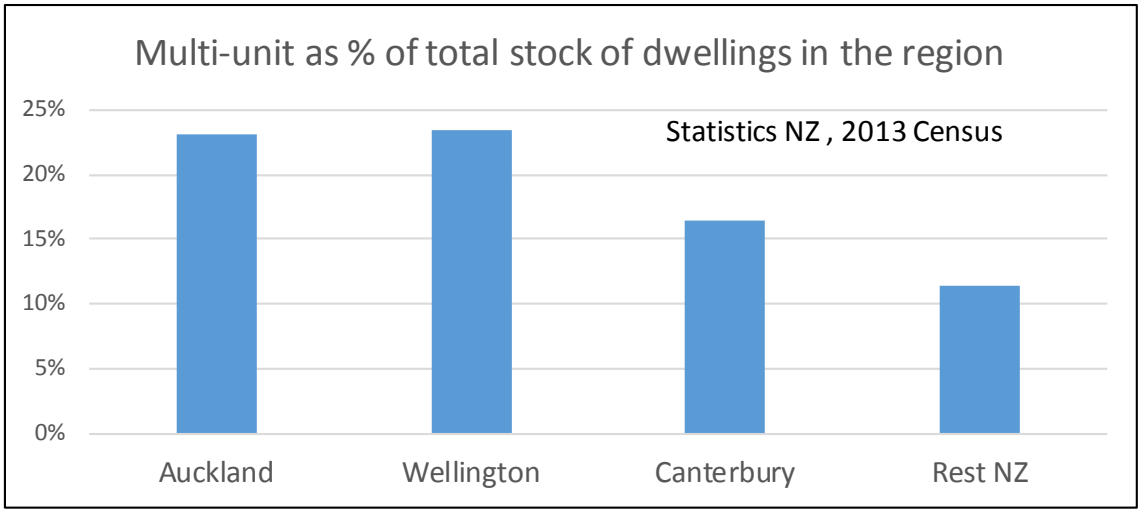


Figure 10. Multi-unit stock by selected regions.

3.2 Numbers of new multi-units

The supply of multi-units has increased markedly in recent years, and Figure 11 shows regional trends. The chart is of building consents, and as mentioned earlier, it is assumed the drop-out rate is low, at about 1%. Media reports have recently described quite high levels of cancellation of apartment projects in Auckland. However, most of

these have occurred before the building consent stage. Auckland and Canterbury have had strong growth. The latter has included earthquake reconstruction, which is now declining in volume.

The percentage of new dwellings that are multi-units is quite different to the total stock shares. Currently, about 29% of new housing is multi-units, while 17% of the total stock is multi-units.

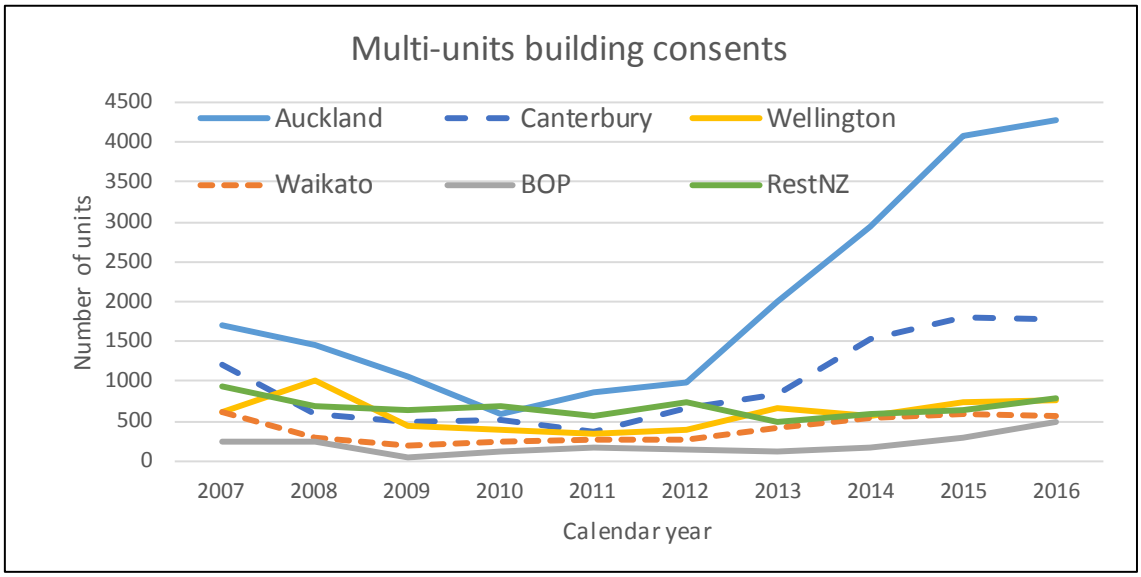


Figure 11. New multi-units for selected regions.

Multi-units now represent 43% and 38% of all new dwellings in Auckland and Wellington respectively. In Canterbury, multi-units are 30% of new dwellings. All other regions have lower percentages.

The trends in the different categories of multi-units as used by Statistics New Zealand are shown in Figure 12. Townhouses (TH), flats and terraced houses have had strong growth in the last 3 years and at present are a major source of new multi-units.

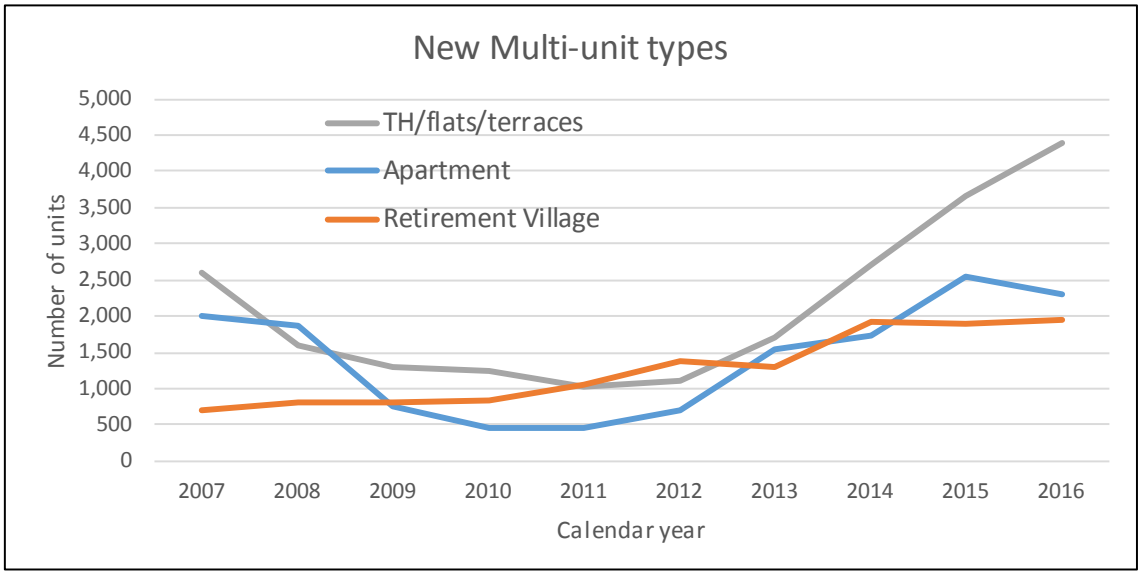


Figure 12. Types of multi-units.

3.3 Current types supplied of MDH

The Whats On[4] dataset contains a description of individual building consents from most councils in New Zealand, including all the major cities. The description and other data provided with the building consent enables a breakdown of new multi-units by number of storeys. This is used to ascertain what proportion of apartments are below 7 storeys and therefore in the MDH definition.

Storey-height distribution for recent building consents for MDH is shown in Figure 13. About 78% of current new MDH is 3 storeys or fewer, and most has timber framing.

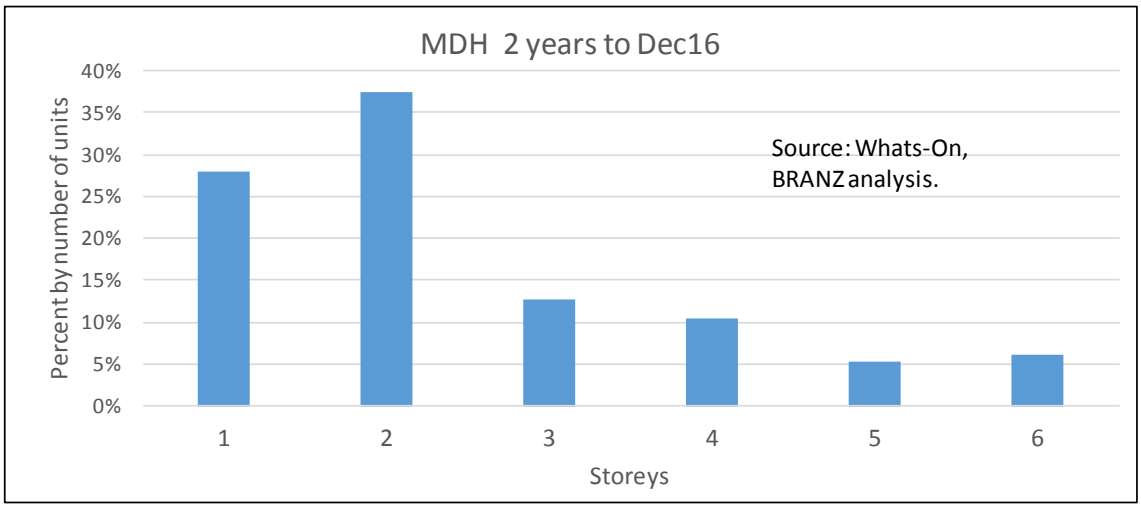


Figure 13. Storey distribution of MDH.

The storey distribution differs in Auckland from other regions (see Figure 14). There are larger shares in the 3–6-storey segment in Auckland than elsewhere, where construction is less intense. Note that, in the period shown, no 5–6-storey apartments outside Auckland were picked up in the Whats On dataset. It is possible that some were missed, as the dataset is known to not be a complete record.

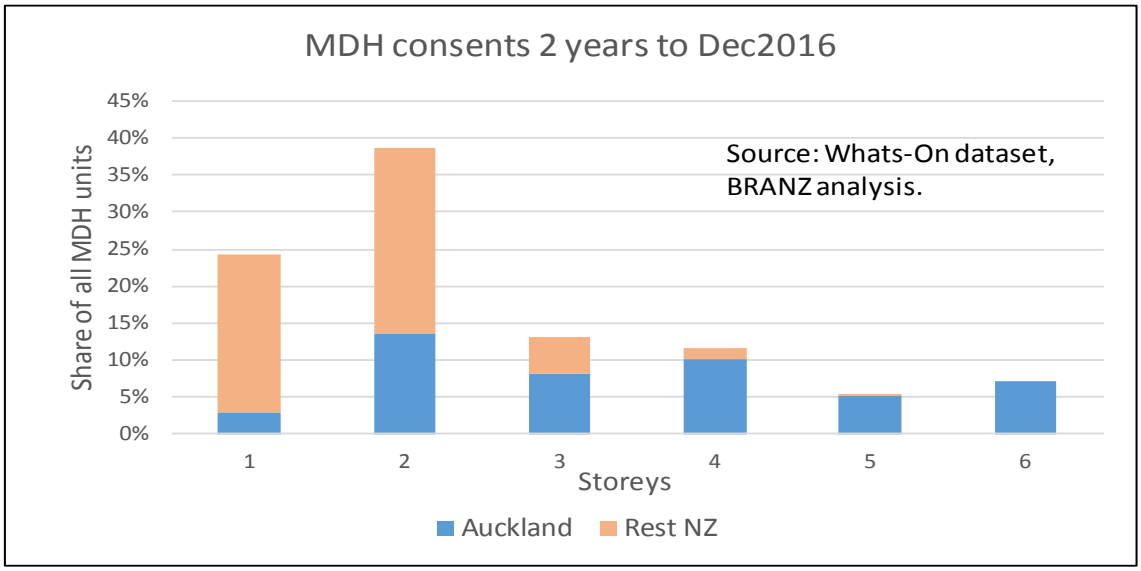


Figure 14. MDH storey distribution for Auckland and the rest of New Zealand.

[4] http://www.whatson.co.nz/

Figure 15 shows the current distribution of project size for terraced housing. A significant proportion are quite small projects (below 5 units per consent), and most are on staged projects. New flats/terraced housing is currently about 2,900 units per year nationally. This number will almost double over the next 9 years. The 1–5-unit projects (27% share of all terraced housing) are a good opportunity for small builders to scale up. Medium-sized builders have significant opportunity in the bigger projects of about 5 to 10 units, which have a current share of 30% of all terraced housing.

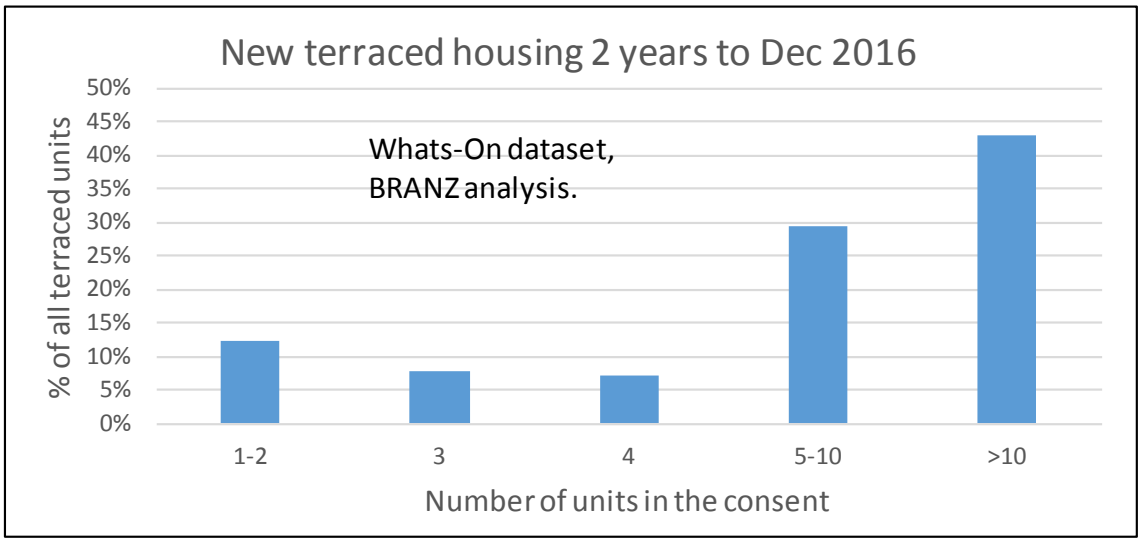


Figure 15. Terraced housing by consent size.

In contrast, the size of apartment projects is much larger (see Figure 16). The most common project size (by total number of units) is over 200 units.

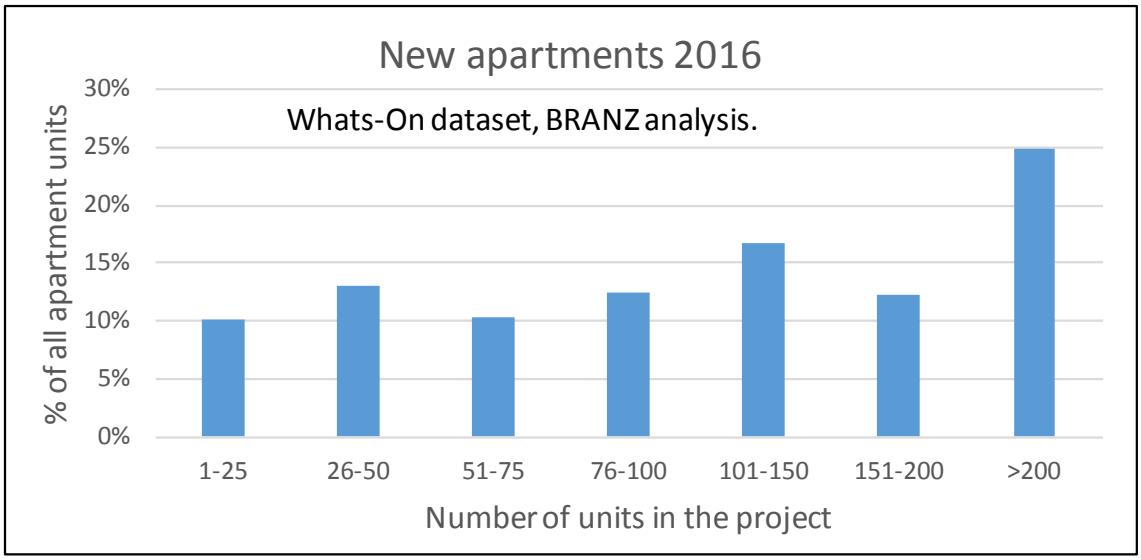


Figure 16. Apartments by project size.

A sizeable percentage of apartments are below 7 storeys (see Figure 17) and inside the MDH definition. All terraced housing projects are 3 storeys or fewer and are all within the MDH definition.

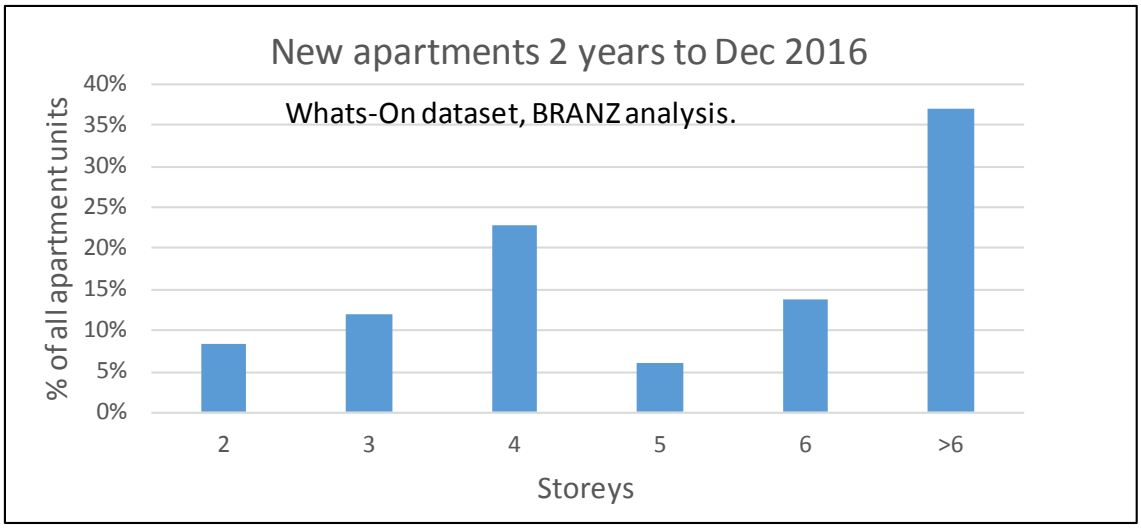


Figure 17. Apartments by storey height.

3.4 Construction cost of multi-units

This section reports on trends in new multi-unit build costs, as revealed by building consents. In Figure 18, the costs of the three main categories of multi-units are shown. Apartments include medium-rise to high-rise units and are mainly outside the MDH definition. The retirement village and the flat/townhouse/terraced units are mainly MDH units. Detached housing costs are also included for comparison. The charts are in dollars per square metre ($/m^2) of floor area and are not adjusted for inflation.

Figure 18 shows that costs of flats/terraced housing are the most consistent over time, rising by about 4% per year except for Canterbury, where the rise was about 6% per year.

Apartment cost rates have fluctuated most, particularly in Wellington. Apartments come in a variety of types from high-rise buildings with expensive fit-outs to 3–6-storey medium-quality units, hence their wide variation in costs. Costs in Auckland for apartments and retirement village units in the last year are higher than elsewhere and have greatly increased. Discussions with builders reveal that skill shortages, some material storages and a shift to higher quality are the main reasons for recent cost escalation. New flats/townhouses in Auckland are the cheapest option in $/m^2 terms.

The cost given on the building consent and the final cost to the new owner are quite different. Typically, for apartments, the building cost is about 33% of the cost of the unit to the new owner. The latter cost, additional to the build cost, includes land, consultants' fees, council fees and charges, developers' financial costs, marketing and sales costs and a profit margin. The latter can be quite large and depends on the state of the market (see Appendix B.2).

The picture for flats/townhouses and terraced houses is somewhat different. These buildings tend to be in the suburbs, and their construction cost is generally lower than for apartments. The selling price is typically twice the building cost but will vary depending on the size and quality of the project. The multiple is lower because planning, design, approvals and construction are generally quicker and cheaper than for apartments.

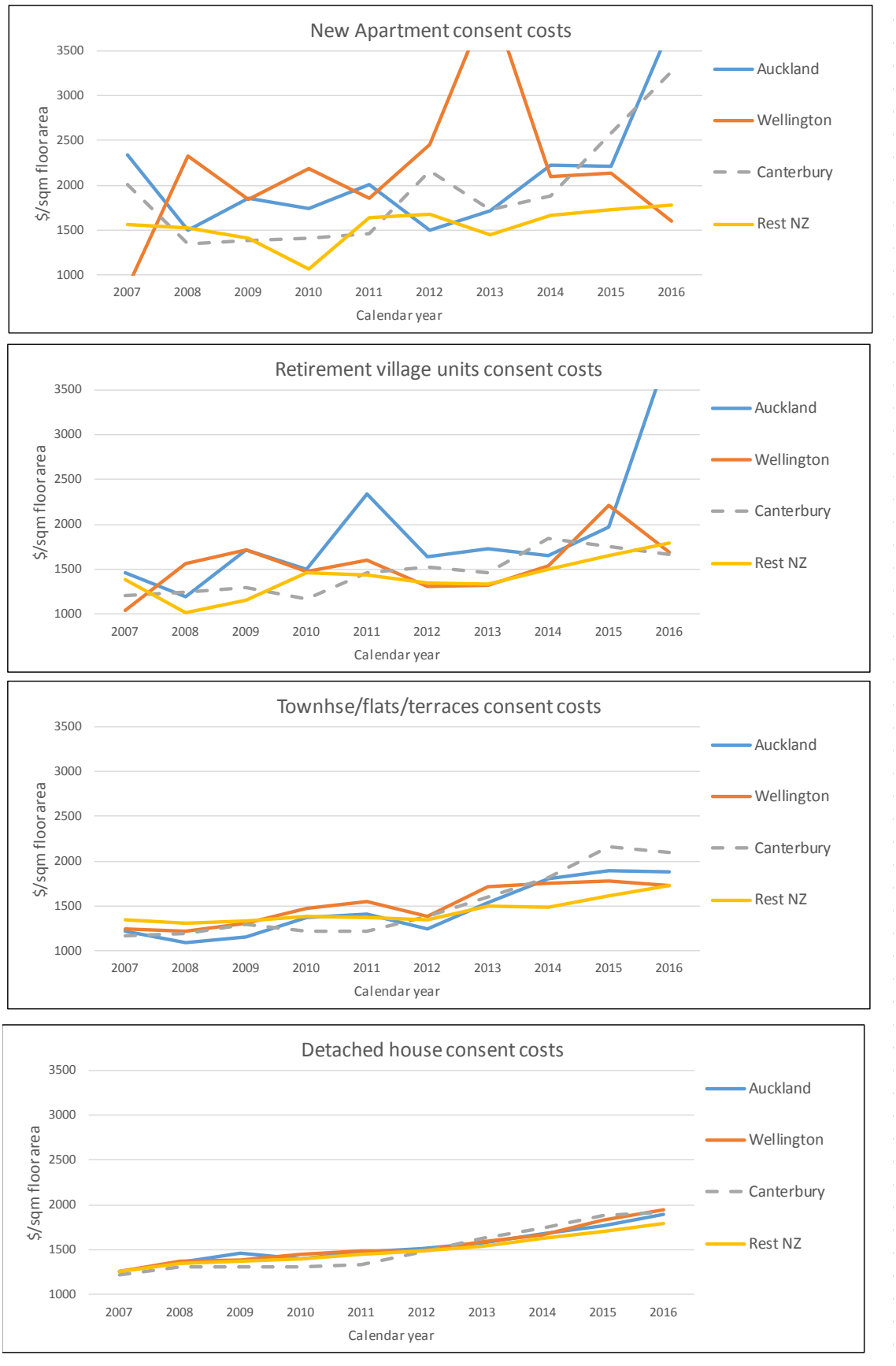


Figure 18. $/m² construction costs for multi-units.

Detached housing shows the least variation between regions, though recently, costs in the three main centres have risen faster than in the rest of New Zealand.

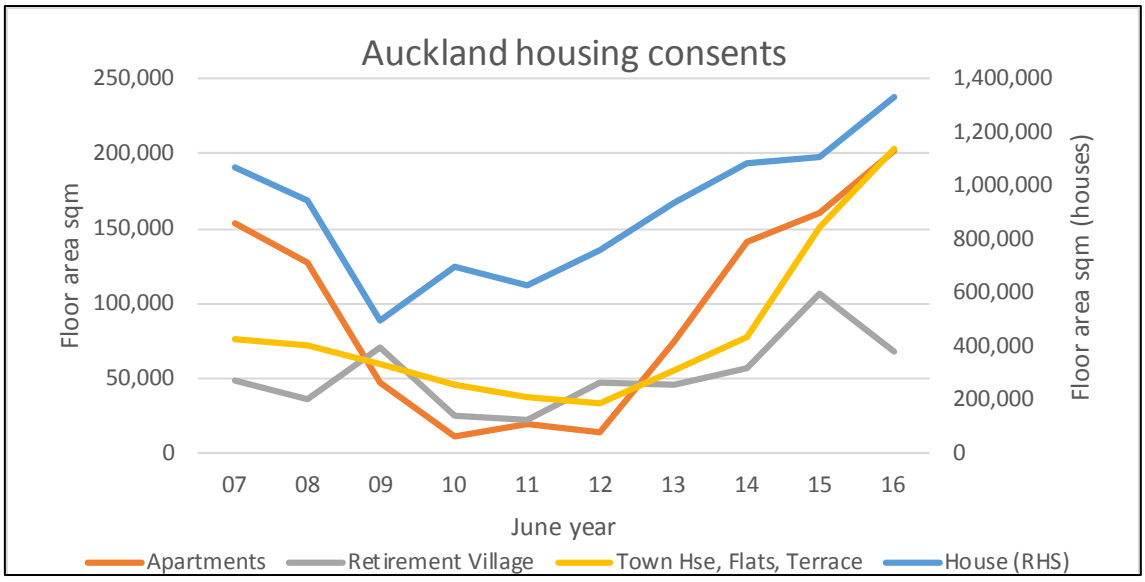
Flats/terraced housing and detached houses have similar costs, reflecting their common construction systems and many building firms constructing both types.

Retirement villages are a mixture of the other three categories, and their cost has varied over the years depending on the relative mix of categories.

3.5 Auckland multi-unit types

Building consent trends in the Auckland market were investigated, with an attempt to define quality categories, namely 'no frills' and 'lavish'.

Figure 19 presents Auckland consents for residential dwellings in square metres of floor area from 2007.



Source: Statistics New Zealand.

Figure 19. Auckland residential consents 2007–2016.

Consenting in Auckland suffered from the turmoil after the global financial crisis (GFC) but is showing strong recovery, arguably after strong net migration and house price growth, which started in 2013. Growth in all categories is strong.

Table 9 presents the quality analysis of MDH consents for the Auckland region from 2007.[5]

The $/m^2 build cost observed in the consents is used as a proxy for quality. To preserve simplicity, dwellings that exceed the average are said to be lavish, whereas those that fall beneath are determined to be no frills.

The same process is used to separate dwellings into large and small based on dwelling size.

[5] Build costs have been adjusted to mid-2016 $ equivalent values using the trend in per m^2 build cost for stand-alone dwellings as an adjustor to reflect cost and quality inflation over that period.

Table 9. Auckland consent subgroups 2007–2016.

Building type	Units	Size	Quality	Build cost (2016 $k adj.)	Build cost per m² (2016 $ adj.)	Unit size (m²)
MDH						
Apartments	212	Large	Lavish	$573	$2,531	226
Apartments	169	Large	No frills	$271	$1,225	221
Apartments	584	Small	Lavish	$223	$2,497	89
Apartments	1,343	Small	No frills	$100	$1,252	80
Retirement	128	Large	Lavish	$299	$1,762	170
Retirement	227	Small	Lavish	$203	$1,940	105
Retirement	259	Large	No frills	$184	$1,009	182
Retirement	154	Small	No frills	$138	$1,240	111
Terraced/flats	524	Large	Lavish	$454	$2,092	217
Terraced/flats	752	Large	No frills	$298	$1,415	211
Terraced/flats	826	Small	Lavish	$239	$2,164	110
Terraced/flats	1,023	Small	No frills	$184	$1,373	134
Detached						
House	4,806	Large	Lavish	$631	$2,053	307
House	6,912	Large	No frills	$441	$1,467	301
House	6,621	Small	Lavish	$339	$2,066	164
House	8,153	Small	No frills	$245	$1,448	169

Source: Whats On data[6] and BRANZ analysis.

Builders are targeting different segments of the market using size and quality (among other factors) as follows.

Cost spread

The combination of large/lavish produces the most expensive offerings compared to small/no frills, which is the most affordable offering. Note that the average large/lavish apartment is 5.7 times more expensive that the small/no frills offering, whereas for terraced housing, the large/lavish is only 2.5 times the small/no frills offering.

Affordable apartments

The small/no-frills apartment has dominated this market and has provided the most affordable option on offer across all segments – but they are small and not for everyone. By contrast, the high-quality version or the small/lavish apartment adds 200%+ to the build cost. More recently, the small/no-frills terraced/flats category in the outer suburbs has become cost competitive as the land cost for apartments (which are usually in the inner suburbs and CBD) has risen.

[6] Note that this section uses Whats On data and its descriptor field of work type. It is known that some consents are wrongly classified as apartments when they are flats and terraced housing. For example, in Table 9, some no-frills apartments are likely to be terraced housing as it is unlikely apartments could be built for the indicated price of about $1,250 per m².

4. Factors affecting the future supply of housing

This section looks at the factors affecting the future supply of housing and includes issues such as the availability of land, labour and materials and the role of builders, developers and financiers.

4.1 Land availability

The availability of land use for MDH is constrained by price and zoning. Councils aim to have land zoned for new housing to meet at least 5 years of demand. This includes both greenfield development and rezoning of developed land for housing use and increased density. MDH can be built on either land type but is more likely to be on redeveloped sites, which are more likely to be zoned for intensive housing than most greenfield sites.

4.1.1 Auckland Unitary Plan

The Unitary Plan, including the zoning maps, was passed by Auckland Council on 14 August 2016 (Auckland Council, 2016). The only change of significance to the recommendation of the independent hearings panel was the number of dwellings in mixed housing zones that can be built without resource consent. This was reduced from four to two.

Compared to the original plan, which the council first published in 2013, the zoning for residential intensification has increased markedly, and Single House Zones are reduced in number. However, limits on heights remain quite strict. The Single House Zone and Mixed Housing Suburban (MHS) Zone are limited to 2 storeys. The Mixed Housing Urban (MHU) Zone is limited to 3 storeys. Multi-units higher than 3 storeys are allowed in only 12% of residential-zoned land.

The Terrace Housing and Apartment Building (THAB) Zone has been extended in the final version and is mainly located around town centres and along major transport routes. It ranges in height from 4 storeys (14.5 m plus 1 m semi-basement parking) to 6 storeys (20.5 m) depending on the scale of the adjacent centre. (These are the 10 metro centres identified in the Unitary Plan.) Where 5–6 storeys are permitted, they scale down to 4 storeys at the edge of the metro zone.

The four main housing zones (with their capacity for additional units) are existing residential – THAB, MHU, MHS (146,000 dwelling units), Housing New Zealand (39,000), metro centres/mixed use (85,000) and rezoned urban (138,000) (see Figure 20). This provides sufficient sites to meet demand to 2041. The new urban zones are mainly greenfield areas that have been rezoned for housing. They are a mixture of Single House, MHS, MHU and THAB, but mainly low-density housing, i.e. Single House or MHS.

The required future supply of new dwellings to meet housing demand in Auckland is unknown, but a rough approximation is that it will be in proportion to the zoning capacity:

- A third in rezoned land with low-density housing (Single House and MHS).
- A quarter in metro centres/fringe CBD (THAB and higher storeys).
- A third in the existing suburbs with mixed housing and THAB.

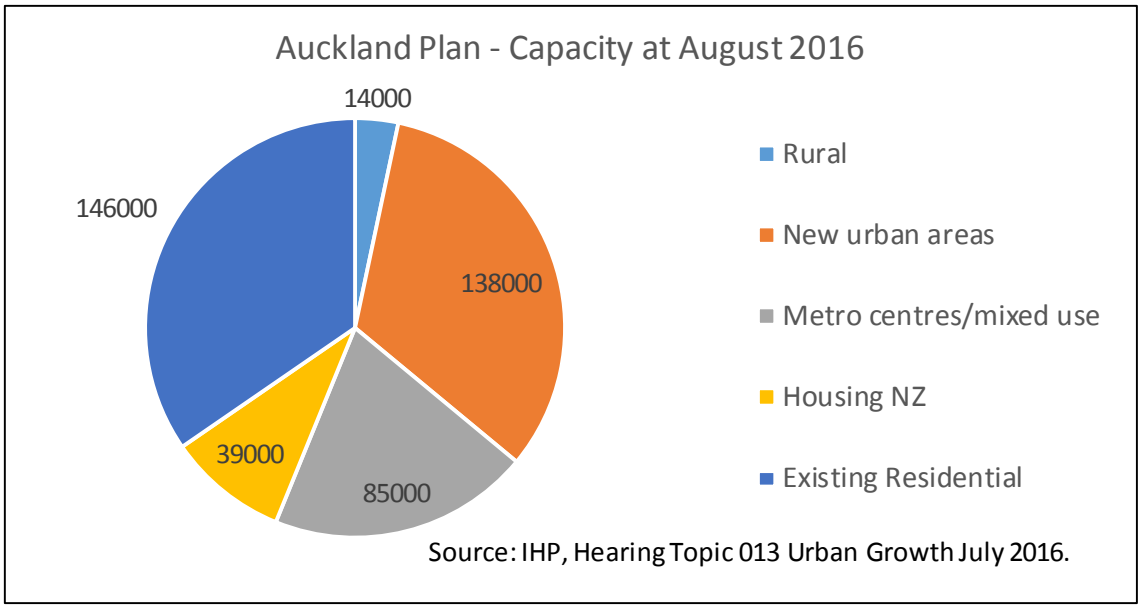


Figure 20. Auckland Unitary Plan redevelopment capacity for new housing.

4.1.2 Wellington District Plan

The Wellington City Council's response to the Productivity Commission's inquiry into using land for housing (Wellington City Council, 2014) stated that the District Plan has sufficient land zoned for:

- 20 years of greenfield supply
- 25 years of residential infill
- 60 years of high-density residential development in the central city area.

MDH was not mentioned in the submission but several areas are designated in the District Plan as medium-density residential areas. Most are not yet developed, and there appears to be sufficient capacity for new MDH for the next 10 years.

In its submission, Wellington City Council also provided data on demand for new housing between 2008 and 2012 (see Table 10). The data is a little old and indicates only about 23% of new housing was detached over the period, the rest being multi-unit. Assuming about half of the last two categories are MDH (using our definition), that represents about 320 new units a year. In Table 14, we are projecting about 540 units for the 2017 calendar year and a rising demand for MDH thereafter. Wellington City Council has targets for intensification, and the percentage breakdown in the table is in line with these targets. It is concluded that the District Plan encourages MDH and has sufficient land zoned for it over the next 10 years at least.

Table 10. New housing in Wellington city by type 2008–2012.

New housing types	Number of Dwellings	% of new dwellings
Greenfield	760	23%
Infill/medium density	1258	38%
Central city/Apartments	1269	39%
Total	3287	100%

Source: Wellington City Council (2014, p. 7).

4.1.3 Christchurch Plan

An independent hearings panel (IHP) reported on the draft revision to the District Plan in August 2016. The IHP said not enough land had been zoned for MDH, and the evidence suggested growing demand for smaller, more affordable housing in Christchurch. An earlier report (Scallan, 2014) estimated there was sufficient capacity to meet projected housing demand for intensification in the planning period 2016–2021.

A main concern of the IHP is that MDH-zoned land should be increased in Christchurch because of affordability considerations. This is now in progress with the Greater Christchurch Urban Development Strategy (update August 2016).[7] It sets out the planning strategy of the area for the next 35 years. The aim is to increase new housing intensification from 40% now to 55% by 2028. Intensification is defined as new housing on existing residential sites and includes infill and redevelopment. Much of this will be MDH, but some will be single-house infill, which is outside the MDH definition.

The 2010 and 2011 earthquakes in Christchurch had a significant effect on the types of new housing in subsequent years. Initially, much of the new construction was in the adjacent territorial authorities of Waimakariri and Selwyn, and almost all was detached housing. More recently, new housing in Christchurch has recovered, peaking in 2014. A large percentage, about 25%, is MDH. See Appendix A.7 for charts of the trends.

4.2 Labour requirements

The required skills include carpenters, bricklayers, concrete workers, roofers, plasterers, painters, plumbers and electricians. Some of these skills are in short supply, as reported by the industry, and modelling indicates growing demand for these skills.[8] The capacity to meet demand is limited. In Auckland, MBIE forecasts for value of work placed assume a cap on new housing capacity of 14,000 per annum in 2018. Even so, this is a 30% increase in current new housing starts and indicates the challenge for the industry.

Current shortages are reported for carpenters, formwork fabricators, steel fixers and structural steel erectors. Site managers are in short supply, and one company is actively recruiting in the UK, South Africa and Australia.

4.2.1 MBIE skills demand forecast

MBIE has produced forecasts of demand for various skills (MBIE, 2016) based on industry activity forecasts (MBIE et al., 2016). These are compared with Building and Construction Industry Training Organisation (BCITO) forecasts to identify potential shortfalls in labour that could affect the capacity of the construction sector to deliver adequate future supply.

4.2.2 BCITO supply planning

The BCITO has produced forecasts of demand for a variety of industry skills,[9] including carpenters, plasterers, tilers, floor finishers, concreters and others. These use forecasts of building and construction activity prepared by Infometrics. A summary is in Table 11

[7] http://www.greaterchristchurch.org.nz/strategy/
[8] http://www.stuff.co.nz/business/79124900/training-thousands-of-extra-apprentices-will-stretch-the-building-industry
[9] http://bcito.org.nz/employers-industry/wdp-2016/

with the MBIE forecasts included for comparison. For some trades, the expected growth for new entrants approaches 4% per annum. This allows for retirement replacements as well as for growth in new building activity.

Table 11. Industry employment demand forecasts.

Employment forecasts MBIE compared to BCITO For the period 2015 to 2020		
Trade group	Average growth rates % per annum	BCITO New entrants over 5 yrs as
	MBIE BCITO	% of trade employment in 2015.
Carpenters and Joiners	1.2% 3.7%	19.8%
Bricklayers and Stonemasons	1.6% 3.7%	19.6%
Concreters	2.3% 1.9%	9.6%
Floor Finishers	2.4% 2.9%	15.2%
Glaziers	2.6% 2.7%	14.4%
Insulation /Interior Systems	2.5% 3.7%	19.7%
Painting Trades Workers	1.5% 2.4%	12.8%
Plasterers	1.4% 3.7%	20.0%
Wall and Floor Tilers	2.7% 3.6%	19.5%

Generally, the BCITO forecasts of demand are higher than the MBIE forecasts. This is believed to be mainly due to the Infometrics forecasts for new housing being some 5,000 per year higher than the MBIE forecasts between 2018 and 2021. The definitions of the trade groups also differ slightly. For example, the BCITO definition of their carpentry group is much wider than for MBIE, since it includes site managers, labourers and building clerical staff.

The BCITO provides for new entrants mainly through apprenticeship schemes. The apprentices are given a structured programme of training, including attendance at block courses (run by BCITO) and regular visits on site from BCITO training advisors. The trainees are apprenticed to an experienced person and work under their supervision on a day-to-day basis. The training advisors (each responsible for about 90 apprentices) visit 3–4 times a year and ensure the apprentice is learning skills and is getting a variety of work. Normally, the visit is with the employer and the apprentice together, though the advisor may speak to each individually as well to the leading hand/LBP for the site.

What is the capability of the industry to supply the level of new skills required in Table 11? The BCITO provided data on the number of advisors, which has risen from approximately 80 in 2008 to about 130 in 2016. This is a growth rate of about 6% per year. The BCITO says advisors are reasonably easy to recruit – often older builders or people from related trades. The advisors undergo an induction period of a few weeks' training as well as periodic update training. With increasing rates of trade retirements, BCITO says the supply of potential advisors appears to be good, and further expansion in their numbers is likely. Assuming advisor recruitment continues at approximately the same rate, there will be sufficient advisors to meet the 3–4% p.a. growth in skills shown in Table 11.

Trade-qualified carpenters are thought to number about 14,000 at present. Apprenticeship completions in carpentry (level 4+) are currently well over 1,000 per year, so the growth in their numbers is over 7% per year, allowing for retirements. This covers the projected growth in demand shown in Table 11.

It is concluded there is sufficient training resource available to teach and supervise new entrants, assuming they are entering in sufficient numbers.

4.2.3 New-entrant supply

The next question is the supply of potential recruits into the industry. The three main sources are:

- young people going into apprenticeships
- migrants
- transfers of people from related industries.

Figure 21 shows BCITO trainee numbers between 2005 and 2015 from BCITO annual reports. BCITO had about 10,500 trainees in 2016. The chart indicates a lag between the peak in trainees and the peak in completions of about 3 years. It is deduced the large upturn in trainees from 2014 will start to appear as completions in 2017 and continue for the following 3 years at least. Due to strong labour demand, the completions may be delayed by high on-site workloads. However, the high level of trainees in the last 3 years indicates they are finding employment in the industry. This bodes well for an ongoing career in building and construction given the expected high level of demand through to 2025.

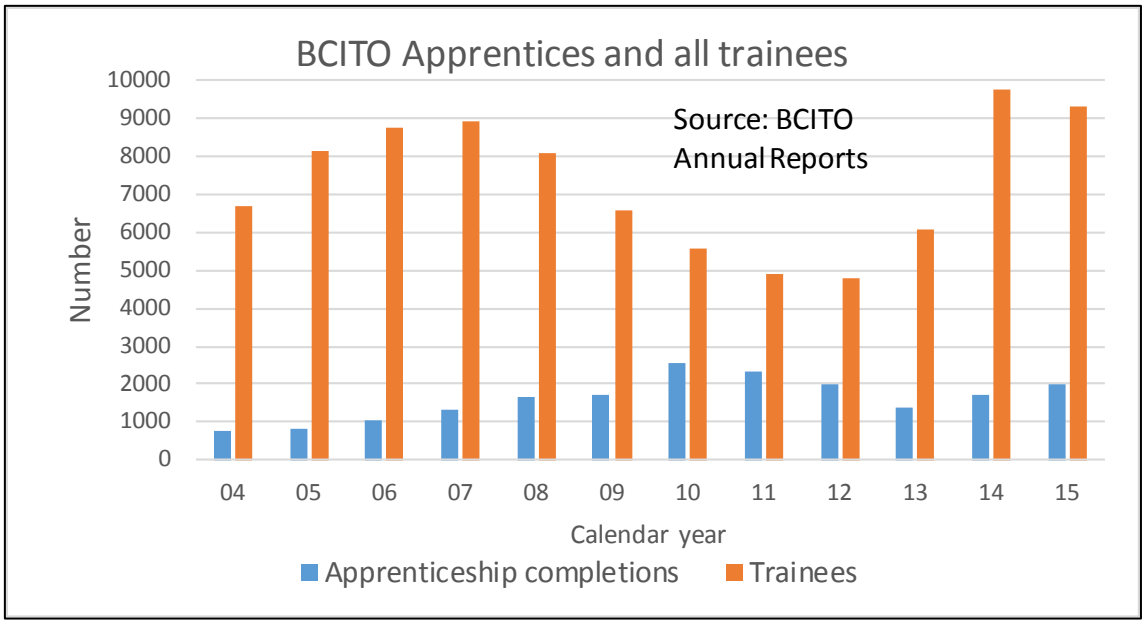


Figure 21. BCITO trainee numbers.

Looking ahead, the supply of potential apprenticeship recruits looks reasonable. Figure 22 shows the population age structure projected for 10 years. The numbers of potential industry recruits in the 16–25 age group are strong at present but slowly decline over the next 10 years. This decline is slight, but it indicates the industry will be in competition with other sectors for new entrants.

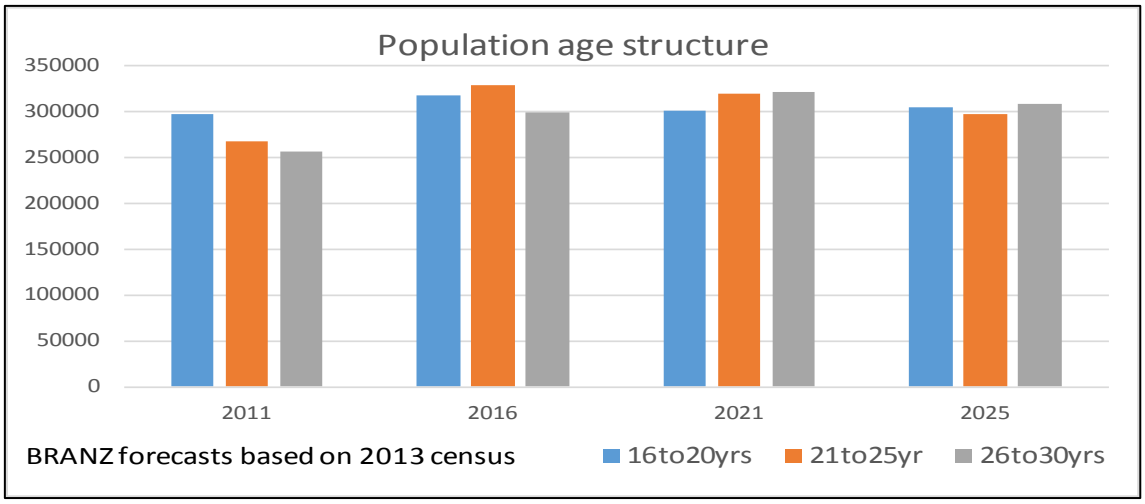


Figure 22. Potential recruits for the industry.

Another source of new entrants is migration. Recent trends for various trade groups, from Statistics New Zealand[10] are shown in Figure 23. The net flow was outwards during the industry downturn in 2011 and 2012 for all the trades shown on the chart. Since then, the net inflows have strengthened and continue to grow for most of those shown. Industry skill movements are sensitive to the strength of the Australian construction labour market. Residential workloads in Australia are expected to fall over the next 2 years, according to the Australian Construction Industry Forum.[11] Net migration inflows into New Zealand are expected to continue over the next 2 years.

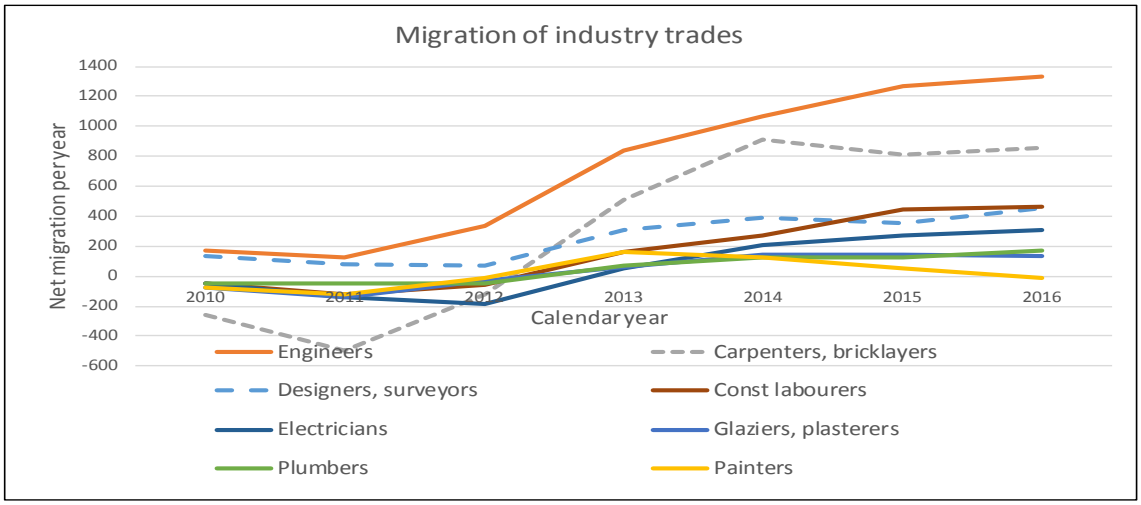


Figure 23. Industry skills migration.

People transferring between industries are difficult to monitor, and numbers can only be derived at Census time. Surveys in New Zealand for the major projects in the 1970s showed a significant proportion of the industry workforce came from other industries. Provision of accommodation and attractive wages appear to have ensured adequate skills on these projects. A similar approach in the provision of accommodation could possibly work in the Auckland market now, 50 years later.

[10] http://www.stats.govt.nz/infoshare/SelectVariables.aspx?pxID=83fb24b4-e753-4eca-aab6-f487dd4c19fb. Accessed 13 February 2017.
[11] https://www.acif.com.au/forecasts/forecasts. Accessed 13 February 2017.

4.2.4 Professional skills

The architectural and engineering schools in New Zealand are educating adequate numbers of students to meet future demand, including retirements. The Tertiary Education Commission Annual Report for 2015[12] recorded annual growth in engineering students at tertiary institutions (universities and polytechnics) was 4.4% per year in 2013 and 2014. Later data is not available, but tertiary technology funding increases for 2015 and 2016 were in line with these growth rates.

An issue has arisen with the capacity of territorial authority personnel to process consents and monitor work. These inspectors are in short supply, especially in Auckland.[13] It is understood Auckland Council is recruiting overseas, particularly in American states and Canadian provinces that have similar construction techniques to New Zealand.

4.3 Access to materials

The Auckland market has reported shortages and/or delays in obtaining some materials, particularly ready-mix concrete, concrete panels, aluminium windows and structural steel fabrications.[14] Ready-mix delays relate to high demand, shortages of delivery trucks and their drivers and because the sources of aggregate are more distant than in the past. Supply of other materials is not a problem, though there are believed to have been some price increases across the board due to high demand. Statistics New Zealand does not produce a building materials cost index, so we have used the property maintenance sub-index from the CPI. This includes maintenance services, as well as building material purchases, by households.

The sub-index is shown in Figure 24 and indicates approximately 3% inflation in material prices at present. A producer price index is also shown for inputs into building construction. This includes both materials and labour, so it is also not a pure materials price index. However, it too shows quite low inflation for overall inputs into new building construction.

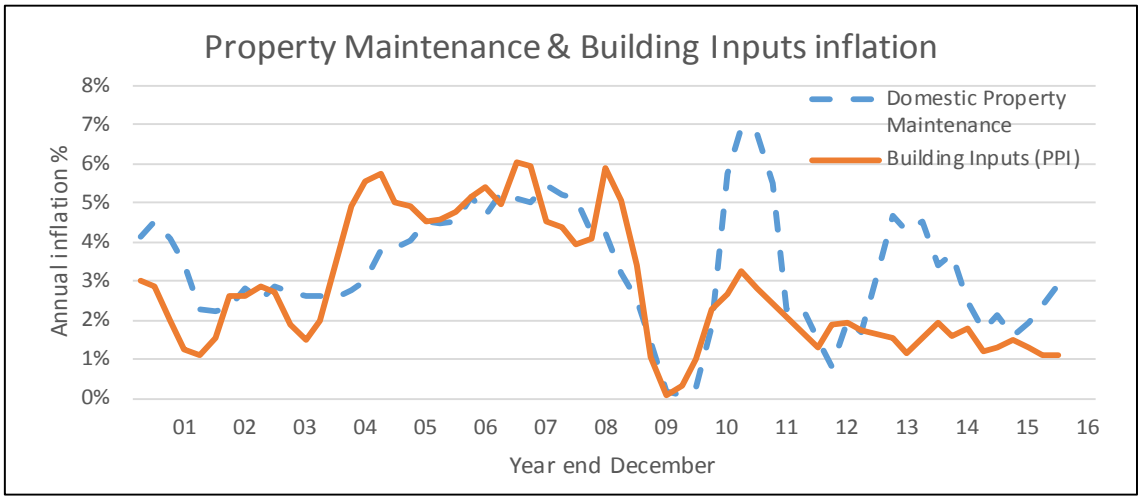


Figure 24. Price indexes for inputs into building work.

[12] http://www.tec.govt.nz/assets/Reports/TEC-annual-report-2015-16.pdf
[13] http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11702070
[14] http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11779499

Limited data on building material production is published by Statistics New Zealand. Figure 25 and Figure 26 show material volumes for ready-mix concrete and sawn timber. Concrete is at an all-time high, confirming the reported delays and shortages. The Auckland market is constrained by aggregate supplies rather than plant and truck delivery capacity. Residents near quarries have objected to expansion plans to meet Auckland's demand, and an Environment Court decision is awaited for the planned expansion of the Brookby Quarry in Manukau City. The Aggregate and Quarrying Association said councils and courts were too ready to shut down quarries or make it hard to open them where people live.[15] Sawn timber demand is high at present, equal to previous highs from the mid-2000s. There is potential to divert exports to local sales for sawn timber, so this material is not expected to be a constraint on further expansion in new housing.

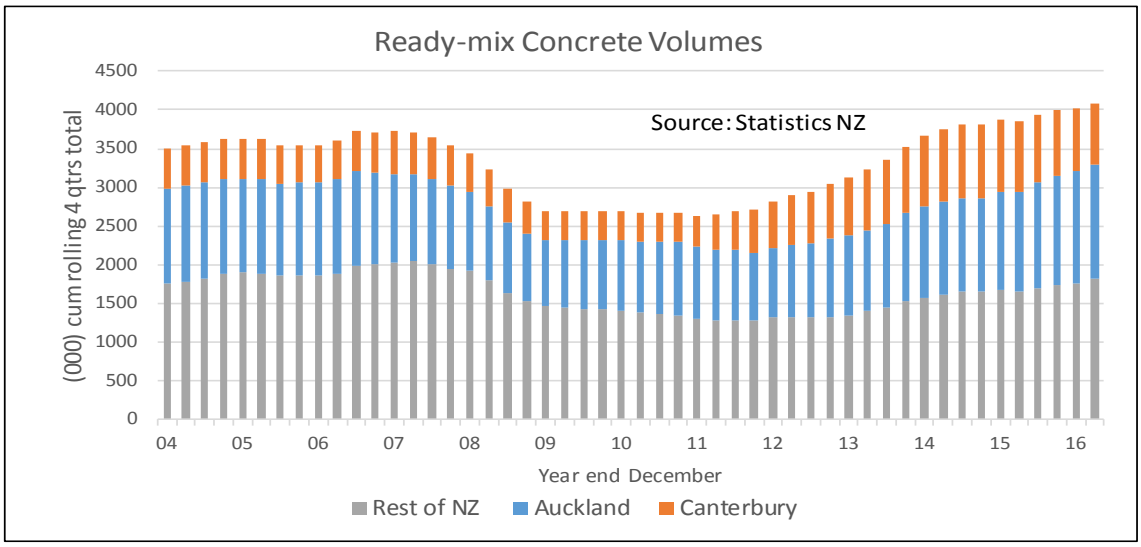


Figure 25. Ready-mix concrete volumes.

Figure 26. Sawn timber production.

[15] http://www.radionz.co.nz/news/national/324860/warning-over-moving-quarries-from-urban-areas

Supply is stretched for some materials, and the effect is two-fold. First, builders need to wait for delivery in many sites, and second, prices have risen for some products. The implications are that builders need to be well organised in their work programme and must order early. Also, where possible, they should fix the prices with their material and subcontractor suppliers. Most manufacturers can increase supply by running extra shifts, but this does increase cost. In the medium term, suppliers can source materials from overseas.

4.4 Financiers, developers and builders

The following sections are based on interviews with industry members involved in producing MDH. The purpose was to understand how demand for multi-units and MDH is viewed by industry and the constraints they face in supply. Several people were interviewed to get different points of view. However, even though a number were interviewed, they are not necessarily representative of the market as a whole.

The case studies are in Appendix B, and the main findings are as follows.

4.4.1 Developers doing MDH

Four MDH developers were interviewed to understand their history, experience and challenges with MDH. The aim was to understand what they are building and the impediments that exist for developing MDH.

Fringe CBD projects were selling for about \$11–12k/m^2 in mid-2016. These are developments up to 5–6 storeys, including basement parking. This is the expensive end for MDH, and the clients are mainly empty nesters[16] and 'dinkies'.[17]

The other main market is first-home buyers. In the inner suburbs, these are 3-level developments without lifts, selling for about \$10k/m^2. The quality is satisfactory, and developers tend to use the same designer, contractor and salespeople on projects. They are attempting to have an MDH template suitable for several sites to control costs.

Councils are improving their turnaround time, which is important for developers, especially on the city fringe and inner suburbs where there are large land costs. Dedicated council officers for these projects are smoothing the consenting process.

In the intensive residential zones of the inner suburbs and CBD fringe, the developers use commercial builders. This workforce is unfamiliar with the bespoke nature of small-scale residential, so they need to standardise layouts and fittings as far as possible.

Further out in the new suburbs, new housing is mainly done by the traditional residential builders. Terraced housing is common here, and prices are typically \$6–9k/m^2. There is also a lot of detached housing in the MDH category because of intensive use of land.

Large houses continue to be built, often on small sections (400 m^2 land area), sometimes for two or three generations in the same house. These are often immigrant families, and while the occupant density is quite high, these developments are usually outside the MDH definition.

[16] A term commonly used for home owners whose children have left home permanently.
[17] An abbreviation of 'double income, no kids' – an affluent childless couple.

Migrant developers operate in the outer suburbs of Auckland and are well resourced financially. However, they need help with consenting and technical issues.

4.4.2 Finance industry role in MDH

Bankers typically require close to 100% presales before they are prepared to fund new multi-unit developments. Even then, they fund only about 80% of a development.

The remaining funds (which are second-mortgage funding) come from private finance companies and merchant bankers. These are usually financed by groups of high-net-worth individuals rather than from the public, as occurred in the past.

The second-tier funding can range between $1 million and $20 million, and these firms are usually quite small operations.

Some merchant bankers will fund the whole project. Usually, this is with a developer they have worked with before, resource consents are held, consultants and contractors are in place, and some presales have occurred to confirm market acceptance.

Typical mortgage or funding interest rates are 7–8% from banks and between 10% and 25%, depending on the level of risk, from finance companies. The latter funding is drawn down towards the end of construction to finish off the fit-out and is usually for a short period. The effective interest rate for the whole project is much closer to 8% than to 25%, assuming progress and sales go to plan.

One of the large financier's aides selected novice developers on small projects ($1–3 million) by using the financier's expertise and advice. Their aim is to enable these borrowers to grow and undertake larger projects in the future.

More research into the effect of finance systems on delivery of MDH is required to comment further on the role of the finance industry in current supply issues and future supply projections.

4.4.3 Builders of MDH

Six builders were interviewed about their experiences with the two main types of MDH:

- Traditional timber-framed construction, up to 3 storeys.
- Concrete and steel construction, commonly 3–6-storey buildings.

Traditional residential builders are quite capable of doing 3-level terraced housing, although generally the value of work is larger than for detached housing. Above 3 levels and sometimes for 2–3-level buildings, it is commercial builders doing the work.

The builders of detached houses who have made the transition to building terraced housing (at 2–3-storeys) use timber framing, often with concrete panel party walls between different occupancies. It requires larger capitalisation than detached housing, as several units need to be completed and sold together.

Many commercial builders also have made the transition to terraced housing, but usually they prefer to build in concrete and steel at 3 levels and, in some cases, even on 2-level projects. This is because they struggle to get the many subtrades involved in timber-framed systems to adapt to the more rigorous coordination and timetabling inherent in commercial practices.

A main issue for the small builder thinking about scaling up is that they find the management demands can be larger than expected, and some businesses struggle to manage larger projects on constricted sites. Conversely, the commercial builder thinking about scaling down often finds that commercial construction techniques and materials are not always appropriate for smaller-scale construction. These projects need to have many units to get the scale economies inherent in commercial practices.

One case study participant suggested a minimum size of 50 MDH units per year to achieve significant cost savings using commercial techniques, and the company concerned had successfully achieved this on one site. Another case study builder said significant economies occur for projects with 50–100 units per year, extending over several years. This ensures the initial costs to achieve productivity gains (refined design, standardised components, establishing a permanent workforce) are spread over many units.

For these reasons, it seems likely that most construction of flats and terraced housing will be timber framed and done by labour experienced in detached-house building. Apartments of 3 storeys and above are likely to be built by commercial builders using concrete and steel structural framing systems.

All MDH builders are suffering from skilled labour shortages. These include carpenters and steel fixers. Some are bringing in temporary skills from overseas. More prefabrication is also being considered.

Precast concrete panels and beams have significant delays at present. Ready-mix concrete needs to ordered at least 4 weeks ahead due to high demand. Often this involves extra cost to ensure the construction is ready for the concrete pour.

4.5 Large companies building MDH

A list of the major construction companies doing MDH work is shown in Table 12. These were taken from the Whats On data over a period of about 18 months of building consents across New Zealand. The average project sizes vary a lot, from 2 units up to over 100 units per project. The small projects are where the work is being staged, and the developers are submitting consecutive consent approvals, all within the same development.

The large projects are usually one-offs and tend to be 3 storeys or more in size. The work is done by commercial contractors. For example, taking the largest projects from the table, McGuiness, Clearwater Construction, Hughes Construction, Foster Construction, Cook Bros and Watts & Hughes were all predominantly commercial and civil contractors. They are now doing large MDH projects, all at 3–6 levels (as well as high-rise projects outside the MDH definition). They are using commercial building techniques on these buildings. Fletcher Residential is predominantly a 1–2-storey detached-house builder, but it is now doing large-scale MDH using medium-rise construction methods borrowed from its commercial building arm.

Redican Allwood and Haydn & Rollett were once predominantly commercial and medium-rise apartment builders but now build a lot of terraced housing. Most traditional group home builders are shifting into MDH projects. Mike Greer Auckland, Universal Homes and G J Gardner are building terraced housing, often with concrete panel inter-tenancy walls. Others such as Mike Greer Homes, Horncastle, Signature Homes and Classic Builders are still building traditional housing but closely spaced or semi-detached on small land areas.

One retirement village company has its own construction company, Ryman Construction, which appears to concentrate on low-rise housing rather than the medium-rise buildings on some of its sites.

Table 12. Major MDH builders.

Largest MDH contractors between April 2015 and August 2016 Source: Whats-On dataset				
	# units	# projects	Average # units/project	Average storeys/project
McGuinness Bldg Contractors	315	2	158	4.0
Ryman Construction	172	29	6	1.9
Clearwater Construction Ltd	107	1	107	4.0
Fletcher Residential Ltd	100	3	33	3.3
Argon Construction Ltd	98	3	33	1.7
Mike Greer Homes	79	24	3	1.3
Yeoman Construction Ltd	79	14	6	1.9
Hughes Construction Ltd	76	2	38	4.0
Foster Construction Ltd	62	1	62	2.0
Tristar Construction Ltd	59	11	5	1.2
Thomas & Adamson Ltd *	58	7	8	1.9
Redican Allwood Ltd	55	4	14	2.8
Haydn & Rollett Ltd	54	6	9	2.8
Clapson Construction Ltd	52	9	6	1.4
Horncastle Homes Ltd	51	12	4	1.4
Mike Greer Homes Auckland Ltd	50	8	6	3.0
1Point618 Ltd *	48	5	10	2.0
Breen Construction Co Ltd	44	3	15	2.0
Livingstone Building	41	9	5	1.1
Signature Homes H/O	39	8	5	2.0
Classic Builders Ltd	38	11	3	1.0
JAL Developments	38	3	13	2.7
Cook Bros Construction	37	1	37	3.0
Universal Homes Ltd	36	6	6	2.0
Chelsea Construction	36	1	36	3.0
Parker Construction Ltd	34	17	2	1.0
Consortium Construction Ltd	34	6	6	1.5
Mike Greer Homes Ltd	34	8	4	1.5
Miles Construction Ltd	34	6	6	1.5
Ryman Healthcare Ltd *	33	6	6	1.5
Harvestfield Holdings Ltd *	31	2	16	3.0
Classic Builders Auckland Ltd	28	18	2	1.2
Pragma Designer Homes	26	2	13	2.0
Morgan Project Services Pty Ltd **	25	6	4	1.3
Nicholls Group Projects Ltd **	25	4	6	1.5
Watts & Hughes Constn Co Ltd	22	1	22	4.0
G J Gardner Homes	20	2	10	1.0
Peak Construction	18	7	3	1.0
Hopper Construction Ltd	18	1	18	3.0
* These names are for the developers, not the contractors				
** Project Managers				

4.6 Construction delays as a measure of industry capacity

The building activity survey undertaken by Statistics New Zealand measures the value of work put in place.[18] Figure 27 shows results compared with building consent values. The two series differ mainly due to the lag between the time the consent is issued and when the work is done on site. Some of the difference between the two lines is due to cost escalation after the contract is signed.

Reading the chart horizontally, the consents lead the work placed, at the same value, by 3–6 months, i.e. there is a 3–6-month lag between the issuing of the consent and work on site. In downturns, the gap gets wider as the builder reduces overtime to keep labour employed. In an upturn, the demand is initially met by an increase in overtime and then by more employment, so the gap closes.

When the industry reaches full employment and there is no further resource to call on, we would expect to see the gap widen beyond 6 months. At present, this data shows no signs of this and no sign of an industry capacity constraint.

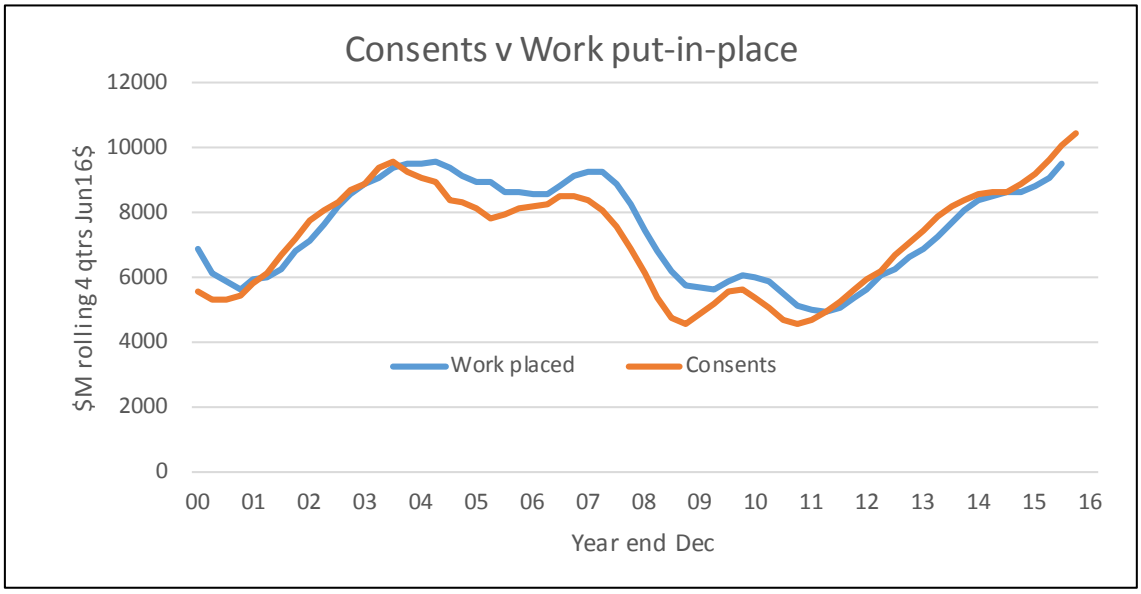


Figure 27. Residential building work delays.

Another measure of industry capacity utilisation is derived from the BRANZ quarterly survey of new dwellings (Curtis, 2016). One of the questions in the survey relates to the time between the consent issue date and the start of framing erection on site. The results, by quarter, are shown in Figure 28 and show Canterbury, until recently, has had the greatest delays. There, the new consents are now turning down quite strongly, and construction times are expected to shorten further in Canterbury. In contrast, Auckland and Wellington delays are now increasing slightly.

Figure 28 indicates an average delay between the consent issue and start of framing of about 2.5 months in recent quarters, which is in approximate agreement with the Statistics New Zealand survey.

[18] http://www.stats.govt.nz/survey-participants/a-z-of-our-surveys/building-activity-survey.aspx

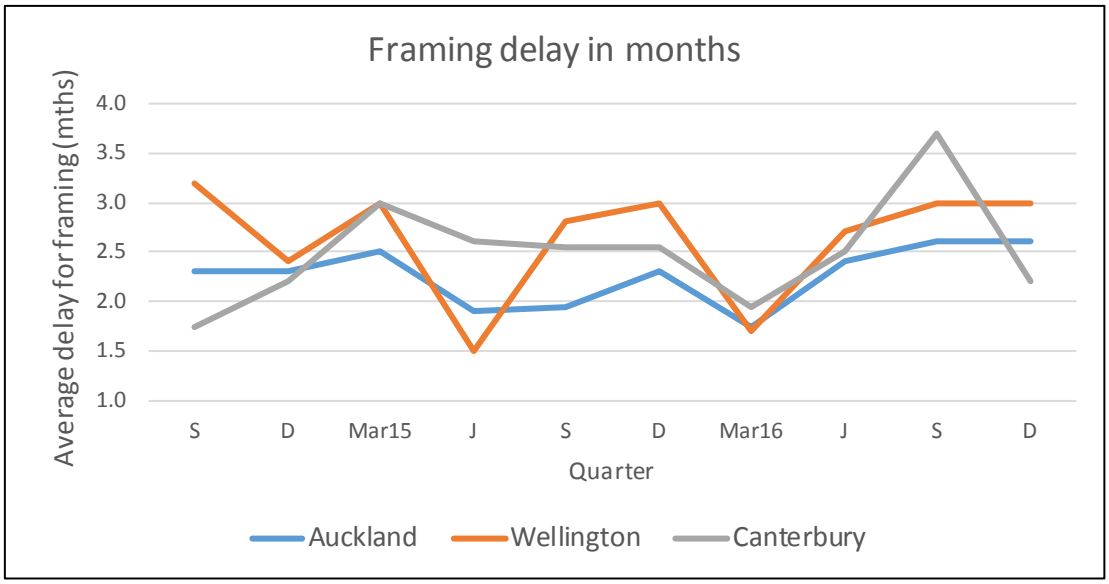


Figure 28. Residential framing delays.

Official quarterly employment data for the industry is only available at aggregate level, i.e. building work is combined with civil engineering work. The results are shown in Figure 29 where all three sectors – housing, non-residential buildings and civil engineering – are combined. The two lines approximately move together, as expected.

The last data available was for the September 2016 quarter and continues to climb. There was a move downwards in the June quarter, possibly due to Canterbury earthquake repair work decreasing. It is likely some of this labour has relocated to the North Island, hence the continuation of the upward trend in September.

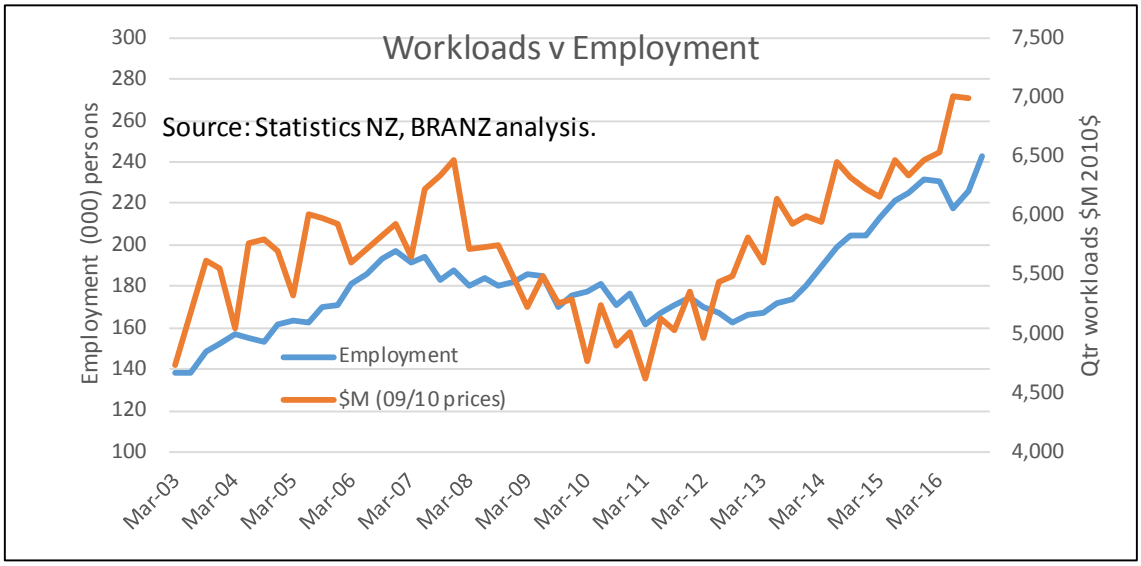


Figure 29. Industry employment versus workloads.

The main conclusion from the three preceding charts is that the industry has responded well to increased housing demand in recent years. However, it may now be struggling to grow at the rates of recent years. Within 2 years, we would expect the charts to show increased delays, indicating significant capacity constraints.

5. Discussion

This report provides forecasts for new housing, including MDH, and analyses the supply side of MDH delivery, including land, materials and skills. A variety of new housing types are being built and, from an affordability viewpoint, MDH has an important role to play.

Building consents have been used as a proxy for supply. It is known that not all consents issued proceed to a completed building. Several apartment developments have fallen through in 2015 and 2016. Generally, this has happened before issue of the building consents. As the resource and building consent process is quite costly, the developers usually get significant commitment before proceeding to the consenting stage. However, money would already have been spent on resource planning, land purchase and preliminary design. The potential error in using consents as a proxy for number of units eventually supplied is believed to be below 2%.

New MDH shown in Table 2 at December 2016 is estimated at 6,800 units per annum and is about 23% of all new housing units. These calculations include some multi-unit construction that has been consented in stages, with some consents having only 1 unit. The Whats On dataset has a work type description field and an address field. This enables an assessment to be made on whether the consent is for a stand-alone house or an additional unit that is part of a more-intensive MDH development for the site.

1–2-storey construction accounts for about 60% of MDH construction for all New Zealand. However, there are larger shares in the 3–6-storey segment in Auckland (see Figure 14) than elsewhere where the construction is less intense. 1–2-storey MDH construction is almost all in traditional timber framing. The construction and design standard NZS 3604:2011 *Timber-framed buildings* applies to these, so builders can readily transfer their skills and experience from detached houses to a large proportion of MDH.

In addition, 3–6-storey construction using timber framing and wood structural members is quite feasible. Currently, most of these buildings have some structural steel and tilt slabs, and they often have concrete upper floors and concrete frames. This type of work requires builders transferring from detached housing to learn new skills. Also, site management is different, as work space is more constricted than for 1–2-storey construction. Health and safety, the coordination of subcontractors and scaffolding requirements become more complex at higher levels.

The future supply forecasts for New Zealand and Auckland are restricted by the ability of the industry to supply resource, in particular, skilled labour. The national cap is assumed to be 34,500 per year nationwide, and in Auckland, the cap is approximately 13,000 per year. The latter cap is reached over the next 3 years and is particularly challenging as it is 30% above the December 2016 level.

Affordability is a matter of concern. The median-income household struggles to afford average-priced new dwellings, as shown in Table 7. The most affordable units are generally terraced housing and flats, though there are regional variations from time to time. They sell for about \$6k/m^2 of floor area. A 2-bedroom terraced house is about 80 m^2 and cost about \$480k at mid-2016 and is affordable to households at the median income range in all locations.

Developers currently produce 4-storey apartments in the inner suburbs for about $10k/m^2, including land, at mid-2016. A 2-bedroom apartment is about 75 m^2 and costs $750k, which is not affordable for median households in all locations, assuming 20% deposit and current mortgage interest rates of 5%.

In summary, demand for MDH is increasing, in large part due to affordability considerations. For new owners, terraced housing is the most affordable. For other owners and renters, apartments are in demand. Supply is expanding but quite slowly due to skills and materials constraints. These are being addressed, but unless major overseas construction firms enter New Zealand, our total housing capacity will be unlikely to exceed 34,500 per year.

Analysis and discussion of MDH is hampered by a dearth of information about the types of housing being built. As mentioned above, Statistics New Zealand does not record housing types with consideration of density. The categories used that include MDH – apartments, retirement villages and townhouses/flats/terraces – inevitably will also include both low-density and high-density buildings. Certain knowledge of how much MDH is being built cannot be gained from these figures. The categorisation is also inadequate for identifying the complexity of MDH types shown in the introduction to this study. More precise categorisation will be necessary if we wish to have more detailed information about what is being built and how people are living.

6. Conclusions

For the future supply side of the new housing market, as represented by new consents, the conclusions are as follows:

- New MDH numbers are expected to increase from the estimated 6,800 per year now by 6% per year, reaching about 10,500 by 2025.
- Flats and terraced housing to 3 storeys make up much of these, at a 60% share of all new MDH in the next 5 years.
- Next largest in number are retirement village units and apartments, each at about 20% share of MDH over the next few years. The former is a mix of flats, apartments, and duplexes.
- These projected MDH categories can be broken down into construction types: vertically attached and horizontally attached units. When this is done, the shares in 5 years' time for MDH are 24% vertically attached and 76% horizontally attached.
- Horizontally attached units are the majority and are almost all light timber or steel framing with double stud or concrete walls between separate occupancies.
- Affordability is now, and will continue to be, difficult for many households. Generally, apartments cost more, because at 3 storeys and above, they are usually concrete and steel construction. The most affordable units for median-income households are likely to be flats and terraced houses on the city fringe and outer suburbs, constructed mainly from light timber framing.
- The forecasts in Auckland are capped at 13,000 dwelling units per year, up 30% from current levels. This is believed to be the upper limit of the capacity of the industry, assuming mainly local sources of labour and materials. This means there is some unsatisfied demand that is deferred to future years. This report finds that the industry reaches its capacity within 3 years' time. Elsewhere, sufficient capacity is available to meet the projected demand, and backlogs are quite small.
- Sufficient land is available in the main centres for new MDH through the planning systems, and these allow for the intensification required for MDH.
- Materials are readily available, although concrete requires long lead times and careful planning of work. From time to time, other materials such as fabricated steel may be subject to delays.
- The main resource constraint is sufficient skilled labour for all building work including MDH. Carpenters are the main shortage, and this applies to framing, cladding and finishing carpenters and those doing formwork on apartment projects. Should new entrants exceed current expectations, industry capacity will be beyond the forecast cap of 34,500 nationally and 13,000 units in Auckland.
- Most MDH will be in timber or light steel framing of 1–2 storeys. MDH of 3 storeys and above is likely to be concrete and steel construction and represents approximately 28% of future MDH demand.
- Commercial builders are best placed to build apartments in the 3–6-storey range. They are also doing terraced housing to 3 storeys.
- Detached-house builders are well able to do 1–3-storey terraced housing and flats. These projects come in different sizes and offer opportunities for firms to scale up.
- These forecasts assume no major entry of large overseas housing contractors. There is known to be some interest shown by Asian-based contractors, but as yet, there is no indication they are committed to build in bulk. Issues related to appropriate design and obtaining consents would remain and cause some delays. However, should these new suppliers establish in New Zealand, consents could be some 3,000 units per year higher, and the demand backlog would be satisfied quicker than expected.

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Appendix A

A.1 Section prices and land areas

Data on land section sales was obtained from the Real Estate Institute of New Zealand (REINZ). The trends in section prices and sizes are shown for the three main centres in Figure 30 and Figure 31. Land prices are unadjusted for inflation and have risen between 5% and 7% per annum, depending on the region.

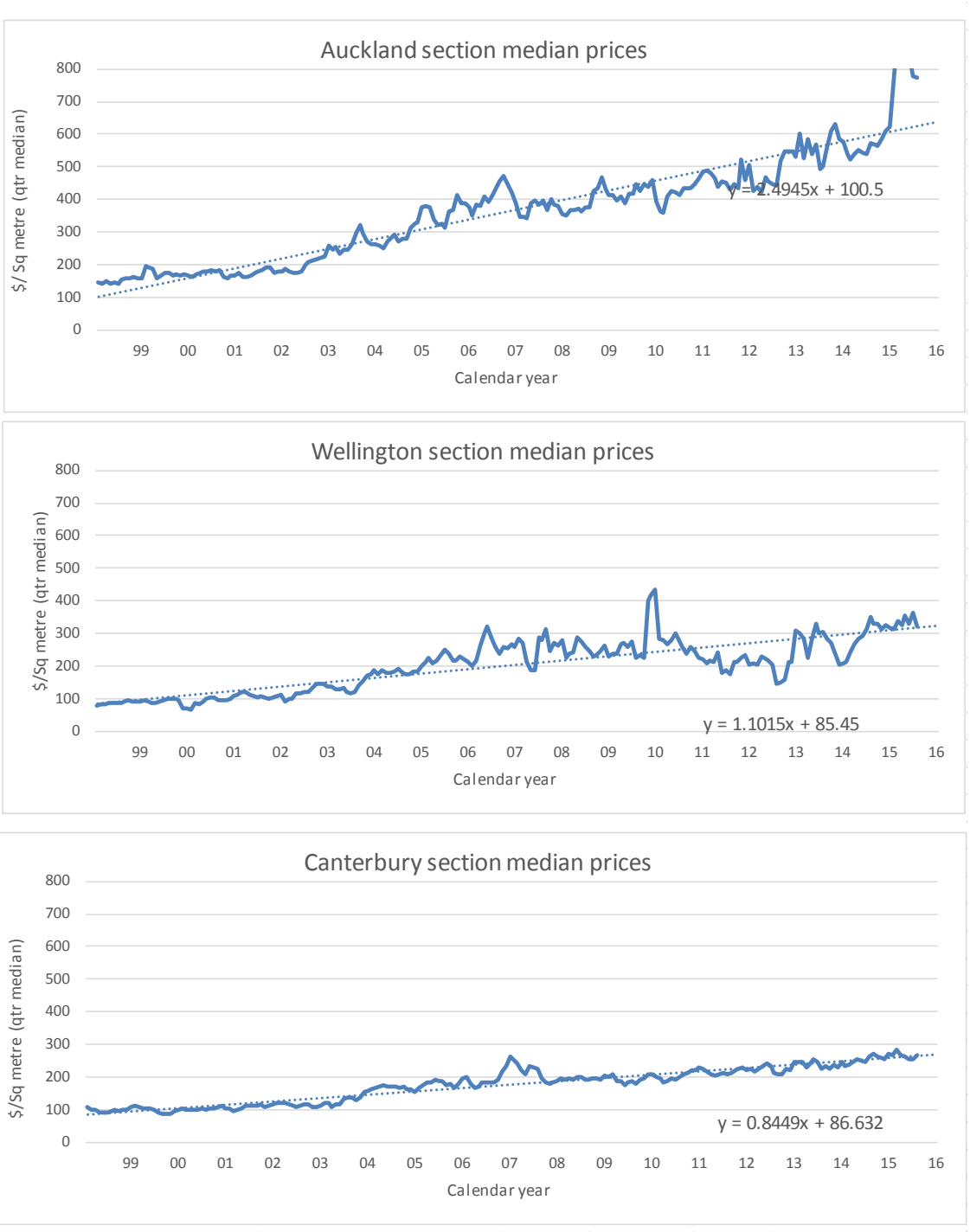


Figure 30. Unit land prices in the main centres.

Sections sizes have been trending down over the period shown on the charts at a rate of about 3 m^2 per year. More recently, the downward trend has steepened, and the current median for the last 12 months is about 650 m^2 in Auckland and slightly more in the other two centres.

Most new housing is on house and land packages, and the section cost is not recorded separately. These packages tend to be on smaller sections than the 650 m^2 average recorded by REINZ. They are mainly in greenfield sites zoned as Mixed Housing Suburban (for example, Hobsonville Point and Flat Bush in Auckland). This zone allows for two houses without notification and more if notified. Many houses in this zone are in the MDH definition, whether detached or terraced-type housing, because of their intensity of land use – below 350 m^2 per dwelling unit.

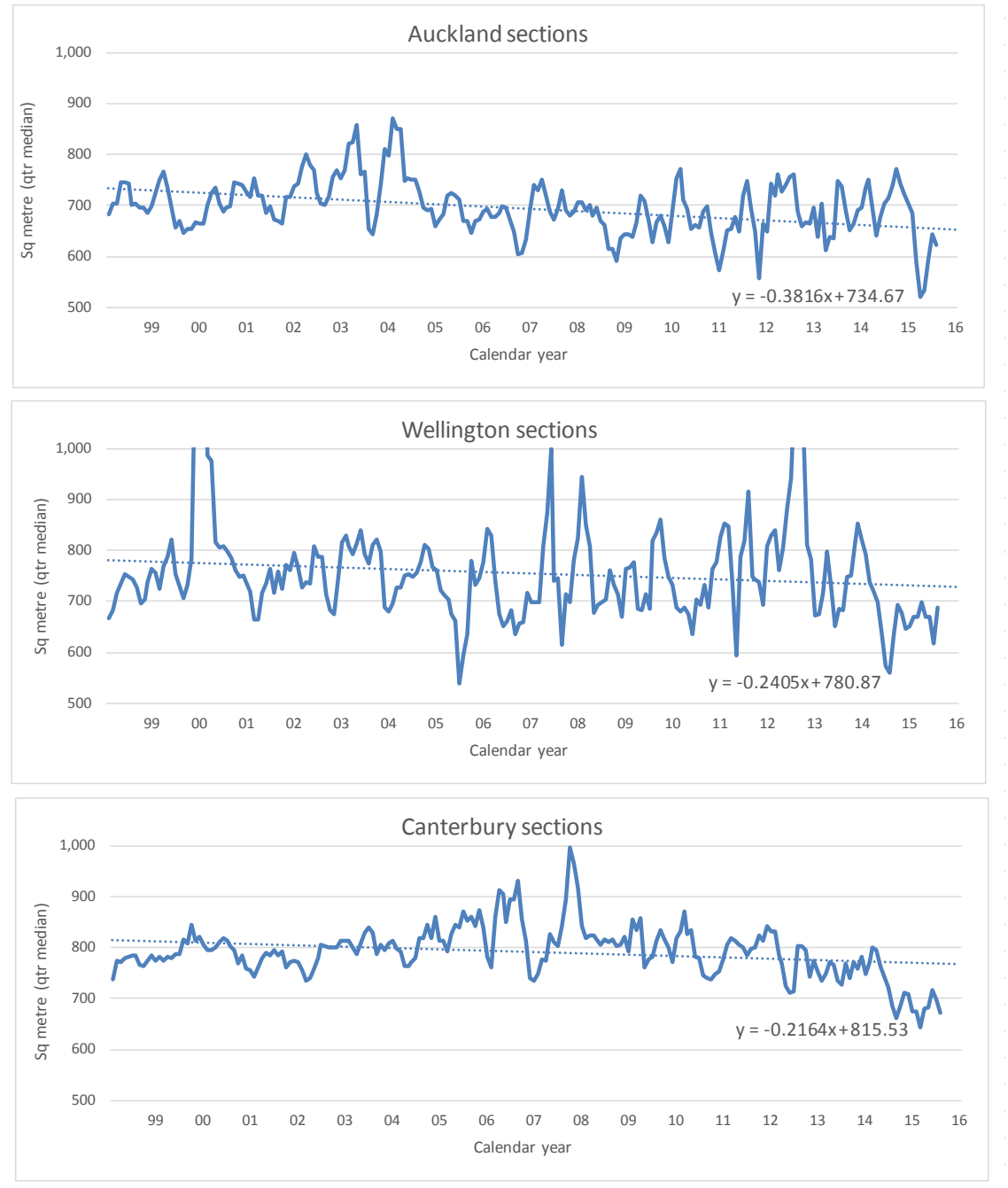


Figure 31. Section sizes in the main centres (REINZ data).

A.2 Forecasting MDH future supply needs

The forecasts are based on the forecasts in the National Construction Pipeline Report (MBIE et al., 2016). This forecasts were modified somewhat for this report to allow for continuing high inward migration. The housing forecasts are driven by demographics projections, constrained by how quickly the industry can scale up to supply increased demand.

The regional household formation forecasts produced by Statistics New Zealand in 2015, which have a 2013 census year base, were used. The forecasts include low, medium and high scenarios with various assumptions about fertility, mortality, migration and living arrangements, which differ between the three scenarios. A combination of 50% high scenario (60,000 net migration per year now declining to 25,000 in 2022) and 50% medium scenario (60,000 net migration per year now declining to 15,000 per year after 2022) was used.

This gives an average new housing need, based on demographics, of about 31,300 per year between 2013 to mid-2018 or a total of 157,000 dwellings. The number of new housing consents issued over the same period was 133,000, (2018 was estimated), so the shortfall is 24,000 consents by mid-2018. On top of this, we need to include demolition replacements and holiday homes at an estimated 1,500 per year. With these, the shortfall rises to about 31,500 dwellings by mid-2018.

After 2018, the 50:50 high:medium household formation scenario is 24,600 new dwellings per year for the following 5 years. If the current backlog is reduced to zero in the same period, this requires another 6,300 dwellings per year plus 1,500 per year demolition replacements. The total is 32,400 dwellings per year for the 5 years after mid-2018. The MDH forecasts in this report are based on that number.

Migration

About half of the permanent and long-term (PLT 12 months or more) migrants are students, temporary workers and long-term visitors. Many are not in the market for permanent housing as they eventually return to their country of origin. In the meantime, they stay in hostels, boarding houses, workplace-provided accommodation and motels and with friends and family. Figure 32 shows long-term arrivals by their visa type. Most growth over the 7-year period shown is in student and worker visas.

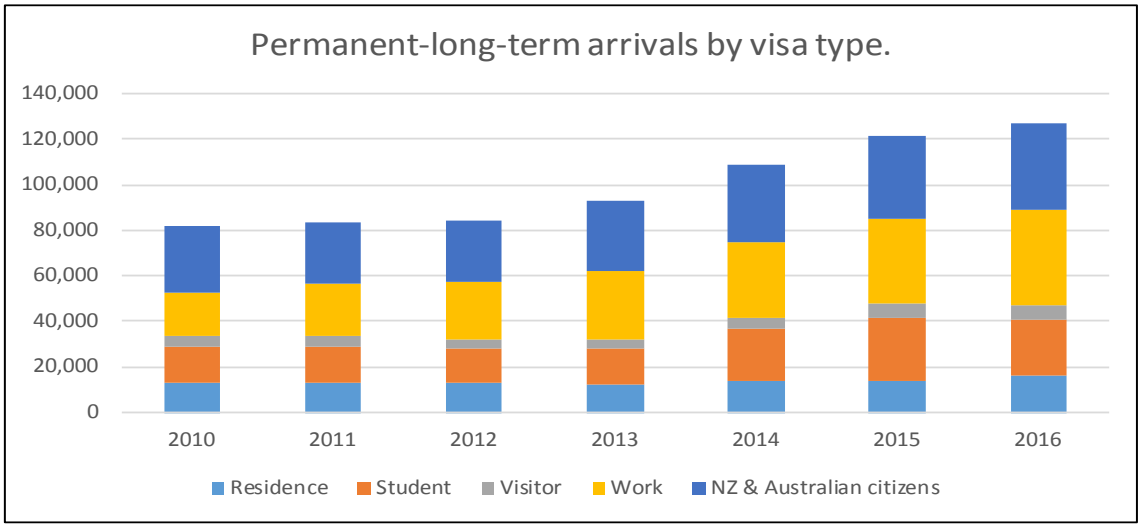


Figure 32. PLT migration by visa type.

This suggests the demand for traditional housing may be less than estimated in the previous section. How much less? About half the migrants are students, visitors and temporary workers. Assume about half of these are unlikely to stay in the long term. That is 15,000 persons per year, and at three persons per house, that suggests a reduction in demand for new dwellings of 5,000 per year.

At present, there are significant numbers of returning citizens from Australia and elsewhere. The net PLT inflows for the last 2 years have been higher than the 60,000 per year assumed in the Statistics New Zealand household formation forecasts. In addition, the shortfall in new housing since 2013 may be higher than the 31,500 estimated due to some cancelled building consents and also a shortfall prior to 2013.

On balance, with continuing high migration inflows, we consider the forecasts in this report to be about right.

As noted previously, MBIE forecasts are constrained by supply capacity in Auckland. This cap is approximately 13,000 new dwellings per year in Auckland. Much of the recent growth in demand has been in Auckland where the industry has scaled up quite quickly but now appears to be slowing.

For example, the growth in new dwelling consents in Auckland was over 20% per year for 4 years to 2015 but only 7% in the 2016 calendar year. At December 2016, Auckland dwelling consents were about 10,000 per year. To get to the 13,000 p.a. cap, the growth over the next 2 years needs to average about 15% p.a. The industry is assumed to be able to achieve this growth, but it is a challenge.

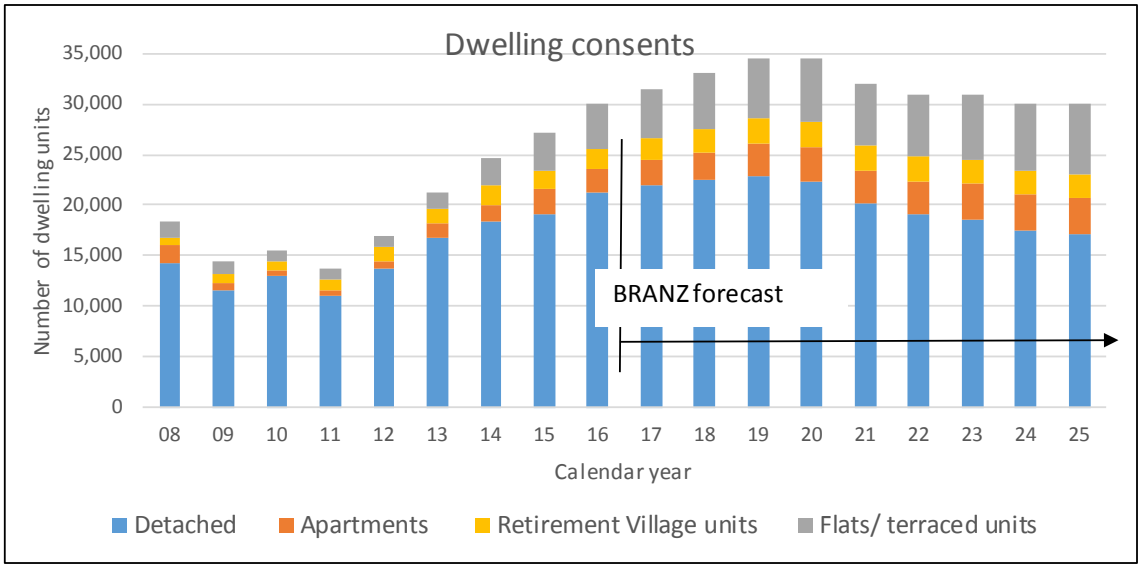


Figure 33. New dwelling unit trends and forecasts.

The regional shares of MDH are shown in Table 13 and the numbers in Table 14.

Table 13. MDH regional percentage shares.

Regional forecasts of MDH Percentage shares by region											
Calendar year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Northland	0.7%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%
Auckland	46.1%	46.7%	47.3%	47.9%	48.5%	49.0%	49.6%	50.2%	50.8%	51.4%	52.0%
Waikato	8.4%	8.5%	8.5%	8.6%	8.6%	8.7%	8.8%	8.8%	8.9%	8.9%	9.0%
Bay of Plenty	4.7%	4.8%	4.9%	5.1%	5.2%	5.3%	5.5%	5.6%	5.7%	5.9%	6.0%
Gisborne	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%
Hawke's Bay	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
Taranaki	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%	1.0%
Manawatu-Wanganui	1.2%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%
Wellington	7.0%	7.1%	7.3%	7.4%	7.6%	7.7%	7.9%	8.0%	8.2%	8.3%	8.5%
Tasman	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%
Nelson	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%
Marlborough	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
West Coast	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Canterbury	25.0%	24.0%	22.9%	21.9%	20.9%	19.9%	18.9%	17.9%	16.8%	15.8%	14.8%
Otago	3.8%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	4.0%	4.0%	4.0%	4.0%
Southland	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%	1.0%	1.0%
NZ	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14. Regional MDH number of units forecast.

Regional forecasts of MDH										
Calendar year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
actual <----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	> BRANZ forecasts
		Number of units								
Northland	50	58	66	75	81	82	85	92	95	102
Auckland	3144	3541	3964	4416	4695	4619	4737	5005	5108	5379
Waikato	574	643	715	793	838	820	837	879	893	936
Bay of Plenty	319	365	414	468	504	503	522	558	576	614
Gisborne	14	15	15	16	16	14	14	13	12	12
Hawke's Bay	15	18	22	26	29	29	31	35	37	40
Taranaki	78	85	93	101	105	101	101	104	103	106
Manawatu-Wanganui	82	90	98	106	109	104	103	106	105	107
Wellington	477	542	612	687	736	730	754	802	824	874
Tasman	25	29	33	38	41	41	43	46	48	51
Nelson	18	21	24	28	31	31	33	36	37	40
Marlborough	12	14	15	17	18	18	18	19	20	21
West Coast	0	1	2	3	4	5	6	7	8	9
Canterbury	1704	1818	1924	2023	2026	1873	1801	1779	1692	1655
Otago	262	293	325	359	378	369	376	394	399	417
Southland	48	55	64	73	79	80	84	91	94	101
NZ	6822	7586	8385	9227	9689	9418	9543	9965	10052	10463

A.3 Determining current MDH stock numbers

The estimate of the current numbers of MDH in the dwelling stock are based on Census data. The last Census that recorded storey heights for multi-units was in 2001 (see Table 15). Since then, we know the number of new multi-units, and the table shows the assumptions of the percentage of these that are MDH.

Table 15. Estimate of MDH stock numbers.

Using the 2001 census to determine current multi-unit stock categories								
	2001 census Number of units	New multi-units to 2016 (1)	Total stock at 2016		Spead the "not defined" to others		% multi-units that are MDH (2)	Number of MDH at 2016
2 flats	130,305	13,320	143,625	46%	163,424	52%	0%	-
>2 flats, <3 storeys	62,376	26,640	89,016	29%	101,287	32%	95%	96,223
>2 flats, >2storeys	14,703	26,640	41,343	13%	47,042	15%	65%	30,578
Multi-units not defined	37,770		37,770	12%				
	245,154	53,280	311,754	100%	311,754	100%		126,800
(1) There were approx 66,600 muti-unit consents from 2001 to 2016. Assume 20% of these are 2 flats only, 40% are 1 or 2 storey, and 40% are > 2storey flats/ apartments, based on the Whats-On dataset.								
(2) BRANZ assumption of % of multi-units, by storeys, that are MDH, based on Whats-On the dataset.								

A.4 Storey height distribution of new multi-units

The trends in multi-unit consents for selected centres were shown earlier in Figure 11.

Figure 34 shows the storey distribution of all multi-units derived from an analysis of the Whats On building consent dataset. This dataset is used to find the storey height distribution of new multi-units.

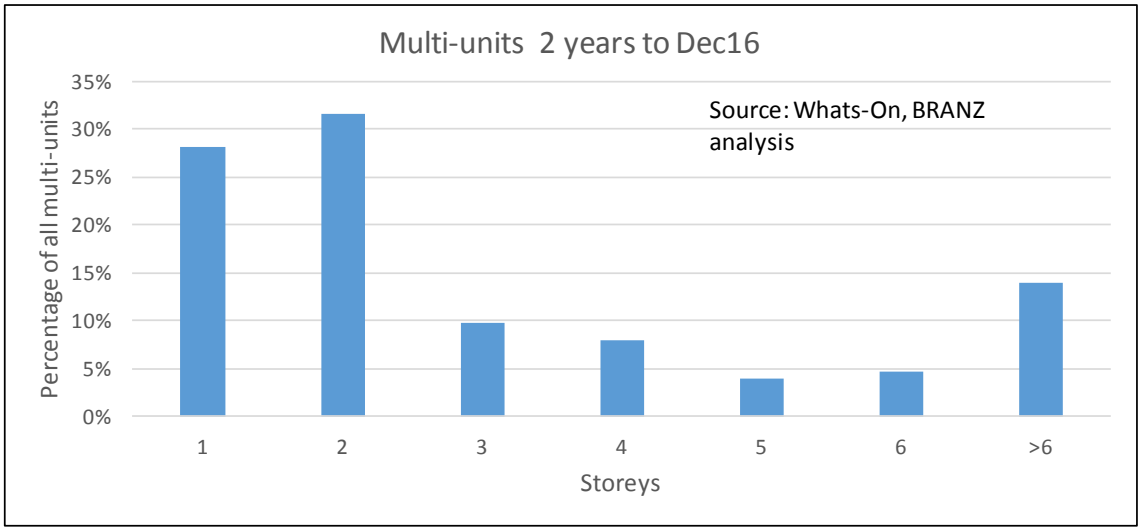


Figure 34. Storeys distribution for multi-units – all New Zealand.

The results for 2 years of data are shown in Figure 34. The dataset has a description of the work type, value, number of dwelling units, floor area, location and owner's and builder's details. In the work description, the number of storeys is often given. Where this was not provided, the larger projects were looked up in Google Earth or on the developer's website. From Google Earth, the size of adjacent buildings usually enables the building storeys to be estimated. Similarly, the developer's website often has graphics of the finished building from which the storey numbers were obtained.

The Whats On dataset records 15,001 multi-units for the 2 years ending December 2016. The official total from Statistics New Zealand is 16,850, so the dataset has 89% of all units. We have assumed the Whats On dataset is representative of all consents and have scaled up the dataset charts by 12% (i.e. 1/89%) to arrive at current MDH numbers over the last 2 years.

The analysis of the Whats On data shows only about 14% of all units are over 6 storeys in height, so most units are low rise. Also, the project size, as represented by the number of units per consent, is quite small at the lower storeys (see Figure 35). It indicates that, for 1–2-storey construction, where two-thirds of multi-units occur, the average project size is below 5 units.

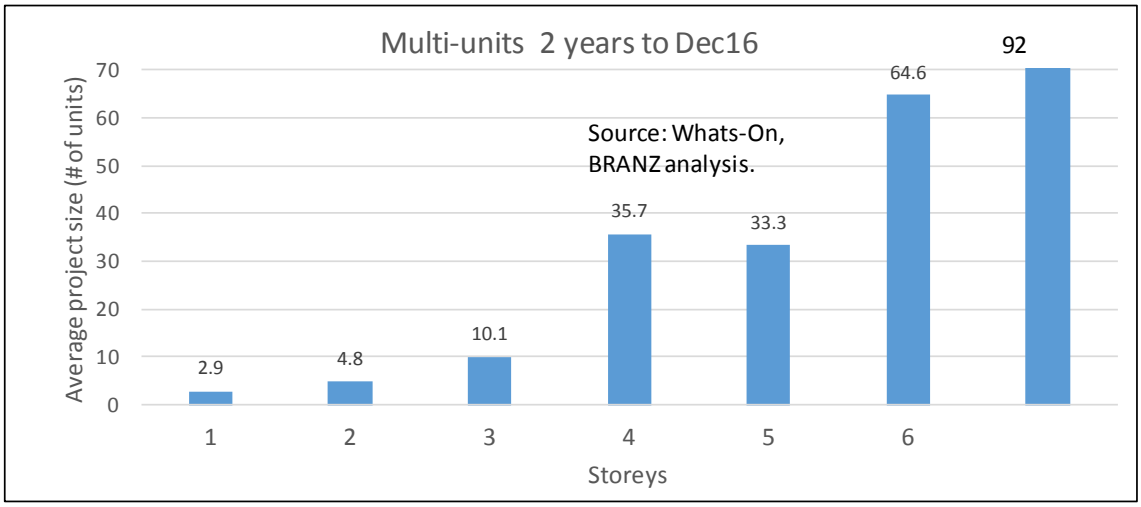


Figure 35. Multi-unit project size by number of units – all New Zealand.

The main conclusions from the Whats On dataset are:

- 60% of multi-units in the 2 years ending December 2016 were 1–2-storeys, and the large majority of these would have been light timber framing
- 3–6-storey construction occurred in about 26% of all multi-units, mainly steel and concrete structural framing, often with timber partition wall framing
- the remaining 14% of multi-units are over 6 storeys in height (i.e. outside the MDH definition).

A.5 Retirement village dwelling demand model

A simple model was developed of demand for retirement village units. The model assumes there is a linear relationship between the increase in population aged over 69 years and the amount of new retirement village (RV) units. Figure 36 shows the ratio of the number of RV units divided by the increase in those aged over 69 in that year. Currently, one new retirement village unit is being built for every increase of 11 people in that age group. The trend line on the chart is slightly downward, which suggests the elderly are becoming slightly less likely to enter a retirement village.

Projecting forward using the trend line, the amount of new consents remains constant, at approximately 2,300 units per year. They remain level because the numbers of new over 69-year-olds are increasing every year, offsetting the decreasing likelihood of them entering a retirement village.

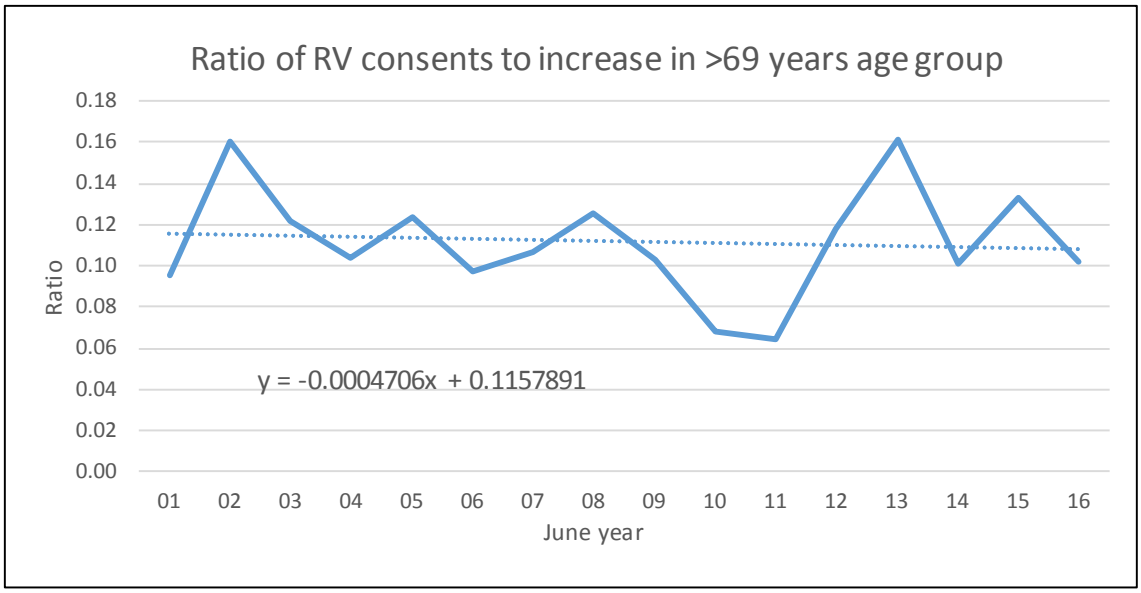


Figure 36. Modelling retirement village dwelling unit demand.

A.6 Average floor areas for MDH

The trends in building consent floor areas are shown in Figure 37. Apartments show the most variation over time and between regions. Detached houses are included for comparison and have the least variation in time and between regions. It appears that detached housing sizes are slowly trending downward, except in Auckland. A possible reason for the downward trend is affordability constraints.

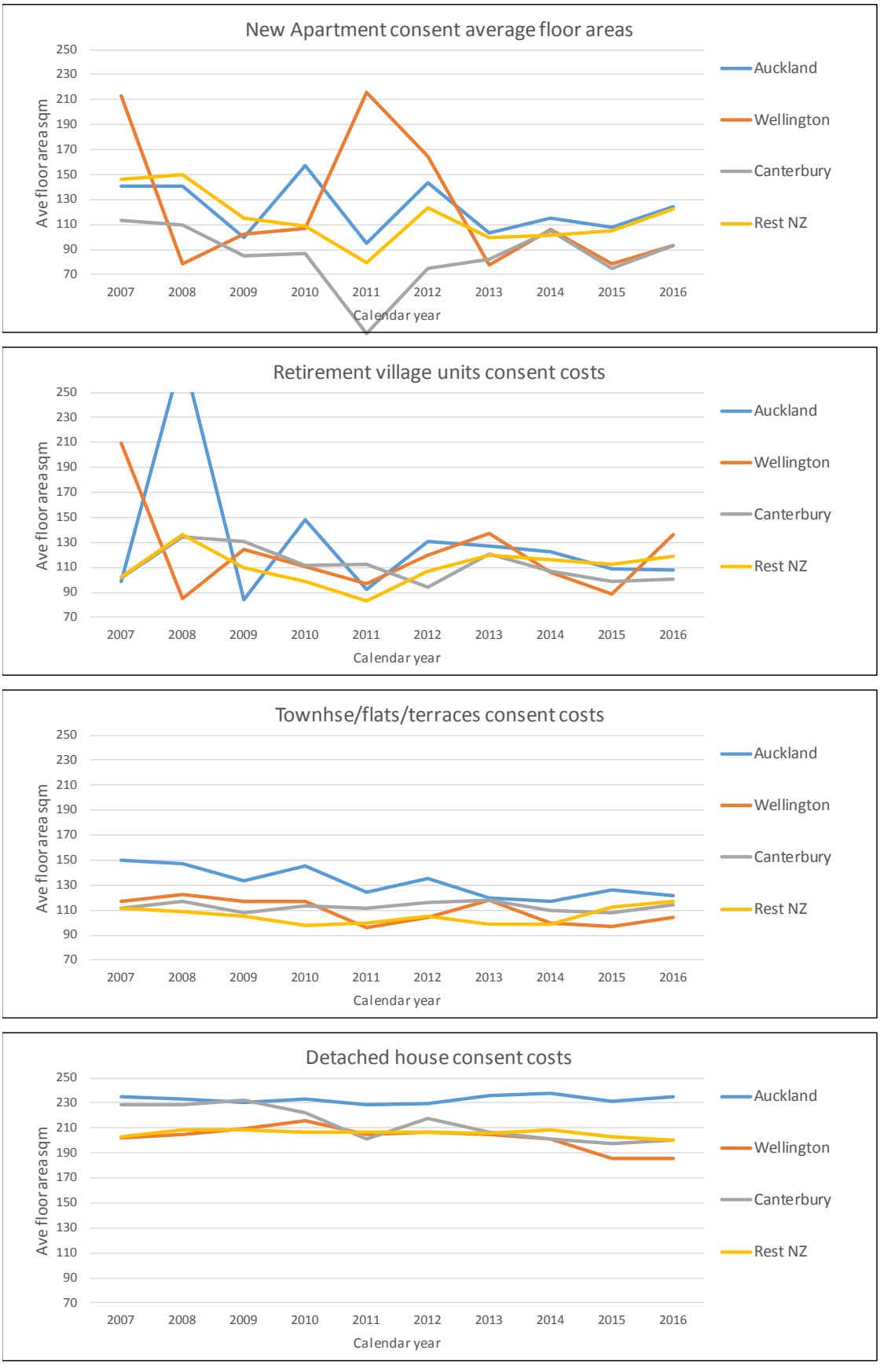


Figure 37. MDH building consent average floor areas.

A.7 Canterbury post-earthquake housing consents

This section briefly shows the pre-earthquake and post-earthquake periods for dwelling consents. The M6 quakes finished in December 2011, and in the 2 years after that, a significant proportion of new units were consented outside Christchurch in the adjacent areas of Waimakariri and Selwyn (see Figure 38). These were almost all detached houses. By 2014, the recovery in Christchurch had peaked, and a large proportion of the new dwellings were multi-units, including MDH. By the end of 2016, activity in Christchurch was still above pre-earthquake years, though consents are now declining.

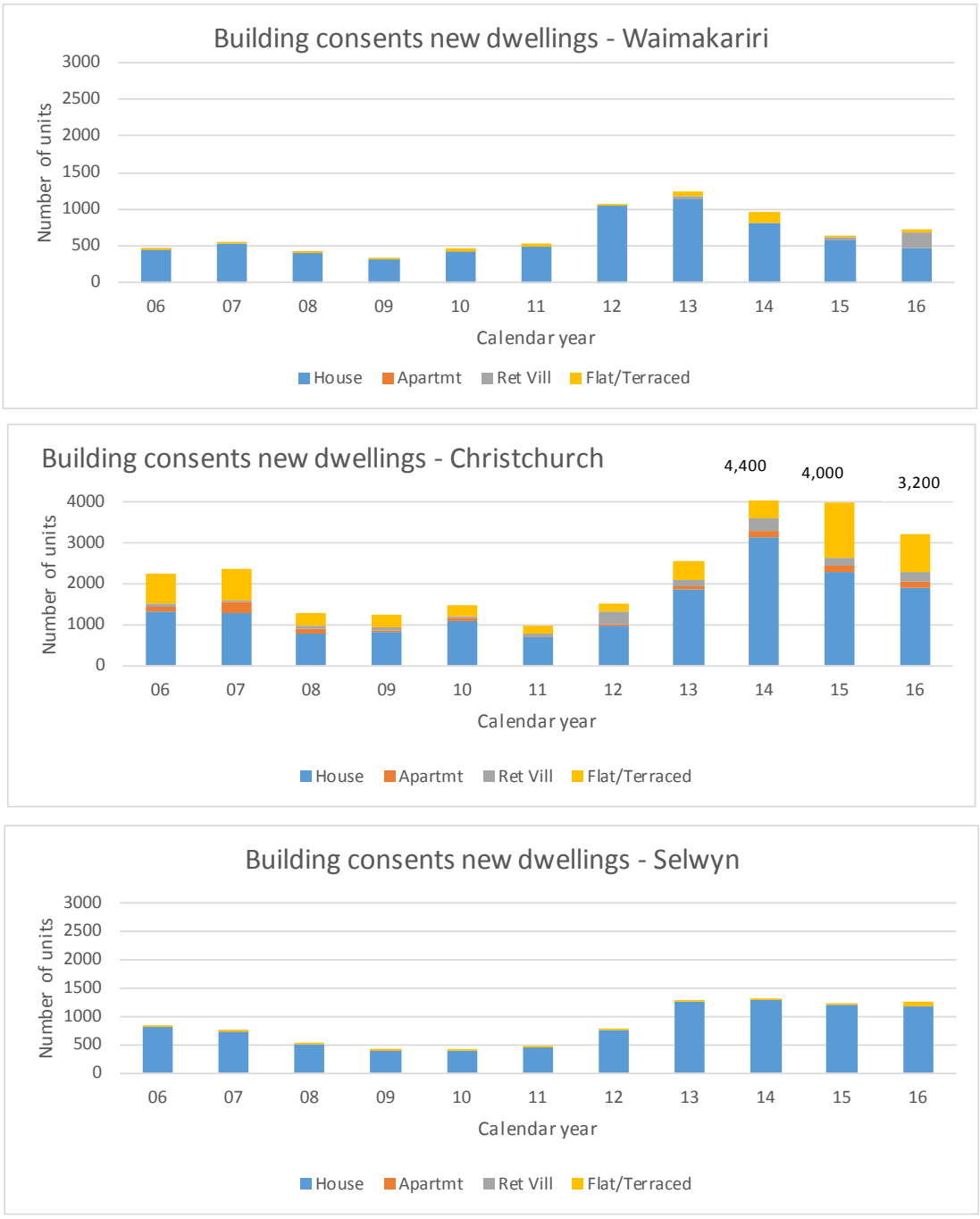
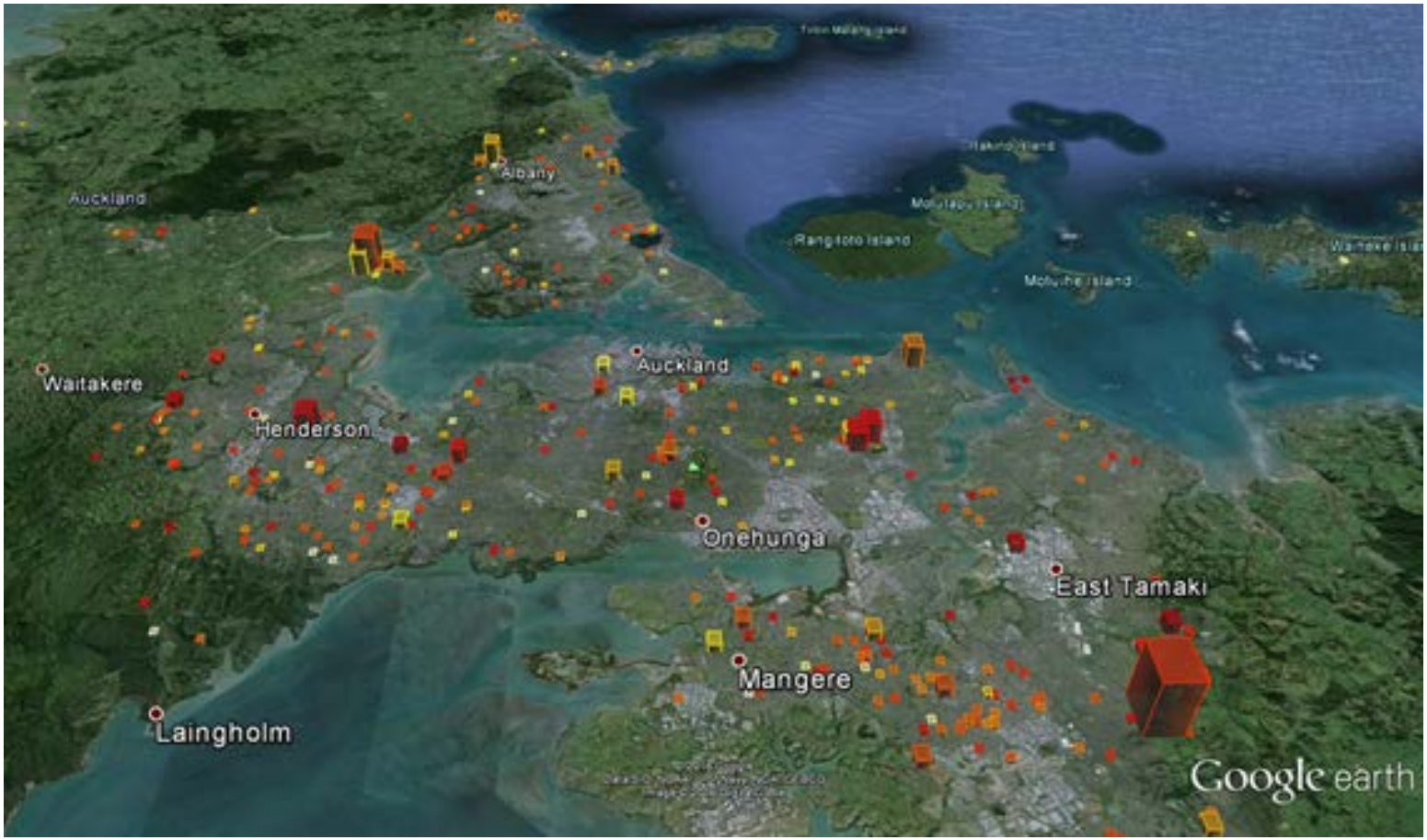


Figure 38. Dwelling consents for selected Canterbury authorities.

A.8 Recent offerings of MDH in Auckland

Figure 39 shows the spread of terraced housing consents in Auckland in recent years. This chart is from a BRANZ analysis of the Whats On dataset. It is observed that these developments are spread toward the fringes with little development around the centre. Major developments are Flat Bush in the southeast, Hobsonville Point in the northwest, Stonefields in the east and Albany in the north.



Note: The sizes of the buildings on the chart represent floor areas. The colours represent $/m^2, with red having high $/m^2 and yellow having low $/m^2.

Figure 39. Auckland terraced housing consents 2007–2015.

Appendix B: Stakeholder case studies

This appendix documents results from selected sources and stakeholder interviews. The interviews covered a range of issues on both the supply and demand side of the industry. The contacts for people consulted were obtained from personal knowledge and media reports. Generally, the people contacted were willing to talk, usually on a confidential basis.

Most interviews were by phone, but some were at the respondent's offices or construction site. Notes were taken as the interviews proceeded.

The following specific questions were used to explore the MDH market:

Financier

1. Medium-density housing (less than 5 storeys)
   - How has the advent of apartments and terraced houses (MDH) changed the market for builders/financiers?
2. Finance structure
   - What financing structures are typically used for MDH (percentage of funds from banks, other bondholders, equity)?
   - What are typical interest rates?
3. Terms
   - What momentum must a project have to be funded and how is it measured (location, design, consent, presales, developer track record)?
4. Efficient market
   - What are the risks to you?
   - What criteria are used to accept/refuse proposals?
   - What proportion of old and new entrants are funded?
5. Costs
   - What are the typical costs of a project (land, construction, consenting, margin)?
6. Change since finance companies' collapse
   - Why did so many finance companies collapse, and how are those issues managed now?
7. Market indicators
   - What are the leading indicators of market dynamics (presales, migration, prices, build cost)?
   - How are these used to manage the market?
8. Going public
   - Why do more firms not list and/or make use of public sources of finance?
9. Other issues
   - Are there any issues we've missed critical to this sector?

Developer

1. Medium-density housing
   - How has the advent of apartments and terraced houses (MDH) changed the housing market for you?
2. Product offerings
   - What size/quality/location combination do you develop?
   - What price points and demographics are you targeting?
   - Why do they buy your product?

3. Project costs
   - What is the typical breakdown of project costs (financing, land, consenting, infrastructure, building, sales, other) relative to m^2 (building and land))?
4. Consenting
   - How do you manage it and how is it different for MDH compared to housing or high rise?
5. Invest/divest
   - How do you decide where to invest and divest in terms of your product offering (size/quality of fittings and finish/location/kitchen/shared areas)?
6. Getting best value
   - How do you get the best out of your consultant and build teams?
   - Do you use the same teams on projects?
7. Finance
   - Is this a major barrier to getting good projects across the line?
8. Barriers
   - What are the barriers to a more efficient outcome compared to developing the same product in say Sydney, Melbourne or Wellington?
9. Managing workload
   - How do you manage workload and scale up for larger projects in the current environment?
10. Buildability
    - How are buildability/weathertightness issues managed?
11. Site visit
    - Is a site visit possible?

Builder

1. Type of building work
   - Can you describe the work you deliver (numbers, square metres, location)?
2. Medium-density housing
   - How has MDH affected your business?
   - What did you need to do differently compared to detached housing work?
3. Business leads
   - How do you source work?
4. Consenting
   - How do you manage it and how is it different for MDH?
5. Quality control
   - How do you decide where to invest and divest in terms of managing your build, mix of senior/juniors among staff, finding work they are interested in, finding cheaper products?
   - How do you manage the risks around subbies, product failure etc.? Is this different for MDH?
6. Managing workload
   - How do you manage workload and scale up for larger projects in the current environment?
7. Cost
   - Can you supply a cost breakdown of the major trades/products on a gross floor area (GFA) basis?
8. Buildability
   - How are buildability/weathertightness issues managed?
9. Site visit
   - Is a site visit possible?

Architect

1. Difference to other work
   - How is medium-density housing different to designing for apartments and/or free-standing houses?
2. Success factors
   - What makes a successful MDH project that is different to other residential projects?
3. Market
   - What segments are you targeting and on what basis?
4. Price points
   - Why does the market buy MDH relative to alternatives such as apartments or houses? What are the price points versus features?
5. Priorities
   - What are your design priorities to make the offering attractive to the market?
   - Where do you invest and divest (save $) in order to produce an acceptable product at a price point?
6. Buildability
   - How are buildability and compliance issues managed?

Real estate agent

1. Market segments
   - Who buys MDH, in what percentage and what is their motivation?
2. Value
   - What MDH features do they like and what do they not like?

B.1 Financiers' views

This section draws from details published in the *NZ Herald* on property sector financing as well as stakeholders' comments.[19]

Structure of the sector

Pre-GFC, finance companies funded approximately $3 billion p.a. of activity. They borrowed from 'ma and pa' investors and lent to virtually anyone at low rates, for complete projects on poor conditions. They gambled with people's money and thus, when market conditions became tight, many people lost money and many operators became insolvent. Rules around borrowing from the public were significantly tightened by the Financial Markets Authority (FMA). Activity in the Auckland market has been severely hampered since 2005 due to constraints around sourcing credit.

Today, terms are much tougher for developers (and builders) looking for debt financing (virtually everyone). Banks will supply up to 80% of that market, using first mortgages on tighter terms. In today's heated market, they look for 100% presales to cover their lending exposure. In the past, they were happy with 50%. They have become more conservative, because market conditions allow them to be. The balance of the 20% must be obtained from a range of mezzanine lenders, lending on second mortgages estimated to be $300 million p.a., a fraction of what was funded in the past. These are generally backed by high-net-worth individuals who are sophisticated lenders and will only lend where the project justifies it, and they charge more.

[19] See http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11640678 and http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11640671

MDH implications

Since MDH projects are often quite large and require finance to deliver, only developers with experience, a sound reputation and capital can afford to enter that market. This limits the capacity to respond to need but also means that the quality of the product is better compared to a detached house. Anecdote says that, in the current 'overheated'[20] Auckland market with a large immigrant workforce, quality issues with detached housing are significant. Similar issues apply to MDH and apartments. However, they have less impact since contractors must have 'substance' to operate in that market. There is better-quality supervision and the contractor has a reputational incentive to deliver well. Issues are better thought out and there is better consideration of buildability issues by all those involved (architect, engineer and contractor).

Public finance rules

The rules around sourcing financing from the public have been set by the FMA to control stability and improve fiduciary duty, but they are not very good at responding to strong demand. Today, constraints on the supply of money are hampering the sector's ability to respond to demand. In addition, the 'ma and pa' investors are entering today's market as purchasers of property, because based on historic price gains and returns in the rental market, it makes sense, if one ignores the price risk.[21]

Market risks

Unless we control immigration, prices will continue to rise in the short to medium term. However, there are risks that, if net migration stopped tomorrow, credit tightened for buyers or large swathes of land entered the market, prices could crash.

An 'overheated' market

Pressure on the Auckland market is most visible in terms of how it impacts product delivery. A contractor involved in a large subdivision (200 lots) should book concrete delivery 4 weeks in advance, and that is an operator who has leverage due to their scale. What impact does that have on smaller operators?

First mortgage

The big five banks will typically lend from 60% to 80% (usually closer to 80%) of a project with a first mortgage interest rate ranging from 6% to 11% (usually 7–8%) depending on term, size and risk. To lend, banks require presales at 100–120% of the debt. If a project fails to achieve presales targets, it is perceived as faulty, since in the current market, most projects are achieving high presales.

Project duration

It typically takes 6–9 months to get a consent and market to achieve sufficient presales. It then typically takes 12 months for a low-rise development or 18 months for a high-rise development. Time to complete is estimated as 3–4 months to set up and 1 month per floor. Most projects complete on a 12–24-month duration. Therefore, the lender typically has their money tied up for an 18-month duration, where they are at risk to market movements in that time.

[20] The term is misused but typically reflects levels of consents that are well above historical trends and prices that are at uneconomic levels from an income perspective.
[21] See the business case outline in http://www.interest.co.nz/property/74351/matthew-gilligan-relates-case-study-comparing-investment-returns-aucklands-otara-and

Balance of financing

Well established companies such as Todd Property, Fletcher and the retirement property companies, among others, have lending facilities they can draw down on as required. Other companies can use a range of options:

- Equity – developers will put in their own money to drive a project to meet a lender's target for presales (i.e. completed land purchase, design, consent and sales offer). They then go to the debt market to recover their equity to proceed onto the next project.
- Presales, usually based on a 10% deposit, but there are examples of smaller deposits associated with other guarantees.[22]
- Mezzanine finance providers such as New Zealand Mortgages & Security, Newgate Capital, Reesby, ASAP Finance, Winton and CapitalGroup, among others.
- Development partners, such as financing arrangements with offshore developers and banks (mostly in China).

Second mortgages and beyond typically have interest rates around 25–30% p.a. They are used to bridge the gap before presales settle and are usually drawn down as needed. If selling is brisk, these costs are minor. However, delays to the building or slow sales could see those costs escalate.

Differences today to pre-GFC

The collapse of finance companies and apartment builder's pre-GFC was because:

- investors initially gave money too easily to finance companies where directors had limited development experience
- finance companies made bad loans with this money on projects that were never going to work because they didn't know any better – money was lost the day they lent it in many cases
- investors wanted money back quickly, so finance companies had to exit positions for a loss.

Now, many property finance companies are internally funded so don't need to worry about investors demanding money back.

Quality and momentum

In a competitive market, a project needs to be attractive with a reasonable location, good design that is desirable to purchasers and tenants and a sound margin (to cover unforeseen cost increases). Therefore, to be funded, deals need to achieve momentum with good value and a good level of presales. The specific reasons given for one low-rise apartment project to proceed have been:

- the developer had a strong track record with …
- resource consent was held, and there was a strong consultant and construction delivery team engaged
- the site was well located and supported by recent investment in public infrastructure
- an acceptable level of unconditional apartment presales was in place, thus demonstrating the market's acceptance of the product and providing a contracted source of partial repayment.

[22] See http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10889924

Cost breakdown

Table 16 presents the cost breakdown of a low-rise apartment project, covering a range of sizes plus car parks, selling in Auckland for an average of $800k per unit.

Table 16. Development costs in Auckland in 2015.

Cost item	Cost ($k)	% of cost excluding margin
Build for 21 units	$8,000	60%
Developer margin	$2,425	18%
Land (500 m2)	$2,250	17%
Financing	$737	6%
Sales commissions: 2.5% apartment + 4% commercial	$456	3%
Reserve levy ($20k/unit)	$420	3%
Contingency	$400	3%
Project manager	$260	2%
Other consultants/sundry	$212	2%
Watercare ($9.5k/unit)	$200	1%
Architects	$185	1%
Total	**$15,829**	

Source: pers. comm.

It is noted that all projects are different, and this example should be regarded as indicative only. The margin is typical of what is required at the outset, although cost overruns and mistakes can eat into the net margin. Also, note the land price is 17% of sales price compared to the 50% typical for a detached house. Table 17 presents a further breakdown of the consulting/sundry elements on the above project.

Table 17. Other consultants/sundry breakdown.

Cost item	Percentage of 'Other consultants/sundry' cost
Council	7.0%
Legal	3.3%
Planner	3.2%
Services consultant	3.2%
Geotech	3.2%
Surveyor	3.2%
Marketing	2.7%
Quantity surveyor	2.2%
Acoustic engineer	1.6%
Fire engineer	1.6%
Valuer	1.6%
Civil	1.3%
Interior designer	1.1%
Subdivision consent – council	1.1%
Homestar consultant	0.9%
Traffic	0.5%
Homestar fees	0.4%
Wind	0.3%
LINZ	0.3%

Source: pers. comm.

It is noted that a Homestar advisor is involved to gain sustainability accreditation. Interestingly, a façade engineer is not involved, and some stakeholders argue this absence will be detrimental to long-term durability.

Cost escalation

The current market is seeing high cost increases among the subcontracting trade due to the amount of work. Thus, some projects are being deferred.

Team dynamics

Most developers rotate their contractors. It is not advisable to get too close, there is a need to maintain commercial tension and contractors are not always available when it suits the developer. However, some developers do have well-established relationships with contractors to ensure consistency of product.

Controlling quality

In an overheated market, there is a danger than presales won't settle if the delivered quality is not to expectation, either because the developer changes the specification without advising clients or the buyer does not understand the offer specification. Some international buyers can't read plans well or don't care because they are renting the properties out. To manage this, most lenders perform due diligence on the offer documents and delivery:

- Quality delivered: A QS is employed to ensure consistency between consent, offer and presales documents and delivery to ensure quality is delivered as specified.
- Indicative unit costs: Build cost should fall within nominal guidelines for quality. In the current market, this is >\$2.5–\$3k/m^2 for a terraced house and \$3–4k/m^2 for a low-rise apartment. For the nominal Auckland market, anything beneath that is likely to undershoot quality expectations.

Prices

Indicative sales prices in the current market tend to be of the order of \$12–17k/m^2, depending on quality and setting.

Market structure

Historically, demand in the Auckland market has not been sufficient to support corporate developers, or we have had bad experiences with the ones we had (Chase, Sargeant, etc.). We do not see the US (or even the Australian) experience where developers will complete a full 5,000-lot subdivision. We have not historically had the consistency of demand to support such entities, and with net migration being what it is, it is unclear whether we will. Auckland is changing from a small town to a big town. Currently, it does not have the entities of a scale to support that change.

This is reflected in the current market for mezzanine finance, where the current players are reluctant to take on too much exposure to second mortgages, since a lot can happen over an 18-month duration. There is Brexit and the US election among many other things. Banks become very wary in a boom market. As a result, credit is significantly constrained, arguably when the developer market needs it most.

Given current rules around raising public money, there is little appetite among current operators to take on the risks involved. International funding is active in the market, but in Auckland, experience to date indicates only a small presence in the apartment sector, mainly from China.

B.2 Developers' views

B.2.1 Developer 1 – MDH in Auckland

City fringe

Developments are proceeding on the city fringe at places such as Avondale, Grey Lynn, Eden Terrace and other areas with low-rise developments that don't feel like traditional apartment living.

Amenity

With detached houses, people are relying on amenity from a 4-bedroom house and their private land, backed up with public amenity from reserves and parks. However, as prices rise, this is becoming unaffordable, hence the need for more affordable configurations of 1–2 bedrooms (or 1 bedroom plus study), with car parking next to the building rather than underground. We see a need for shared on-site amenity in the form of a communal lounge, play area, vegetable garden and shared green space at the heart of the development.

Demand for MDH

Demand for high-density housing (HDH) is strong for inner-city living and MDH in the CBD fringe and beyond. 'New' New Zealanders are most attracted to it since they are used to apartment living and don't value land. However, there is little demand for MDH out of the city.

Detached-house trends

In South Auckland, it was traditional to develop 300–400 m^2 sections. Now, we work with 100–200 m^2 and place a 5-bedroom home on it so that two families (usually multi-generational) can help repay the mortgage. 70% of buyers are 'new' New Zealanders who find this a popular option, even though there is 1.5 m separating them from the neighbours. Since most buyers come from living in apartments, having their own house is a step up and, despite the lack of land, is popular. We spend hours on the design to minimise unused space.

B.2.2 Developer 2 – MDH in Auckland

Moving into MDH

We were originally purely commercial property developers. We came into residential work accidently by way of a client-driven project. This drew our attention to the mismatch between supply and demand, which we see as being a constant theme over the next 10 years or as far as we can see. It was purely a commercially driven response to a large and persistent gap in the market. We are concentrating our developments on the inner suburbs and CBD fringe to attract primarily the empty nesters and young professionals (i.e. dinkies) with 47 m^2 1-bedroom, 70 m^2 2-bedroom and 97 m^2 3-bedroom apartments in small developments that are close to amenities such as cute villages with attractive bars/cafés. On one development, the market breakdown was:

- empty nester – 45%
- dinky – 45%
- investor – 10%.

The empty nesters are our prime market and come mainly from Remuera, Epsom and Mt Eden and wish to live on the CBD fringe (not CBD and not suburbs) in a 'lock and leave' apartment close to where they currently live.

The dinkies are more likely to buy a smaller entry-level unit without a car park, and being close to transport becomes important to them.

The investors we see tend to be buying a bolt-hole for their children and give little thought to renting it out.

Family needs are different. They need space, and the detached house in the suburbs is likely to be their preference. But they have lower affordability thresholds, and we have not considered that market.

Future projections

This gap assumes Auckland continues to grow as it has done so over the recent past and that it follows the trajectories indicated by similar cities providing environments for lifestyle and employment that attract migration, such as Vancouver, Sydney, Melbourne and Brisbane. In our opinion, Vancouver provides a strong benchmark for what we expect to see in Auckland, providing a 15-year projection of where Auckland could be on issues such as affordability, homelessness and congestion.[23] However, Vancouver's Unitary Plan encouraged supply by relaxing rules on density. In Auckland, the complexity of the density rules has increased, and we expect consenting costs and delays to increase because of the new Auckland Unitary Plan.

Sourcing land

Sourcing land with an acceptable lot size and price is a significant challenge since the market is now aware of the value these lots can command. Land prices have increased by 20% in one of our core markets. This escalation has tightened margins and made projects more difficult. We have linkages into the commercial market that we hope to use to secure lots from industrial/commercial users at more affordable prices. It seems to us that the only people making money in this market are the sellers of the land.

Benchmark predictors

Looking at international benchmarks (Sydney, Melbourne, Vancouver etc.), we predict that size will go down and quality will rise.

Consenting

Council employees have no idea of the impact of delay and the need to lock in build costs and the opportunity. In some cases, we have seen developments fail because, by the time the developer has gone through the consenting process, the market opportunity has disappeared. They have no comprehension of the cost and market risks a developer faces.

However, to their credit, they have been forced to be the insurer of last resort when the people who should be responsible (developer, designer and builder) have gone away. So, we are forced to go through multiple layers of peer review (especially for façade), which have caused significant delay for us. We employ a strong consultant

[23] For one perspective, see http://www.metrovancouver.org/services/regional-planning/PlanningPublications/WhatWorks-AffordableHousingInitiatives.pdf

team (architect and engineer), and their response was that the façade engineering peer review added delay, compliance cost, pedantry and little value.

However, we expect that process to get better since our consent was one of the first under new rules and people were finding their way, especially on the peer review side where there is currently insufficient capacity and experience with the process. Over time, we expect the capacity to increase and quality and timeliness to improve as the council becomes more familiar with façade methods.

We have well developed relationships with the council and work hard to present a mature initial plan and to give them what they need for resource consents, so they have a clear view on the impact on neighbours. This includes sight lines, impact on streetscape, etc. As a result, we get good turnaround, and the service is brilliant. However, the council loses people, so the process is never smooth.

We make every effort to avoid consent notification by staying within the guidelines, since that means delays, as neighbours can have their say, even though it may not directly affect them. The rules in Sydney are different. People there only have a say if it directly affects them. Delays mean cost escalation, and in that time, the market can change, making the whole project unfeasible.

B.2.3 Developer 3 – MDH in Auckland

MDH market

We came to MDH from developing detached houses and believe we led the medium-density market in the early days. We have focused recently on 4–6-level apartment blocks but are moving back to a focus on 3-level walk-ups or low-level apartment blocks (<3–4 levels). That typology is flexible, makes good use of a costly resource (i.e. land) and there is increasing acceptance of it if buyers want proximity to the city centre.

Like a few others, we are looking to build a portfolio of work that puts a strong brand on our product for durability and good design, which is a little unique to the Auckland market.

Today, if one wants a detached home in a sub-$900k range, a buyer must go to the city extremities and beyond to achieve that (e.g. Papakura/Pokeno). Given the prices of land in the CBD fringe, the economics dictate that one builds MDH for affordability. But there are many who return from living overseas where MDH living is the norm so they are used to it, indeed sometimes prefer it. So, we see MDH as a simple trade-off in proximity, size and affordability for a given budget.

In the last 2 years, the market has become increasingly sophisticated as buyers know what their options are and the various price points. They are embracing MDH. We have marketed product at the higher end (i.e. $13k+/$m^2$) but are currently looking at a more affordable price point ($10.4k/$m^2$), as this is where we see considerable unsatisfied demand.

Access to local amenity and transport links are crucial for these projects to work, and places such as the Great North Road and Grey Lynn ridge lines are perfect opportunities since they mean converting car yards and other less attractive developments into desirable MDH. However, it means that land prices rise, making further developments a struggle. We think we'll 'let the froth come off' that one before engaging again.

Most of our buyers are owner-occupiers. Subcomponents are:

- empty nesters (probably the largest segment in the more expensive developments but less so in more affordable projects)
- dinkies
- first-home buyers (developing market but finance restrictions make it tough for them)
- investors (a small percentage). They generally take a long-term view (useful when I return from overseas, Mum can live in it …). They perceive that the rental market for a quality unit (warm/dry) will provide a steadier return than a lower quality unit. Also, its attractive to investors who want a 'low-touch' option.

Most of our units have car parks with them but a few do not, although they need to be close to a train station or a transport hub (major bus route) for units without car parks to work.

Every development is different. We have previously targeted the higher end of the market but are now targeting the entry level ($400–600k) as opposed to $700k for a 2-bedroom unit. We always use durable product and thoughtful design with good use of space, but at the higher end, we will use higher cost fit-out and maybe two heat pumps as standard as opposed to optional.

Durability

We design to ensure the entire building will age gracefully. So, for example, in high traffic common areas like lift lobbies, we use tiles where paint might do and a high-quality palette to achieve graceful ageing. And the cladding is done for durability and to avoid a major reclad in 35 years, i.e. we use predominantly brick and concrete.

Price points

Price points are set top down by market analysis, examining current competitive offerings, and bottom up using cost analysis, to ensure a project is economically feasible.

We work with a sophisticated market. The empty nesters already own a large property, and they do their homework. They have an informed view on the MDH and townhouse options out there and the trade-offs available for location/price/quality perceptions. Likewise, first-home buyers. They've looked at their options – nothing, a fibrolite do-up or something in some distant part of town. In one of our projects, we offer something accessible (at a pinch) close to a train station. The offer is attractive to a first-home buyer since the price is set and they can easily do due diligence and line up bank funding based on a known property and known price. They don't have to go through the uncertainties of an auction process.

Equity in Watercare costs

Watercare charges $11k/unit for potable water and waste connections. This charge does not change for a small unit versus a large unit, and it can have a bearing on decision making. For a $410k unit, which would be 1 bedroom, the cost is 2.6%. For a $1.1 million 4-bedroom townhouse, it's 1%. The latter will generate a far greater volume of wastewater than the former, but both pay the same fixed charge.

It would be more equitable if charges were based on occupied m^2 (which would be simple to verify since it's in the consent), and it would more accurately reflect the potential load on the Watercare system.

Consenting

We have been especially pleased with the role of the account managers in the Housing Project Office. Their ability to get people with authority around a table to make decisions in one room at short notice was impressive. The ability for the council to respond to issues is crucial – and in development, you always get issues, like an unexpected sewer going through the middle of your land. The council needs resourcing and empowerment to react to these issues, and given there is one [Building Act] rule for all nationally, we don't see any reason why there shouldn't be a national unit that is staffed up to meet consenting peaks. Before the supercity, we used to limit our work to one part of the combined city, as we knew and understood the rules. With the supercity, the rules in Ellerslie became, essentially, the same as in Avondale. It gave us the confidence to move further afield and increased options for consumers.

Design that works

The group builders have standard designs for their stand-alone product and can consent those in short timeframes. We are looking to develop something similar for MDH, while allowing for all developments to have their own look and feel, but we are looking for replication that makes building more efficient. We have a very strong relationship with our architect, a construction company, and salespeople so that we can capture our design/buildability/market learnings and respond quickly to the market. Ideally, it should be possible to use a successful MDH template from one location elsewhere with limited reworking of the design and consenting process.

Building the team

We prefer to develop close working relationships, and where useful, we develop in-house capacity. We have a preferred list of builders and develop a trust relationship based on quantity and unit costings, which we occasionally test to the market. For example, the price of plastering has recently increased sharply.

Building size options

We build mainly two types:

- Low rise or small footprint: 3-level walk-ups. They are cheaper and quick (9 months) to build and therefore less risky. Project size can be adjusted in response to market trends more easily.
- Medium rise with large footprint: 4–6 levels and above requires expensive foundations (1–2 level basement), possibly a crane for between 9 and 15 months, and services such as fire, lift. Only a few companies have the capacity to do this work – it takes a lot of labour to complete the plumbing on a level inside a week. These projects take 2 years to build and 3–4 years from land purchase to settlement of finished units. You can face a market cycle in that time, but once it's started, you have little choice but to continue through to completion. So this style of MDH makes good use of land, but it is higher risk.

In all cases, the design emphasises the ability to age gracefully, so the use of durable materials for cladding and for high-traffic areas.

Car parks

We have found that, for MDH (targeting dinkies) close to transport hubs and especially train stations, car parks are not necessarily required. However, for most other

developments, particularly upper end pricewise with a focus on the empty nesters, car parks are a requirement to meet market demand.

Finance

We work only with tier 1 banks and do not use mezzanine finance. We have a small number of experienced equity partners we work with to fund the first stage of a project. These arrangements allow us to take a more aggressive approach to timetables, since normal financing arrangements may require 66%+ presales to manage the financier's risk, but we have the freedom to back ourselves to get it right and are not as constrained on achieving presales levels prior to construction.

Barriers

There are a limited number of places where MDH is permissible, given current height and density restrictions. These may change with the release of the new Unitary Plan.

Technical challenges

Acoustic isolation is a big issue, especially foot slap horizontally between units for concrete slabs that current standards do not test for. However, consumers do not like the inter-tenancy noise created. The current state of the art is not sophisticated to resolve this, and solutions in Europe are expensive.

The skills to manage acoustic issues with a wooden floor are not present locally. Therefore, we do not build using timber floors where acoustic separation is required.

B.3 Designers' views

B.3.1 Architect 1

Dual-key designs

Dual-key designs could have been sold 10 times over. The concept involves usually a 2–3-bedroom apartment where one of the bedrooms is fitted out as a studio apartment with a basic kitchen and bathroom, which is accessed via a small common hallway. They allow a first-home buyer to accommodate a 'flatmate' in an independent studio living arrangement to help fund the mortgage and then, as finances allow, to convert back into a larger apartment.[24]

The concept is relatively common offshore but has just been introduced to New Zealand as a way of helping first-home buyers onto the property ladder. It is reported that it costs an additional $10k to make the conversion. The banks find it attractive, and it makes strong commercial sense for younger buyers, especially those able to sustain a flatmate. The following financials are indicative:

- $775 per week = mortgage repayment @ 5% interest rate, 20-year term, 30% deposit on a 2-bedroom apartment ($700k = 70 m^2 @ $10k/$m^2$)
- $300 per week = rent (est.) for a well presented studio apartment.

As noted, the indicative income from a flatmate could reduce mortgage repayments by almost 40%.

[24] See http://www.stuff.co.nz/life-style/home-property/81557550/dualkey-apartments-sell-like-hot-cakes

B.3.2 Architect 2

3-storey terraces

We perceive the 3-storey terraced house to be a very strong offering, usually made of lightweight materials with prefab concrete for inter-tenancy separation. [An observation made by another stakeholder was that a 3-level terrace means that a 2 m x 5 m space is devoted to stairwell and it does not suit elderly or single owners who are the largest demographic.]

The 3-storey walk-up apartments are also attractive since most people can make them using lightweight materials and they are quick to build, with prenail systems coming to the fore.

Houses versus apartments

It is observed that Fletcher has split its delivery arms into housing (Fletcher Living) and apartments (Fletcher Developments), arguably reflecting the different skills needed to deliver.

Auckland trends

The demand for housing in Auckland is changing as people start to value their commute time more and the amenity the city offers, especially the CBD.

Design issues

A terraced house requires the designer to consider the front and back as opposed to windows all around in a standard house. For an apartment, getting perimeter to as many rooms as possible is desirable but creates trade-offs to be managed along with the need to get services out in vertical risers. The terraced house and low-level apartment is a well-known concept that has been developed overseas although it is new to us.

Acoustics

Lack of expertise in acoustics in the local sector is becoming a big issue. Floor slap on concrete floors travelling horizontally is a significant issue. Carpet is fine, but with timber or tiles, we need to add a sound-absorbing layer. The solution is some behavioural changes and perhaps some legislative change.

Keeping external noise out is also an issue. The council is assuming that people will go to sleep with windows closed to keep the noise out, Therefore, more ventilation is required, in addition to kitchen and bathroom extraction fans, to manage that.

Apartments

Apartments are a can of worms. The 3-storey walk-up is best and can be done by most builders. The 4–8-storey can be done by many, but above 8 storeys, the number of contractors falls off dramatically. Lightweight façades are not suitable for these, and curtain wall is expensive and does not like penetrations such as balconies.

Sweet spot

In Auckland, $750k for a 2-bedroom apartment is the sweet spot in terms of the number of buyers versus cost, so we target $10–11k/m^2 as the delivered cost to the consumer. We are working with one of our clients to deliver durable, credible and reliable apartments into the market, using 40 to 60 apartments as the typical project

size. We are refining designs to achieve all of that and targeting inner-city fringe and transport hubs.

The new Auckland rail link that connects Britomart, Mt Eden and Newmarket will be brilliant since it provides a loop for people to work and live that facilitates developments best suited to MDH.

Parking

Terraced housing with individual car parks is not efficient. The alternative is aggregated parking so consumers need to walk to their parking or basement parks, which are expensive. Some markets do not require car parks, but most do.

Bureaucratic elephant

Time taken for consenting (both resource and build consent) is a huge issue, driven by the council's concerns over being the insurer of last resort. Time to issue a consent has doubled in recent times. Anything related to standardisation that reduces uncertainty will help.

In one case, we are aware of a client taking a project to notification simply to get certainty over a timeframe. That is unheard of.

B.3.3 Architect 3 – MDH in Wellington

Demand overview

The family unit is getting smaller, and couples are having children later. The older generation are coming off the hills and onto the flat since they find cities a more vibrant place to be.

The Wellington market has solidity to it (grows in a controlled way), and we're doing much the same thing now as we were a decade ago attracting investors, young and empty nesters, roughly in the same proportion.

Most are happy with a 2-bedroom solution, which means 85–110 m^2, with a 3-bedroom 120–130 m^2. The market has previously demanded on-site garaging, but that is changing with the cost of providing them. There is little demand for 4+ bedrooms.

Reasons to buy

Reasons to buy are:

- ease of living – body corporate takes care of common areas
- doesn't have the density of 50+ units in an apartment block
- warm – insulation and double glazing
- common areas brings a sense of community.

High priorities are:

- easy living with good access (drive in)
- outdoor space
- sun
- proximity to shopping and transport
- size – the 3-bedroom options are approximately 20% larger than a competitive offering
- cladding – the cedar planking cladding makes the development look very attractive.

Low priorities:

- Kitchen and bathroom spec. Default settings were low. However, virtually all buyers chose to upgrade to the higher specified options.

Like:

- Warmth (double glazing and insulation), low maintenance with body corporate looking after the outside, modern inside.

Don't like:

- No garaging (in some cases) especially for elderly. 3 levels. Prefer more outdoor areas.

Economics

It currently cost approximately $700k to buy a nicely presented 100–120 m^2 house in a Wellington suburb, whereas it costs $600k to buy a 100 m^2 3-bedroom similar sized MDH. Equally, the economics of building a large home (200 m^2) in a central Wellington suburb are:

- $700–800k for a 400 m^2 section
- $700k to build ($3.5k/m^2)

So if cash is limited, MDH provides good buying. The market has accepted need for MDH close to city, but there is a shortage of affordable and developable land close to the CBD, which will limit developments, even though Wellington City Council is supportive of developments to change zoning to allow higher density and encourage consenting.

Indicative costs:

- Sell for $4–7k/$m^2$ – depends on quality and location, bottom range is for 147 m^2 house + 45 m^2 land in suburbs.
- Margin – 20–25%.
- Finance – 8%.
- Builder – $2.2/$m^2$.
- Land – $600–700/$m^2$, up from $200/$m^2$ in early 2000s.
- Consultants – balance.

Consenting

Time is critical. Invest heavily to get time for consent to be processed down, but the process is being reasonably administered by Wellington City Council. When a project is >15 units, it becomes a major project and triggers a more convoluted and expensive process. Fees have escalated significantly over the last 10 years and dealing with the council can be frustrating. Even when the inspector has signed off on the project, issuing the Code Compliance Certificate (CCC) can be delayed by a month.

Buildability

The market has responded with off-the-shelf systems to meet structural and façade issues with standard detail. Not a big issue for us, but it has made a building more expensive with two or three skins to keep weather out.

There is a better information flow than in the past so people are better aware of what they're getting and lawyers are more cautious. Agents are required to disclose more. Suspect that developers are more cautious now and work with established teams of architects/builders than in the past.

People assume that lessons have been learned of the 'no-noes' from the past, with use of external gutters, treated timber and vented cavities. People prefer sound claddings such as weatherboard.

Buyers

Buyers are:

- first-home buyers/young professionals – 40%
- investors – 30%
- empty nesters – 20%
- migrants – 10%.

First-home buyers find the 10% deposit on a new home easier than 20% on a used one.

Some older buyers who have homes elsewhere use them as a city bolt-hole (Kapiti/Wairarapa), but they are rare.

Buyer preference

If people had the money, they would buy the house with the land.

Kairangi

The Kairangi development in Miramar is an example of a local development. Extracts from the sales material are:

> ... combines the very best of modern living with a community focus at a remarkably affordable price ... A sense of space and quiet has been created using quality insulation, thoughtful design, and easy connection with the outdoors. Because you're creating a new home, there's also less maintenance – and you can rest assured that it will last for years because every detail has been completed to the latest standards of the NZ Building Code. Pricing starts at $435,000 for a 2-bedroom home (107 m^2 house + 30–42 m^2 private)

B.3.4 Civil engineer

Investment returns

Not only have costs risen, but returns have fallen. In the past, 50% margins were not uncommon, whereas developers today can struggle to achieve 25%, and many proposals are not getting off the ground.

Market drivers

Migration drives the market, including the subcategories such as students, Kiwis and skilled migrants who have different needs. Capacity constraints are driving prices up. It used to be just about getting land, but in recent times, the ability to deliver infrastructure is constraining the supply of development ready land.

Special Housing Areas (SHAs)

SHAs have helped, but they also drive prices higher since the requirement to supply 10% affordable units means that prices must rise in the others to support the development, thereby raising prices further in the next round of development.

Schools

Access to good-quality schools can be the biggest issue in getting market acceptance of a new development.

B.4 Builders' views

B.4.1 Builder 1

The on-site project manager was interviewed. The project was a 20-unit 4-storey terraced construction, double stud inter-tenancy walls, timber framing with steel portals for bracing and timber floors except for the concrete floor over the block-wall basement. The project used six house builder firms with each responsible for 3–4 units.

The project manager had 15 years' industry experience, and this was his largest management project to date. His main issues were getting the 6 firms to undertake the various stages as programmed. They tended to operate, as in the past, on two or three sites simultaneously. There was no certainty when they would be on site, causing problems in efficient utilisation of subcontractors across all units. In future, he would recommend that commercial builders be used because they tend to concentrate their workforce on one project until the work is complete.

B.4.2 Builder 2

The project manager was interviewed. He has previously worked on medium to high-rise construction, and this was his first MDH project. He has over 30 years' experience. The firm also has mainly built commercial buildings. The project is to be done in several stages. The first stage was for approximately 25 3-storey units with concrete floors and block walls. They are using commercial techniques such as a small tower crane, and the design is mainly concrete flooring and block wall basement, with timber framing on the upper two floors. The firm is quite large and is doing other projects simultaneously. They have skilled labour shortages across most projects and have a person tasked full-time on obtaining labour.

B.4.3 Builder 3

The site manager was interviewed. The project was an HNZ redevelopment site of 13 units with a mix of detached, terraced and duplex housing. The framing was timber to 2 storeys height. The firm employs contract labour only from a labour hire firm. For several weeks, the weekly turnover was two or three workers in the 10-person crew. In general, the level of skills was low. The leading hand supplied by the labour hire firm was not adequate either in his skill level or supervision of the crew. To achieve an adequate level of quality, the site manager had to closely supervise the work quality, and he arranged for demonstrations of how to do the various components. The project progress was quite slow, and the site manager estimated the project could be completed in half the actual time, assuming an experienced crew, and the use of some prefabricated wall panels.

The site manager said, in his experience, most other residential group builders in Auckland were having similar problems with inexperienced staff.

B.4.4 Builder 4

MDH compared to detached houses

As a straight comparison of build costs, 60-unit MDH can't seem to compete with detached houses built by large group builders (such as G J Gardner) on a $ per GFA basis. Although it is easier to spread set-up costs for a $10 million project (or thereabouts) denoted as provisional and general (P&G) over 60 units. Higher costs are driven by:

- inter-tenancy fire and sound separation required
- façade is different
- services such as sprinklers and/or lifts
- infrastructure is frequently needed to serve the site onto reticulation
- more consultants are used for design, consenting, structural, acoustic, traffic, services and peer review of issues such as façade engineering as required by the council on large projects. This adds cost, but it also adds value in terms of functionality, durability and buildability.

Consenting

Time is a significant driver. We don't want lost production waiting for consents between stages, and we want certainty on start times, so we invest to get a clear understanding of requirements for the content and detail in the documentation. Today, the council requires more detail and peer review on issues such as façade inter-connections, and these must be relevant to the project or else it gets knocked back. 4-storey apartments require peer review now.

However, we feel the cost spent on peer review is well spent. They are very thorough, and we ourselves hold workshops with specialist façade providers and subbies to ensure details are compliant with wind loadings and are thought through. It is time well spent, and they are appreciative of feedback. This is a huge step up in detailing required on façade and external systems to get a consent. Previously, indicative detail was sufficient, but now it must have more detail and be project specific.

Work mix

60% of our work is in high rise with 40% in MDH, our largest job being a $70 million high rise with the smallest project being around $3.5 million, ranging from detached houses to terraced houses to 4-storey apartments.

75% of our work is sourced from long-term clients or people who seek us out to work with, and price is negotiated. Our clients are generally sophisticated, and it is straightforward to maintain 'commercial tension' by developing a cost plan based on agreed rates and quantities. Most of our costs are subcontracted, so we negotiate a price based on agreed quantities and rates, negotiated between our QS and the client's QS. If required, an independent QS is used to arbitrate any sticky issues. We maintain in-house capacity for some trades, and these are costed using rates typical in the market agreed between the QSs. There is a strong level of mutual trust. It is relatively simple for us since we contract most services out. However, for a larger firm with more internal products/trades, the challenges to agree a fair price reflective of a competitive market are greater.

We run several teams and try to target work for a team to maintain continuity and will tender fit-outs to balance workload. The MDH is attractive work since it is relatively simple and a good training ground (in comparison to high rise). We use it to give experience to our younger project managers to learn the financial management of a larger project ($3.5–10 million) without being burdened by the complexity of the structural engineering and foundations typical in a high rise.

MDH façade systems

We tend to use traditional façade systems (usually specified by the architect). For MDH, we usually use traditional timber and brick veneer, timber frame and cavity. We have generally stayed away from sheet products and occasionally use precast.

Resource constraints (concrete)

The supply of ready-mix concrete is under some stress in Auckland. Demand from builders and from infrastructure projects is stretching existing capacity such that projects need to pre-book concrete (2–4 weeks in advance even for large pours, say 200–1,000 m^3).[25] In addition, there are financial penalties if a pour date is changed or trucks are delayed on site due to weather or scheduling issues. In the past, the ready-mix providers had sufficient capacity to respond quickly to demand, and it was not an issue to change a pour if required. Not now.

On the prefab side, demand for panels from infrastructure projects to line motorways and train tracks is easier for a prefab supplier to meet, since they are simple and numerous, rather than architectural components, which have complex fittings and facings and are few by comparison. Over the last 5 years or so, precast concrete components have doubled in price. Some of this has been due to increased seismic requirements (extra reinforcing), but a lot is due to the demand, especially from infrastructure.

In the last 18 months, the demand for skilled labour for concrete formwork trades has increased 50%, and when that component of total build cost can be 10–15%, it can cut into margins.

Approaches to manage this:

- Strategic alignments to guarantee work in response for preferential service.
- 20% premium to guarantee service.
- On-site batching plants have been considered but are not currently considered feasible due to the concrete certification requirements needed, especially to guarantee performance in high rise. Ready-mix providers currently deliver that service. No on-site batching plants are planned in the short term.
- Extra days are being put in the schedule to ensure pour dates can be met reliably. This can introduce delay and increase cost.
- Longer-term relationships with related trades.

Resource constraints (staff)

We train them, give them experience at leading a team, develop them, support them, pay them what they're worth and then hope the competition doesn't poach them. We need guys who can read a plan and can make technical enquiries back to engineers and architects when needed. Everything we do is different, and they must be able to think through the problem and get a solution. We don't operate the group builder

[25] A typical concrete truck has capacity for 4.8 m^3.

model where everything has been thought through beforehand, costed and all the subbies know what's required. They should be able to deal with complex changes. Most projects are a new learning curve, and the guys must handle that and be attentive to detail. On some projects, we can have hundreds of technical enquiries back to architects/engineers.

In the current climate, we look widely for people in South Africa, UK, Australia. We're like the United Nations here with people from Eastern Europe as well as Kiwis.

In the last 18 months, prices from subbies have increased 50% in some trades in demand (say carpentry, steel fixers, concrete formwork), and even then, it can be difficult to secure the necessary capacity. To manage this, some people are entering exclusive arrangements with preferential rates, no tendering and charge up.

To manage this, we've recently brought in a team from the Philippines to control costs in that area. They are very skilled and do a good job, but it is too early to tell whether this is the way of the future.

Currently, people are predicting 5 years of continuous work, but I've seen a few building cycles where projects stall because developers can't get builders for the costs they budgeted on, and then the work starts drying up. The structural guys are usually the first to notice a weaker market.

Buildability

Table 18 presents the relative and average complexity of different projects.

Table 18. Project complexity.

Type	Complexity rating (relative)
Group-built house	2–3
Terraced house	5–6
Low-rise apartment	8
High rise	10

Source: pers. comm.

We observe the significant jump from a detached house to terraced housing, where the scale of the project has grown from a $300–400k build project to a $5–10 million project, with all the attendant planning, consulting, logistics, funding and organisational issues involved.

By comparison the jump to low-rise apartments and then high rise is manageable, even though the technical and engineering complexities grow. The high-rise complexities cover underground issues such as piling, basements, traffic control and structural detail. However, high rise does have the benefits of repetition. The team learns how to do it on the first 3 floors, and the rest tend to go like clockwork.

To manage project complexity, we typically conduct buildability and value engineering workshops with the consultants early in the project to identify areas where we can do it quicker/better/less complex. These workshops pick up on lots of things and improve the quality of the documentation. We often find that the designers have not been to site often enough and don't understand that, if a 20–30 mm reinforcing bar in a concrete prefab unit is not quite right and in the way, you can't bend it. It becomes a major issue on site to sort it out, and we stress the need to have sufficient tolerances

in components to enable smooth placement on site without compromising performance.

Typical areas of particular interest:

- Façade/structure interface details.
- Floor slab and structure interface details.
- Rationalising the use of multiple products adjacent to each other doing similar jobs, where different trades are needed to manage each component. Rationalising this can save time and cost. Structural steel and precast concrete used to implement a façade can often be more efficiently done by integrating the functionality of the steel into the precast component, often at little or no additional cost.
- Foundations present the opportunity to integrate strip footings and floor slab and pour in one operation. This is more efficient and reduces risk of footings filling with water.

We find that terraced house details are well known, and there is not much to be gained there. However low-rise apartments and high rise benefit greatly from this approach or where a project is bespoke and complex.

Not all clients are keen for this approach. Some are hands-off or bankers, and they can't add value to the discussion. But we think it offers good value. We use design engineers internally to initiate these workshop sessions.

Efficient solutions

There are opportunities to make things more efficient via automation and prefabrication, but New Zealand is too small and uncertain a market. In the US and elsewhere, when people establish factories and invest in moulds and automation, they keep the factories busy 24/7, but it needs constant and consistent demand. There is interest to build low-rise apartments with tilt-up prefabricated concrete components. However, there needs to be certainty of demand (such as 100 buildings per annum) for people to invest in the gear to get the efficiencies. I've seen that work in Australia in a related area where a public agency funded the development of a component that became a national standard and was used all over Australia. This requires a large agency (such as government) to underpin the investment.

B.4.5 Builder 5

Evolution

We have developed a residential practice in MDH from a traditional high-rise and commercial construction company. Most of our work is now derived from well established contacts or people who choose to work with us, although we tender for about 50% of work. We are actively seeking to develop relationships with Housing New Zealand to participate on the panel of builders in the large developments planned for Point England and to have a mix of work covering state housing, high-end apartments and terraced houses. Our work covers a mix of sizes but mostly involves concrete inter-tenancy separation with lightweight timber infill. We target this work since it is sustainable and try to avoid the risky work with basement level developers.

In HNZ work, they require us to use concrete for inter-tenancy separation since it handles fire and sound ratings, and it's not much more expensive than wood/steel. Their cost engineers say it has a lower lifetime cost, but it can be hard to get.

Skills development

We support the apprenticeship scheme and develop our resources into two streams depending on skills and interest – either outside doing formwork or inside doing fit-out and joinery. It's tough since the old apprenticeship scheme was damaged. We can share teams with the commercial side of our business where sometimes we do fit-outs for them and sometimes they help us with structural work, but there's not a lot of mix and match.

Consenting

This is outsourced to consultants, and since time is so critical, we try to understand council needs for the level of documentation required.

More buildings are requiring resource consents since higher prices for land mean smaller lot sizes and taller buildings, and the developer must jump through more hoops before the pricing stage. But it gets easier, and we can anticipate what they want.

Quality and buildability

Sustainability is becoming an issue, and it requires QA inspections, which becomes a form of enforced quality control. In addition, one major client requires cost-engineering work be done upfront as part of the design review process where there is some flexibility in costing such as where there is uncertainty around the loadbearing capacity of volcanic soils, which may require change to foundation details. We walk through the options for efficient procurement within loose guidelines on end quality.

We are getting in at an earlier stage in the design process and have more say in how things should go, although things like claddings are fashion driven and often are not cost-efficient. We are finding that, if you have a good market presence and have the capacity, it is an attractive position to be in. We get into a better position with a developer where they draw on our expertise, and it is cheaper for them and easier for us. It provides a secure outcome for both sides.

Staff retention

We maintain a mix of 60% seniors and 40% juniors, and we keep them engaged by mixing things up and trying to give them interesting projects to work on, using a 'do it once, do it right' approach. We try to stay away from the group builder model, which generally uses a high mix of juniors and a delivery model targeted at off-the-shelf and repeat specifications. We sell the value of our senior heavy workforce to clients who are looking to create a durable product that can withstand the rigours of the rental market, especially in social housing.

QA risks

We make use of recognised appraisals and stay away from risks associated with imports. We have a robust QA process and look to see that happening with all our subcontractors who are responsible for the QA of their work.

Managing workloads

We maintain a sizeable workforce on a waged basis and source workload to keep them busy and support an apprenticeship scheme to bring new guys through. We also maintain relationships with a labour-only company to meet peaks and have used offshore sourcing to meet need for specialist trades (i.e. concrete formwork), although

that is not our preferred approach. A times, we make share teams from our commercial associate but generally for specialist skills such as QS.

Project cost breakdown

Table 19 presents the cost breakdown for significant trades for a complex of 13 apartments.

Table 19. MDH cost breakdown – small apartment project.

Cost	$ per GFA	% of total
Professional design + consenting	$186	6%
Local authority + infrastructure	$177	5%
Sundry	$59	2%
Preliminary and general (P&G)	$308	10%
Site prep and landscaping	$380	12%
Foundations	$162	5%
Structure	$440	14%
Cladding + external joinery	$556	17%
Interior trades	$246	8%
Interior walls	$283	9%
Interior fittings + joinery	$278	9%
Overhead and margin	$161	5%
Total	$3,237	

Source: pers. comm.

B.4.6 Builder 6

Experience of market

Most of our work comes via repeat work with selected commercial clients doing relatively simple warehouse and office-related work. We came to the market due to the changes in market demand, and we found that our skills in managing a project site made us more competitive than the group build companies also at that site.

Consequently, we now find ourselves working on MDH projects ranging from terraced housing to low-rise apartments and similar. In our view, the sector runs on relationships, and to control quality and efficiency, it is important to have a strong site presence and to build relationships with the trades doing the work. The terraced residential work we do is at the upper end of the complexity spectrum due to the large number of subcontractors on site and their relative inexperience with the disciplines required on a large project site (H&S, parking, access etc.).

By contrast, the 4–6-storey apartments are done with commercial teams who have the scale and disciplines needed to work on a large project site.

Risk management

We control our risk and therefore our production efficiency by working with design consultants and clients that we are familiar with. This is especially so in areas such as the façade, where we use façade engineers among others to manage and control this risk. The complexity of the façade can have a strong bearing on the project viability for us. In terraced housing projects especially, the detailing, texture variability and complexity that the market demands in this area starts to push our comfort level.

Contracting method

Most of our work is delivered using the early contractor involvement (ECI) method. It is based on relationships we have developed with long-term clients and our willingness to protect our clients' interests, which is also in our long-term interests. It does mean that we must work hard to ensure we are getting the best value for them, considering market conditions. It only works where there is commitment by senior managers on both sides (i.e. those with judgement who understand where their long-term interests lie and have the authority to make decisions). From the contractor's perspective, we must be able to live in the client's shoes. We work as a developer as well as a builder, so we can step into the client's shoes with ease since we have an acute awareness of the market and how it is evolving.

In our opinion, this method delivers the best outcome for the client. If a client adopts an adversarial model where all work was tendered and parties are managed in a dictatorial manner, over time, the defect rates are bound to increase. In that model, severe legacy costs often arise on both the contractor and client. However, making ECI work for the client can be challenging, and not all clients are ready for it. It works best where there is the potential for long-term association between both parties. It can be made to work with good quantity surveyors reviewing market rates, but it usually requires the right client who has the experience and attitude to make it work.

Value sweet spot

In our experience, given the costs to set up a site and the incentives to do it right over the longer term, the type of volume that is required to get good design/build outcomes for the MDH market (say considering possible social housing options) is 50–100 units per annum over a 4-year horizon.

That sort of scale and certainty gives the incentives to develop a build design and programme that is efficient and durable.

Supply chain

The low-level apartments are sourced out of the commercial supply chain, which has the capacity and experience to handle high-volume work. We estimate it is 30% cheaper to build using this method than using the labour-intensive methods typically applied on a terraced house site. There the residential supply chain is used with lightweight materials. The process is labour intensive, costly and difficult to control, and we have found working at the 'retail' level challenging. In commercial work, you are working with professionals who understand the industry and the normal tolerances. By contrast in the retail market, the consumer often has expectations that may not be met with standard commercial tolerances. This requires more resource to manage.

While standard residential builders have the skills to manage client expectations in this area, they don't have the skills to operate effectively on a large project.

Cost breakdown

Table 20 presents a cost breakdown of apartments and terraced housing for projects nominally in the 2015/16 timeframe. In the difference column, positive values indicate areas where terraced housing is more expensive, whereas negative values indicate areas where apartments are more expensive.

Table 20. MDH cost breakdown – apartments and terraced houses.

Work item	Apartment $/m²	Apartment %	Terraced $/m²	Terraced %	Difference in total unit costs
Preliminary and general	$351	12%	$405	12%	
Demolition	$8	0%	$0	0%	
Piling/ground anchors	$56	2%	$0	0%	-2%
Shotcrete	$14	1%	$0	0%	
Excavation	$204	7%	$43	1%	-6%
Concrete work	$117	4%	$177	5%	
Tanking/waterproofing	$0	0%	$0	0%	
Precast concrete work	$382	13%	$130	4%	-9%
Reinforcing steel	$42	1%	$0	0%	
Structural steelwork	$248	9%	$71	2%	-7%
Blockwork	$16	1%	$196	6%	5%
Speedwall	$18	1%	$0	0%	
Metalwork	$97	3%	$16	0%	-3%
Aluminium joinery/curtain walling	$98	3%	$140	4%	
Roller shutter doors	$3	0%	$18	1%	
Carpentry work	$63	2%	$776	22%	20%
Steel stud framing/ceiling grid	$82	3%	$0	0%	-3%
Hardware	$15	1%	$13	0%	
Joinery doors	$31	1%	$31	1%	
Wardrobes	$12	0%	$8	0%	
Joinery fittings	$83	3%	$124	4%	
Joinery stairs/landings	$0	0%	$16	0%	
Roofing	$42	1%	$137	4%	3%
Membrane roofing	$0	0%	$0	0%	
Plumbing services	$140	5%	$282	8%	3%
Drainage services	$29	1%	$0	0%	
Mechanical services	$104	4%	$39	1%	-3%
Fire protection services	$30	1%	$0	0%	
Vertical transportation	$20	1%	$0	0%	
Electrical services	$173	6%	$128	4%	-2%
Specialist services	$0	0%	$8	0%	
Solid plaster	$9	0%	$0	0%	
Insulation	$18	1%	$0	0%	
Plasterboard linings	$106	4%	$125	4%	
Suspended ceilings	$0	0%	$22	1%	
Tiling	$80	3%	$38	1%	-2%
Floor coverings	$36	1%	$66	2%	
Painting and decorating	$57	2%	$122	4%	2%
Specialist finishes	$12	0%	$0	0%	
Glazing	$9	0%	$1	0%	
Fall arrest system	$5	0%	$0	0%	
Hard landscaping	$0	0%	$0	0%	
Soft landscaping	$16	1%	$261	8%	9%
Seismic joints	$3	0%	$0	0%	
Fencing	$0	0%	$0	0%	
Signage	$1	0%	$0	0%	
Acoustic fence	$3	0%	$0	0%	
Appliances	$17	1%	$21	1%	
Sundries	$0	0%	$0	0%	
Contingency	$50	2%	$51	1%	
TOTAL	$2,851	100%	$3,465	100%	22%

Source: pers. comm.

It is observed that apartments are significantly (22%) cheaper to build on a unit rate basis than the corresponding terraced houses. The apartment project is three times the size of the terraced project, but that is not expected to make a significant difference.

The builder comments that terraced houses are more labour intensive using predominantly lightweight materials. Therefore, terraced houses have higher unit costs for carpentry and plumbing as opposed to apartments built from concrete and steel, where concrete, steel and excavation unit costs are more significant.

B.5 Other stakeholders' views

B.5.1 Real estate agent

Location

Demand for apartments in the Auckland market is driven by three main issues:

- Views and access to amenities (mostly vibrant inner-city life).
- Transport hubs (the rail network or easy access to the motorway).
- Schools/universities.

To achieve A grade prices, the developer needs to have an A grade site, small scale and support that with attractive design and quality build.

Current market

There are examples of several projects (perhaps around 20) that are stalled because the level of presales was insufficient to put the project across the line for funding. There are a number of reasons:

- Value: Buyers are savvy and will not pay A grade prices for anything other than A grade product. The price, size, site amenity, design and build quality need to be consistent.
- Cost escalation: Builders and subcontractors are very busy, and costs are escalating. Any delays caused by consenting or other issues put the project at risk since the build cost can't be fixed.

Empty nesters

The empty nesters or 'accidental millionaires' are driving large segments of this MDH market (as opposed to small apartments that target investors and/or students). We estimate there are 25,000 in suburbs such as Epsom and Remuera who are living in a valuable home and looking for a change to the next stage of their life. They usually live in a good home and are savvy and looking to move into something that has quality and views, is well designed, provides good amenity and is good value. They usually already have a bach, are looking to put money into the bank (after selling their current home), say 30–40% of the sale value, and looking to pay $1.2–1.6 million for a unit. Putting a deposit on a unit gives them 2 years to sell their existing house and prepare for a new direction in their lives, which they are very excited about. Projects with large apartments (>100 m^2) that are mainly in small developments (<100 units) are mainly sold (80%) to empty nesters. They are looking for Miele appliances, high studs, timber floor, good design, a car park and good amenity.

The ridge along Great North Road is proving popular since harbour views are protected by heritage designation and it is close to the amenities of Grey Lynn and Ponsonby and close to the motorway. It rewards low-rise MDH style developments.

In most cases, they wish to live close to where they already live, and for some, being close to where grandchildren are going to school is an issue.

Rental demand

The CBD and around transport hubs is showing strong rental demand but is providing only an OK return to investors, given recent cost escalation, where 60% are going to investors with the balance to owner-occupiers. In recent times, it is proving difficult to get presales settlements to a sufficient level due to rise in prices.

Transport/university

Projects that target the transport hubs and university precincts tend to be 60% investors who then rent these primarily to the student rental market, which has grown in recent times.

Stresses on the market

It used to be unheard of to ask \$10k/m^2, but now the economics of production (driven by higher costs of land and builders) are forcing projects to ask \$15k/m^2 for the development to stack up. Thus, only experienced developers can compete to achieve the quality and delivery, and projects are being cancelled. A developer requires equity to practise in this market, and you need to question whether the developer can deliver. There are young guys coming through, but they need to work closely with QSs to ensure their costings are up to date. In many cases, there are examples of people who don't, and they can come unstuck.

New developers

A few Chinese developers are coming into the market, some of whom have built whole cities. They bring capacity that the market desperately needs, and many are very experienced in China but not experienced in the small scale and dynamics of the New Zealand market.

B.5.2 Economist

Land prices

MDH and HDH are a response to high land prices, but it can be difficult to get a lot large enough for a project. An old industrial or recreational site is ideal (i.e. old garden centre or bowling club). Few developers have the resources to acquire land piecemeal. In international jurisdictions, there are examples of neighbours getting together to market their land as a block but so far no obvious examples here. The Special Housing Areas (SHAs) were an attempt to make it easier to get lots of sufficient size and in a timeframe to justify development but at the expense of less community consultation. The Great North Road is an SHA but neighbours complain that the developments are higher than they perceived – 6 or 7 storeys rather than the 4 storeys they expected.

Projections

Based on trends in cities such as Brisbane, we are projecting a 25% increase in the mix of multi-unit developments (MDH + apartments) over the next 2 years. The experience from Australia has been that, as cities grow and congestion increases, there

is more value in being closer to work, hence the demand for units in the CBD and CBD fringe. In the 1990s in Auckland, there was value in living away from the city in places such as Titirangi, since travel times around the city were reasonable (see Mare, Coleman & Pinkerton, 2011). Thus, land prices sometimes increased the further out from the CBD. However, as traffic congestion has risen, this dynamic has changed, and there is now value in living closer to work and close to transport hubs and good schools.

Statistics New Zealand estimates that 25% of employment in Auckland is in the CBD and CBD fringe. If the 80,000 or so tertiary students are added to this, the number who are seeking to be close to the CBD rises, hence the demand for CBD and CBD fringe living. Because the people are moving in, investment in the form of living space and bars/cafés makes this area an increasingly attractive place to be. Experience from the major Australian cities suggests a strong trend in land values, which continuously decrease the further out from the CBD (see RBA, 2012). The expectation is that Auckland follows their trend.

Architecture

Our practice has come to MDH primarily from commercial work (hotels, large apartments etc.), rather than coming at it from a purely residential experience base.

B.6 Interview conclusions

These are the conclusions from the interviews from the point of view of demand drivers:

- The main buyers of apartments are in three main groups – empty nesters, young professionals with no children and investors.
- The first two groups are particularly interested in city fringe apartments. Some of these currently being built are above 6 storeys and outside our MDH definition.
- First-home buyers can purchase city fringe apartments under a dual-key arrangement, which enables them to rent out to pay down the mortgage.
- 3-storey terraced housing in the suburbs has strong demand for first-home family buyers, particularly if communal space is well designed. These units are quickly built and are usually cheaper compared to apartments.

On the supply side, these are some points of note from the interviews:

- Banks will fund up to 80% of apartment projects, but significant pre-commitment, usually close to 100%, is required.
- Finance companies and developers fund the other 20%. Some financiers will fund the whole project when working with a developer with a favourable track record.
- This also applies to the larger terraced housing projects, but small projects are funded by private individuals.
- Apartments take approximately 2–3 years before the developers recover their initial investment, and any delays (council, labour or material shortages) affect the viability of these projects.
- Generally, MDH construction above 3 storeys is undertaken by commercial builders.
- Traditional house builders are moving into the smaller terraced housing projects.
- Some financiers are prepared to help builders make this transition from detached housing to terraced housing developer.