STUDY REPORT

SR 295 (2013)

Auckland housing forecasts and the Unitary Plan

IC Page

The work reported here was funded by BRANZ
from the Building Research Levy.

ISSN: 1179-6197

Preface

This report describes some aspects of the Auckland Plan related to zoning and the effect on new housing. It was produced because it is believed new housing types in Auckland will change from a predominance of detached to a larger percentage of multi-unit type housing. This will be a mix of terraced housing and low, medium and high rise apartments.

Acknowledgments

This work was funded by the Building Research Levy.

Note

This report is intended for builders and designers. It provides details of the Auckland Plan and the BRANZ interpretation of the types of housing, location and timing of their construction.

Auckland housing forecasts and the Unitary Plan

BRANZ Study Report SR 295

IC Page

Abstract

The Auckland Plan sets out the strategic direction for the future of Auckland. It covers economic, social and environmental considerations, housing, physical infrastructure, and transport. Included in the Plan are zones for various housing types, with an emphasis on intensification of housing mainly within the planned metropolitan urban limit (MUL). The relevance to the building industry is that housing types are changing and builders and designers need to be aware the predominance of detached housing in new builds is coming to an end.

Contents Page

Figures

Page

Tables

Page

1. INTRODUCTION

The Auckland Plan was released by Auckland Council in March 2012. It provides estimates of new housing demand by urban centre classification and estimates of demand outside the urban limits, out to 2040. The subsequent draft Unitary Plan sets out land zoning at a detailed level and was issued in March 2013. It shows zoning at the lot level and hence indicates how individual owners could be affected by future developments. Subsequently, the zoning was revised in late September 2013 following extensive feedback from the community. The revisions mainly relate to the mixed housing zones where two sub-zones were developed.

This report has used the September 2013 zoning maps to estimate the number of new houses by zone and type out to 2021. The forecast horizon is curtailed to 2021 for two reasons: first, the further ahead the less accurate the forecasts are likely to be; second, designers and builders are more interested in the immediate, rather than distant, future.

Affordability has been a hot topic recently and some analysis on selected areas was done in this report to estimate likely sales prices of new housing. It confirms the analysis in the Auckland Plan that median income households will struggle to afford housing in Auckland. For completeness, renovation, alterations and additions work to the existing housing stock has been estimated because it is a significant proportion of builders' workloads.

2. SUMMARY

The main findings are:

- The amount of bulk-serviced green field land is sufficient for about 15,000 sections. There are also approximately another 22,000 scattered sections in suburban and rural areas. These two sources can theoretically supply about three years of demand, although as not all existing sections are easy to build on, probably only two years of supply is available in reality.
- In parallel with these ready-to-go sections there is demand for redeveloped sites within the Metropolitan Urban Limit (MUL) and for new green field sites outside the MUL.
- Due to the time constraints, new green field sources are unlikely to be ready within four years and most demand between years two to four will need to be met with infill and site redevelopment. It is likely some redevelopment will occur earlier due to demand for units in established suburbs.
- A large number of land parcels within the MUL are suitable for redevelopment and BRANZ estimates prices as low as $318,000 per unit may be possible with four-storey apartment developments.
- Less intensive redevelopment in mixed housing zones are estimated by BRANZ to be priced at between $470,000 to $880,000 per unit, depending on location. These are in developments of between four and 15 units per land parcel (typically 900 sqm to 1700 sqm land area) and are typically attached townhouses or terraced housing.
- In the eight years to 2021 approximately 84,000 new units will be required and it is anticipated approximately 44% of these, or 37,000, will be attached units. The

remainder will be detached houses and about 6000 of them are assumed to be outside the current MUL and built on sections not ready until after 2018.

- Builders need to be aware that multi-unit construction will become a significant part of future work and they may need to reorganise their firms, including joining with others (developers, other builders), to undertake these larger projects.
- Alterations and additions work remains a significant part of future building workloads, about 38% of housing and commercial work, but it is declining as a percentage of total workloads.
- An increase in building work is forecast for the next eight years. On average, dwelling-related value of work is likely to be up 56% on current workloads.

3. MAIN RESULTS

New housing starts are recovering nationally from a 40-year low reached last year. Most growth is occurring in Auckland and Canterbury. In Auckland new starts are expected to more than double. Over the next eight years to 2021 BRANZ estimates the average number of new dwelling units required in Auckland will be about 10,500 per year, contrasting with 4800 consents in the year to March 2013. This is a significant increase in demand and will stretch the capacity of the industry in Auckland.

Another major change is that the proportion of new multi-unit consents is expected to steadily rise. BRANZ forecasts are for an increase from about 20% now to 60% in 2021, see Figure 1. The multi-units will be mainly terraced housing and low-rise apartments. Detached house builders will be able to adapt to the smaller multi-unit developments, but for the larger projects, i.e. apartments four storeys or more, some detached housing builders may wish to scale up their operations, perhaps by merging with other small-scale colleagues.

The type of new housing depends on the zoning of the land and the BRANZ forecast to 2021 is shown in Figure 2.

Vacant section capacity scattered within the MUL is about 22,000 and many of these are expected to be used in the next eight years. In addition, several green field sites have been zoned residential within the MUL and have capacity for about 15,000 housing units. Most are near bulk infrastructure (water supply, waste water disposal) and many are immediately ready for building as roading and individual connections have been made.

In the single housing zone infill is permitted provided each house has a minimum land area of 500 sqm. This option is the easiest for builders, apart from having a vacant section, especially when the existing house does not need to be moved and/or access is available around it for construction.

In the mixed housing zones the public feedback was that intensive development is not wanted so two sub-zones were developed. In the suburbs the maximum is two storeys and a minimum of 400 sqm land area per dwelling. In the “so-called” urban mixed zone up to three storeys are allowed and there is a minimum of 300 sqm of land per dwelling. On land larger than 1200 sqm the allowable density is one dwelling per 200 sqm of land for the suburban mixed housing zone and unlimited density for the urban mixed housing zone. However, only moderate uptake of these sites is envisaged at about 17% of capacity over the next eight years.

The terraced housing/apartment zones are near town centres and along transport routes where up to four storeys is allowed. Due to public opposite of redevelopment in suburban areas we have assumed the percentage uptake of terraced housing-zoned sites will be

higher compared to the mixed zones, but still only 20% of capacity over the next eight years. The former also allows for cheaper housing due to the greater densities.

In business areas (town, metro and city centres) housing can be developed to four, six, eight or more storeys, depending on the zone, and this is all multi-unit construction. This business zone is a significant source for new housing, accounting for about 19%.

Rural areas have a large number of vacant plots and many parcels that can be sub-divided to some extent. These are mainly located in the old Rodney and Franklin districts, but low numbers are expected in these zones.

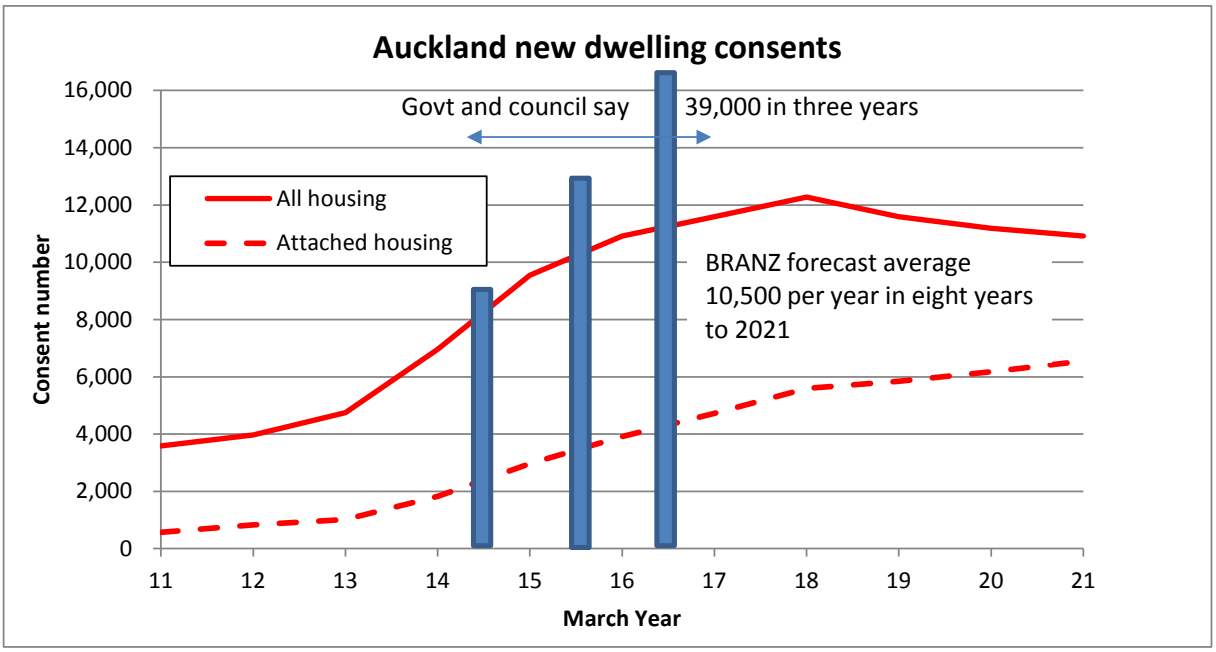


Figure 1 Auckland housing forecasts

Lastly, the BRANZ forecasts assume there will be some detached housing on new green field sites which are adjacent to services in rural and coastal towns. Also, some land is rezoned residential near or adjacent to the current MUL at Warkworth, Silverdale, Kumeu and Pukekohe. This slice is 8%, see Figure 2, and would have been larger but it is believed it will take a significant time to develop the required infrastructure.

The Unitary Plan now goes through a three-month second submission process and it is likely any changes will be small.

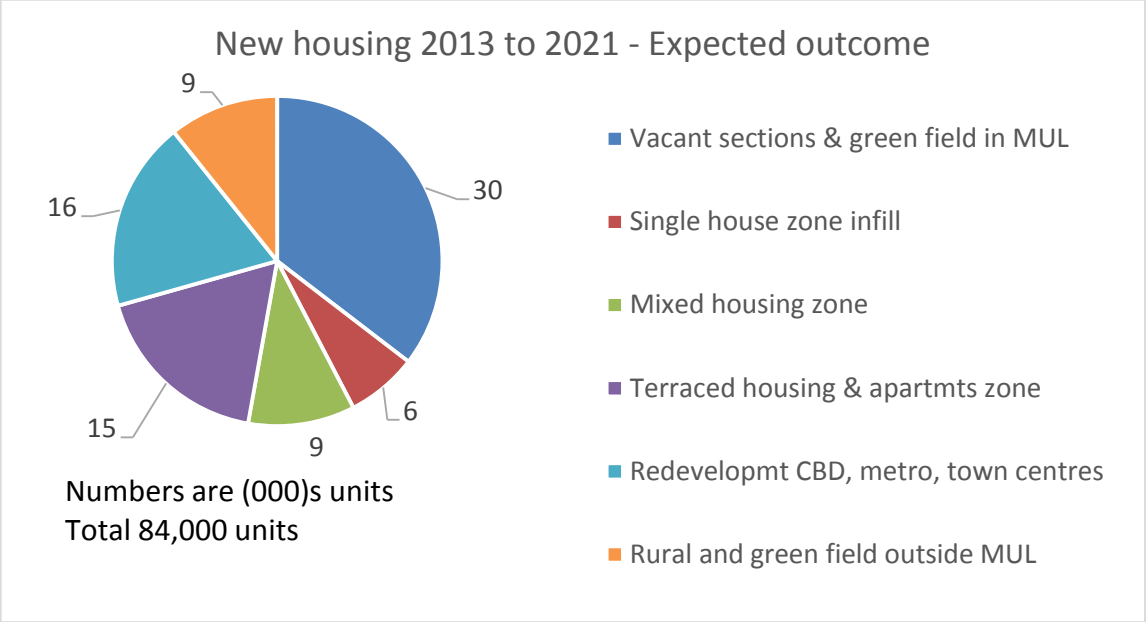


Figure 2 Auckland new housing forecasts by zoning

3.1 Scenarios

The above is the BRANZ expectation of the new housing mix. However, the actual mix will depend on redevelopment opportunities within the MUL, including costs, preferences, affordability and any council and Government encouragement of particular developments. It is uncertain how successful intensification will be and the exact mix between infills, low-rise developments and medium to high rise developments is unknown.

Three scenarios are shown in Table 1 and further details on how these were derived are in Section 6.1 of the Appendix. The middle scenario is the one used for the numbers by zone reported above. The total number of units is the same in the three scenarios, namely an 80,000 increase in household capacity by 2021. Demolition replacements are included in the number of new units and this amount differs depending on the scenario. The more intensive the scenario, the greater the number of demolitions required. The zoning mix changes from low redevelopment on existing sites, the expected outcome presented in Figure 2 and a scenario with quite high redevelopment within the MUL and no green field developments outside the MUL.

The three scenarios give quite different outcomes for the proportion of detached housing, ranging from 90% to 34%.

Table 1 New housing scenarios

New housing by zone type scenarios - BRANZ estimates			
Number of units 2013 to 2021 (000)			
	Redevelopment within the MUL		
	Low	Expected	High
Vacant sections ready now	20	18	9
Green field within MUL	14	12	11
Single house zone infill	7	6	4
Mixed housing suburban zone	4	6	8
Mixed housing urban zone	1	3	3
Terraced housing/apartments zone	7	15	30
Redevelopmt (CBD, metro,town centres)	5	16	22
Rural areas	8	3	0
Green field outside MUL	16	7	0
	82	84	87
Detached housing %	90%	56%	34%
The new housing totals differ slightly because different demolition			
replacements are required in the three scenarios. New households to be			
accomodated is 85,000 households in all scenarios.			

3.2 Affordability

Affordability of new housing depends on the deposit available and household income. For most first-time buyers it is difficult. With a 15% deposit and a household income of about $85,000 a house price of about $420,000 is affordable. This assumes repayments are no more than 30% of income and interest rates at 5.5%. Existing house prices in most of Auckland are above this level, see Figure 3.

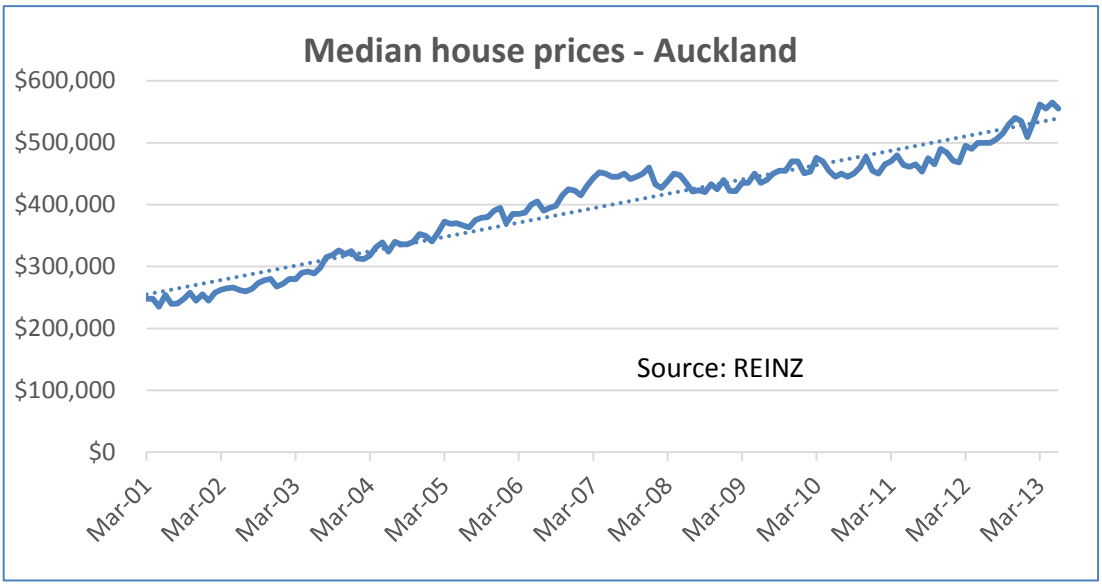


Figure 3 Auckland existing house median prices

BRANZ estimates that low-rise new apartments, about 65 sqm to 90 sqm floor area net, can be provided at this cost in New Lynn or Onehunga but not in the more central suburbs. Inner-city apartments are also available at this price but the units are quite small. More details of affordability are in the Appendix.

3.3 Workloads

The estimated workloads over the next few years are shown in Table 2. At present building work (excluding civil infrastructure) is about $5.5 billion a year in Auckland so a 40% increase on average is estimated for the next few years. Approximately 10,500 new housing units per year are required through to 2021. The Appendix has historic data on housing trends and indicates a peak in the 2002 to 2004 period of about this amount. So the industry is capable of this level in Auckland but it will entail rebuilding capacity and scaling up of existing firms' activities.

Table 2 Building forecasts for Auckland

Building work in Auckland BRANZ forecasts		
	$m per year	
	2013	Average to 2021
New housing	1,529	3,293
Residential additions & alterations (consented)	618	867
Residential repairs and maintenance (not consented)	1,435	1,413
Non-residential new & additions (consented)	1,473	1,667
Non-residential repairs & maintenance (not consented)	443	460
	5,498	7,699
Non-consented A&A is assumed to be three times consented A&A for housing based on the Household Economic Survey. For non-residential bldgs assume a a factor of 1.0 on consented work for non-consented R&M work.		

The forecasts include Auckland Plan demand and maintenance requirements of the existing housing stock, plus non-residential building needs. More details are in Section 6.2 of the Appendix.

4. DISCUSSION

The Plan calls for 100,000 new dwelling units between April 2013 and March 2021. In fact, due to demolitions the total of new builds required by the Plan is about 105,000 in the eight-year period. That is an average of over 13,000 new units per year, compared to the current 4800 annually. It will be a challenge to scale up construction volumes and we believe the industry will struggle to get to our forecast of 84,000 units in the period.

The BRANZ forecasts assume a significant four-fold increase in multi-unit construction from about 1500 per year now to 4700 per year on average over the next eight years.

The greater part of demand will still be met by detached houses, averaging about 5800 per year through to 2021.

Vacant section capacity is about 22,000 units and much of this is likely to be built on first. Zoned green field sites within the MUL have a capacity of about 15,000 units. These are in variously-sized land blocks which are already serviced at their boundary and can be quickly made ready for sale (within 12 months or less for roading, cabling and water/waste connections to individual sections). It is assumed much of these two sources will be used first, however they only provide about three years of demand. Assuming a preference for detached housing there is an urgent need to develop more green field sites, in particular those already identified outside the MUL in Silverdale, Warkworth, Kumeu and Pukekohe.

The latter sites will not all be ready within the next four years and hence demand will increasingly be within the MUL on existing occupied sites. In the single and mixed housing zones there is large capacity for infill and redevelopment. Due to the demographics it seems likely much of this will be attractive to households sizing down and also as first homes for young people. Young people are likely to be able to afford the intensive multi-units whereas the infill is likely for families trading up.

The terraced housing zones provide 15,000 units in the period to 2021 and are mainly on sites where the existing building is demolished.

So we are likely to see significant volumes of low-rise intensification in the mixed housing and terrace/apartment zones, as indicated in the draft Plan. On average the BRANZ forecast is for 4700 new attached units and another 5800 detached houses per year.

It is interesting to compare these numbers to earlier forecasts prepared by BRANZ (Page 2007). In 2007 the forecasts were 5300 attached units per year and 3800 detached houses per year for the ten years finishing 2021. So the earlier forecasts were lower in total and a greater proportion of multi-units was assumed. As we have been under-building in recent years the total numbers need to be higher than earlier forecast to catch up. This report is less optimistic than the earlier report about the acceptability of multi-units for new owners and hence the multi-unit proportion is lower than in the earlier report.

Several locations and actual sections were chosen to illustrate a number of possible redevelopments. The example multi-unit redevelopments shown in Figure 6 to Figure 12 in the Appendix have a price range from $318,000 per unit for 81 sqm in a four-storey, 48-unit apartment complex in New Lynn to $484,000 in a smaller-scale development for 116 sqm, in a 24-unit terraced housing complex in Balmoral. The small redevelopments are the more expensive per unit, typically in the range of $650,000 to $750,000 per dwelling.

Escalation of 40% in the 2011 Capital Value amounts has been assumed, but this may be an underestimate given recent sale prices. If we assume a doubling of the 2011 CV this raises the price for the New Lynn apartments to about $334,000 per unit, which is still reasonably “affordable”. A household income of between $55,000 and $75,000, depending on the mortgage type, is sufficient to afford this unit.

Redevelopment appears to work best on large sections or when adjacent sections can be combined. Under the proposed rules a land parcel of over 1200 sqm allows for at least six dwelling units per site in the mixed housing zones. Over 20 units are possible in an apartment zone. This demonstrates the potential of intensification in existing areas of single-house land parcels.

Further public feedback on the second iteration of the Unitary Plan is underway. But it is likely there will be minimal changes in the Plan and any will be advised mid-2014.

5. REFERENCES

Auckland Council (2012) The Auckland Plan.

Auckland Council (2012) Capacity for growth study 2012 Technical Report 2013/010 April 2013.

Auckland Council (2013) Auckland Unitary Plan.

BRANZ (2013) http:www.branz.co.nz/ then Toolbox, then Auckland Atlas of Construction, accessed 15 July 2013.

Page I (2007) Changing housing need. Study Report No. 183. Building Research Association of New Zealand.

6. APPENDIX

This Appendix contains:

- Details of the three new housing scenarios.
- Affordability criteria.
- Building workload details.
- Possible redevelopments on selected sites.
- Housing consent trends in recent years in Auckland.

6.1 Housing scenarios

The three scenarios are:

- Low redevelopment – a high proportion of demand is provided by one or two-house infills and in green field developments outside the MUL. Redevelopment of business centres for housing is quite low.
- Medium redevelopment – infill is reduced and instead these sites are redeveloped for medium density housing up to four storeys. There is still significant green field development outside the MUL.
- Intensive redevelopment – most new housing is provided in the mixed housing and terraced housing zones, and in the business centres. There are no new green field developments.

The numbers are derived from the Auckland Council capacity for Growth 2012 study, in which an assessment was done by council staff of plot development/redevelopment potential in the two housing zones (mixed, terraced) and in the business zones. The chart and table shows the results based on BRANZ assumptions on the percentage uptake of these potential developments by 2021.

In the expected (or moderate) scenario the assumed uptake in the mixed zones is quite low at 15% to 20% to reflect community concern about moving away from existing housing densities. However, terraced housing, near local and town centres, is likely to be more acceptable than the earlier widespread distribution of this zone. Some medium to high rise CDB, metro and town centre development is foreseen, as the likely purchasers, namely young singles and some empty nesters, find the lifestyle attractive.

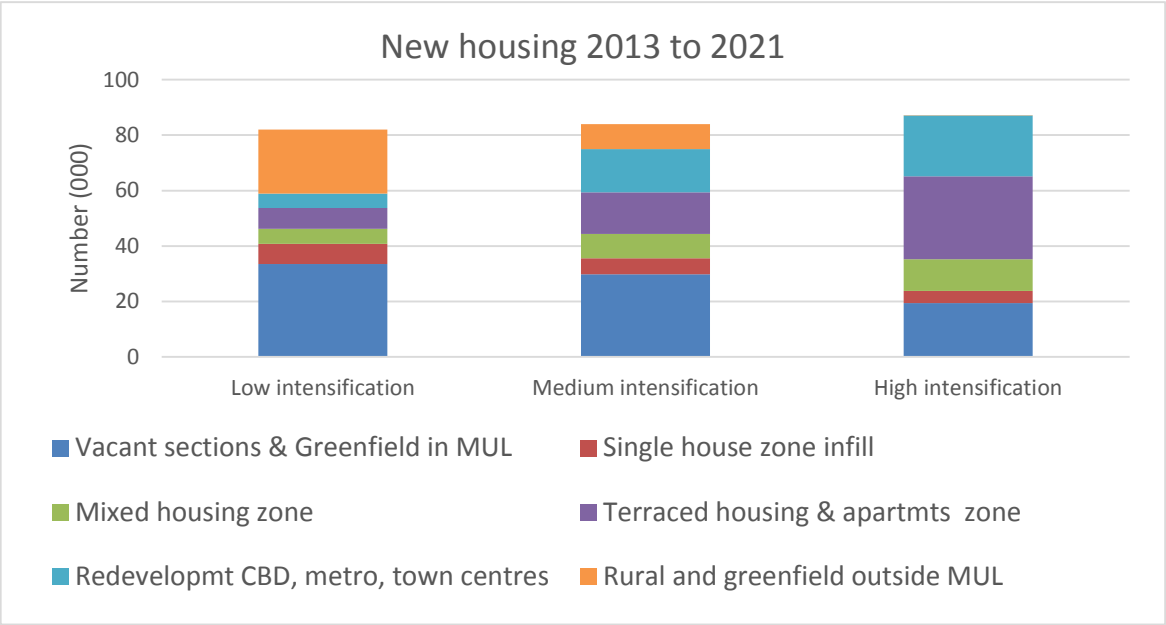


Figure 4 New housing intensification scenarios

Table 3 Three new housing scenarios

New housing scenarios 2013 to 2021 At 22nd Sep 2013										Forecast new housing numbers		
Low intensification within MUL	New housing units		Assumptions		Demo replace (000) (10)	New units required	Detached or semi	Terraced units	Med-hi rise	Detached/ semi (000)	Terraced units (000)	Med-hi rise (000)
Vacant sections capacity	20.0	(1)	90%	uptake	0	20.0	90%	10%	0%	18.0	2.0	0.0
Green field within MUL	13.5	(2)	90%	uptake	0	13.5	90%	10%	0%	12.2	1.4	0.0
Single house zone, infill	7.3	(3)	25%	uptake	0	7.3	100%	0%	0%	7.3	0.0	0.0
Mixed housing suburban zone	3.1	(4)	10%	uptake	0.9	4.1	90%	10%	0%	3.6	0.4	0.0
Mixed housing urban zone	1.0	(5)	10%	uptake	0.3	1.4	20%	80%	0%	0.3	1.1	0.0
Terraced housing/apartments zone	6.2	(6)	10%	uptake	1.2	7.5	0%	90%	10%	0.0	6.7	0.7
Redevelopmt (CBD, metro,town ctres)	5.2	(7)	5%	uptake	0	5.2	0%	40%	60%	0.0	2.1	3.1
Rural areas	7.5	(8)	30%	uptake	0	7.5	100%	0%	0%	7.5	0.0	0.0
Green field outside MUL	15.6	(9)	balance needed		0	15.6	90%	10%	0%	14.0	1.6	0.0
	79.5				2.5	82.0				62.9	15.2	3.9
										90%	10%	0%
Moderate intensification within MUL												
Vacant sections capacity	17.8	(1)	80%	uptake	0	17.8	90%	10%	0%	16.0	1.8	0.0
Green field within MUL	12.0	(2)	80%	uptake	0	12.0	90%	10%	0%	10.8	1.2	0.0
Single house zone, infill	5.8	(3)	20%	uptake	0	5.8	100%	0%	0%	5.8	0.0	0.0
Mixed housing suburban zone	4.7	(4)	15%	uptake	1.4	6.1	90%	10%	0%	5.5	0.6	0.0
Mixed housing urban zone	2.1	(5)	20%	uptake	0.6	2.7	20%	80%	0%	0.5	2.2	0.0
Terraced housing/apartments zone	12.5	(6)	20%	uptake	2.5	15.0	0%	90%	10%	0.0	13.5	1.5
Redevelopmt (CBD, metro,town ctres)	15.7	(7)	15%	uptake	0	15.7	0%	40%	60%	0.0	6.3	9.4
Rural areas	2.5	(8)	10%	uptake	0	2.5	100%	0%	0%	2.5	0.0	0.0
Green field outside MUL	6.5	(9)	balance needed		0	6.5	90%	10%	0%	5.9	0.7	0.0
	79.5				4.5	84.0				47.0	26.1	10.9
										56%	31%	13%
High intensification within MUL									Per year =	5.9	3.3	1.4
Vacant sections capacity	8.9	(1)	40%	uptake	0	8.9	90%	10%	0%	8.0	0.9	0.0
Green field within MUL	10.5	(2)	70%	uptake	0	10.5	90%	10%	0%	9.5	1.1	0.0
Single house zone, infill	4.4	(3)	15%	uptake	0	4.4	100%	0%	0%	4.4	0.0	0.0
Mixed housing suburban zone	6.2	(4)	20%	uptake	1.9	8.1	90%	10%	0%	7.3	0.8	0.0
Mixed housing urban zone	2.6	(5)	25%	uptake	0.8	3.4	20%	80%	0%	0.7	2.7	0.0
Terraced housing/apartments zone	24.9	(6)	40%	uptake	5.0	29.9	0%	90%	10%	0.0	26.9	3.0
Redevelopmt (CBD, metro,town ctres)	21.9	(7)	21%	uptake	0	21.9	0%	40%	60%	0.0	8.8	13.2
Rural areas	0.0	(8)	0%	uptake	0	0.0	100%	0%	0%	0.0	0.0	0.0
Green field outside MUL	0.0	(9)	balance needed		0	0.0	90%	10%	0%	0.0	0.0	0.0
Total	79.5				7.6	87.1				29.8	41.2	16.1
										34%	47%	19%
(1) to (8) Source is "Capacity for growth study 2012: Results" Technical Report 2013/010, April 2013, Auckland Council												
(1), (2), (3) Potential is 22,200, 15,000, and 49,100 housing units respectively.												
(4),(5), (6) Uses redevelopment potential of residential zones (116,000 units) and assumes 30% mixed suburban, 10% mixed urban and 60% terraced/apartment zoning.												
(7) Redevelopment in business areas capaicity is 103,900 units.												
(8) Rural areas capacity is 25,000 units.												
(9) Green field outside MUL is the required extra needed to get the 84,000 new units over the eight-year period. (Warkworth, Silverdale, Kumeu, Pukekohe)												
(10) Demolition replacements are required in the mixed housing and the terraced housing zones. The assumption is 0.3 demolition per new units in the mixed zone and 0.2 units in the terraced housing/ apartment zone.												

6.2 Affordability

Table 4 shows the housing package that is affordable at different income levels. The table assumes mortgage repayment outgoings of 30% of household income. The amount of deposit available is assumed to increase with income, as shown in the tables. The current median household income in Auckland is about $81,000 for wage and salary earners. This equates to an affordable housing package of about $380,000.

Table 4 assumes repayment of the principal within 25 years but interest-only loans allow a significant increase in borrowings, see Table 5. The median income household can now afford a house priced at $515,000.

Interest rates are currently at a long term low and are expected to rise in 2014. If they increase to 7% then the affordable packages are $335,000 and $405,000 respectively for principal repayment and interest-only loans.

Table 4 Household income and new house price – includes principal repayments

Affordable house price modelling Principal repayments included				
Household income $			Deposit %	House price $
50,000			10%	194,226
60,000			10%	233,072
70,000			10%	271,917
80,000			15%	329,042
90,000			15%	370,173
100,000			15%	411,303
110,000			15%	452,433
120,000			20%	524,411
130,000			20%	568,112
140,000			20%	611,813
160,000			20%	699,215
Interest rates =		7.0%		
Loan period =		25	years	
Mortgage repayments as % of income =				30%
USPWF=	11.65			

Table 5 Household income and new house price – interest-only mortgage

Affordable house price modelling Interest payments only				
Household income $			Deposit %	House price $
50,000			10%	238,095
60,000			10%	285,714
70,000			10%	333,333
80,000			15%	403,361
90,000			15%	453,782
100,000			15%	504,202
110,000			15%	554,622
120,000			20%	642,857
130,000			20%	696,429
140,000			20%	750,000
160,000			20%	857,143
Interest rates =		7.0%		
Mortgage repayments as % of income =				30%

Some potential redevelopments allowed by the Plan were trialled in different zones and suburbs as shown in Table 6. The parameters are based on the Unitary Plan (September 2013) specifications. The summary of the trials is in Table 6 and the details for each site are shown in Figure 7 to Figure 11 in Section 6.5 of the Appendix. These are actual sites but the addresses have been omitted to preserve existing owner anonymity in potential redevelopments.

6.3 Workloads

The estimated total workloads in Auckland on building work are shown in Table 7. The value of work averages about $8 billion over the next few years. At present workloads are about $5.5 billion.

The forecasts allow for new housing based on the Moderate scenario in Table 3. There is a “normal” level of additions and alterations to existing housing related to adapting a house to the new owner or the changing family needs of the exiting owner. In addition, we have an aging stock of houses. The 1960s and 1970s were periods of large scale house building in Auckland and as these now average about 50 years in age they are beginning to need major renovation, repairs and maintenance. Many will be demolished and the sites redeveloped in accordance with the Plan. But the majority will remain where they are and will need significant work so they can continue to provide housing services to their occupants.

This report is mainly focused on housing but as commercial work often uses similar resources it has been included to complete the picture. Its growth is estimated at about 11% on average over the next few years.

Table 6 Cost of typical potential redevelopments

Cost of typical redevelopments													Price
				Total									$/sqm
Location	Zoning	Number	Total	CV		Redevelopment		Gross		Site	Total	Price	floor area
		of land	land area	2010/11	Comment	# storeys	# units	sqm	Footprint	cover	price	per unit	(includes
		parcels	sqm	$M				per unit	sqm	%	$M	$000	land)
Blockhouse Bay Rd	Single house	1	1012	0.64	Infill, exist hse OK	1	2	161	322	32%	1.43	713	4430
Balmoral, Milton Rd	Mixed, suburban	1	1673	1.70	Demolish 1 house	2	8	165	662	40%	5.8	723	4368
New Lynn, Margan Ave	THAB	3	2436	1.12	Demolish 3 houses	4	48	81	976	40%	15.3	318	3912
Onehunga, Forbes Rd	Mixed Urban	2	1664	1.37	Demolish 2 house	2.5	11	126	686	41%	7.1	649	5166
Mt Albert, Benfield Ave	Mixed Suburban	1	890	0.76	Move exist hse back	1	2	150	236	27%	1.8	922	6149
Balmoral, Dominion Rd	THAB	2	1241	1.25	Demolish 2 houses	4	24	116	696	56%	11.6	484	4173
Avondale, Blockhse B Rd	Mixed Suburban	1	1011	0.44	Demolish 1 house	1	2	198	396	39%	1.6	810	4089
Flat Bush, empty section	Mixed Urban	1	1200	0.86	New section	2.5	12	142	681	57%	6.3	523	3685
Court Cres Panmure	Mixed Urban	2	1533	0.82	Demolish 2 houses	2	12	138	825	54%	5.1	426	3100
Assume:													
Purchase price percentage above 2011 CV				40%									
Rebuild cost terraced housing/apartments to 4 storey				3000	$/sqm	THAB = Terrace housing & apartment buildings zone.							
Rebuild cost terraced housing/apartments to 3 storey				2500	$/sqm								
Rebuild cost one-two storey detached houses				2000	$/sqm								
Profit on costs				15%									

The cheapest units occur in New Lynn at $318,000 each in a four-storey apartment development. This development has scale economies of three adjacent sections and the ability to fit a large number of units on the amalgamation. However, when the total cost is divided by the total floor area provided then the Flat Bush development is the “best value”, mainly because the capital value only includes land and not an existing house as in the other options. The Avondale development has a high cost per house but the total cost per square metre of land is quite low and indicates purchasers are “getting more for their dollar”. It indicates that demolishing existing housing on the cheaper sites and redeveloping for two houses may become widespread.

Table 7 Estimated total workloads on buildings

Building workloads in Auckland to 2021											
	Multi-units	Detached	Totals	$/sqm Multi-	$/sqm Detached	Floor area sqm Multi-	Floor area sqm Detached	$ million Multi-	$ million Detached	
New housing (Moderate scenario)	(000)	(000)	(000)							
Vacant sections capacity	2	16	18	$2,000	$1,700	80	200	284	5,435	
Green field next eight years	1	11	12	$2,000	$1,700	80	200	192	3,672	
Single house zone, infill	0	6	6	$2,200	$1,800	80	200	0	2,102	
Mixed housing suburban zone	1	5	6	$2,200	$1,800	100	200	134	1,969	
Mixed housing urban zone	2	1	3	$2,500	$1,800	100	200	540	195	
Terraced housing/apartments zone	15	0	15	$3,000	$1,800	100	200	4,488	0	
Redevelopmt (CBD, metro,town centres)	16	0	16	$3,500	$1,700	80	200	4,385	0	
Rural areas	0	3	3	$2,000	$1,700	80	200	0	850	
Green field outside MUL	1	6	7	$2,000	$1,700	80	200	104	1,995	
Total	37	47	84					10,128	16,217	
									26,345	Year to
								$ million per year		Mar-13
Other residential work					New housing per year to 2021 =				3,293	1,529
Consented alteration/additions consents (i.e. normal level of routine A&A consents)								471		478
Consented renovations to the aging stock (130,000 1950s, 1960s houses @ $40K each repaired over 20 yrs)								210		-
Leaky housing consented repairs (approx $9 billion and 33% in Auckland, 50% repaired by 2021)								186		139
Non-consented repairs and maintenance work (three times consented A&As)								1,413	2,279	1,435
Non-residential buildings										
New and A&A consented work (approx $4.0 billion per year all NZ, excl Cant EQ, and 37% in Auckland)								1480		1,455
Leaky Non-res bldgs in Auckland (approx $3 billion all NZ, 35% Auckland, repaired over 15 years)								70		18
Earthquake strengthening (approx $5 billion all NZ, 35% in Auckland, strengthened over 15 years)								117		-
Non-consented repairs and maintenance work (assumed equal to consented A&A non-res work)								460	2,127	443
				Average workloads per year 2013 to 2021 $m =					7,699	5,498
						% increase =			40%	

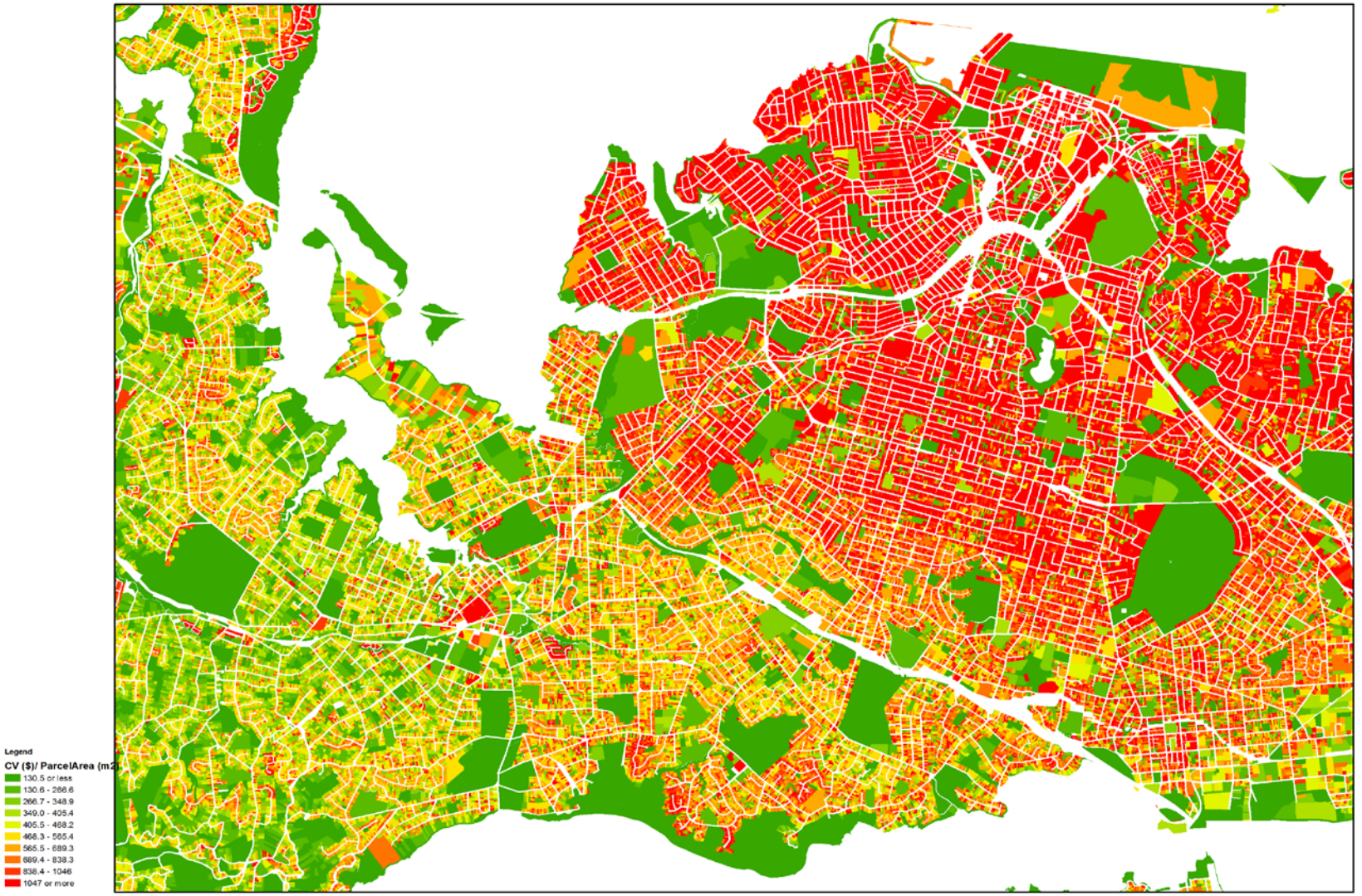
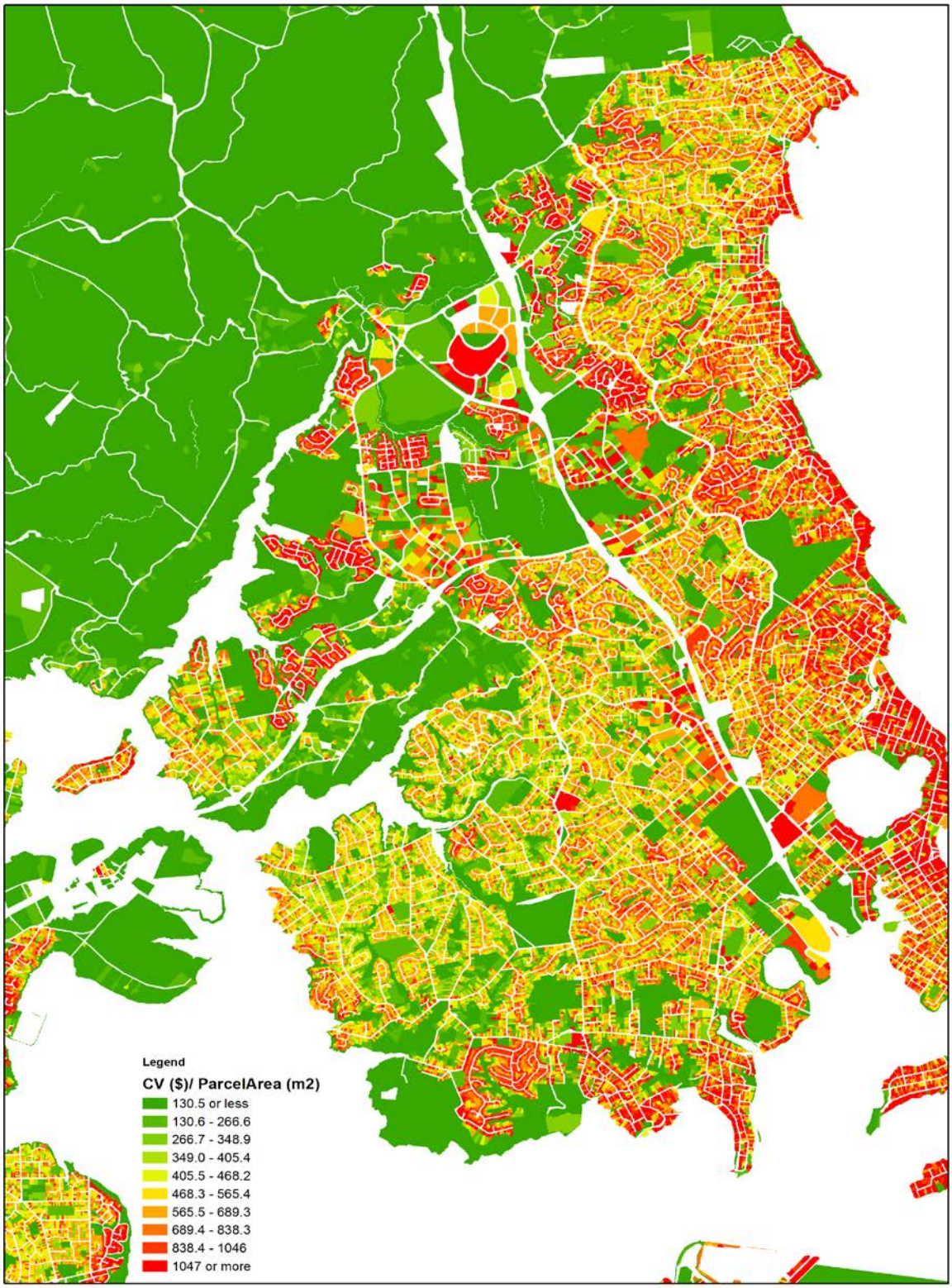


Figure 5 Capital value by land area – Central Auckland



Red = over $1000/sqm, Yellow/orange = $400-$700/sqm, Green = $100-$400/sqm

Figure 6 Capital value by land area – North Shore

6.4 Capital values across the council region

Figure 4 and Figure 5 above show selected areas of the council region. The different colours represent varying ratios of capital value divided by land area in square metres which have been calculated for all land parcels in the region.

The charts give an indicator of the value proposition of redeveloping a site for more intensive housing. Red colours represent sites where the likely purchase price is high per unit of land and the redevelopment would need to be quite intensive and/or for high-cost housing. The yellows represent sites where redevelopment is likely to be feasible at lower intensities and for lower cost housing. Orange is in between. Green generally represents industrial areas, reserves, schools and parks, however it also includes undeveloped residential zoned land within the MUL.

The capital values are mainly from the 2011 revisions, so they are somewhat out-of-date. However, they indicate certain patterns such as a general trend of higher unit costs in the CBD and on the shore lines. As we move away from these areas the unit cost declines. For example, moving south from the CBD along Dominion and Sandringham Roads, the dark reds change to light reds, oranges and yellows. These types of maps can be produced at larger scales to better identify localised redevelopment potential.

6.5 Redevelopment scenarios for selected sites

Particular parcels of land within the mixed housing and apartment/terraced housing zones were assessed for their redevelopment potential. Actual land parcels are shown in Figure 6 to Figure 12. In all cases there are existing dwellings on these sites. The assumption was they would be demolished and the site redeveloped. In some cases two or three adjacent sections have been amalgamated to enable a large apartment to be constructed. The requirements in the Unitary Plan on heights, unit density, boundary distances and coverage have been followed.

Construction costs are shown. The existing property purchase price is also shown and assumes a 40% premium on existing valuations. This may be an underestimate given recent trends in prices so the new unit prices to buyers may be on the optimistic side.

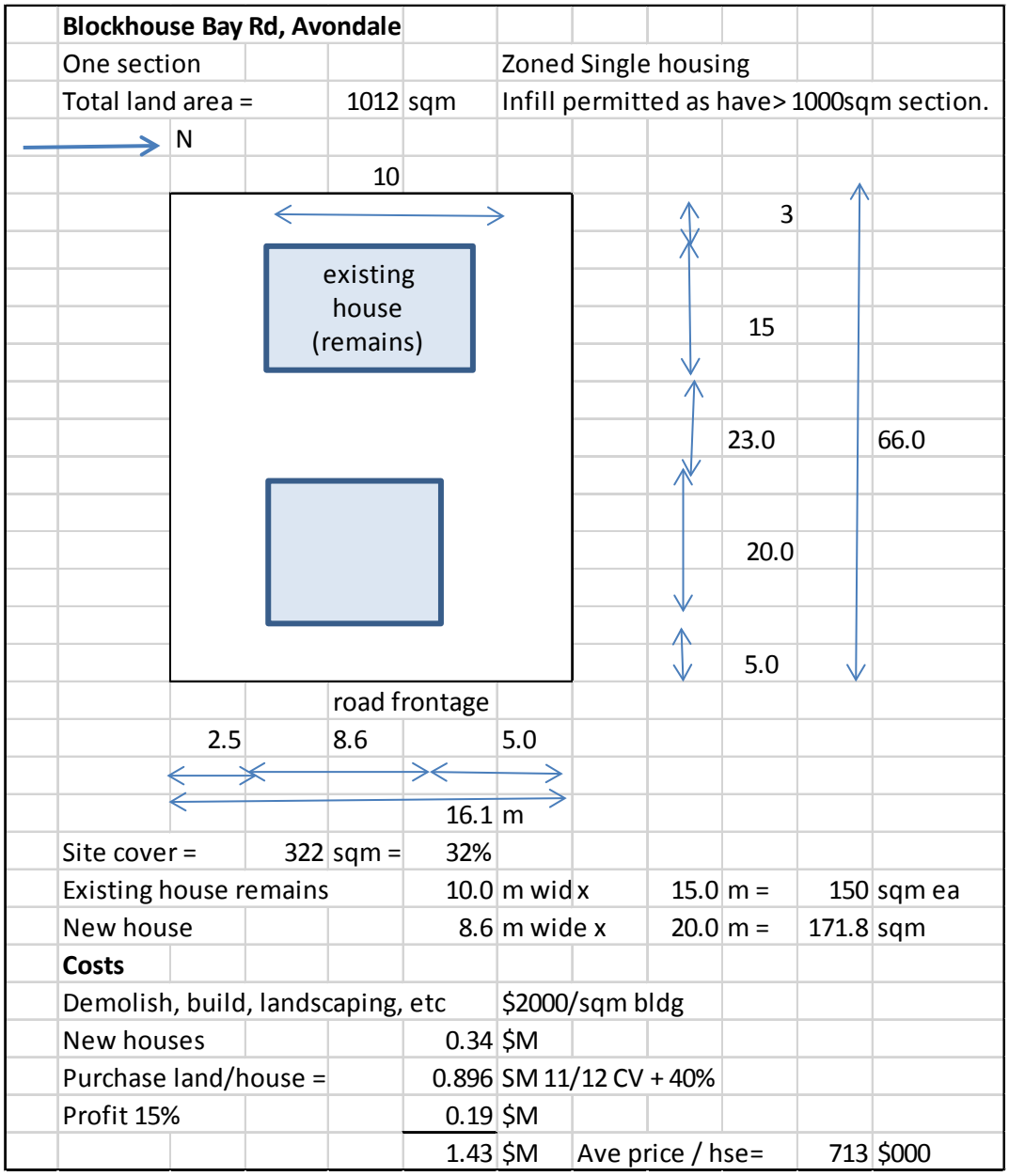


Figure 7 Redevelopment example Avondale

Milton Rd, Balmoral										
One section			Zoned terraced housing/ apartments							
Total land area =		1673	sqm							
		N								
	section plan									
			57.7	m						
								10		
29								15.5		
								3.5		
	7.5		42.7	m			7.5			
		road frontage								
Demolish existing house and replace with 4 storey apartments										
Site cover =	661.9	sqm =	40%							
Assume 7 units/ level =			6.1	m wide x		15.5	m =		94.55	sqm ea
		deduct 15% for services/ stairs, etc							80.37	sqm ea
Number of units =		28								
Costs										
Demolish, build landscaping, etc				$3000/sqm bldg						
New Apartments			7.94							
Purchase land/house =			2.38	SM allow 40% above CV.						
Profit 15%			1.55	$M						
			11.87	$M						
Price per unit =			424	$000						

Figure 8 Redevelopment example Balmoral

Margan Ave, New Lynn

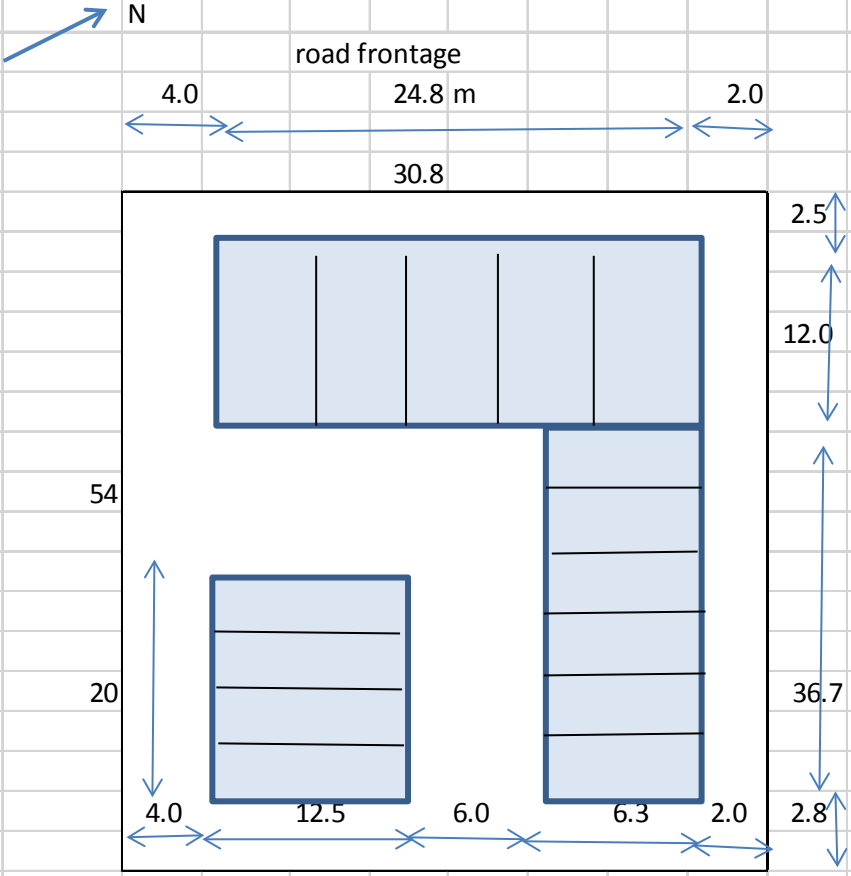
Amalgamate 3 adjacant sections				Zoned Terraced housing/ apartments					
Total land area =			2436	sqm					
	N								
			road frontage						
	7.5		30.7				7.5		
			45.7						
53.3								3.5	
								15.9	
								15	
								15.9	
								3	
Demolish existing houses and replace with two 4 storey apartments									
Site cover =		976.3	sqm =	40%					
Assume 6 units/ level =			5.12	m wide x		15.9	m =	81.36	sqm ea
			deduct 15% for services/ stairs, etc					69.15	sqm ea
Number of units =			48						
Costs									
Demolish, build landscaping, etc				$3000/sqm bldg					
New Apartments			11.72	$M					
Purchase land/house =			1.57	SM allow 40% above CV.					
Profit 15%			1.99	$M					
			15.28	$M					
Price per unit =			318	$000					

Figure 9 Redevelopment example New Lynn

Forbes Rd Onehunga

Amalgamate 2 adjacant sections — Zoned Mixed housing

Total land area = 1664 sqm



Demolish existing houses & replace with 14 two(or2.5) storey terraced houses

Site cover =	779	sqm =	47%				
Front 5 units=			4.96	m wide x	12.0	m =	119.1 sqm ea
Back 6 units (2.5 storeys) =			6.12	m wide x	6.3	m =	96.34 sqm ea
Back4 units=			5	m wide x	12.5	m =	125 sqm ea
Number of units =	15						

Costs

Demolish, build, landscaping, etc		$2500/sqm bldg
New terraced hses	4.18	$M
Purchase land/house =	1.92	SM allow 40% above CV.
Profit 15%	0.92	$M
	7.02	$M
Average price per unit =	468	$000

Figure 10 Redevelopment example Onehunga

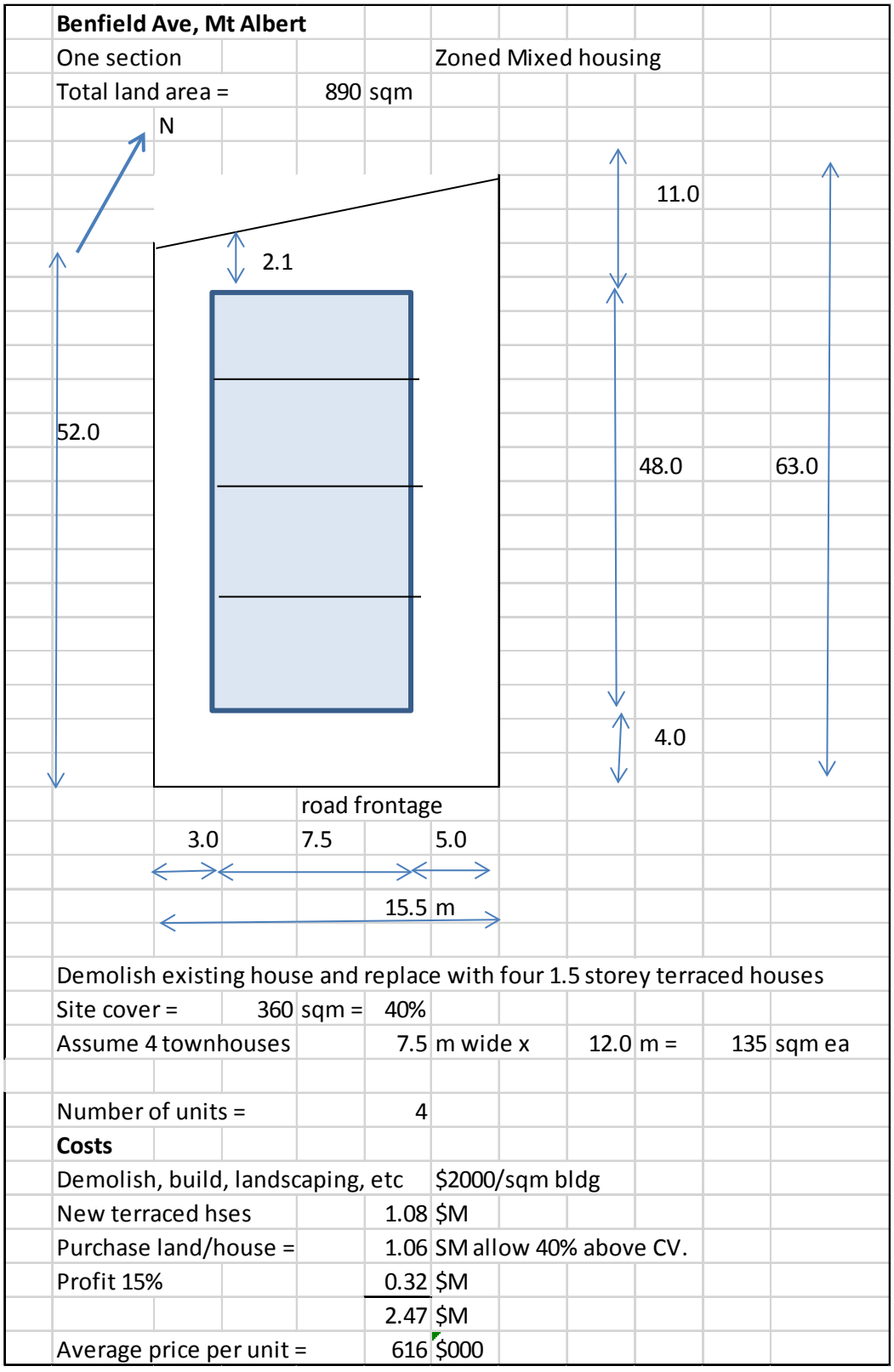
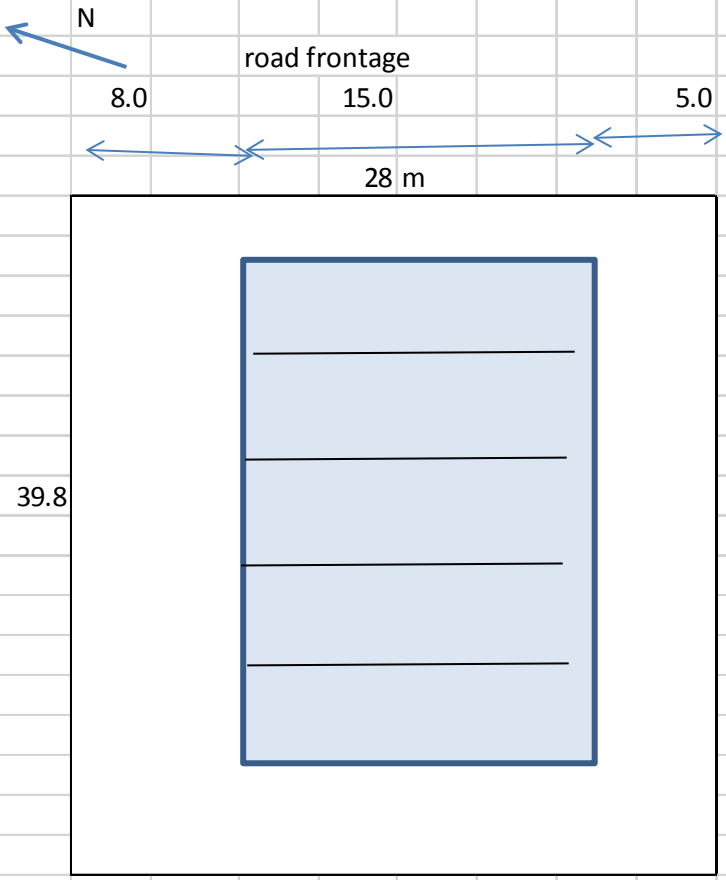


Figure 11 Redevelopment example Mt Albert

Dominion Rd Balmoral

Amalgamate 2 adjacant sections — Zoned Mixed housing use

Total land area = 1041 sqm



Demolish existing house and replace with five 2 storey terraced houses

Site cover =	514.5	sqm =	49%		
Units=			6.86	m wide x	15.0 m = 205.8 sqm ea
Number of units =			5		

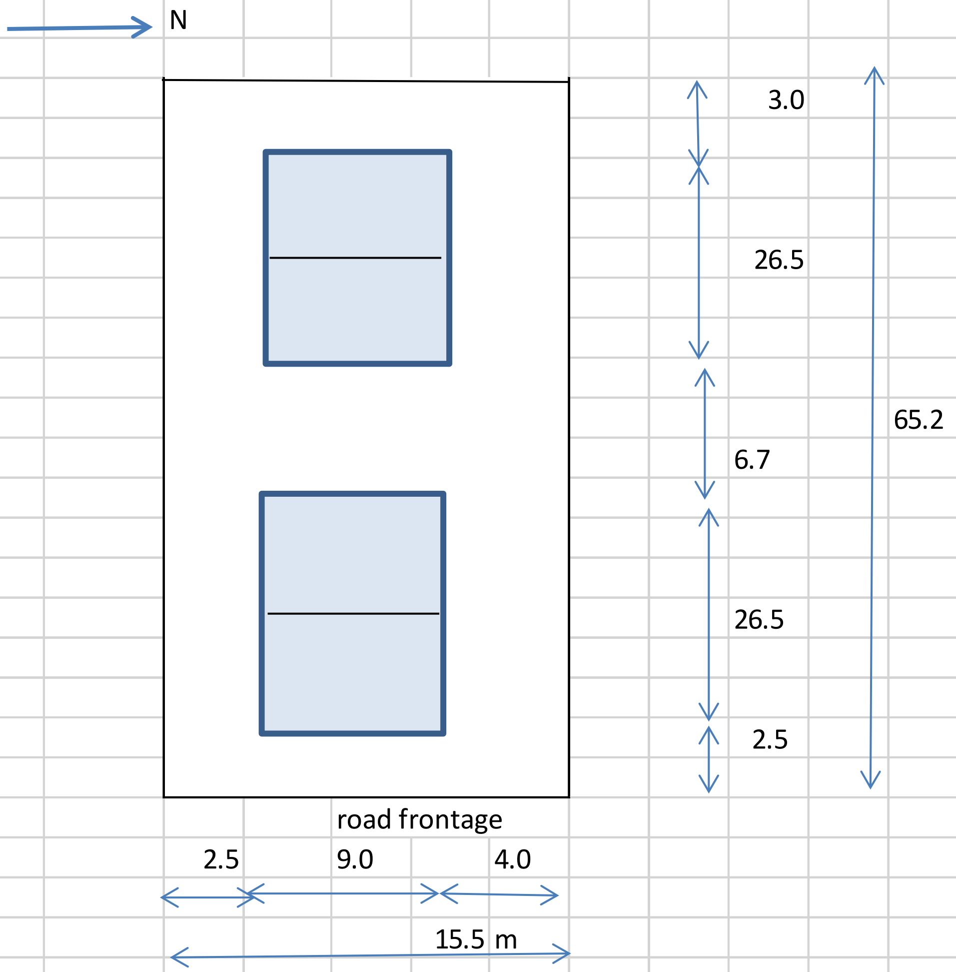
Costs

Demolish, build, landscaping, etc	$2000/sqm bldg	
New terraced hses	2.06	$M
Purchase land/house =	1.75	SM allow40% above CV.
Profit 15%	0.57	$M
	4.38	$M
Average price per unit =	876	$000

Figure 12 Redevelopment example Dominion Rd

Blockhouse Bay Rd, Avondale

One section		Zoned Mixed housing	
Total land area =	1011	sqm	



Demolish existing house and replace with four 1.5 storey terraced houses

Site cover =	477	sqm =	47%					
Assume 5 townhouses								
Front 2 units		9.0	m wide x	13.3	m =	178.9	sqm ea	
Back 2 units		9.0	m wide x	13.3	m =	178.9	sqm ea	
Number of units =		4						
Costs								
Demolish, build, landscaping, etc			$2000/sqm bldg					
New terraced hses		1.43	$M					
Purchase land/house =		0.62	SM allow 40% above CV.					
Profit 15%		0.31	$M					
		2.35	$M					
Average price per unit =		589	$000					

Figure 13 Redevelopment example Avondale again

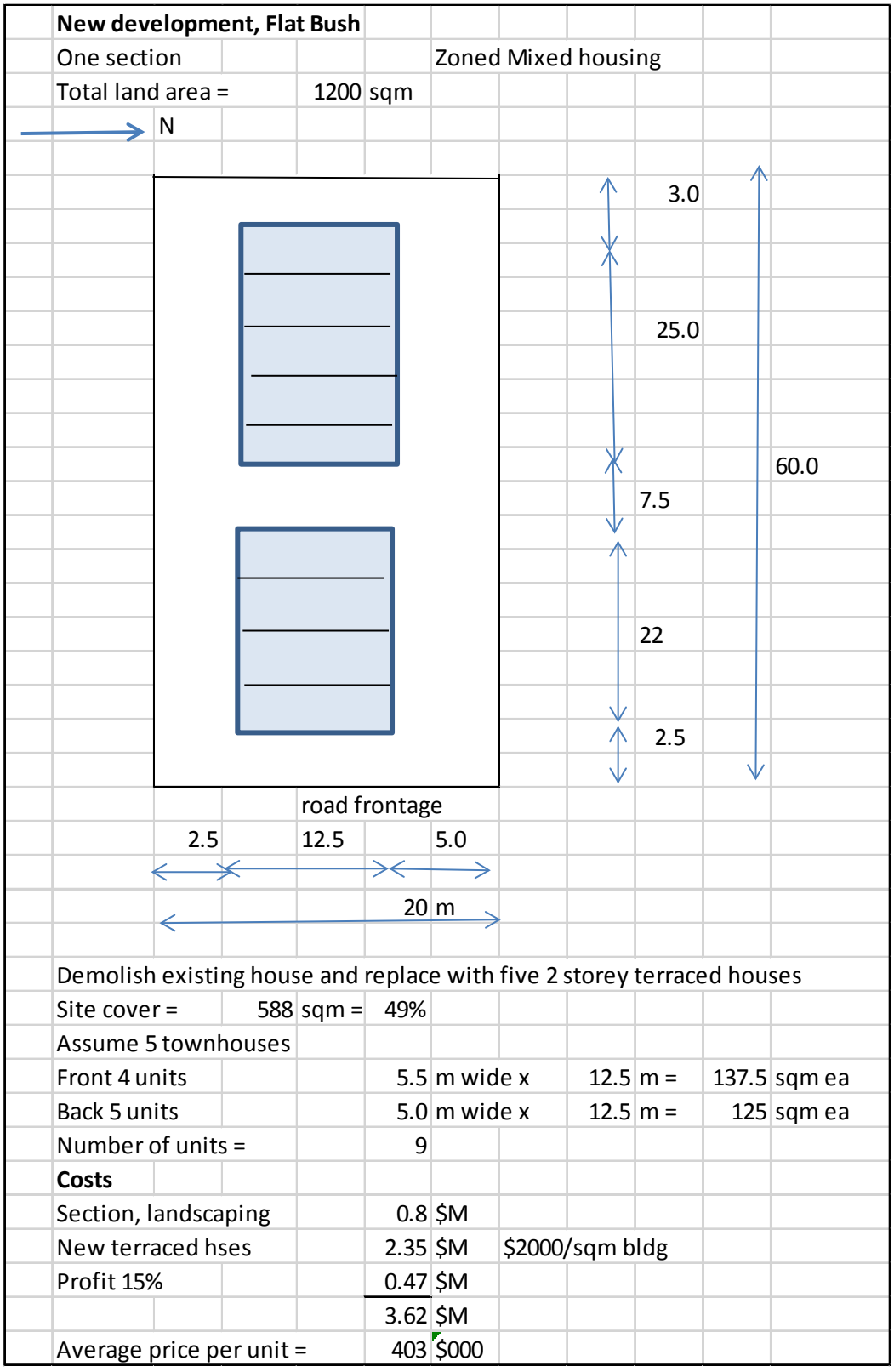


Figure 14 New housing development on bare land Flat Bush

6.6 Recent trends in Auckland's new residential construction

Construction trends and other building related data is presented as charts on the BRANZ website (BRANZ 2013). The following charts are from the Auckland Atlas of Construction, developed by Hans Roberti of BRANZ, and the commentary on the charts is his.

Construction of new residential buildings is sensitive to economic cycles. Over the period of 13 years covered in the regional trends graphs in the atlas it is clear that the Auckland new housing market went through the same boom and subsequent bust period as the rest of New Zealand, see Figure 13. This bust period was caused by the global economic downturn. The activity in Auckland during the boom was three and a half times higher than during the bust when only 3475 consents were issued. Compared to the national figures it appears that the Auckland market was hit twice as hard by the crisis. The reason for this is not clear. There might have been some other factors at work. For instance, the change of the Building Code in 2004 triggered by the leaky homes problems also seems to have subdued building activity in Auckland by 37% from 12,115 in 2004 in to 7707 in 2005. The scale of the drop in building activity at the national level over the same period indicates that the effect is almost exclusively linked to Auckland. Production seems to stabilise on this new production level (around 7000) in the second part of the boom period that ended in 2007.

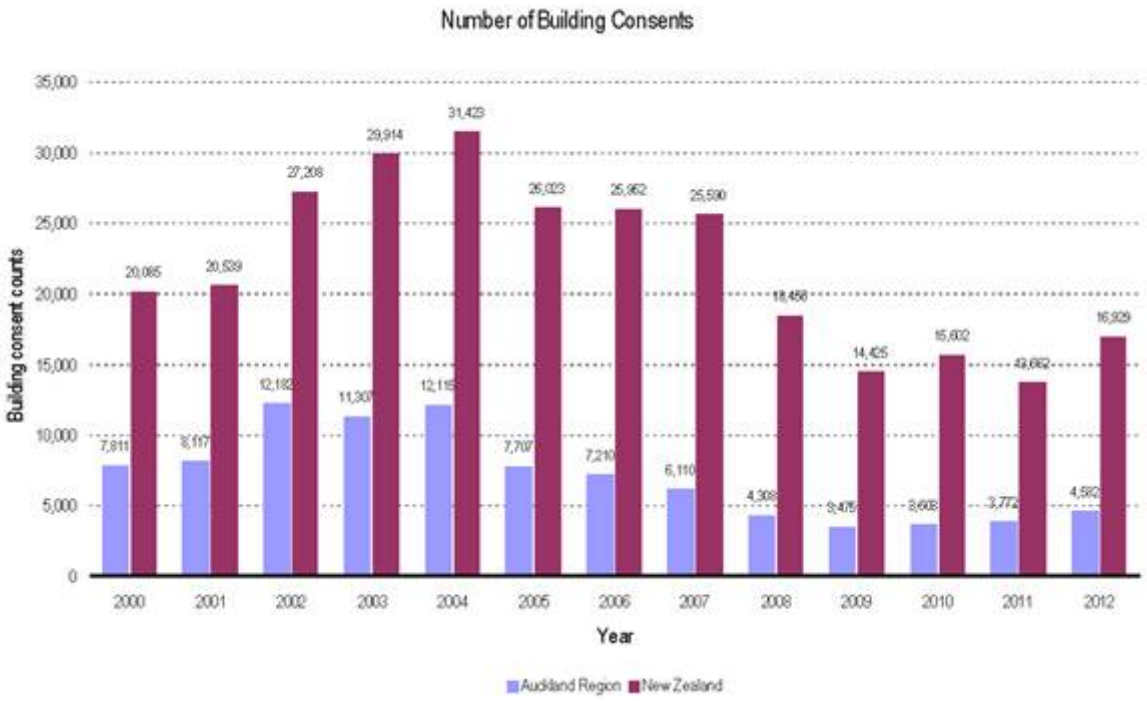


Figure 15 Number of residential consents in Auckland by year

To meet Auckland's population growth prognosis, housing production will have to return to peak boom period production levels of over 11,000 dwellings per year. Will Auckland be able to create the required conditions that will allow the industry to deliver to the plan ambitions? The previous period might already contain some lessons on the structure of housing supply under different market conditions.

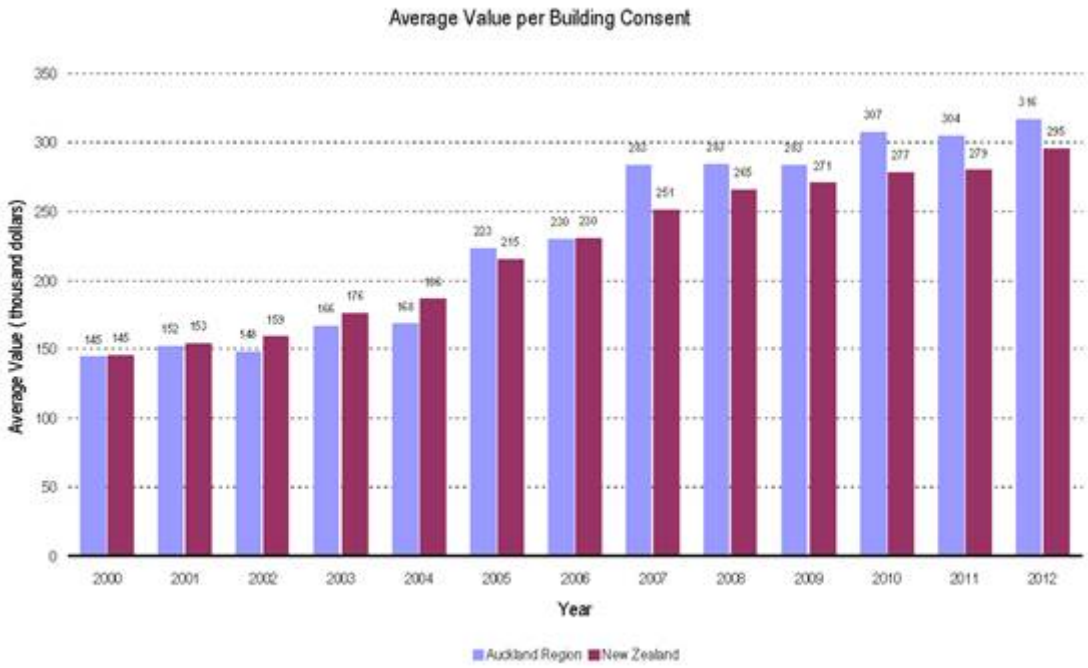


Figure 16 Average new dwelling consent value in Auckland by year

If we look at the change in investment per building consent in the graph on average value per building consent, see Figure 14, then we can see a doubling of the amount of money per project over the period. The boom and bust does not seems to have any impact on this trend. In 2012, average values in Auckland were priced 7% above the New Zealand average, whereas they were similar or lower ten years before. Costs appear on average to increase by 8% per year in Auckland. According to Reserve Bank figures inflation was on average around 2.6% per year over this period with fluctuations of about a percentage point around this value. Therefore the cost increase was more than triple the inflation rate. From 2004-2005 and from 2006-2007 there appears to have been a jump in the prices in Auckland that was not visible in the national figure. The first jump could be a result of changes in the Building Code in 2004. The only event that coincides with the second jump is the change of Clause H1/AS1 in the acceptable solution of the Building Code.

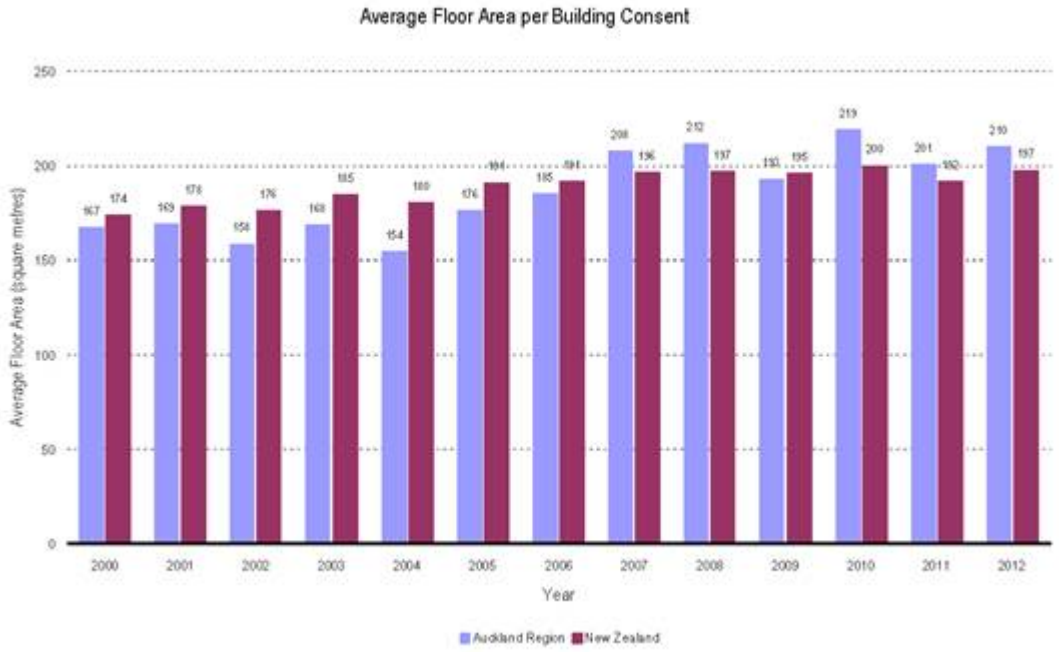


Figure 17 Average new dwelling consent floor areas in Auckland by year

Another driver might have been a change in what was actually built. For this we can evaluate the trend in the average floor area per building consent, see Figure 15. The physical size of new buildings increased 30% in Auckland. The average annual increase over the period was 2.7%. There appears to have been a step change with the main shift in demand happening between 2004 and 2007. Before the shift new buildings were about 160 square metres, after the shift they were around 210 square metres. The national increase is about 15%. New buildings in Auckland used to be smaller, currently they are on average larger than the national figure. Therefore an appetite for larger buildings is partially responsible for the increased value per building consent.

Larger new housing is not the whole reason because the cost increase per unit floor area is still 5.2% per year, which is about 2.8% above the average inflation level in the period (see Figure 16 for trends in dollars per square metre). Therefore, new built residential construction has become significantly more expensive at a steady rate over the previous decade. Over the same period average real gross domestic product has risen at a rate of 2.7% per year. Under these conditions it is clear that the increased purchasing power of New Zealanders will not result in the construction of more square metres unless a larger fraction of household income is spent on new builds.

What will be the impact of this increase and what mechanisms are driving it? Given that housing affordability is already an issue in Auckland, rising construction costs will not help. Therefore it will be essential for the sector to indicate the sources of this substantial rise in cost. This will not be easy since low productivity growth has been persistent in the sector for decades. The business model in the construction sector appears to change only very slowly.

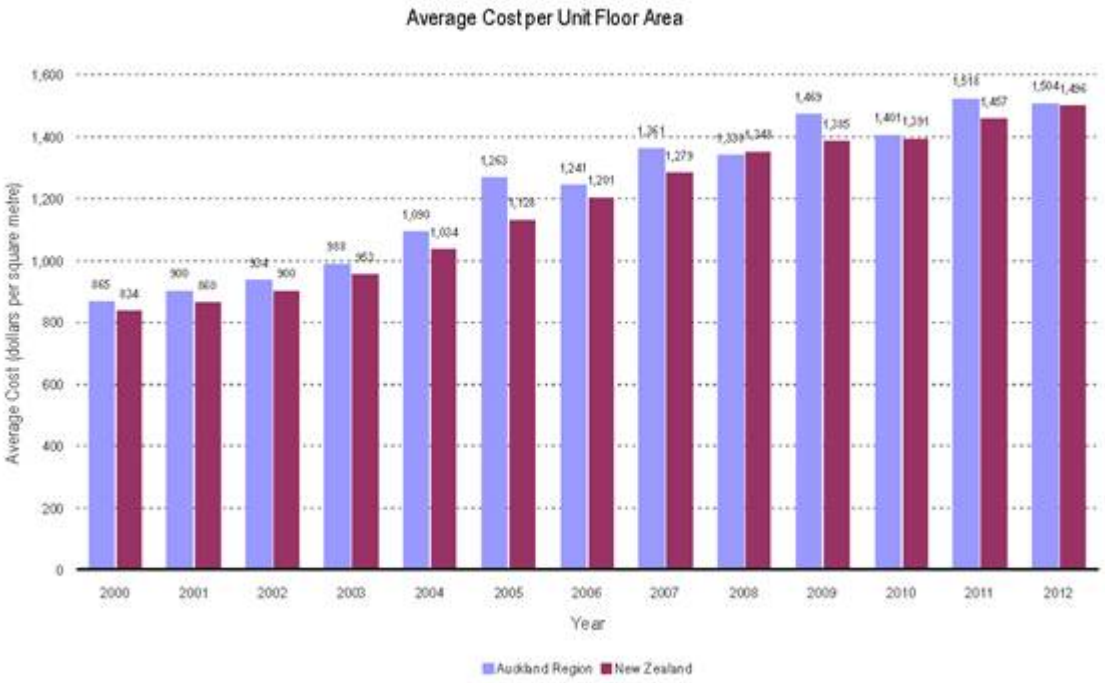


Figure 18 Average new dwelling consent $ per sqm of floor area in Auckland by year

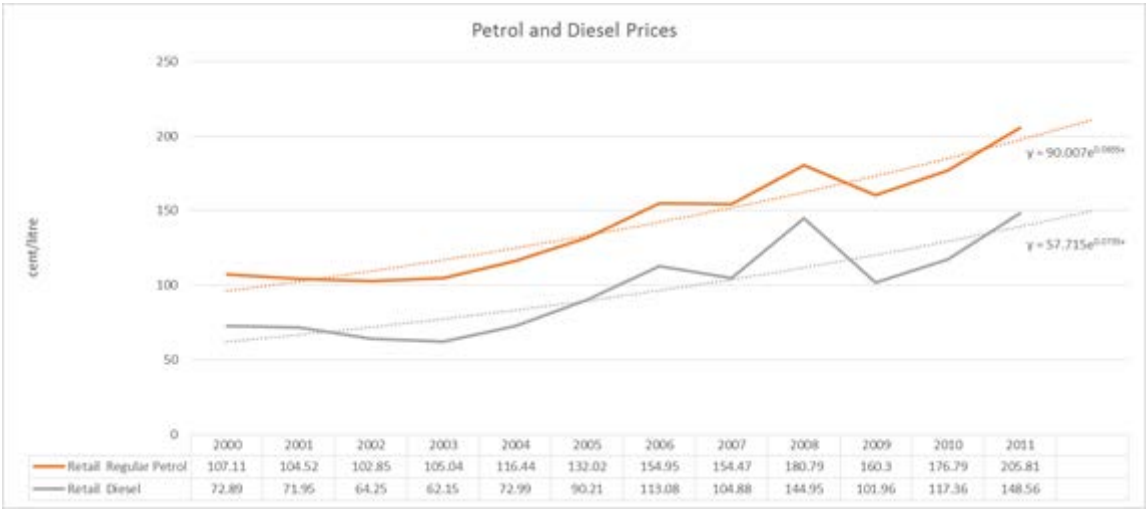


Figure 19 Petrol and diesel price trends

What other factors are driving cost increases in construction? Could some of the increase be transport-related? Petrol and diesel prices over this period are shown in the 2011 New Zealand energy data file produced by the former Ministry of Economic Development (now part of the new Ministry of Business, Innovation and Employment). We can see that petrol prices have increased on average by 6.5 % per year and diesel by 7.3% per year. Corrected for inflation we would still look at a net increase of 3.5% to 4% for fuel. This is a tremendous rise that is bound to have an effect on the cost of construction materials, since they are typically bulky and therefore high-volume and low-value. Literature indicates that circa 30% of the cost of construction is hidden transport costs. Therefore it seems appropriate to attribute a significant fraction of the cost increase in new residential construction to a rise in transport costs. However, does the sector recognise its sensitivity to it?