

Getting Accessible Housing: Practical Approaches to Encouraging Industry Take-up and Meeting Need

**Report Prepared for the
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Executive Summary

This paper scopes the different levers that can be used to improve lifetime housing supply by the residential building sectors and assesses the efficacy of those levers. It finishes by commenting on options for improving the performance of the New Zealand housing stock by increasing the supply of dwellings incorporating lifetime design principles.

While the paper reviews the range of levers used in various initiatives to increase the supply of more functional and accessible dwellings, it notes that many of the levers that could be used in that arena have only been recently introduced or introduced in a relatively narrow manner. It is in the area of housing transformation for energy and thermal efficiency, and to a lesser extent green buildings, that a comprehensive range of regulatory and market-based levers have been used. Those that have now been bedded in over many decades are now being assessed. Consequently, emphasis has been given to the energy efficiency and green building literature around the merits of different levers.

The energy efficiency and green building sector also share similar issues with which the disability and older people's sectors are concerned. In particular, they have to deal with a complex interaction between the housing and building sector. In addition, they are concerned with the progressive transformation of the housing stock. Consequently, they have to deal with issues of stock inertia, a persistent vicious circle of blame and problems of innovation.

In addition to reviewing the experience of levers in the domains of energy efficiency, thermal efficiency and green homes, the paper also highlights the need to have a clear orientation in terms of outcome which is either the provision of special housing targeted to particular individuals or improving the mainstream stock and establishing lifetime housing as an integral part of the mainstream housing stock.

- Special housing requires commissioning of dwellings by a housing sector provider and establishing the supply of lifetime houses requires a transformational approach to the building industry and the housing sectors.
- Special housing requires a command and control approach to public policy and establishing the supply of lifetime houses requires an integrated package of levers directly tailored to key stakeholders in the building industry value chain and the housing sector.

- Special housing requires forecasting but little strategic orientation or innovation while establishing the supply of lifetime houses requires an innovative approach not only to materials, design, construction and public policy levers but also an integrated, strategic approach.

The paper notes that both here and overseas the special housing approach has largely failed and, consequently, the discussion on levers focuses on a transformational approach as most effective and most efficient.

The evaluation of the efficacy, certainty and costs effectiveness of levers suggests that:

- A combination of policy instruments need to be used.
- Regulatory and control instruments can be effective and are often necessary.
- Policy instruments should be directed at market transformation rather than simply being instituted in *perpetua*.
- Economic instruments, subsidies and informational levers as single items have variable results but are important to a mutually reinforcing package.

It is important that any transformational package needs to be tailored specifically to prevailing institutional, cultural and market conditions and target all stages of chains of supply and demand.

Overall the paper concludes that lifetime housing supply is more likely to be stimulated if:

- Lifetime housing becomes one component of a wider societal commitment to accessibility.
- Carefully calibrated short, medium and long-term outcomes are required.
- There are clear regulatory requirements in both the building and the housing sector related to the provision of lifetime accessible dwellings.
- Regulatory requirements provide both for dwelling residence and for visitors.
- Compliance with regulatory requirements is low cost.
- There are demonstrated and achievable solutions for the building industry within acceptable cost structures for different building typologies both for:
 - new builds; and
 - refurbished stock.

- The building industry is encouraged to ‘gear up’ for accessibility through:
 - Opportunities for provision at scale;
 - Certainty around expectations and phased introduction of regulatory requirements;
 - Developing consumer expectation;
 - Opportunities to reduce systemic costs.
- Consumers have a clear understanding of the nature of lifetime housing, appropriate price expectations and the ability to make informed choices.
- Price barriers are addressed for consumers that are most in need and whose under-consumption is associated with the highest externalised costs.
- Standards are flexible and designed to a series of step-wise outcomes. A proliferation of seemingly unconnected or competing standards undermines their credibility and their transformational impacts.

It concludes that New Zealand should:

- Work to embed lifetime homes in a broader strategy of accessibility.
- Develop an integrated package of interventions that are strategically directed but tailored to the complex and actual situations prevailing in New Zealand’s building industry and housing sector respectively.
- Apply instruments that address coherently both supply-side inertias as well as limits on consumer sovereignty.

This will require:

- A clear, consistent and single framework of standards incorporating different components to deal with different levels of outcomes (visitability, liveability and so forth) and different housing stocks (existing and new builds). Those standards need to be used to underpin any:
 - Mandatory or voluntary codes.
 - Accreditation systems.
 - Consumer choice tools.
 - Procurement criteria.

- Value cases that systematically and credibly explore the benefits, costs and externalities associated with under-delivery and delivery of lifetime homes in relation to key stakeholders including householders, older people and disabled people.
- Technical development, process developments including registers, and demonstration of lifetime homes.
- Government strategic leadership, statutory requirements, process and investment setting out the clear outcomes, targets, actions on the stakeholders in both the building industry value chain as well the housing sector.
- A work programme, pathways and accountabilities, resourcing and action priorities including:
 - Resolving barriers to supply associated with policy and legislative barriers with particular attention given to ensuring that these are cross-sectorally mutually reinforcing and not contradictory.
 - Specifying requirements and timetables for any regulatory reviews or requirements of statutes related to the building industry or housing sector or benefits such as the Accommodation Supplement.
 - Ensuring that the current funding streams are rationally disposed to the outcomes sought.

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1 Introduction

1.1 The purpose of this paper is to:

- Scope the different levers that can be used to improve lifetime housing supply by the residential building sector and take-up by housing providers;
- Assess the relative efficacy, practicality and implications of implementing different levers; and
- Comment on options for improving the performance of the New Zealand housing stock by increasing the supply of dwellings incorporating lifetime design principles.

1.2 The paper focuses on a range of levers that could be used in the effort to transform the housing stock and raise the supply rate of lifetime housing. They are levers:

- To facilitate consumer decision-making and the ability of consumers to specify their requirements and makes choices on the housing market.
- Directed to fostering the capability of the residential building sector to deliver cost-effective lifetime design across market segments and tenures.
- That incentivise the supply and/or consumption of lifetime housing.
- That address price barriers to lifetime housing take-up where those suppress supply.
- That prescribe and regulate for lifetime housing.

1.3 In assessing those different levers, this paper is concerned to identify those likely to:

- Maximise outcomes in relation to supply.
- Minimise implementation, transaction and compliance costs.
- Mitigate the risk of negative, unintended consequences.

Background

- 1.4 Here and overseas the desire to generate a lifetime housing stock is associated with a realisation that treating older people and disabled people as dependents is simply unsustainable.
- 1.5 As the population ages, the future economic and social well-being of individuals, families, communities and New Zealand as a whole will be increasingly contingent on the social and economic contributions of older people and disabled people. Fundamental to older people and disabled people optimising their economic and social participation and contribution is a housing stock able to support active daily living.
- 1.6 This is by no means a trivial challenge. A raft of research shows New Zealand's housing stock struggles to function adequately for people with impairments and tends to be costly to adapt. The New Zealand housing stock's poor functionality, performance and adaptability contributes to the process by which individuals' sensory or physical limitations are transformed into a disability. This has resulted in New Zealand, as it has in other countries, in a pattern of:
- People being displaced from private homes into residential facilities.
 - Costly dwelling modifications which frequently under-deliver functionality, are unaffordable for individuals and rationed because of constraints on public funding, with a consequent gap between need and supply.
 - Requirements for significant in-home support provided and/or funded by families or contracted with public funding.
- 1.7 None of these outcomes are satisfactory. They are costly, exclusionary, exhausting for families, and can present barriers to disabled people's and older people's social or economic participation. Consequently, the focus has recently turned to encouraging design and construction of dwellings that:
- Without modification can work for people with a wide range of physical and sensory capabilities.
 - Are able to be easily and with minimal costs adapted to disabled people with individualised and specialised needs.
 - Encourage older people and disabled people to participate by ensuring older people and disabled people can visit not only non-residential buildings for work,

recreation and education but also the homes of their friends, relatives and people they may be working with or delivering services to in the community.

1.8 Commitment to promoting visitability and access for disabled people has progressed through:

- Accessibility requirements for non-residential, public buildings.
- Initial funding contribution to community and disability sector initiatives, particularly the Lifetime Design and the associated LifeMark.
- The 2011 relationship agreement between the government and the Maori Party which seeks incorporation of lifetime design principles and standards in new-build dwellings developed directly by, or through lease arrangements with, Housing New Zealand.

1.9 Government does recognise, however, that the Housing New Zealand stock constitutes only a small proportion of New Zealand's dwellings. Most people, including most older people and most disabled people, live in either owner occupied homes or dwellings in the private rental markets.

1.10 Under those circumstances, the government and the disability sector are both looking for ways to increase the rate of stock transformation and encourage more rapid supply of dwellings incorporating lifetime design principles by both the residential building industry and housing providers. The Office for Disability Issues the then Department of Building and Housing commissioned this paper to assist that process.

Scope and Approach

1.11 There is an array of relevant international and local published research and grey literature around housing, ageing, and disability respectively. Much of this has been reviewed in successive New Zealand reports. Those reports and that research, including projections on the prevalence of disability, the demography of ageing populations, and housing issues for disabled people and older people, remain relevant. They provide much of the underpinning of this paper. The material within them is not rehearsed in detail in this paper. Rather data are presented in summary form where necessary to contextualise and illuminate the focus of the paper.

- 1.12 In addition, a brief search of more recent research and literature around housing, ageing and disability has been undertaken to ensure that no substantially new information or materially different evidence has become available. This has been supplemented by interviews with a small set of key researchers and practitioners in jurisdictions in Australia, the United Kingdom and North America.
- 1.13 Two other sets of research and commentary have also been important to the development of this paper. They are:
- Material relating to innovation and the innovation potential of the residential building industry and housing sectors.
 - Material dealing with the experience of improving other aspects of residential building performance, in particular the approaches and levers used to address the thermal performance and energy efficiency of homes.

Report Structure

- 1.14 The report is structured as follows:
- Section 2 reviews the context and imperatives for lifetime housing.
 - Section 3 notes that alternative approaches to the issues of housing accessibility and functionality will use different levers and compares the special housing approach to the lifetime housing approach.
 - Section 4 looks at three important dynamics that inhibit the extent and pace of any transformation of the New Zealand housing stock to lifetime housing.
 - Section 5 identifies the range of levers currently used to increase the supply of more accessible and functional housing and explores the transformational merits of different levers.
 - Section 6 outlines a pathway for optimising lifetime housing supply in New Zealand.

Some Definitions

- 1.15 Before considering these issues it is useful to define some of the terms used in this paper. This is, in part, because terms such as lifetime housing or design attract different labels elsewhere. It is also because this will help to clarify important, albeit subtle, distinctions between, for instance, the building industry and the housing sector, which would otherwise require clumsy and repeated explanation throughout the text (Infobox 1.1).

1.16 It should be noted that where lifetime housing is used as a generic term it refers to the range of accessibility and functionality improvements. Where a specific level of functionality is referred to the term is usually used. When full lifetime homes such as those envisaged by high credits in systems such as LifeMark, this is usually evident from the context.

Infobox 1.1: Some Definitions

<i>Dwellings</i>	
Universal Design	An approach to the design, construction and adaptation of standard housing to meet the needs of all home owners regardless of their age, ability, or social situation. Universal design benefits all age groups. Also known as <i>Universal Housing</i> and <i>Adaptable Housing</i> . Achieving uptake in the social housing market; but its adoption in private dwellings has been limited.
Life Span or Lifetime Homes	Housing that can accommodate changes in human ability over a person's lifespan, enabling the occupants to live and remain in their homes as long as possible. Also known as <i>Lifetime Homes</i> in the United Kingdom, <i>Lifecycle Housing</i> in Norway and <i>Adaptable Housing</i> in Australia.
Inclusive Design	A way of designing products and environments so they are usable by everyone regardless of age, ability or circumstance. Remove barriers in the social, technical, political and economic processes underpinning building and design.
Barrier-free Design	To be active, a disabled person should be able to commute between home, work and other destinations. Barrier-free design ensures that the whole built and transport environment meets the needs of people with physical, sensory or cognitive disabilities.
Wheelchair Housing	Specific design to allow wheelchair mobility.
<i>Building Accessibility Performance Terms</i>	
Negotiable	Where a building allows only for assisted access and provides some movement around the lower levels, but does not necessarily provide access to a toilet.
Visitability	Where a building allows independent wheelchair entry to the property, access to lower levels, ability to move between rooms and access to the toilet.
Liveable	Where there is unassisted wheelchair access to the lowest level of a building and the ability to move between rooms, access to a usable bathroom, toilet and a bedroom.
Adaptable	Where the whole house or flat is retrofitted or purpose built to give the desired level of accessibility that will be required through the occupant's social and life cycle changes over at least a 30 year period.
Universal	Where a whole house or flat is fully accessible to an unassisted wheelchair user or person with other functional impairments.

Building and Housing	
Residential Building Industry	Consists of the value chain and regulatory agents that are involved in the production of new dwellings, dwelling refurbishment, and maintenance and repairs.
Housing Sector	The sector that delivers, regulates and funds dwellings including owner-occupied dwellings and rental dwellings to households.
Value chain	The chain of activities, firms, and skills that are ordered sequentially to produce and deliver a good or service. It starts with raw materials and is complete at the point that the good or service is delivered to the consumer or into the market.
Ageing and Population	
Older person	In New Zealand, a person aged 65 years or more.
Ageing	Physiological processes by which an individual ages.
Ageing population	The process by which the median and average age of a population increases. This is typically due to a combination of extended life expectancies and low birth rates.
Population ageing	As above.
Dependency ratio	The number of people in the 'dependent age' groups in relation to the population as a whole. The aged dependency ratio usually refers to the older people relative to the population of 15-64 year olds and the child dependency ratio usually refers to people aged 0-14 years relative to the 15-64 years olds. The total dependency ratio combines the aged and child populations relative to 15-64 year olds.
Disability and Impairment	
Disability	A generic term which embraces impairment, limitations in activity and restrictions in participation.
Activity limitation	Difficulties an individual finds in executing a particular task.
Impairment	A problem in body function or structure.
Participation restriction	Reduced ability to participate in social and economic interactions.
Prevalence	The total number of a characteristic or risk factor in proportion to the total population at any one time.
Incidence	The number of new cases of a characteristic or risk factor as a proportion of the population during a specified period.
Disability threshold	The point at which the interaction between impairment and the environments in which an individual operates leads to activity limitation and restricted participation.

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2 Lifetime Housing: Imperatives and Cost effectiveness

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- 2.1 This section highlights the conditions driving the need for a supply-side response to the provision of lifetime housing in the New Zealand housing stock. It presents a brief summary of data around three issues. They are:
- New Zealand's ageing population and the prevalence and patterns of disability in this country.

- The societal implications of ageing populations and prevalence of disability respectively.
- The cost effectiveness of lifetime housing.

An Ageing Population¹

- 2.2 Population ageing is an inexorable outcome of changes in the balance between births, deaths and life expectancies established many generations ago. Most of Europe, as well as Britain, Australia Canada, Japan and the United States of America have ageing population structures.
- 2.3 New Zealand, because of the relatively youthful profile of the Pacific and Maori populations, is only starting on this ageing pathway. Despite this, the impacts of population ageing on New Zealand should not be underestimated.
- 2.4 By 2050, New Zealand will be home for around 1.35 million people aged 65 years or more. Overall, 800,000 dwellings will be home for households headed by an older person. Most older people in 2050 will live in owner occupied or family owned dwellings. Despite this, the number of households headed by an older person living in rental properties is projected to increase significantly.
- 2.5 New Zealand can expect the number of households with an older person as head of household in a rental dwelling will increase by 2051 by between 2.5 and 3.1 times. There could be as many as 170,000 households headed by an older person in rentals in the next forty years. The number of older people in rentals will, of course be higher. Two thirds of households headed by an older person in rental accommodation will be tenants in the private rental sector.²
- 2.6 Despite the increased numbers of older people in rental accommodation – private or otherwise – those numbers will be exceeded by the numbers in some form of owner occupation. Projections suggest that up to 658,000 households with an older head will be in the private, owner occupied stock. In the past, older owner occupiers could be expected to be mortgage free. This is unlikely to be the case for older people in the future. This has profound implications for the ability of older people to downsize or to contribute to modifications and renovations of their existing dwellings.³

¹ See the following reports for a summary of these trends: Nana, Stokes *et al.*, 2009; Saville-Smith and James *et al.*, 2009.

² Nana, Stokes *et al.*, 2009,

³ Saville-Smith, James *et al.*, 2009.

- 2.7 There has been a longstanding argument that home equity conversion offers older people opportunities to liquidate some of their asset wealth. That wealth, it has been suggested, could be used for a range of purposes from dwelling repairs and maintenance to renovations and modifications, to releasing income for daily living.⁴ None of the modelling nor robust, empirical analysis of housing markets or financial products suggest that this is likely.⁵
- 2.8 The targeting of high end housing by the building industry combined with prevailing house prices, increased indebtedness among older people, lower entry into home ownership by younger households⁶ and falling rates of owner occupation societally, as well as issues around financial products, all mitigate against scenarios of older people being able to easily downsize and liquidate assets.
- 2.9 Retirement villages are a segment of the housing sector that has attempted to offer opportunities for those able to downsize. They still make up a tiny proportion of older people's housing.⁷ They are also confronting significant challenges around their business models, particularly as the complexities of tenure security and insurance cover have emerged in the wake of the Canterbury earthquakes.⁸
- 2.10 If downsizing is not a likely medium to long term scenario, this suggests that in the long term, ensuring older people can retain independence and functionality in their homes longer is likely to be contingent on ensuring that the cohort reaching older age in 2050 are living already in lifetime housing.

Prevalence of Disability⁹

- 2.11 A similar argument could be made around disability. Of course, some of the prevalence of disability now and in the future will be attributable to ageing. As individuals age they are more likely to have to meet the challenge of physical or sensory impairment. Forty-five percent of older people in the 2006 Disability Survey reported a disability.¹⁰

⁴ Davey and Wilton, 2006.

⁵ Coleman, 2009.

⁶ The implications for older people's downsizing are evident in the dynamics around under forty year old tenure choice in a housing market such as Auckland. See Saville-Smith and James, 2010.

⁷ James and Saville-Smith, 2011.

⁸ Department of Building and Housing and the Retirement Commission, 2011.

⁹ See Saville-Smith and James, 2006 for an extended discussion of the issues around disability forecasting.

¹⁰ Statistics New Zealand, 2007.

- 2.12 Whether ageing population structures drive increased incidence and prevalence of disability over the long run is still the focus of considerable debate internationally. Some commentators suggest that future generations of older people will confront lower burdens of impairment and disability. They argue age-related disability will be compressed into the later years of life with increased life expectancies. If this was the case there would be no significant shift in rates of disability despite ageing population structures.
- 2.13 Others suggest that despite an extended active life, longer life expectancies will be associated with higher prevalence of serious disease and impairment among old survivors. Others suggest that while the rate of disability among older people is likely to remain stable, the increased number of older people will be associated with a higher societal burden of disability.
- 2.14 It is unlikely that these debates will be resolved. Under these circumstances, assuming that rates of disability are, in the aggregate, likely to stay relatively stable may be most sensible. By using that assumption, we can simultaneously accommodate apparent shifts to longer, active lives as well as the impact of extended life expectancies and the possibility of impairment being compressed into a late segment of the life cycle. Even if rates of age-related disability remain stable, the number of older people in New Zealand with a disability is likely to increase.
- 2.15 Of course, neither the incidence nor the prevalence of disability can simply be reduced to the demographics of ageing. People's sensory, physical and psychological capabilities can be impaired through disease, congenital conditions, or accident and injury irrespective of age. Again there are significant complexities in projecting future disability rates due to these drivers.
- 2.16 There are significant issues around the measurement of disability. These make comparisons difficult whether those comparisons are with other countries or for New Zealand over time. In addition, projecting rates of disability are hampered by the complex permutations between two critical factors: first, the incidence of diseases, congenital conditions, accidents and injury; and second, access to and the effectiveness and outcomes of the treatment.

- 2.17 For instance, higher survival rates through more effective intervention may be associated with higher rates of impairment. Alternatively, improved health prevention, practice and treatment may simultaneously reduce both mortality and rates of impairment as well. The complexities of measurement and the dynamics of disability have made undertaking disability projections so uncertain that some jurisdictions, New Zealand included, hesitate to undertake them.
- 2.18 Nevertheless, disability surveying does show that disability is prevalent. Although the reported rate of disability fell from around 20 percent to 17 percent between 2001 and 2006, over 570,000 adults reported a disability in 2006. Some 90,000 children were reported in the 2006 Disability Survey as having a disability.¹¹

Responses to Ageing and Disability

- 2.19 Until quite recently, the extent to which people, whether old or young, have to deal with some sort of limitation or impairment was largely invisible. Disabled people in particular were assumed to be largely dependent, living in specialised facilities and having quite different needs to others. New Zealand also, compared to other countries, had a tendency to place older people outside the community and into residential care.¹²
- 2.20 Research both in New Zealand and overseas have shown that the vast majority of disabled people live in private homes. Disabled people live in their communities, they are in paid or unpaid work, they recreate, and they spend and consume goods and services. Similarly, despite New Zealand's comparatively high use of rest homes, a robust body of evidence shows that older people typically also live, work and play in their communities. Moreover, the vast majority of older people want to stay in their homes and in their communities as they age.¹³
- 2.21 What this new awareness has done is highlight the social and economic importance of older people and disabled people. In small societies, and societies in which the population is ageing or there are high levels of pre-adult dependency, the productivity, participation and contribution of all adults become critical to economic and social wellbeing.

¹¹ Statistics New Zealand, 2007.

¹² Saville-Smith, 1993.

¹³ Ministry of Social Development, 2005.

- 2.22 It has, for instance, been estimated that the value of older people's unpaid and voluntary work is in the region of \$6 billion for 2011 and could be over \$22 billion in 2051 under current patterns of labour force and unpaid work. Moreover, while most older people in retirement and living in their communities show modest levels of consumption, in aggregate that consumption is significant.
- 2.23 Projected real consumer expenditure by 2051 by older people showing similar patterns of income generation as currently prevail suggest that older people in the community will expend around \$45.7 billion compared to an expenditure of \$10.85 billion in 2011.¹⁴
- 2.24 Clearly the unpaid but productive contribution of older people and their consumption expenditure are contingent on being able to operate freely in their homes and maximise their well-being. Participation in paid work is also influenced by the functionality of people's homes.¹⁵ The latter should not be ignored. A number of studies suggest that by retaining older people in the workforce for longer could, at least until 2031, offset the future cost of New Zealand Superannuation through the PAYE flow back.¹⁶
- 2.25 Effectively, then, societies have a choice. Older people and people managing sensory, physical or psychological difficulties can:
- EITHER:*
- Be treated as costly dependents;
- OR*
- Their social and economic skills, consumption, contribution and potential can be optimised.
- 2.26 Achieving the latter depends on "reducing the disability threshold." Reducing the disability threshold requires a paradigmatic shift which recognises the interactive nature of any individual's limitations and the public and private environments in which they carry out their lives. That environment not only encompasses support services, systems and policies, but also cultural practices, relationships and attitudes. It also involves products and technologies, the non-residential built environment and the dwellings in which people live.

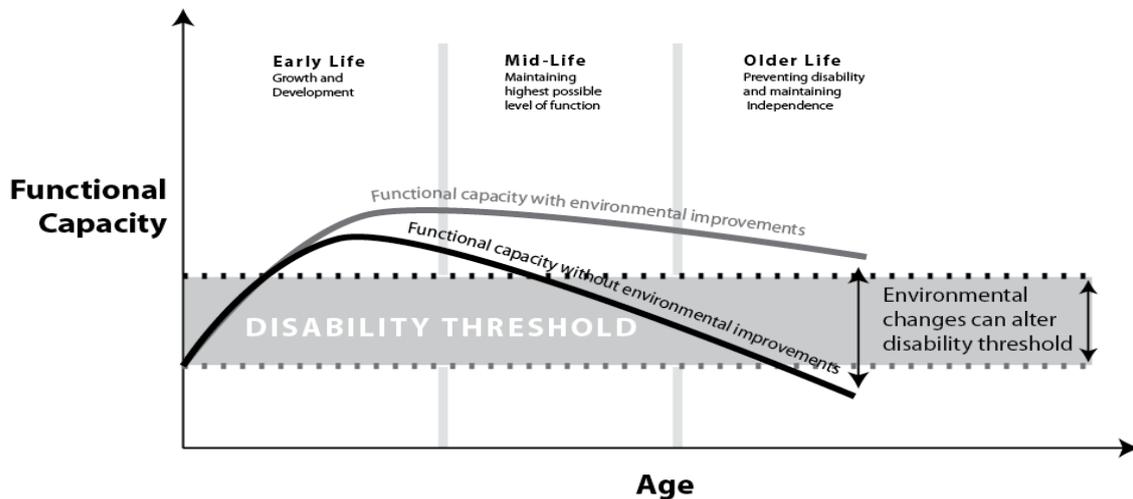
¹⁴ Ministry of Social Development, 2011.

¹⁵ See for instance, Marsden and Mariconi, 2008.

¹⁶ Pauk, Rashbrooke and Rea, 2006 and Ministry of Social Development, 2011.

2.27 Figure 2.1 shows this interaction in relation to the ageing process. But it can be equally well applied to a continuum of impairment across the population bell curve.

Figure 2.1: Shifting the Disability Threshold¹⁷



Adapted from WHO, 2002

2.28 Internationally the paradigmatic shift from seeing disability as determined entirely by impairment of a small minority in the population to a recognising it as interactive dynamic between individuals and the social and built environments is beginning to emerge. In some jurisdictions it is still embedded primarily in the institution of human rights and anti-discrimination legislation and policy. But it is also emerging in some jurisdictions as a strategic goal of universal accessibility.

2.29 In some countries this is a new development. For instance, Hong Kong's Legislative Council is currently considering proposals to adopt universal design.¹⁸ In other countries, the notion of a cross-sectoral approach to universal design tied to clearly specified outcomes, actions and accountabilities is becoming well-established.¹⁹

2.30 The latter is most clearly evident in the Norwegian government's strategic goal for Norway to be universally designed by 2025.²⁰ That strategic goal has been underpinned by an action plan for universal design and increased accessibility for the period 2009-2013 which:

¹⁷ Camemolla and Bridge, 2011.

¹⁸ Equal Opportunities Commission, 2012.

¹⁹ See Ginnerup, 2009 for a review of European initiatives in relation to universal design directed to reducing the disability threshold across multiple domains of everyday life including housing.

²⁰ Norwegian Ministry of Children and Equality, 2009.

- Places requirements on the public sector and seeks to develop a more responsive private sector.
- Uses a mix of statutory and non-statutory levers.
- Sets goals, measures and allocates leadership and accountabilities.
- Prioritises four areas of action:
 - Building and construction.
 - Planning and outdoor areas.
 - Transport.
 - Information and communication technologies.

2.31 It is notable that buildings – public and private – remain prioritised in this wide ranging Norwegian strategy. This reflects the fundamental reality of settled societies. The majority of work, recreation and private life respectively are carried out in buildings and they are the site in which goods and services are both delivered and consumed.

2.32 The Greater London Authority (GLA) is also pursuing a similarly integrated approach to accessibility. In 2004, the GLA adopted a strategy for achieving what it referred to as “Accessible London”.²¹ That strategy identified twenty implementation points for an accessible city and a series of actions and accountabilities around them. Notably housing appeared as two separate implementation points in that strategy. First there was an implementation point around ‘accessible housing’ and, second, an implementation point around ‘wheelchair housing’.

2.33 For the GLA, accessible housing called for the implementation of what they termed Lifetime Homes standards in all new homes, conversions and refurbishments irrespective of dwelling size or typology. This was a considerable advance on the statutory requirements in Britain in Part M of the Building Regulations 1991 which required little more than visitability and which could be avoided under a variety of circumstance.²²

²¹ Greater London Authority, 2004.

²² For a commentary around Part M see Imrie, 2006.

- 2.34 The GLA's 'wheelchair housing' requirement relates to ensuring that all housing developments and redevelopments deliver 10 percent of the stock which is wheelchair accessible or very easily adaptable to wheelchairs. Again there is an emphasis on:
- delivery through both market housing developments and social housing developments;
 - distributing that housing across the stock, not in concentrations in one part of the development; and
 - delivering wheelchair housing for different household sizes.
- 2.35 This early plan was followed up in 2010 with the draft *Equal Life Chances for All Londoners – Disability Equality* which reinforced targets for Lifetime Homes, proposed the roll-out of the London Accessible Housing Register, signalled the integration of lifetime housing in future housing strategies, and requirements around housing provided in the rental market. That plan was subsequently adopted in 2011 and in addition to housing included actions and targets around: transport, employment, crime and safety, health and the public environment.²³
- 2.36 At the heart of the GLA's strategies has been a social model of disability which reflects not only a concern with the million disabled people living in London but also a desire to attract overseas visitors to London. The 2012 Olympics have, consequently, seen a significant further push to institute an enabling city.
- 2.37 In New Zealand there have been limited regulatory initiatives to reduce the barriers that the public built environment presents to disabled people's use of services and participation in paid and unpaid work outside the home. However, how the housing stock, the homes in which older people and disabled people live, impacts on support and care needs, and on their engagement in paid and unpaid work, their contribution to their families, and their participation in their communities has attracted less attention.

²³ Greater London Authority, 2010 and Greater London Authority, 2011.

Cost Effectiveness of a Lifetime Housing Stock

2.38 That is not to suggest that the accessibility and functionality of dwellings has been ignored. A number of New Zealand reviews in recent years have looked at the range of international initiatives.²⁴ The consistent theme, however, is that New Zealand has been relatively slow in developing a coherent and active approach, despite the development of the Lifetime Design initiative and the LifeMark. The gap between the New Zealand response and the international momentum and response appears to be widening.

2.39 New Zealand still has the opportunity to build on its own innovation and benefit from the growing momentum overseas focusing on lifetime housing. That momentum is partly driven by the demographics of ageing, disability prevalence and increasing dependency ratios. It is also a manifestation of anti-discrimination and human rights requirements. But it is also because there is an increasingly weighty body of research that shows lifetime housing:

- Reduces in-home support costs.
- Reduces the costs of home modifications.
- Increases safety and reduces the costs associated with injury.
- Reduces the probability of residential care.

In-home Support costs

2.40 Both here and in many similar countries overseas, the 1980s and 1990s saw a strong movement towards the provision of in-home support rather than retaining older people or disabled people in hospital care or residential care. This partly reflected increasing influential views around inclusion and deinstitutionalisation, but it also reflected governmental concerns around: the costs of hospital and residential care and dependency.

2.41 The shifting of costs from residential and hospital care budgets to community care budgets raised issues around how those costs could be reduced without jeopardising older people's and disabled people's outcomes and quality of life. In the 1990s a series of studies emerged that suggested home help costs could be reduced if

²⁴ Including Scotts, Saville-Smith, and James, 2007; Saville-Smith, James *et al.*, 2009; Davey, de Joux *et al.* 2004.

dwellings were accessible. A Joseph Rowntree Foundation study suggested that costs could be reduced up to 20 percent.²⁵

2.42 This theme of relative costs has continued. According to a recent English study, the costs of modifying a dwelling to provide an entry level shower constituted less than 10 percent of the cost of assisted bathing care over five years.²⁶ In a set of three highly specified Australian case studies, Camemolla and Bridge find substantial potential savings over a year in relation to in-home wage costs associated with home modification for two cases and no savings for another.²⁷ Their cost estimates for the three cases are set out in Table 2.1.

Table 2.1: In-home Care Wage Substitution and Home Modifications: Potential Cost Savings in Three Australia Case Studies

Case Study	Current Care Annually (A\$)	Modification Costs (A\$)	Potential Savings by Substituting In-home Care Wages with Home Accessibility		
			100%	50%	Impact over 24 Months
Elizabeth	\$53,453.19	\$2,472.00	\$50,981.19	\$24,254.59	Savings
Jean	\$35,734.95	\$15,546.61	\$20,188.34	\$2,320.87	Savings for full modifications
Ronald	\$2,035.02	\$5,623.92	\$3,588.90	\$4,606.41	No Savings

2.43 Camemolla and Bridge note that savings reflect only to some degree individual impairment dynamics. Other factors are the extent to which the dwelling already performs well in relation to some parameters of accessibility, the availability of informal care and the number of years the resident is likely to continue in their dwelling.

2.44 Studies on the savings of in-home care costs for people living in lifetime housing are fragmentary but indicate that there may be substantial value in accessible dwellings. Current studies are likely to understate that value because of their limited focus and the fragmentary nature of the data available. Two limitations are of most import:

- The research is limited by its almost entire focus on home modifications on dwellings that have demonstrated themselves to be inadequate to the needs of the residents.²⁸
- Extant studies tend to restrict the measurement of in-home support costs to formal and waged care.

²⁵ Brewerton and Darton, 1997.

²⁶ Home Adaptations Consortium, 2010.

²⁷ See Camemolla and Bridge, 2011 also for a comprehensive review of research around in-home care wage substitution through home modifications.

²⁸ An exception to this is Liu and Lapane, 2009.

- 2.45 The first of these limitations means that while the cost effectiveness of home modifications in relation to in-home care can be measured, the avoided costs for an individual living in a dwelling that has lifetime housing amenities is ignored. There are two major consequences associated with this. Estimations of the value of lifetime housing based on dwellings subject to modification because of formal assessment are likely to under-estimate the value of, and the avoided costs, associated with those living in dwellings that have lifetime housing amenities.
- 2.46 In addition these studies tend to be backward looking. They do not capture the impact and cost implications for in-home care associated with emerging changes in residential construction, materials, systems and designs. It is tempting, but unwise, to ignore the implications of changing techniques, fashions and designs in the building sector. There can be significant follow-on and unforeseen impacts.
- 2.47 For instance, durability outcomes for dwellings with a combination of some sheet cladding systems, untreated timber framing, low pitched roofs with limited overhang, for instance, have been poor in New Zealand.²⁹ Another similar instance has been the extensive incorporation of downlights into New Zealand homes in the last three decades. This has been associated with both poor energy performance, costly retrofit, and hazards.³⁰
- 2.48 In terms of accessibility and functionality for people dealing with impairment, consideration of the impacts of multi-units, semi-detached or multi-level dwellings may all impact on the levels of in-home care required unless there is active incorporation of lifetime housing principles.
- 2.49 The second of the limitations in current research around in-home care and accessible houses is the focus on waged labour substitution rather than the costs of informal care. This is understandable but it is undesirable. Cost-effectiveness studies are almost entirely developed in the context of non-private funders' concern with the direct costs to them of different or no provision of services. Less attention has been given to indirect costs (such as loss of foregone earnings by unpaid carers) or incorporating the value of unpaid work into cost-effectiveness studies.³¹

²⁹ See Department of Building and Housing and www.consumerbuild.org.nz for information around leaky homes.

³⁰ Fire hazard issues have led to regulatory amendments which came into effect on 10 May 2012. See Easton, 2010.

³¹ See also Bridge, Phibbs *et al*, 2007 and Bridge, Phibbs *et al*, 2008.

- 2.50 The under-accounting of unpaid care is problematic for a number of reasons:
- Firstly, it disguises the range and quanta of costs and liabilities to individuals, households and the wider economy of in-home care.
 - Second, it disguises the relative costs and returns on investment in lifetime housing both at the new-build phase or where subsequent modification to a dwelling.
 - Finally, it undermines the ability of in-home care funders to:
 - Assess the impacts of changed market settings on their exposure to direct costs and whether those might be managed through promoting more accessible dwellings. Those settings can change quite dramatically as they have done with recent court decisions regarding the payment of in-home carers for overnight attendance and the payment of parents caring for adult children.
 - Manage their exposure to in-home care costs arising from either inappropriate choices of householders about the amenities of the dwellings they select or an under-supply of lifetime dwellings by the residential building industry.
- 2.51 Together those problems compromise consumer sovereignty and generate the classic problem of moral hazard:
- Consumer sovereignty is compromised because householders or other purchasers have not got the information they need to make rational choices and trade-offs.
 - Moral hazard is generated because the costs of organisations or individuals choosing NOT to supply or consume lifetime housing generally do not fall on them. Rather the costs of in-home care often fall on others – extended family, tax payers in relation to government funded care, or those paying insurance premiums.³²
- 2.52 The shift from residential care to in-home care is in part prompted by a desire to improve the quality of life of older people and of disabled people. It has also been prompted by the costs of residential care. The capital assets and infrastructure of residential care are considerable. Indeed, the projected costs of repairs,

³² See Phaup and Kirschner, 2010, for a discussion of the analogous situation of moral hazard in the context of disaster preparation, indemnification and the tendency to defer the costs of disasters until after the event rather than through preventative action.

maintenance and up-grading residential facilities was one of the key factors in the New Zealand Salvation Army exiting from the rest home sector. There are also considerable costs associated with staffing in residential care. Those costs are likely to increase as pressure grows to improve the pay and conditions of rest home workers.³³

2.53 The unit staff costs for rest home providers are rising and margins are also increasingly squeezed by more stringent targeting of government subsidies and the spread of retirement villages. Rest home operators' opportunities to cherry-pick or cream-skim and offset the costs associated with high care demanding residents with the lower costs associated with residents that demand minimal care are significantly reduced.

2.54 Under those conditions, as Camemolla and Bridge point out in relation to Australia, the focus must shift:

FROM

- The current reactive mode of home modifications as a substitution for in-home care

TO

- A focus on the cost-effectiveness of accessible design as a preventive strategy.³⁴

Lifetime housing or home modifications?

2.55 This raises the issue of whether new-build lifetime housing will cost-effectively reduce the need for home modifications and/or the cost of specialised home modifications. There is a growing international body of evidence internationally suggesting that:

- A design-led approach to lifetime housing around clear specifications and standards means that lifetime new-builds can be delivered to market at prices not dissimilar from other new-builds.
- Lifetime housing does allow subsequent, more specialised and tailored modifications to be undertaken more cost-effectively.

³³ Human Rights Commission, 2012.

³⁴ Camemolla and Bridge, 2010.

- 2.56 In relation to the relative costs of traditional new-builds and lifetime housing, cost differentials found in the research vary. The most expensive are the differentials between new-builds delivered through the market and what the Canadians describe as FlexiHousing. The latter is typically around 5.5 percent more expensive than what they have benchmarked as a home commonly delivered to the market.³⁵
- 2.57 The Canadian differential is substantially larger than those found by the New South Wales state government's land development corporation. They found re-configuring existing plans was associated with costs in the region of less than 2 percent and virtually no cost where designs incorporated accessible features from the outset of the design process.³⁶
- 2.58 These are consistent with BRANZ's analysis of cost impacts associated with re-configuration of existing designs.³⁷ They are also consistent with the Victorian state government's assessment of costs for access features incorporated in the design phase which ranged from 0.2 percent in single dwellings to 0.3 percent in high rise apartments of the build cost. Fitting similar features as a retrofit cost in the region of 6 percent of the build price.
- 2.59 In addition to the low marginal cost of lifetime housing design and construction, there is also evidence that subsequent modification to meet specialised needs can be undertaken at lower cost in lifetime housing. An Australian study suggests that prior provision of the sort found in lifetime housing can shift modification costs in detached dwellings from 8.7-12 percent of build cost to around 1 percent of dwelling build cost (Table 2.2).³⁸

Table 2.2: Percent of Build Costs for Subsequent Modification Dwellings with No Provision and Dwellings with Prior Provision

Dwelling Type	Modifications in Housing with Prior Provision	Dwellings with No Provision for Adaptation
Detached dwelling	0.7%-1.2%	8.7%-12%
Town-house	5.7%-6.7%	19.0%-23.8%
Low-middle rise unit	0.3%-7.0%	10.3%-21.9%
High rise unit	0.3%-0.7%	9.2%-12.9%

³⁵ CMHC, 2002.

³⁶ Landcom, 2008.

³⁷ Page and Curtis, 2011.

³⁸ Quin *et al.*, 2009.

2.60 Recent British costings associated with Department of Community and Local Government proposals³⁹ around sustainable homes including mandatory lifetime homes related features, reinforce the cost savings associated with incorporating standards within new-build designs rather than subsequent modification. A 2009 study considering the costs of Lifetime Homes in the context of the British government's broader package of housing targets set the full cost of a Lifetime Homes at £550 per dwelling or £75 per flat.⁴⁰

Reductions in Injury

2.61 The extent to which lifetime housing could act as a preventative to injury, especially among older people, has increasingly caught the attention of both health funders and accident insurers over the last decade. The reasons are obvious:

- Injury is frequently a precipitating factor in older people's admission to acute care.
- Injury is a critical factor in loss of functionality, chronic disability and higher dependence, as well as excess mortality for older people.
- Most injuries among older people occur in the home.⁴¹

2.62 Most studies in this area have been on the cost-effectiveness of modifications to existing dwellings that have not been designed to lifetime design principles. Again those studies have been driven primarily by government agencies attempting to establish the cost-effectiveness of modifications in relation to their exposure to direct health care and support costs arising from injury, particularly older people's injuries and falls.

2.63 In that narrow context, the evidence overwhelmingly supports modifying the dwelling of an older person to incorporate lifetime and accessibility features. These are particularly effective where an older person has had a previous fall that resulted in treatment. Australian research indicates a 60 percent reduction in falls in the home among older people previously subject to treated injury from a fall.⁴² New Zealand research suggests that the number of older people's falls can be reduced between

³⁹ Department of Community and Local Government, 2007. In this context, lifetime homes are those that meet the accepted Lifetime Homes standards promulgated by the Lifetime Homes Foundation.

⁴⁰ Building Cost Information Service, 2009.

⁴¹ Njogu and Brown, 2008 and Oswald, Wahl and Schilling, 2002.

⁴² Hill *et al*, 2004.

14 percent and 41 percent by widening paths, ensuring non-slip walkways within a dwelling and in the yard, and improving lighting.⁴³

- 2.64 Although these home modification studies indicate the efficacy of lifetime design features in reducing injury for older people, they probably under-estimate the extent of the preventative impact on injury. There is a dearth of studies in relation to injury for disabled people. It could be expected that designs which facilitate movement for both mobility impaired and sensory impaired people could well reduce the risk of injury. Certainly there is evidence that improved home accessibility for disabled people reduces the risks of injury to in-home carers.⁴⁴
- 2.65 The full extent of the injury preventative benefits of housing which incorporates lifetime principles within its very design and construction may also well exceed the benefits associated with home modifications. Home modifications, by definition, suggest that the dwelling is likely to be still compromised in terms of its accessibility and functionality. The extent and value of injury prevention associated with lifetime homes has yet to be tested in comparison to home without accessibility features, and existing homes that have been made more accessible through home modifications.⁴⁵

Reducing Probabilities of Residential Care

- 2.66 The reduction of injury and optimising in-home care by reducing those costs are both part of a broader agenda to allow older people to be productive and functional in their homes and communities. The extent to which lifetime housing or modifications to existing housing delay or remove the need for residential care has, consequently, been of considerable interest.
- 2.67 There is a substantial body of research here and overseas showing that housing problems can precipitate the transfer of older people and disabled people from living within their communities to living in residential facilities. In considering the data around lifetime housing and its relationship to residential care, it is important to differentiate two separate, albeit relevant, measures. They are:
- The reduction in excess admission to residential facilities. That is, where admission to a residential facility is avoided altogether.

⁴³ Campbell and Robertson, 2008.

⁴⁴ Heywood and Turner, 2007.

⁴⁵ See Heywood, 2004, which notes how poor modifications and design may increase the vulnerability of disabled people to injury.

This measure recognises that most individuals, irrespective of their health, age or disability status, do not enter long-term residential care.

- The delay in taking up residential care.

Typically this measure is used in relation to older people and involves calculations of average age and incidence of residential care admission.

- 2.68 The full implications of each of these measures in terms of cost-effectiveness have yet to be fully explored. Research findings also vary according to the population targeted. There is very little research that targets the residential pathways of disabled people below the age of 65 years. Most analysis has focused on the housing pathways of older people. Despite those limitations, substantial cost-savings related to the aggregate reduction of residential care and the delays in transition to residential care are apparent.
- 2.69 There are two types of housing problems that precipitate older people and disabled people into residential care. One relates to factors around housing consumption. The other relates to the accessibility and design of dwellings. With regard to the former of these, it is now clear that some people, particularly older people, move to residential care not because of the inherent impact of impairment or ill-health but because they live in unsatisfactory housing conditions.
- 2.70 Tenure uncertainty, unaffordable housing related costs, dilapidation, disaster or disconnected neighbourhoods have all been found to prompt movement into residential care in England,⁴⁶ Australia,⁴⁷ New Zealand⁴⁸ and the United States.⁴⁹ Effectively, these types of housing problems exacerbate existing conditions and heighten the impacts of impairment. They trigger dislocation from their communities, admission to an unnecessarily high level of care and support, and shift the cost of what is primarily a housing problem onto the health and social services sectors.
- 2.71 The other housing issue is of course the accessibility and functionality of the dwelling itself. In that context, the body of research showing the importance of accessible housing has been accumulating for many years. Key findings in relation to potential savings through delayed or avoided admission into residential care are:

⁴⁶ Heywood and Turner, 2007.

⁴⁷ Nissam, 2008 and AHURI, 2010.

⁴⁸ See the public science research programme which explores the importance of repairs and maintenance on enabling older people to age in place at www.goodhomes.co.nz.

⁴⁹ There is a burgeoning literature on the impact of adverse events such as Katrina on the excess mortality rates as well as institutionalisation of older people and disabled people.

- Sweden – Under 65 yrs disabled admission reduction – 12-30 percent.
- United Kingdom – Savings in delaying people with disability under 65 from institutional care: \$59m per year.⁵⁰
- Australia – Average saving on residential care costs of \$41,190 per person per year.⁵¹

3 Levers for What: Lifetime Housing Stock or Special Housing?

3.1 Before one considers either the barriers or the levers to remedy the supply of housing designed in such a way as to be functional and accessible, it is critical to have a clear understanding of what outcomes are being sought. The development of a stream of special houses targeted to particular individuals identified as requiring a dwelling different to a ‘mainstream’ dwelling is quite a different task from establishing lifetime housing as an integral part of the mainstream stock. At its most simple:

- The former requires commissioning of dwellings by a housing sector provider and the latter requires a transformational approach to the building industry and the housing sectors.
- The former requires a command and control approach to public policy and the latter requires an integrated package of levers directly tailored to key stakeholders in the building industry value chain and the housing sector.
- The former requires forecasting but little strategic orientation or innovation while the latter requires an innovative approach not only to materials, design, construction and public policy levers but also an integrated, strategic approach.

3.2 Because of those profound differences, we now turn to the relative merits of an accessible housing stock or a stock of special housing. The latter seeks to increase the supply of housing modified for disabled people and/or older people as primary occupants. The former seeks to make the housing stock as a whole increasingly accessible and functional.

⁵⁰ Hill, 1999.

⁵¹ Bridge, Phibbs *et al.*, 2008.

The Special Housing Approach

- 3.3 The special housing approach treats the needs of older people and disabled people as specialised and unique. The amenity value of accessibility and functionality are portrayed as largely unwanted by other people. The numbers of dwellings required to meet the needs of older people and disabled people are treated as significant but relatively small. Prominence is given to moderate and severe disability and the minority proportion of moderate and severe disability among the population.
- 3.4 This paradigm assumes that most disabled people and older people will remain in single locations and they will not require the ability to move house for employment or other non-disability related reasons. It assumes that disabled people and older people live by themselves or have no responsibilities to other household members or dependents outside of the household.
- 3.5 This approach also tends to assume the costs of lifetime housing principles in new builds will drive housing prices up and costs will fall on those that do not need lifetime housing. This approach assumes some lifetime houses will be lived in by those that do not need them and that the building industry will be required to over-supply, the costs of which will fall on all new-build purchasers.
- 3.6 To meet need and avoid costs, proponents of this view tend to see the housing response to changing demographics to rest in close forecasting of the quantum and location of lifetime housing requirements. In general, analysis based on this view tends to suggest an increase in supply will be required, but that supply should be delivered into quite narrowly specified segments of the housing market: retirement villages, social housing providers, public housing and in response to individual householders who are able to commission specialised dwellings for their own use.

A Lifetime Housing Stock Approach

- 3.7 By contrast, the second approach gives prominence to the dynamic nature of disability. It also focuses on the role that private homes play not only as accommodation for individuals but also as sites for social interaction, service provision, paid and unpaid work. The accessibility of a dwelling is, consequently, relevant to the occupiers but also to those who may come to visit whether in a social or a professional capacity.

- 3.8 In the context of this perspective there is no assumption that the occupant is disabled and the visitor, whether for social or professional reasons, has no disability. Similarly, there is no assumption that a disabled person or an older person will remain in a single dwelling unless they must move to a higher dependency residential environment.

- 3.9 Equally, proponents of this approach cite benefits accruing not simply to those dealing with disability due to increasing age, injury or disease. They also see lifetime housing as relieving the burdens of poor design on all occupants. Those range from children who are limited by their skills and stature and their carers as well as the carers of older people and disabled people. They see the costs of lifetime housing as either a small marginal cost or an avoidable cost.
- 3.10 Those taking this approach seek to maximise the use of accessible and modified existing dwellings through providing disabled people better information about the availability and location of that stock. However, they tend to be oriented to the progressive transformation of the housing stock over time.

Special Housing or an Accessible Housing Stock?

- 3.11 The levers likely to be most effective in delivering 'special housing' dwellings are direct commissioning and purchase by a housing provider.
- 3.12 New Zealand has had a long history of taking this special housing approach. The housing stock developed by IHC as well as the local authority pensioner housing stock were subject to significant central government subsidies. Other housing in the disability sector has, historically, been developed using a mix of Vote:Housing, Vote:Health and Vote:Welfare. Much of that housing has been group housing and unsuitable to older people and disabled people living in families.⁵²
- 3.13 The special housing approach has the advantage of reducing the extent of market and industry transformation and innovation required to deliver accessible dwellings. It does, however, require secure investment by housing providers and typically this has been generated through, or at least highly subsidised, by government funds. In essence, the procurement and funding from government substitutes for regulatory or market initiatives.
- 3.14 The special housing approach does, however, exhibit a series of deficiencies and rigidities including:
- stifling labour mobility;
 - stock wastage; and,

⁵² Capital Strategy and SGS Economics and Planning, 2007 and Saville-Smith and James, 2007.

- moral hazard.⁵³
- 3.15 However, what is most problematic about the special housing approach of ‘predict and provide’⁵⁴ is that it is impractical and unrealistic. It fails to stimulate the supply needed to meet the requirements of the very segments of the population that its proponents claim are targeted by the special housing paradigm.
- 3.16 In particular, it is an approach that:
- Depends on forecasts and prediction at high levels of certainty which internationally are agreed to be unachievable because of persistent problems and complexities around measurement and the highly dynamic nature of ageing and of disability respectively.
 - Ignores the life of the dwelling itself and focuses on the minority status of older people and disabled people. There are a range of estimates suggesting that more than 60 percent of single family dwellings will have at least one resident with a disability over the life of the dwelling. It is estimated that over 90 percent of dwellings will need to provide for visitors with a disability over the dwelling life.⁵⁵
 - Fails to deliver and can dis-locate older people and disabled people from their communities, their families and their networks.
- 3.17 While targeting and supply of special housing appears a simple matter of command and control, the reality is that it is associated with considerable wastage of ‘special housing’ subsequent to its development. The life cycle of special housing is short, in part because the tailoring to an occupant tends to be done without thought for future adaptation.
- 3.18 There are multiple reasons for the wastage of modified dwellings. Of primary importance are the:
- Accessibility of modified and special housing dwellings is frequently achieved through clumsy and obtrusive add-ons.⁵⁶

⁵³ It is an approach that allows householders to avoid managing the risks of disability and transfers the costs of dealing with subsequent housing need on other family members, government funders, and/or insurers.

⁵⁴ Imrie, 2006.

⁵⁵ Smith, Rayer and Smith, 2008.

⁵⁶ Bringolf, 2011.

- Incidence of disability is patchy and makes forecasting of the quantum, timing and location of special housing need difficult to forecast.⁵⁷ This of course goes back to the previously discussed fundamental inability to predict accurately at the required level of scale.
 - Ability to match accessible dwellings with the seekers of accessible dwellings has been limited.
- 3.19 Nor has the ‘command and control’ or ‘predict and provide’ associated with this special housing approach actually met the quantum of need.
- 3.20 Research persistently points to an under-supply of accessible housing where special housing interventions have been the prevailing response. Special dwelling units are low in number and delivered at considerable unit cost.⁵⁸ London found that less than half of wheel chair users in housing association houses had an accessible dwelling.⁵⁹
- 3.21 Similarly, in New Zealand despite decades of, effectively, a special housing approach, it was estimated that:
- 45-50 percent of moderately or severely disabled adults live in unmodified dwellings.
 - 28-53 percent of dwellings in which moderately or severely disabled adults live have been modified.⁶⁰
- 3.22 Nowhere is the failure of a special housing approach more apparent than in the significant expenditure that needs to be made to modify the mainstream stock:
- Individuals and households make significant private expenditures on modification in New Zealand. A 2007 survey found a median of \$3,000 and an average expenditure of \$13,353 on modifications among households with a member who has a moderate or severe mobility disability.⁶¹

⁵⁷ See Saville and James, 2010, for a discussion of the importance of place in households’ housing decisions. The study of Auckland housing demand among under forty-year olds found that decisions around place were finally calibrated even within neighbourhoods. Decisions reflected households’ attempts to maintain and optimise often cross-cutting and complex balances between adult employment, schooling and extended family needs as well as attempts to sustain longstanding social relationships and community attachments. Those imperatives do not diminish, indeed they could be argued as amplified, where an older person or a disabled person is a household member.

⁵⁸ Capital Strategy and SGS Economics and Planning, 2007 and Campbell and Memken, 2007.

⁵⁹ Greater London Authority, 2010.

⁶⁰ McDermott Miller, 2005.

⁶¹ Saville-Smith *et al.*, 2007.

- In 2009, the Ministry of Health expended \$14 million on modifications and the Accident Compensation Corporation expended \$19 million.
- The annual average per person expenditure on house modification by public agencies at the end of the last decade was \$11,078 by the Accident Compensation Corporation and \$4,194 by the Ministry of Health.
- Over the period of a disabled person's occupancy of a dwelling, the average assistance for modifications is estimated to be between \$30,000 and \$35,000.

3.23 The debate around the merits of a special housing approach compared to a lifetime housing approach remains. However, the last two decades have seen a distinct shift from residential care and special housing as the dominant paradigm to lifetime housing. That shift reflects a multiplicity of factors, primarily a combination of:

- The retraction of the state from direct provision and a focus on market mechanisms with state interventions directed to dealing with market failure.
- Fiscal constraints on public spending and the need to control residential and in-home support costs as well as dwelling modification costs.
- The failure of 'predict and provide' special housing to meet accessible housing needs.
- The high probability that 'mainstream' dwellings will accommodate a disabled resident during a dwelling's lifetime.

3.24 The impact of those factors has been amplified by two broader trends.

- First, the evolving recognition of accessibility as a fundamental platform for inclusion and non-discrimination in both public and private spaces.
- Second, the recognition that fit-for-purpose housing is a critical component of the economic competitiveness and productivity of local economies and reducing individual and family dependency.⁶²

Those trends have driven the development of the accessibility approach exemplified by, but not restricted to, the GLA and Norwegian strategies previously discussed.

⁶² Hanson, 2001; Imrie, 2003; Kpvacs Burn and Gordon, 2010; Lepofsky and Graham, 2009; McDermott, Haslam, and Gibb, 2006; Ministry of Social Development, 2011.

4 Barriers to a Housing Stock Transformation

- 4.1 A lifetime housing approach takes the focus away from 'predict and provide' to a focus on stock transformation. The problem of housing stock transformation is not restricted to those concerned with lifetime housing. How to transform a housing stock has also been at the centre of other sectors' concerns. In particular, those concerned with energy efficiency, fuel poverty, healthy housing, and green housing.
- 4.2 All those sectors have found that there are arguably no significant building technology barriers to performance improvement.⁶³ Despite that there has been significant resistance to change. The experience of those sectors has highlighted three dynamics that inhibit the transformation of housing stocks. They are:
- Stock inertia.
 - Vicious circle of blame.
 - The innovation chasm.

Stock Inertia

- 4.3 One of the critical problems in attempting to transform a housing stock rather than simply build a dwelling with improved performance is the stock inertia effect. By 2050, current population projections suggest that New Zealand will have in the region of 2.4 million dwellings compared to the approximately 1.6 million dwelling stock extant in 2006. Most of the dwellings that are currently in the housing stock will be in the stock in 2050.
- 4.4 Based on annual stock demolition of 2,000 and assuming stock units will be demolished due to the Canterbury earthquakes, between 1.4 and 1.5 million of the 2006 stock will remain. Of those, possibly 120,000 will have had major renovations requiring a building consent.⁶⁴
- 4.5 The inertia effect is clear. Around 68 percent of the stock in 2050 will have been built prior to 2006 and prior to the development and promulgation of lifetime housing and standards in New Zealand. Nevertheless, there are clearly significant opportunities to integrate lifetime design principles into the housing stock in the context for this need for new-build housing over the next four decades. To meet the household needs

⁶³ Barlow and Venables, 2004

⁶⁴ Page, 2007.

indicated by current population projections, around 20,000 new dwellings need to be added to the stock annually between 2006 and 2050.

Vicious Circle of Blame

- 4.6 If new stock fails to meet desired performance standards, then the prospects for transformation even in the medium and long-terms are dim indeed. That then raises the issue of supply-side inertia. It is in this context that the vicious circle of blame emerged to explain the failure of the market to deliver over time buildings with better environmental performance. That explanatory model portrays the supply chain in the building industry, including investors, developers, material and product suppliers and builders as persistently rationalising the failure to deliver technically achievable outcomes by citing barriers presented by other stakeholders.
- 4.7 In the context of lifetime housing that model would look something akin to that shown in Figure 4.1.

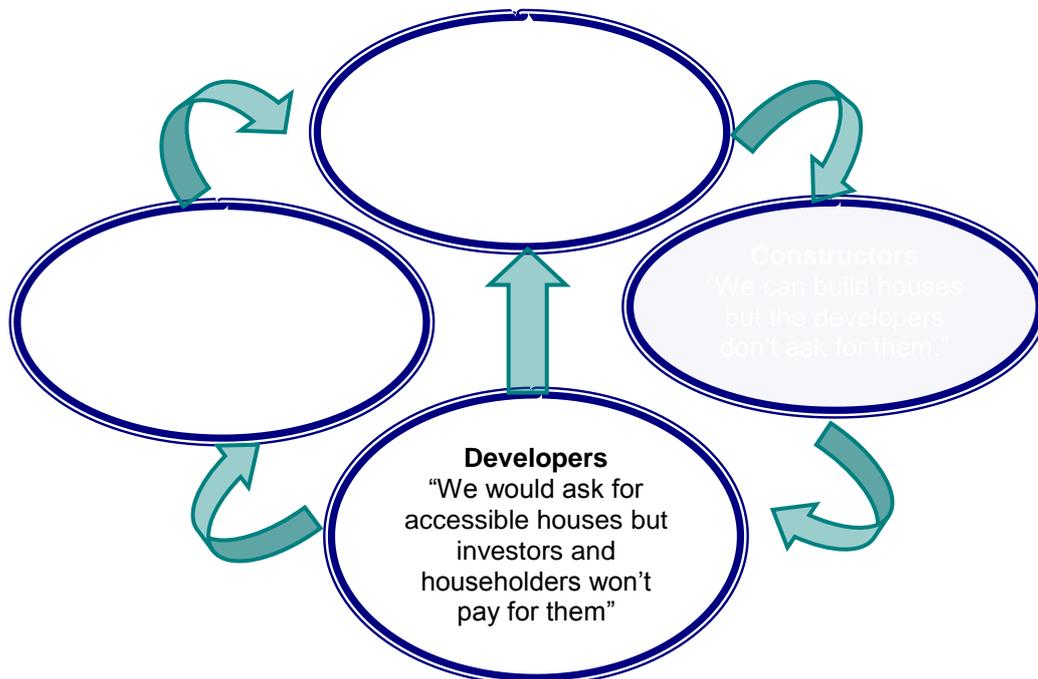


Figure 4.1: A Vicious Circle of Blame in Lifetime Housing⁶⁵

⁶⁵ Adapted from Pett and Ramsay, 2003.

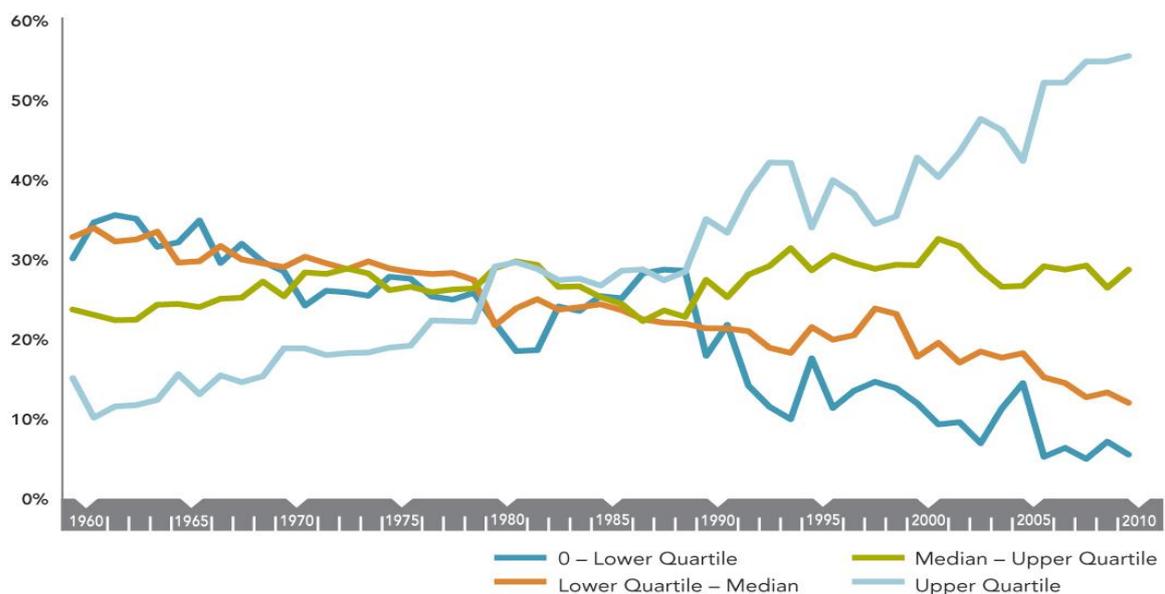
4.8 This explanatory model was developed in relation to the non-residential building sector in the context of attempts to increase the supply of environmentally efficient commercial buildings. By comparison, the residential sector is very complex. In the residential sector there are two critical dynamics. One is the operation of the residential building industry. The other is the operation of the housing sector.

The Building Industry

4.9 The building industry, particularly the residential building industry, is frequently described as fragmented.⁶⁶ But it could equally be described as dominated by a few building/development business and product suppliers. The myriad of building companies building the occasional dwelling independently are, like the sub-trades, effectively providing casualised, contracted services to more dominant producers.

4.10 The dwellings produced by the residential building value chain are regulated by both the performance requirements of the Building Act and the planning requirements of district plans developed within the framework set out in the Resource Management Act. Since the late 1970s, the residential building industry has increasingly concentrated on supplying upper quartile dwellings and persistently under-supplied affordably priced dwellings in the last twenty-five years (Figure 4.2).⁶⁷

Figure 4.2: Value of New-Builds Delivered by the NZ Residential Building Industry

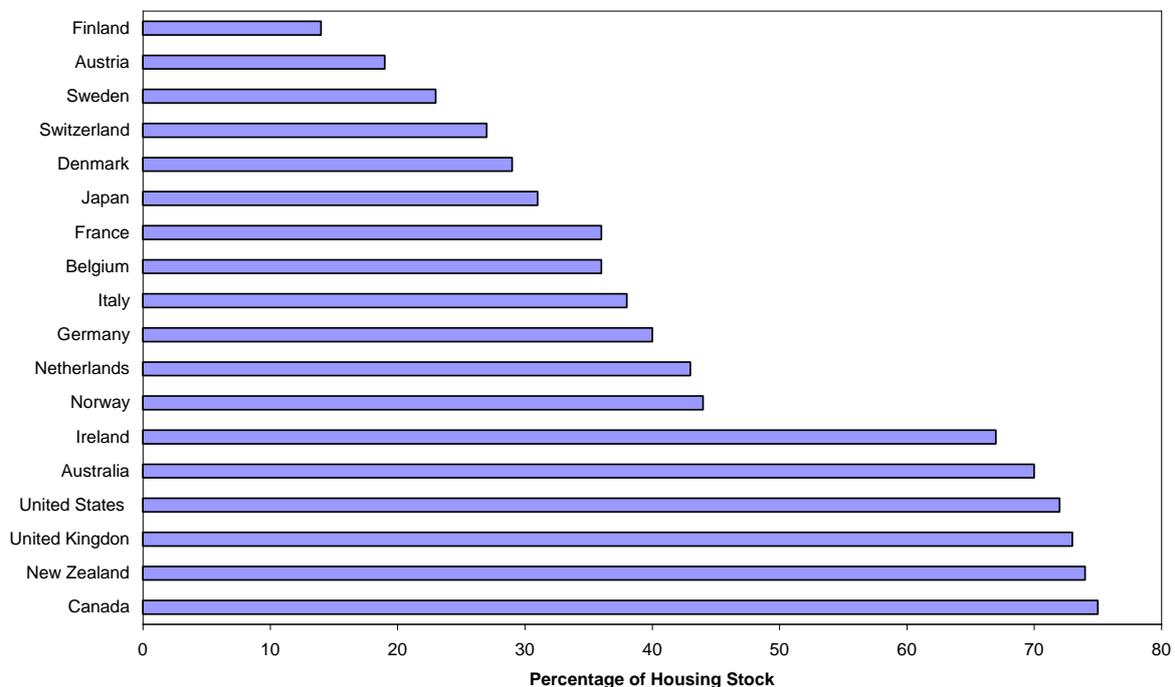


⁶⁶ Page, 2010; and the Productivity Commission, 2012.

⁶⁷ Productivity Commission, 2012.

- 4.11 The more expensive dwellings that have emerged as the focus of the building industry's supply strategy are also larger dwellings. While New Zealand's household sizes are falling, the building industry is supplying houses that are increasingly large, off-set by some relatively small apartments. Between 1973 and 2008 the square metre per person in new dwellings rose from an average of 32.5 sq metres to 73 sq metres.⁶⁸
- 4.12 Apart from the evidence that early design incorporation of lifetime requirements reduces impacts on floor sizes, the more than doubling of new house floor sizes makes anxieties expressed by the industry about the floor size impact of lifetime housing designs almost inexplicable.
- 4.13 The reality is that the building industry in New Zealand has of its own accord been building bigger houses. New Zealand now has more rooms in its dwellings than most industrialised countries (Figure 4.3). However, that trend has delivered little in the way of improved accessibility.⁶⁹

Figure 4.3: Proportion of Housing Stock with Five Rooms or More by Country - 1st Decade of the 21st Century



⁶⁸ Saville-Smith, James *et al.*, 2009.

⁶⁹ Saville-Smith, James *et al.*, 2009.

The Housing Sector

4.14 The building industry typically sees itself as meeting the requirements of householders. But householders are not always, indeed in some segments of the housing market are not even, the immediate consumer of new-builds.

4.15 Dwellings constructed in New Zealand are supplied to the housing sector. The housing sector is constituted around suppliers who deliver housing to households. Those suppliers are diverse but can be listed as follows:

- Owner occupiers – Most households acquire dwellings by buying from owner occupiers who are seeking an alternative dwelling. Most of the New Zealand stock is circulated in this market.
- Private landlords or investors – They deliver private rental stock, this has been traditionally existing dwelling purchase but in the multi-unit sector they are increasingly prominent in the commissioning or purchase of speculative new-builds from builders and developers;⁷⁰
- Social landlords including Housing New Zealand, local authorities and various community providers – They typically deliver rental housing and typically purchase new-build stock through a variety of purchase mechanisms with the building industry;⁷¹
- Providers of alternative tenure housing such as:
 - Shared ownership, rent-for-buy, sweat equity or co-operative housing providers including Habitat for Humanity, Queenstown Lakes Housing, Abbeyfield and so forth.
 - Retirement villages that provide dwellings through a variety of mechanisms but increasingly license to occupy.
 - Maori housing providers that also provide dwellings through a variety of tenures but frequently through various forms of occupation licences.

⁷⁰ In this respect it is important to recognise that private landlords can fall into three categories:

- Those who have dwellings that are surplus to their needs and temporarily rent them out until they are disposed of or are used by the owner.
- Landlords that see themselves as part of a service industry with a long term interest in the provision of rental housing as a business.
- Investors who treat rental property as a form of largely passive investment.

For a discussion of this see Saville-Smith and Fraser, 2004.

⁷¹ See the Productivity Commission for an extended discussion on social landlords, also Capital Strategy and SGS Economics and Planning, 2007; Saville-Smith and James, 2007; and Davey, de Joux *et al.*, 2004.

In most cases these dwellings are commissioned or purchased new-builds and provided to householders.

- Builders and developers who sell either refurbished stock or new builds to:
 - Householders directly; or
 - The range of housing providers previously listed.

Implications of the Building Industry/Housing Sector Interface

- 4.16 The interface between the building industry and the housing sector makes the circle blame already noted in Figure 4.1 extremely complex. Some stakeholders have multiple positions. Builders and developers can act both as suppliers to households but also suppliers to housing sector suppliers. Households can be the direct consumers in relation to the residential building industry, but they are more likely to be dependent on housing sector suppliers.
- 4.17 Under those circumstances, there is a multiplicity of ways in which the building industry and the housing sectors respectively can shift 'blame' for under-supply not only within their own industry, value chain or sector but across the building industry/housing sector divide as well. This is exacerbated by fundamental and inevitable differences between the environments in which the building industry and the housing sector respectively operate.
- 4.18 In the housing sector, while housing providers (landlords and providers of alternative tenures) and householders commonly use borrowings to finance housing purchase, the financial institutions and the products used by each of those differ. Housing sector finance also differs significantly from the lines of credit that underpin the building industry's activities.
- 4.19 Similarly, the statutes that regulate the housing sector are significantly different from the legislation that manages the building industry. Likewise the range of direct and indirect subsidies and incentives evident in the building industry differ from those evident in the housing sector.

The Innovation Chasm

- 4.20 The complex dynamics within and between the housing sector and the building industry are marked by the negative impact of:
- Price barriers that inhibit household demand;
 - High transaction costs;
 - Asymmetric information that undermines consumer sovereignty; and
 - Capability and capacity constraints.
- 4.21 All these problems noted inhibit innovation and innovation is a critical pathway to housing stock transformation.
- 4.22 Fundamentally, housing change, whether it is to energy efficiency, comfortable homes with good thermal performance, or lifetime housing requires:
- Innovation from the building industry and housing sector suppliers; and
 - A desire for those innovations by consumers or those carrying the externalised costs of the status quo.
- 4.23 In New Zealand, as elsewhere, both the residential building industry and the housing sector have been characterised by low levels of innovation and take-up of new technologies, processes, products and designs.⁷² This is a largely accurate portrayal of the housing sector, but is less accurate in relation to the building industry.
- 4.24 Take up of new products and materials are common in the building industry. Heat pumps have shown a rapid take-up in new builds. Downlights, similarly showed a rapid adoption. Indeed, some would suggest that some of the more problematic aspects of recent dwelling performance have been associated with an overly rapid take-up of products and aesthetics such as low pitched roofs, reduced eaves, and plastered surfaces without a proper understanding of the implications and handling requirements associated with them.
- 4.25 What is clear from the pattern of take-up of these types of innovations is that, unlike lifetime design:

⁷² Building and Construction Sector Productivity Taskforce, 2009; Burke, 2010; Buxton, 1998; Campagnac, 1998; Fairweather, 2009.

- None of them require significant reworking of the existing industry relationships, designs, or labour processes.
- They tend to be driven through manufacturers and product suppliers.
- Many, such as heat pumps, are promoted by both direct marketing to householders and housing sector suppliers as well as to builders and developers.
- They have limited impact on building consent requirements and tend to be more attractive to the industry than systems that require consenting. Heat pumps again present an example. Despite piercing the building envelope heat pumps have not generally, unlike for instance solar water heaters or enclosed wood burners, been subject to building consents.
- They generate virtually no hump costs for builders and developers.
- They are perceived as being easily accommodated within pricing structures prevailing in the market.

4.26 Indeed, where these types of systems or products become fashionable, builders and developers who do not take them up risk market share. Heat pumps and downlights are both examples. Downlights, of course, have been subsequently shown to have a variety of energy efficiency, safety and adaptability issues associated with them.⁷³

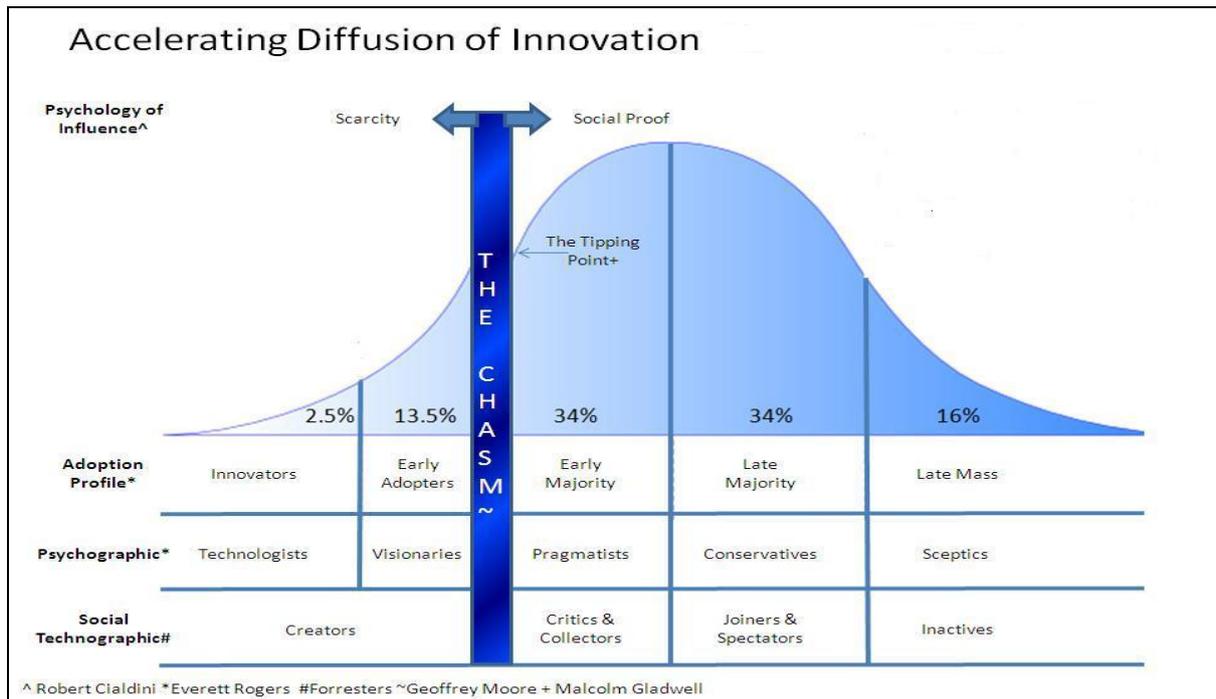
4.27 By way of contrast, innovations which require hump design costs or significant investments in skills, capability and developing new relationships are much less likely to be taken up rapidly by the industry. This is exacerbated by situations in which the market does not incorporate those innovations into capital values or where there are significant price barriers.

4.28 These are the characteristics of many of the innovations that bring fundamental improvements to dwelling performance, whether that performance is in the realm of reducing environmental impacts, energy efficiency, thermal performance, affordable housing or accessible housing.

4.29 The challenge, then, is how these types of innovations can be taken up and diffused. Figure 4.4 suggest that for an innovation such as lifetime housing to transform the market the chasm between 'early adopters' and the 'early majority' has to be bridged. The challenge is to reach a tipping point – around a fifth of market potential – which will then drive take-up of its own accord.

⁷³ Easton, 2007.

Figure 4.4: Innovation Diffusion and Take-up⁷⁴



- 4.30 To reach that tipping point an innovation needs to demonstrate practicality and engender social proof. Practicality means that innovations need to appeal to the supply chain and consumers as meeting practical problems. Social proof – technically referred to as *informational social influence* – is the phenomenon by which products, practices, systems and behaviours are taken up by some people because other people have already adopted them.
- 4.31 Informational social influence has its own momentum. It is quite divorced from the public or private good associated with an innovation. Poor practices, inefficient and costly products, and poorly performing systems can become adopted simply because the proportion of the population using them reaches a tipping point.
- 4.32 It is notable that in the area of energy and thermal efficiency, after many years insulation has now crossed the tipping point and is increasingly demanded by householders and promoted by the building industry.⁷⁵ Developing social proof and demonstrating that insulation ‘works’ to the building industry, the housing sector and households has involved many years of central and local government leadership, subsidies to reduce price barriers to household take-up, social marketing and

⁷⁴ Maloney, 2010; Cialdini, 2001.

⁷⁵ Saville-Smith, James, Easton and Burrough, 2011.

systematic attempts to generate an effective supply chain including the use of regulatory levers.

5 Levers for Housing Transformation

5.1 This section:

- Briefly outlines the range of instruments used to support the supply of accessible housing internationally and comments on emerging developments in that field and the findings around effectiveness of those instruments.
- Reviews what we can learn from the much more widespread and diverse instrumentation used to increase the energy efficiency and thermal performance of buildings as well as reducing their environmental footprint.
- Identifies the key elements and instruments necessary to effect a lifetime housing transformation of New Zealand's housing stock.

Instruments for Lifetime Housing

5.2 Previous reports have set out the range of instruments used internationally to increase the accessibility of dwellings for disabled people and older people. Interviews with key practitioners and researchers undertaken in preparing this paper suggest that the range of instrumentation identified in those reports is largely unchanged.⁷⁶

5.3 They can be broadly summarised as:

- **Regulatory and control mechanisms to encourage some level of accessibility.** Infobox 5.1 is drawn from a report on international practice in 2007.

⁷⁶ Professor Rob Imrie and John Yudelman pers com., June 2012.

Infobox 5.1: 2007 Review of Regulatory and Control Mechanisms for Disability Access⁷⁷

Country	Framework/legislation	Year	Public Buildings	New Homes	Existing Homes
Australia	Building Code of Australia. Standards for public buildings.		√		
	State level Building Standards for accessible showers, doorways, ramps.	2005	√	√	
	AS/NZS 1428.4:2002. Design for access and mobility. Tactile Indicators.	2002	√	√	√
	AS 4299-1995. Adaptable Housing Standard.	1995	√		
	AS 14281-200. Design for Access and Mobility		√		
United Kingdom	NHS and Community Care Act	1990	√	√	√
	United Kingdom Building Code. Lifetime Home Standard Part M. Similar codes in Scotland & Wales	1999		√	
	BS8300:2001. Code of Practice.	2001	√		
	BS 5588. Part 8. Safe means of escape for disabled people (fire related.)	1999	√	√	√
	Local Govt & Housing Act	1989	√		
	Disability Discrimination Act	1995	√	√	√
Canada	Accessibility for Ontarians with Disabilities Act	2005	√	√	√
United States	Federal Fair Housing Amendments Act	1968	√	√	√
	Americans with Disabilities Act	1990	√	√	√
	Visitability laws - some states		√	√	
	Architectural Barriers Act Public law 90-480. Uniform Federal Accessibility Standard.		√		
	HB 1441. (Visit ability access)		√	√	
	<i>Inclusive Home Design Act⁷⁸</i>	<i>Referred to congressional committee May 16 2012 – Generally believed not likely to be enacted</i>			
Japan	General Principles Concerning Measures For The Aged	2001	√	√	
	Housing Quality System (1999)	1999		√	
	Accessible and Useable Building Law (revised)	2003		√	
European Union	Standard EN 81-70. Independent access and use of lifts	2003	√	√	
	Commission of the European Communities Directive 2000/78	2003	√		
Norway	Life Span Dwellings Standard	1995	√	√	
Israel	Accessibility Chapter of the Equal Rights for People with Disabilities Law.	2005	√	√	

⁷⁷ Scotts *et al.*, 2007.

⁷⁸ This legislation is highlighted because it has yet to be enacted.

While there may be some changes on the margins, commentators suggest that the general pattern evident in that analysis persists. This is a pattern of:

- Concentrating regulatory tools on public buildings.
- Provision of standards with some limited requirements on residential dwellings, almost entirely new-builds.
- An emphasis on inclusion outcomes rather than mandatory or code specifications.
- **Funding, subsidies, grants and subsidised lending designed to increase dwelling functionality.** These tend to fall into four categories, all of which are likely to have benefits for older people and for disabled people. With the exception of home modifications they are not necessarily targeted to those populations, however.⁷⁹ They are:
 - Renovation and stock modernisation programmes often focusing on the social housing stock and using procurement power to decrease price and drive the industry to deliver accessibility features. These can benefit disabled people, but in New Zealand are strongly directed to older people.
 - Retrofit programmes to increase thermal performance, energy efficiency and reduce fuel poverty. Generally directed to households to encourage insulation and clean heat take-up but also to social housing and the private rental market.
 - Repairs and maintenance funding to assist with minor adaptations and repairs. Generally directed to households.
 - Home modifications. Generally highly targeted through health or disability funding to individuals that have been subject to needs assessment.
- **Accreditation programmes directed to signalling the accessibility performance of dwellings to households and to give housing providers new competitive advantage.** LifeMark in New Zealand is a leading example, but there are also accreditation tools used in North America as a basis for matching disabled people with rental dwellings.

⁷⁹ Brown, Ammon and Grevatt, 2010, demonstrate the diversity of the United States' federal governments support for 'healthy housing' and the range of populations targeted by those initiatives.

The drive in North America for accreditation reflects an attempt to replicate the industry based LEED scheme for green homes into a tool for accessible homes. There is a strong visitability focus which targets new-builds. In this context visitability involves: one zero-step entrance; widened doors and passages compared with traditional practice; and, one wheelchair accessible bathroom on the main floor.

- **Planning and procurement initiatives which define targets for the provision of lifetime dwellings in new developments.** These are often pursued in the context of social housing procurement but can also be sought through planning tools. These appear to be most common in the context of broader universal access strategies. The Norwegian universal design strategy has a focus on housing, including using public investment in social housing as a procurement instrument to drive provision. The GLA strategy previously discussed also incorporates requirements around proportions of developments providing lifetime homes and wheelchair accessible housing.
- **Capability development and demonstrations.** This has a number of aspects to it but these initiatives are generally directed to:
 - Developing the capability of the supply side to deliver cost-effective solutions;
 - Ensuring consumers raise their expectations and are enabled to make choices around the amenities delivered in a home.

Some of these are delivered by way of accepted solutions associated with officially promulgated standards and regulation. But there are also attempts to promote designs and solutions through alliances between the disability sector and the older people's sectors and early adopters in the building industry and the community housing sector. These do not rely on official standards or regulation.

For instance, in the United States, the visitability movement has strongly followed this model. It is reliant on the significant body of charitable funding available as well as corporate sponsorship.

Professional bodies, research organisations and government (local, state or central) can also generate accepted solutions which feed directly to the industry or consumers.

Australia is particularly adept at this and two partnerships are of note:

- Victorian Archicentre Home Renovation Service which is provided by the building advisory service of the Royal Australian Institute of Architects and funded by the Victorian Department of Housing.
- New South Wales Home Modification Information Clearinghouse. This is a web-based facility funded by “the NSW Department of Family & Community Services - Ageing, Disability and Home Care for Home Modification and Maintenance service coordinators, occupational therapists, builders, subcontractors and their consumers.”⁸⁰

These partnerships provide a strong platform for the national strategic dialogue on which Australia is embarking around lifetime homes.

In New Zealand the development and promotion of solutions has been strongly driven by the disability sector with the development of Lifetime Design Ltd and the LifeMark being largely sponsored by CCS Disability Action with supplementary funding from government, sponsorship and service-based revenue.

5.4 Two issues emerge from the array of initiatives around lifetime housing:

- First, the very little activity associated with the private rental market.
- Second, there is hesitancy around regulatory instruments, particularly mandatory standards or the use of building codes to prompt improved housing accessibility. Where those do exist, they tend to be set at the relatively low levels of access: visitability, for instance, rather than lifetime homes.

5.5 The research and evaluations that have been undertaken on the efficacy of those regulatory requirements have suggested that:

- Enforcement is poor.
- There are significant loopholes such as trade-offs, mitigating factors and compliance officers who have discretion over the nature of specific requirements.
- Statutory levers, standards and solutions can be contradictory.
- Regulatory requirements founder where the building industry has not the capability of delivering solutions.⁸¹

⁸⁰ <http://www.homemods.info/>

⁸¹ Bichard *et al.*, 2007; McDermott *et al.*, 2006; Savills, 2008.

- 5.6 Professor Imrie suggests that the tendency to a weak regulatory environment arises in part from deep-seated societal beliefs that lifetime homes are for people who are different from everyone else. That is, the building industry, policy makers and regulatory agencies, and ordinary people are still working within a special housing paradigm.⁸² That paradigm, he suggests, is unlikely to be dismantled unless there is a circuit breaker and mandatory standards and regulation are actively enforced.
- 5.7 The ageing of the population and the focus of some large building companies targeting grey-housing may, Imrie suggests, prompt a more inclusive market. It might, however, he suggests, simply segment the market further and have little impact on the overall stock or the emergence of lifetime housing as a solution for the mainstream.
- 5.8 Canadian John Yudelman has a similar view. He is currently analysing the potential of property tax exemptions as a way of encouraging lifetime housing supply through increasing demand by lowering price barriers to lifetime housing. He suggests the ageing of the population and the costs associated with residential care and in-home support is creating a new understanding of and exposure to the externalised as well as the personal costs of dysfunctional homes. His concern, however, is the failure to recognise the value of lifetime home amenities in capital values. For Yudelman statutory recognition of the value of lifetime homes in the tax system is a critical pathway to prompting supply.⁸³
- 5.9 The desire for regulatory or government control instruments is common in the disability sector and the older people's sector. It is equally common to see anxiety about and resistance to regulatory controls in the policy sector in many countries.⁸⁴ This is in part driven out of the issues of compliance management, enforcement and liabilities that might arise.⁸⁵ In part, however, they reflect claims that regulatory levers decrease innovation and increase costs in the value chain and ultimately to consumers. There is some evidence to suggest that these anxieties can be overstated.

⁸² Imrie, 2006 and pers com 2012.

⁸³ pers com 2012. It should be noted that the Canadian tax system is significantly different from New Zealand.

⁸⁴ Imrie, 2006.

⁸⁵ For instance Schwem, 2006.

- 5.10 There are certainly international examples in the building industry that indicate regulation can stimulate rather than stifle innovation. Indeed, some analysts suggest that stricter environmental standards have both increased industry productivity and lowered total prices to consumers. A comparison of the United Kingdom and Sweden, Germany and the Netherlands showed that the latter three all had stricter environmental regulation, higher materials costs and higher labour costs but delivered lower cost buildings. In 2002, Dewick and Miozzo concluded that: “*In these countries, construction processes have been improved to out-weigh the component costs of building.*” In other words, the building industry had found smarter designs and smarter ways to build. In doing so, it has increased its productivity.⁸⁶
- 5.11 Beerepoot and Beerepoot’s study of regulation and innovation supports this view. They found that loose regulatory requirements that under-challenge existing industry performance and practice had little impact on innovation. By contrast, more stringent regulation around building performance was a spur to innovation, particularly if accompanied by targeting systems manufacturers. In their view targeting builders and developers was not sufficient to engender transformation. Their views on this are consistent with the British experience of low carbon housing transformation.⁸⁷

What are Effective Transformational Levers?

- 5.12 The narrow range and limited application of regulatory and market-based levers in the domain of accessible housing makes it difficult to come to any view about the relative merits of different levers. However, lifetime housing is not the only sphere in which the transformation of the housing stock and increased supply has been sought.
- 5.13 Over the last three decades and in many countries, there have been three prominent domains of seeking building stock transformation. They are:
- Energy efficient buildings with improved thermal performance;
 - Green buildings; and,
 - Accessible buildings.

Of these three, the first has the longest history and has been the focus of considerable activity around stock transformation in both the non-residential and the residential building sectors respectively.

⁸⁶ Dewick and Mozzo, 2002.

⁸⁷ Beerepoot and Beerepoot, 2007.

- 5.14 The concern with energy efficiency and thermal performance merged with concerns around carbon emissions and other resource efficiency issues in the last decade or so. Although synergies around lifetime housing and adaptability on the one hand and mitigating the environmental impacts of buildings on the other, are now beginning to emerge, there has been less confluence between a concern with energy, thermal performance and environment and the issue of accessible buildings.
- 5.15 Irrespective of the substantive synergies, recognised or unrecognised, between these domains, what they all have in common is the range of levers available to prompt stock transformation. Unfortunately, there is no single or agreed taxonomy of the mechanisms or public policy instruments. The prevailing classification used in the environmental and energy sectors is set out in Table 5.1.

Table 5.1: Classification of Policy Instruments for Dwelling Stock Transformation⁸⁸

Regulatory & Government Control	Economic & market-based Instruments	Fiscal Instruments	Information, Leadership & Voluntary Action
Mandatory standards Building codes Mandatory audits Mandatory labelling, certification or disclosure Procurement regulation	Performance contracting Cooperative procurement	Taxation Tax exemptions or fee reductions Subsidies, grants, loans	Public leadership Voluntary standards Voluntary labelling, certification or disclosure Promotional information and campaigns

- 5.16 There has been considerable debate around the relative merits of each of these. For many years, much of that debate has been dominated by theoretical economics with little reference to empirical evaluation or, indeed, experience.⁸⁹ This has led to a paradox. Theoretical economics tends to argue against regulatory mechanisms including, in some cases, fiscal or market incentives. At the same time, many countries have been implementing precisely those instruments in an effort to transform their housing stock and to encourage the building industry to be more energy efficient and more environmentally friendly. Because applying these different instruments has a long history, there is now emerging a body of empirical evaluation which compares these tools directly.

⁸⁸ Davies and Osmani, 2011.

⁸⁹ Jaffe and Stavins, 1995.

- 5.17 The most comprehensive study is the 2007 United Nations Environment Programme (UNEP) review.⁹⁰ The UNEP study assessed both each 'family' of instruments and specific instruments according to three criteria: effectiveness; cost-effectiveness; and, contingencies around success. Their findings are broadly summarised in Table 5.2.
- 5.18 The UNEP review comes to three conclusions. They are that:
- Policy instruments need to be used in combination.
 - Regulatory and control instruments can be effective and are often necessary.
 - Policy instruments should be directed at market transformation rather than simply being instituted in *perpetua*.
 - Economic instruments, subsidies and informational levers as single items have variable results but are important to a mutually reinforcing package.⁹¹
 - Any transformational package needs to be tailored specifically to prevailing institutional, cultural and market conditions and target all stages of chains of supply and demand.⁹²
- 5.19 The UNEP review highlights that the experience of transformation has been that no single lever provides the solution or an adequate platform for transformational change. The review also notes that single lever approaches can have unintended and sometimes undesirable consequences.
- 5.20 These findings have resonance with experience in New Zealand in a number of sectors. It is clear that subsidies or incentives can, particularly where there is asymmetrical information, poor capability development or the potential for funders to be exposed to poor decisions on both the parts of suppliers and consumers, lead to poor quality and/or price inflated provision. The problem of managing quality and price has certainly been an aspect of home modification programmes whether through the Ministry of Health or through the Accident Compensation Corporation.

⁹⁰ Koepfel and Urge-Vorstaz, 2007.

⁹¹ See also McCormick and Neij, 2009 and Circo, 2007 and Molloy, 2009.

⁹² See also Birner and Martinot, 2003.

Table 5.2: Policy Instrument Efficacy: Buildings and Greenhouse Gas Emissions

Policy Instrument	Effectiveness	Cost-effectiveness	Success Contingencies
<i>Regulatory and Government Control</i>			
Mandatory standards	High	High	Agreed and updated standards maintained by an independent body support by information, communication and education.
Building codes	High	Medium	Dependent on enforcement.
Mandatory audits	Variable	Medium/High	Effective standards, tools and reporting processes required. Suitable for some stakeholders only.
Mandatory labelling, certification or disclosure	High	High	Depends on ability of end-user to assess and continuous end-user engagement.
Procurement regulation	High	High/medium	Ambitious targets needed if to provide demonstration to the market, clear standards required and tools to measure compliance against standards.
<i>Economic & market-based Instruments</i>			
Co-operative procurement	Medium/High	High/Medium	Establishes economies of scale.
<i>Fiscal Instruments</i>			
Taxation	Low/Medium	Low	Dependent on price elasticity.
Tax or fee exemptions or reductions	High	High	Need to be properly structured and monitored.
Capital subsidies, grants, loans	High/Medium	Variable	Can be cost-effective when properly targeted to households confronting price barriers.
<i>Information, Leadership & Voluntary Action</i>			
Public leadership	Medium/High	High/Medium	Useful to demonstrate new technologies and practices.
Voluntary compliance with standards	Medium/High	High/Medium	Effective if combined with fiscal incentives and possibility of regulation.
Voluntary labelling, certification or disclosure	Medium	Medium	Clear standards and comparative tools needed.
Promotional information and campaigns	Low/Medium	Medium/High	Potential is limited unless supported by other instruments. Clear and properly targeted messages needed.

- 5.21 Similarly, where statutory levers are relied on without supply-side and consumer acceptance of those, there is a likelihood of avoidance which can only be dealt with by comprehensive, active and often costly enforcement. Where price barriers exist for consumers who are most likely to benefit from the amenity, regulatory requirements may simply increase those price barriers further. The costs to the supply side may be not be counteracted by productivity gains or economies of scale. Moreover, prices to consumers may also rise unnecessarily unless consumers (or funders) are able to manage supply-driven pricing. Consequently, associated with the implementation of regulatory requirements, there is frequently a need to simultaneously relieve consumers unable to meet the price barrier.
- 5.22 Nowhere is this clearer in the New Zealand context than around energy efficiency and clean air initiatives. Regulations around open fires and the replacement of inefficient enclosed fuel burners have been enacted by a number of local authorities. Government funding has been used to stimulate the supply-side of the market, generate economies of scale and favour those providing lower unit prices to the market. Demand has been stimulated by an array of incentives to take-up insulation and clean heat options including rates-based lending.⁹³

Implications for Lifetime Housing

- 5.23 In practice, internationally, it can be said that countries attempting to transform their housing stocks have used, and continue to use, a diversity of policy instruments. This has been the case for green buildings. It has been the case for energy and thermal efficiency stock transformations in New Zealand and overseas. It must inevitably be the case if the supply of lifetime housing is to be increased.
- 5.24 In terms of lifetime housing a transformational approach involves finding ways to heighten the ability of consumers to specify their requirements and makes choices. Those consumers may be:
- Households operating in the housing market making choices when they buy or tenant an existing or new-build dwelling.
 - Housing sector providers to whom the building sector is delivering.
- 5.25 This may involve household subsidies, grants or subsidised lending to allow them to meet price barriers and/or providing informational support that is intended to:
- Provide households with a value case for investing in lifetime design;

⁹³ See Saville-Smith, James, Easton and Burrough, 2011.

- Give households the ability to make choices between dwellings by providing them with the ability to assess the functionality of a dwelling;
 - Facilitate households' dwelling search; and
 - Allows households to understand the price/amenity trade off in their consumption choices.
- 5.26 The experience of lifetime housing as well as energy efficiency and thermal improvement programmes also suggests that:
- The capability of the residential building sector to deliver cost-effective lifetime design across market segments and tenures needs to be fostered.
 - Both the building sector and the housing sector to which the building sector delivers need to be incentivised to supply and commission lifetime homes.
- 5.27 The latter is particularly difficult, but important, with the private rental sector. The state and local authority owned rental sector, as well as the community rental sector, could potentially have more procurement leverage to ensure the commissioning and delivery of affordable, lifetime accessible homes.
- 5.28 Nevertheless, it must be accepted that transformation of the building industry to deliver lifetime homes in New Zealand presents a challenge. Repeated studies show that the residential building industry in New Zealand struggles to deliver price appropriate dwellings, appropriately sized dwellings, tends to make only cosmetic changes in design, and can have difficulties in delivering fit-for-purpose, durable dwellings.
- 5.29 Supplying lifetime housing requires the building industry, and the planners and building officers that regulate it, to be flexible and innovative. This is a real challenge to a building industry that has a tradition of achieving its margins not through innovation but by delivering at scale using largely existing floor plans. It also requires the building industry to target a stock segment that it currently under-supplies in preference to supplying upper quartile value dwellings. Most older people and disabled people seek and need housing in the lower two quartiles of dwelling value.
- 5.30 In summary, the international experience suggests that lifetime housing supply is more likely to be stimulated if:
- Lifetime housing becomes one component of a wider societal commitment to accessibility with carefully calibrated short, medium and long-term outcomes.

- There are clear regulatory requirements in both the building and the housing sector related to the provision of lifetime accessible dwellings.
- Regulatory requirements provide both for dwelling residents and for visitors.
- Compliance with regulatory requirements is low cost.
- There are demonstrated and achievable solutions for the building industry within acceptable cost structures for different building typologies both for:
 - new builds; and
 - refurbished stock.
- The building industry is encouraged to 'gear up' for accessibility through:
 - Opportunities for provision at scale;
 - Certainty around expectations and phased introduction of regulatory requirements;
 - Developing consumer expectation; and
 - Opportunities to reduce systemic costs.
- Consumers have a clear understanding of the nature of lifetime housing, appropriate price expectations and the ability to make informed choices.
- Price barriers are addressed for consumers that are most in need and whose under-consumption is associated with the highest externalised costs.⁹⁴
- Standards are flexible and designed to a series of step-wise outcomes. A proliferation of seemingly unconnected or competing standards undermines their credibility and their transformational impacts.

⁹⁴ In dealing with price barriers to consumers it is important to avoid this being used as a basis for increasing prices to consumers. Modest and no price impacts of lifetime design should mean that lifetime housing can be delivered within existing pricing structures. It should be noted, however, that there is no guarantee that the delivery of this amenity will not be associated with higher pricing. This is particularly so in a market such as New Zealand where increased new-build prices are the subject of considerable debate, claim and counter-claim. The New Zealand building industry persistently claims that new-build prices reflect directly the cost of land, amenities and materials. However, as repeated studies have suggested, most recently that by the Productivity Commission, there are substantial price gaps between New Zealand materials, construction systems and builds compared to overseas equivalents. Similar dwellings with similar amenities are substantially more expensive in New Zealand than in Australia. The Productivity Commission and some other commentators are sceptical of the cost-driver argument for new build prices. Low building industry productivity is increasingly cited as critical to price driving, as are some practices antithetical to efficient markets such as cover-bidding. The arguments around this do not need to be rehearsed here. There are, however, some implications for lifetime housing. Because neither building costs nor new-build price drivers are transparent in New Zealand, it is not unreasonable to expect that the building industry may choose to deliver lifetime housing at a premium price even where the marginal costs of delivery are low.

6 Optimising Lifetime Housing Supply in New Zealand

6.1 So what are the key components of a transformational pathway? First, it is embedding lifetime homes in a broader strategy of accessibility directed to optimising the continued contribution of people to their families and communities, ensuring people's opportunities for work, education and recreation are not disabled by either private or public living environments, and the quality of life offered by our cities and settlements.

6.2 Second, it requires an integrated package of interventions that are strategically directed but tailored to the complex and actual situations prevailing in New Zealand's building industry and housing sector respectively. Those instruments have to address both supply-side inertias as well as limits on consumer sovereignty. This will require:

- **A clear, consistent and single framework of standards.** The energy and green building sector has seen a proliferation of standards and tools in New Zealand. This has undermined both their credibility and efficacy and compares poorly with the more carefully managed tools around appliance standards and their energy performance.

A coherent standards framework that incorporates different components to deal with different levels of outcomes (visitability, liveability and so forth) and different housing stocks (existing and new builds) is a critical platform for:

- Mandatory or voluntary codes.
- Accreditation systems.
- Consumer choice tools.
- Procurement criteria.
- **Value cases** that systematically and credibly explore the benefits, costs and externalities associated with under-delivery and delivery of lifetime homes in relation to key stakeholders including householders in general as well as older people and disabled people.
- **Technical development, process developments including registers, and demonstration of lifetime homes.** Demonstrations encourage take-up by dealing with both practicality and social proof issues in a variety of ways. Because they test and evaluate innovations in real life situations, two of the main

inhibitors of innovation in the residential building sector – the risks associated with innovation and uncertainties about the benefits of an innovation – can be better managed. Consequently, demonstrations help refine innovations for the market. They assist in developing practices, guidelines, processes and tools to optimise innovation performance and benefits as well as mitigate risks.

Demonstrations can be used to test technical solutions such as level entries to aluminium framed doors, or regulatory and procedural changes, such as, for instance, triaging for consenting purposes which ensure that high performance dwellings are given priority in the processing of consents. They are also important tools for consumers within the housing sector whether they be householders or housing providers.

- **Government strategic leadership, statutory requirements, process and investment** setting out the clear outcomes, targets, actions on the stakeholders in both the building industry value chain as well the housing sector. It should set out a work programme, pathways and accountabilities, resourcing and action priorities including:
 - Resolving barriers to supply associated with policy and legislative barriers with particular attention given to ensuring that these are cross-sectorally mutually reinforcing and not contradictory.
 - Specifying requirements and timetables for any regulatory reviews or requirements of statutes related to the building industry or housing sector or benefits such as the Accommodation Supplement.
 - Ensuring that the current funding streams are rationally disposed to the outcomes sought.

6.3 It is beyond the scope of this paper to expand these key components from a relatively abstract specification. However, there are a number of areas which may have potential and be worth subjecting to systematic policy analysis and development. They are:

- Dwelling matching registers could be developed to identify three types of stock:
 - Modified housing stock;
 - Stock built to meet lifetime standards; and
 - Existing stock assessed according to agreed standards.

It should be noted that matching registers for existing dwellings can facilitate more efficient stock use, but they are, like regulatory instruments, very dependent on the quality of delivery. They require a consistent standards framework and assessment tools as well as consideration of the point of delivery and register management. They are costly to administer with variable results and should be seen as having a short-life simply to maximize access over the period of stock transformation.

- Existing stock assessment and 'marking' at point of sale or rent. This would involve developing an existing home standard, the tools to assess and mechanisms to brand dwellings according to specific levels of accessibility performance. This is unlikely to have a significant short-term matching outcome, although it is possible, but it would provide a strong consumer and provider awareness stimulus.
- Actions to price manage and increase building productivity and incentives in the residential building sector:
 - Triage and rapid management among building officers of consents which have been approved as lifemark compliant at a certain level (for permitted use only)
 - Capacity and capability development of building consent officers, designers and developers including:
 - Approved solutions and register;
 - Training; and
 - Promulgation to designers.
 - Improved training and curriculum development.
 - Targeted product solutions development through the materials and product industry. The opportunities to target government innovation and research investment into areas such as level entries could be reviewed.
- Incentives and disincentives:
 - Building consent fees/development levies for new builds and refurbishments that meet specified standards could be reduced.
 - Landlords that provide specified standards of accessibility could be provided some recognition through the Accommodation Supplement or tax systems.

- Funding and procurement to establish:
 - Better integration across home modifications, retrofit funding, and repairs and maintenance funding for social housing and households.
 - Review opportunities to develop funding stream to facilitate some initiatives in the rental sector in particular the management of tenancy bond funds.

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