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The Future of Housing in New Zealand

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The Future of Housing in New Zealand

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and Building Research*

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Scenarios rely on imagery to convey their messages.
Imagination must be used in conjunction with skill and judgment.
If there are any deficiencies in this regard, the authors alone are responsible.

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EXECUTIVE SUMMARY

CHRANZ and Building Research contracted Scion to generate a set of thought-provoking and realistic scenarios to show how New Zealand's housing sector might look in 2030. One of the primary aims of this research was to engage stakeholders in the New Zealand housing sector and enhance the collective understanding of the forces that will shape this sector in the future.

The purpose of the scenarios is to stretch our imaginations beyond the here and now and offer people a multi-dimensional view of possible future housing in New Zealand. Translating such scenarios into action is a separate, equally challenging task.

The scenarios described in this report and the process by which they were developed are a necessary first step towards promoting awareness of how the issues might affect each individual or organisation. Collectively developing an action plan (or roadmap) would be the next logical step.

The work addressed three key research questions:

- 1) How might the New Zealand housing sector look in 2030?
- 2) What are the underlying forces?
- 3) What are the implications (in terms of what this might mean for the key players in the housing market)?

The process began with an analysis of social, technological, environmental, economic, and political trends (STEEP analysis). Stakeholders were engaged in the scenario development process by means of interviews, a workshop, and a work-in-progress seminar. The purpose of these was two-fold: to identify potential gaps in the STEEP analysis and to generate interest in the concept of long-term planning for the future of housing.

Once the main driving forces had been identified, it became apparent that some of them were pre-determined, i.e., firmly established along a particular trajectory and completely outside our control. The following pre-determined elements are common to all our scenarios: the advent of new technologies and solutions; more mass-produced/factory housing; capability changes within the construction industry; an increase in the number of households relative to the population; ageing of the population; climate change; the need to address the quality of the 70% of 2030's housing stock that already exists; and regulatory changes in the New Zealand building industry.

The points of difference between the scenarios arise from what we call critical uncertainties, i.e., those issues that are central to the future of housing in New Zealand and are impossible to predict. A large number of uncertainties were identified with the help of the workshop participants. These divergent uncertainties were clustered and mapped until four key groupings emerged:

- regional economics and communities;
- aspirations and attitudes, durability, economic lifetime, maintenance;
- resource availability and price, transport and infrastructure;
- demographics, communities, attitudes.

Four plausible scenarios were derived from these clusters, each offering a unique description of the future of housing in 2030 — ***Sunrise, Sunset, Change of Heart***; the ***Vertical Village***; and ***Gates of Heaven***. A fifth status quo-style reference scenario was then added to complement the four stretch scenarios.

The ***Sunrise, Sunset*** scenario looks at regional economics, in particular regional decline. ***Change of Heart*** covers home ownership aspirations, housing affordability, attitude to debt and the durability and economic lifetime of buildings. ***Vertical Village*** considers resource availability and price as well as transport and infrastructure. ***Gates of Heaven*** considers rising conservatism, a strengthened influence of Christian fundamentalist values, and changes in demographic trends.

The reference scenario presents an alternative outlook based on extrapolations of current trends, especially the structure of the housing sector and government organisations.

These scenarios and their accompanying explanations will provide people with an interest in the New Zealand housing sector, be they policy makers, investors, building industry bodies, or consumers, with some thought-provoking housing options — scenarios that can be a springboard for dialogue and action on some choices about the future of New Zealand's housing sector.

THE FUTURE OF HOUSING IN NEW ZEALAND

INTRODUCTION

Purpose

CHRANZ and Building Research contracted Scion to generate a set of thought-provoking and realistic scenarios to show how New Zealand's housing sector might look in 2030. The intent was to use the scenarios as a means to promote a better understanding of the forces that will shape New Zealand's housing sector in the future. It was envisaged that the work would assist with forward planning and begin the process of identifying and assigning the roles and responsibilities of key players. The findings of the research are outlined in this report. The report will be useful to, amongst others, policy makers, investors, building industry bodies, and consumers.

Research aims

By means of a scenario building process:

- 1) Develop further insights into the key drivers and trends in the New Zealand housing market.
- 2) Explore the key linkages between housing, society, the economy, and the environment.
- 3) Provide the basis for a better understanding of the current and future roles and responsibilities of key players in the housing market. A full exploration of these roles and responsibilities will form the basis of a future project.

Objectives

- 1) Identify some plausible housing futures for the New Zealand housing sector in 2030.
- 2) Engage the interest of key stakeholders in the New Zealand housing sector.
- 3) Enhance the collective understanding of the forces that will shape the New Zealand housing sector in the future.

Key research questions

- 1) How might the New Zealand housing sector look in 2030?
- 2) What are the underlying forces?
- 3) What are the implications (in terms of what this might mean for the key players in the housing market)?

Scenario planning methodology

The term "foresight" is used to refer to systematic attempts to look at the longer-term future of science, technology, the economy, the environment, and society. Foresight studies have become an increasingly popular means by which to influence, to formulate, or to implement policy¹. Scenario planning is one of the best-known foresight tools. The scenario planning technique is a very useful tool because:

- the technique acknowledges that the future is unpredictable;
- a large amount of seemingly unrelated information can be organised in a logical manner;
- plausible combinations of trends and events can be effectively illustrated in short stories;
- the process provides a valuable learning opportunity;
- clearer insights into the future pave the way for better decisions.

¹ The Henley Centre (2001).

In a planning context, the term “scenario” is taken to mean a story of a possible future that an organisation might encounter. Scenarios are graphic, dynamic, and holistic, taking into account social, technological, economic, environmental, and political trends and events.

The use of scenarios as a strategic planning tool can be traced back to military origins in ancient Greece. Strategy derives from the Greek word “strategos”, which means “general of the army”. During World War II the US Air Force used scenarios to help its generals imagine possible enemy actions in different circumstances. The insights they gained helped them develop multiple alternative strategies for success. During his time at the Rand Corporation in the 1950s, Herman Kahn developed scenarios for future strategic military alternatives in the Cold War. The technique was introduced to Royal Dutch Shell in the 1970s by Pierre Wack, a former colleague of Kahn. Shell led the way in learning to focus scenarios on a business purpose. The more widespread adaptation of scenario planning began in the early 1990s, with the publication of Peter Schwartz’s “The Art of the Long View”².

Myths and misconceptions abound regarding scenario planning methodology. People tend to talk in terms of prediction, forecasts, “crystal balls”, and so forth. In reality, the process involves a systematic analysis of trends and influencing factors. Creativity is required, however, in order to convey the essence of the findings in a memorable and meaningful manner.

This scenario planning process began with a comprehensive analysis of trends and drivers — i.e., social, technological, environmental, economic, and political trends (STEEP analysis). This information was further interpreted to determine which issues are the most important and the most uncertain for the future of housing in New Zealand. A set of five plausible scenarios emerged, each offering a unique description of the New Zealand housing sector in 2030.

Prediction *versus* choice

Given that CHRANZ has an interest in identifying and assigning the roles and responsibilities of key players in the New Zealand housing sector, significant emphasis was placed on engaging the interest of stakeholders, as a step towards enhancing the collective understanding of the forces that will shape the New Zealand housing sector in the future.

It was not the intent to find one scenario that “gets it right”. Rather, this set of scenarios illustrates the major driving forces and their interrelationships. The real future will not be any single one of the scenarios; it will contain elements from all of them. Furthermore, the future does contain an element of choice — not all of the trends identified are unchangeable.

The ancient Greeks understood the perverse logic of prognostication — if people had believed her, then Cassandra wouldn’t have been able to foretell the future, because action would have been taken to avoid disasters. In other words, there is a basic contradiction between prediction and choice. A predictable world has no room for choice; a choosable world is not predictable³.

Schumacher (1973) said: “When we are dealing with large numbers of people many aspects of their behaviour are indeed predictable”. Some simple rules of thumb can be used to gauge the difference between predictability and choice⁴:

² Schwartz (1991).

³ Meadows (1999).

⁴ Meadows (1999).

- in the short term, a great deal (but not everything) cannot be changed;
- in the long term, almost everything can change;
- in the medium term, there is a messy combination of predictability and choice.

Scenarios are a tool to assist decision making. New Zealand's housing sector comprises multiple organisations and individuals; some are motivated by financial imperatives, some are not. Our scenarios and their accompanying explanations will provide people with an interest in the New Zealand housing sector, be they policy makers, investors, building industry bodies, or consumers, with a springboard from which to make some choices about the future of New Zealand's housing sector.

Four species of futurist

Many scenario planning exercises conclude that the underlying driving forces do not vary a great deal from one scenario to another. The points of difference arise from the varying responses of the human actors^{5,6,7}. In other words, what differentiates one scenario from another lies not so much with the social, political, and economic systems, but with the people within them. How people, for example consumers, politicians, and financial agents, will respond to various pressures is virtually impossible to predict with certainty in the longer term. Scenarios can describe plausible responses to possible sets of conditions and show how the future might change as a result. Whereas one response to the problem of increasingly unaffordable housing might be to introduce measures to make home ownership more achievable, an equally viable alternative might be to promote security of tenure, a wider range of tenure options, and increased provision of state housing. Such diverse opinions were expressed by individuals consulted during the course of this study (see Appendix 4).

Each of our scenarios portrays a different set of circumstances and shows only one possible response to those conditions. Human behaviour could cause the course of events to take an entirely different turn.

Over the past three decades foresight studies have undergone noticeable changes in character. In the 1980s foresight was essentially concerned with identifying emerging technologies and exploitable areas of science and was limited to experts (the First Generation). Later developments involved linking technology and markets by industry and academics (the Second Generation), while more recently a strong social dimension has been introduced with the involvement of society stakeholders (the Third Generation). Indeed, one of the exciting growing uses of scenarios is for public policy, to create a common language and vision in a city, or a country, or on environmental issues⁸. Clearly, ours is a "third generation" project.

Given this change in the application of foresight studies, a corresponding change in the way we think about the future may be required. Russell Ackoff, whose work has had a major impact upon all the various branches of the management sciences, identified four species of futurist⁹:

1. Inactivists, who believe that interfering with the course of events will make things worse.
2. Reactivists, who want to go back to how things were.
3. Preactivists, who attempt to predict and prepare. They believe that the future is essentially uncontrollable, but they can control its effects on them. They want to take advantage of new opportunities before others get to them.

⁵ World Business Council for Sustainable Development (1997).

⁶ World Business Council for Sustainable Development (2000).

⁷ Bates & Killerby (2002).

⁸ Ringland (2002).

⁹ Ackoff (1974).

4. Interactivists, who want to design a desirable future and invent ways of bringing it about. The aims are to prevent threats, rather than just prepare for them, threats and to create, not merely exploit, opportunities.

Whereas the use of futures studies in the corporate world seems to be geared towards preparing for the future and taking advantage of new opportunities, when dealing with public policy and sector-level issues it is perhaps more appropriate to think in terms of designing a desirable future. In other words, we should consider moving from a “preactive” state to an “interactive” one.

Future use

One of the primary functions of this research was to engage key stakeholders in the New Zealand housing sector and enhance the collective understanding of the forces that will shape this sector in the future. Of course, these stakeholders include all the men, women, and children of New Zealand and while the people consulted during the course of the study represented various cross-sections of the community — for example, Government agencies, older New Zealanders, building firms, Māori, financial institutions, people with disability — there is still work to be done to maximise the benefits of the work for as many New Zealanders as possible. A wide range of agencies and individuals had some degree of involvement in this work (see Appendix 2). However, the list of contributors is not exhaustive — some people were unavailable at the time the work was being carried out, and there will be some individuals or groups who have an important contribution to make but who have yet to be identified.

The scenarios described in this report and the process by which they were developed are a necessary first step towards achieving the goal of enhancing the collective understanding of how the issues might affect each individual or organisation. However, the work to date will not have been sufficient to ensure that the various roles and responsibilities are fully understood and accepted.

Any successful foresight project is an ongoing process that involves a great deal of communication and learning. Collectively developing an action plan (or roadmap) would be the next logical step. This involves using the scenarios to identify a preferred future and developing an action plan to achieve it. The task of the scenarios is to stretch our imaginations beyond the here and now and offer people a multi-dimensional view of the future of housing in New Zealand; the long timeframe is necessary to inspire people. Translating such scenarios into action is a separate, equally challenging task. Part of the challenge is to bridge the gap in people’s minds between the distant future (2030 in this case) and the present, where most people’s day-to-day efforts are focused.

It is suggested that a series of workshops be held (possibly on a regional basis), with the intent of teasing out a list of agreed action points. Using the scenarios as a starting point, workshops conducted during this phase would pose the question “Where do we need/have to be in 5–10 years’ time?” This involves bringing the scenarios down to a more manageable timeframe for the participants. Many scenario planning purists would caution against this approach but it can be a useful exercise within one sector and with a shorter timeframe. Each workshop will be tasked with:

- 1) Agreeing the key issues to be taken forward.
- 2) Proposing an action plan that deals with the issues in the most appropriate manner for the respective region.

The housing sector is important

In the foreword to the *New Zealand Housing Strategy*¹⁰, released in May 2005, the Hon. Steve Maharey, then Minister of Housing, asserts not only that “homes contribute to our every-day wellbeing” but also that “the housing sector in the broadest sense — the builders, local authorities, real estate agents, community trusts, and investors — makes up a sizeable slice of the national economy”.

The need to understand the economic, social, and environmental impacts of the New Zealand housing market and the impact of economic, social, and environmental changes on housing is familiar to many, not least to CHRANZ. The relevance of housing research to broader policy making is best expressed thus:

“Housing is the fulcrum around which many economic and social factors are balanced. All people need to be housed. The nature of that housing, and of the neighbourhood in which they are housed, affects their well-being and those of others around them. Outcomes of certain population groups, particularly children and other vulnerable groups, may be linked to their housing circumstances. Economic forces have a major bearing on those housing outcomes; and housing market developments have strong macroeconomic effects. Housing issues impinge crucially on environmental outcomes through urban sprawl, in-fill effects (especially on infrastructure), energy usage, and transport requirements”¹¹.

A wide variety of people were consulted during the course of this project, all of whom had very deeply held but divergent views on housing. This work can begin the process of making some collective choices about the future of New Zealand’s housing sector.

¹⁰ Housing New Zealand Corporation (2004).

¹¹ Grimes *et al.* (2004c).

METHODOLOGY AND KEY RESEARCH STEPS

Six research steps address the three key research questions of how the housing sector will look in 2030, the underlying forces and their implications.

1. Identify the focal issue.

A scenario planning process begins with identifying the focal issue or decision. In this case, CHRANZ recognised the need: “to identify some plausible housing futures for the whole New Zealand housing sector in 2030”. In other words: “How will the New Zealand housing sector look in 2030?”.

2. Highlight the key forces in both the local environment (i.e., micro-economic dynamics) and the macro environment.

This step begins to address the second of our research questions: “What are the underlying forces?”. The standard practice is to carry out an analysis of social, technological, environmental, economic, and political trends (STEEP). Given the funding cap for this particular project, we adopted a pragmatic approach to this step in order to maximise our ability to include a wide variety of interest groups at later stages in the methodology. We therefore used documentation already at our disposal to generate a set of key trends and drivers. The documents are listed in Appendix 1. Given that some of this source material is now a few years old, we checked the validity of some of the base data and referred to similar (i.e., housing-focused) exercises that have been completed elsewhere in the world¹².

The analysis considered, but was not restricted to, the following key social, political, economic, environmental, and technological factors:

- demographic changes — ageing population, changes in household composition;
- urban density;
- urban sprawl;
- availability of credit;
- housing demand from the one million New Zealanders living overseas;
- cycles in the New Zealand housing market;
- the level and nature of investment in the housing market (rental/apartments);
- internal and external migration rates;
- availability of land;
- home ownership rates;
- energy prices (domestic and vehicle fuels);
- regulatory framework for planning and building;
- respective roles and responsibilities of providers of social housing;
- factors that could constrain the physical environment in which people live (e.g., climate change, attitudes to environmental and health issues associated with accommodation, infrastructure);
- new technologies;
- arrangements for funding and organising the management and development of urban form in New Zealand;
- the goals of economic, social, and environmental sustainability.

¹² Funders’ Network for Smart Growth and Liveable Communities (2004), Freeman (2000), Australian Housing and Urban Research Institute (2005).

3. Conduct interviews and workshop.

The purpose of these is two-fold: to identify potential gaps in the environmental analysis and to engage some of the key players in the housing sector. Our experience has taught us that a combination of interviews and workshops is the optimum means of gaining an insight into the collective mindset of the key players and engaging their interest in the process. Although the interview process is very elaborate, it can be very productive in terms of detail generated. On the other hand, the group dynamic of the workshop is useful for kickstarting the trend clustering process and ranking trends in terms of impact and importance. At this stage, it is still possible for participants to identify drivers which they consider have been overlooked or given insufficient weight in the initial process.

Interview and workshop candidates were selected for their experience in and understanding of housing-related issues in New Zealand, and/or because they have the potential to influence future developments in the housing sector. We interviewed a total of 18 people, all of whom were guaranteed anonymity in order to encourage them to speak as freely as possible. For this reason we cannot publish a list of names. People from a wide variety of backgrounds¹³ were either interviewed, attended our workshop, or attended our work-in-progress seminar. Workshop participants are listed in Appendix 2.

The interviews were carried out using detailed guidelines from van der Heijden (1996) about how to conduct the interview and how then to analyse the information generated (pp. 145–158). The questions listed in Appendix 3 formed the basis of the interviews, the duration of which varied from 45 minutes to 2 hours.

The workshop took place in Wellington in July 2005. The number of participants was deliberately kept small in order to allow as much interaction as possible between the facilitators and the participants. The participants were carefully targeted to provide as wide a range of views as possible; it was considered inappropriate to allow any one group to dominate. Prior to the workshop, participants were asked to prepare a brief statement outlining their vision for the future of housing in New Zealand. These statements formed the basis of a discussion during the course of the workshop.

An overview of the findings from the STEEP analysis and a summary of the interview analysis were presented at the workshop. The participants — a multidisciplinary team of experts — were asked to comment on the scope and validity of the material presented and to identify any gaps.

Once the main driving forces have been identified, it should be apparent that some of them are pre-determined — in other words, they are completely outside our control and will be the same in all scenarios. The points of difference between the scenarios arise from what we call critical uncertainties. Many things are uncertain. The critical uncertainties are those that are central to the focal issue of the exercise (the New Zealand housing sector in 2030) and are impossible to predict. The key issues covered at the workshop were sorted, with the help of the participants, into pre-determined elements and critical uncertainties.

¹³ Architects, building suppliers, Habitat for Humanity, CHRANZ, builders, the Registered Master Builders Federation, Te Puni Kokiri, building NGOs, the Retirement Commission, MSD, DTZ, DBH, MfE, HNZA, Statistics New Zealand, REINZ, university researchers, city councils, an advisor on Māori housing issues, a person with a long track record of involvement in community organisations (school boards, health boards, council, disability issues), an advocate for people with disability.

Pre-determined elements and critical uncertainties are defined in more detail in Appendix 4, which also includes a summary of the views of the interviewees and workshop participants.

4. Develop themes/clusters.

This step, which built on the preliminary sorting exercise carried out at the workshop, was carried out by a team of five people over a 3-day period in August 2005.

The list of pre-determined elements and critical uncertainties generated at the workshop was refined — some issues were re-classified, some were combined, some were deleted and some were added. A process of rigorous debate and analysis of evidence revealed four groupings of uncertainties that were considered to be more important and more uncertain than any others (see Appendix 4). Cause-and-effect diagrams were constructed for each critical uncertainty. The outlines of the original four scenarios were generated from these diagrams, which are included with the background information for the scenarios.

This step answered the second research question and began to address the third.

5. Work-in-progress seminar.

The initial scenario outlines were presented to a group of Government policy advisors on 24 August 2005. A list of attendees can be found in Appendix 2. The purpose of the exercise was to test the key findings from the work to date, i.e., whether the key drivers had been correctly identified and whether the scenarios would be sufficiently plausible and thought provoking to: promote a better understanding of the forces that will shape New Zealand's housing sector in the future; assist with forward planning; and begin the process of identifying and assigning the roles and responsibilities of key players. The seminar also provided the opportunity for a preliminary discussion about the potential policy implications of the work. The reviewers suggested that a fifth, status quo-style scenario would enhance people's understanding of the messages contained in the original set of scenarios.

6. Write scenarios and develop visual images.

This step answered the first of our research questions and contributed to the third. The scenario outlines having been ratified at the work-in-progress seminar, a freelance writer was engaged to produce the narratives. The visual images were created by a professional illustrator.

The power of scenario building is that it offers a disciplined path for creating stories. Old arguments can often be bypassed altogether, allowing new conversations to take place¹⁴. The role of the stories and visual images is to convey the essence of the new findings. They should, therefore, be provocative, memorable, and rich in imagery. A certain degree of exaggeration is expected — we are looking to the outer limits of what is plausible.

¹⁴ WBCSD (2000).

The aim is to challenge assumptions and get people thinking. The emergence of “unmentionables” allows difficult issues to be discussed in non-threatening contexts. After all, scenarios are fictions, not action plans or a vision that is being promoted. Nevertheless, as discussed earlier, scenarios can have non-fictional outcomes.

In regard to the number of scenarios: in theory, there is no upper limit but conventional wisdom sets the lower limit at two — to reflect uncertainty, and the upper limit at four. We developed a fifth reference scenario to complement the four stretch scenarios as a result of feedback from policy advisors at the work-in-progress seminar.

LOOK BACK TO LOOK FORWARD

As a means by which to encourage our workshop and work-in-progress seminar participants to gain an understanding of the type and scale of developments that can occur in a 25-year time frame, we summarised some of the technical, political, and social trends that have occurred in the past 25 years in the table below. It is no coincidence that our study looks forward for the same length of time. This is not presented as an exhaustive treatise on change over that period; however, it is instructive to consider the accelerating pace of technical development, and whether this is driving political and social changes, or vice-versa. The emergent global influence on the key political issues (GE, Kyoto Protocol) in New Zealand could similarly be as a result of the relatively high level of Internet access available to New Zealand citizens, leading to a larger number of internationally informed voters.

Table 1: Technical, political and social trends 1980–2005

Agricultural sector	Kiwifruit export sector		Tourism sector		Film industry
Cold War	Nuclear-free		Clean and Green		9/11 GE-free?
Double / Triple garaging	NZSE crash	Rogernomics	Redundancies	Double income households	
Seaside / lakeside holidays				Café Culture	Pacific Is /Gold Coast holidays
Dishwasher	Microwave	Portable Phones	Cellphones	Text Messages	Video SMS
PC					
Hardcopy letters	Floppy disks	Audio CD	Email	Data CD	DVD
					Ipod/MP3
Video					
Save the whales	Conservation	Global warming		Kyoto	Carbon tax
●	→				
1980	1985	1990	1995	2000	2005

PRE-DETERMINED ELEMENTS

The following pre-determined elements were identified as a result of the STEEP analysis, interviews, workshop, and the scenario development process. A full description of the process can be found in the methodology section and Appendices 2, 3, and 4.

New technologies/new solutions

The future for housing-related technology lies primarily with enhanced communication and information exchange. In terms of Information and Communication Technology (ICT), Japan is leading the way with devices that are not only easy to use, but also fun, interactive, and relaxing. Technology advances are expected to continue on a stepwise route, with a few step-change revolutionary advances, similar to the levels of the past decade. However, the focus of technology in the home will be on enhancing human functions and controlling the ambient environment, rather than increasing technical capacity and complexity. Several reports indicate that workplace (office-based) technologies have not been adopted into the home environment as originally anticipated. In other words, office technologies have been adapted rather than adopted for home use to create a more comfortable, rather than a more efficient, living environment.

There will be rapid revolutionary developments in materials science, information technologies, and the biological sciences. The convergence of developments in these three areas is most significant. The pervasive and ubiquitous nature of technology over the last two decades has been driven by the motto “anywhere, anyhow, anytime”. The increasing prevalence of mobile technologies, devices with multiple applications and functions, and “connected” devices is a response to the complexity of modern lifestyles. Over the past 20 years we have seen exponential growth in the use of microwaves, home PCs and other appliances. Households with children are also faster to adopt these types of technologies than those where children are not present. Most of these devices have become ubiquitous to the extent that almost everyone has them. In Australia¹⁵ the adoption rates for VCRs, microwave ovens, CD players and home PCs rose from under 35% in 1985 to 70–90% in 1995¹⁶. The adoption of more recent technologies such as plasma screens and DVDs will likely follow a similar path. The pervasiveness of such technology comes at a time of growing awareness of the need to tread lightly and live harmoniously with our planet.

Most commentators state that the world is in the midst of a technology revolution, which is bringing major technological advances across all application areas. ICT has been the key enabling technology for the broad-based technology revolution. In the early part of the 21st Century, ICT and life sciences (biotechnology) will be the key drivers of change. Between these two technological areas lies the potential to dramatically change the way people live and work. Although the speed of technological advance, development, and implementation is increasing, step-change advances (such as ubiquitous computing) will still take time (up to 15 years) to be realised, because they rarely depend on a single technology. Technology convergence and interdependency is increasingly the norm — and within each technological field any major advance is dependent on multiple, lower-level, science and technology developments¹⁷.

¹⁵ No comparable New Zealand data are available.

¹⁶ Ironmonger *et al.* (2000).

¹⁷ Data from Scion’s 2001 Future Insight STEEP analysis.

However, there is some evidence to suggest that the rate of significant innovations is actually declining. Jonathan Huebner, a physicist who works at the Pentagon's Naval Air Welfare Center in China Lake, California, has calculated that the rate of innovation peaked in 1873 and has been declining ever since (based on innovations per person). Needless to say, Huebner's work is controversial although he has successfully responded to all of the criticisms so far levelled at it¹⁸.

Technological change in the building and construction sector will come from the streamlining of regulatory structures, online construction management systems, holistic building assemblies (probably factory-based or pre-assembled units) and integration of sustainable building technologies. Air conditioning is likely to be used more widely by 2030 due to climatic change. Other likely developments include rapid adoption of solar thermal and PV technologies, micro turbine and fuel cell use in powering individual buildings and "intelligent" management of services to automatically respond to climatic and ambient conditions. Research into LCA, indoor air quality and materials by design are seen as key limiting factors.

Construction industry capability — long-term expectations

Future housing options will be affected by the construction industry's ability to respond to such issues as skill shortages, the ability to attract new entrants, the expense of retraining, and the impending retirement of many of the more skilled practitioners.

There are many reports of the inadequacy of skills-based training. It was cited as a cause of the "leaky building syndrome", and it has contributed to the move towards factory-based and pre-assembled housing. The building and construction sector currently employs approximately 150,000 people, but it is expected that the demand for employment within the sector will drop over the next decade, except for civil engineering (specifically concrete engineering). Options available to the sector include redeployment towards civil engineering, reducing capacity (with the emphasis on reaching an overall higher standard), or encouraging offshore employment. The latter has obvious implications for training and labour levels should these skilled persons not return when the building cycle again reaches a peak. Retirement may also be a modifying factor in reduced demand levels, as 12% of the construction industry's labour force is currently nearing retirement age. If the industry does not appear attractive to new entrants over the next 10 years, the number of experienced hands will be significantly diminished by 2030.

More mass-produced/factory housing

In the future, house building will be focused on meeting consumers' raised expectations for quality, value, and excellence in design. Customisation with the use of standardised components will allow greater choice for the consumer, and builders who offer such customisation will gain a competitive advantage. Already we have seen a rise in factory-built housing in North America, and manufactured housing constituted 24% of all new housing and 38% of all homes sold in the USA in 1996. Similarly, there is increased use of factory-built componentry and automation in the New Zealand building industry — over 80% of New Zealand timber framing used for new residential building is pre-cut. A rise in quality standards coupled with a declining skill base means that a move towards factory-produced homes is almost inevitable. These homes will be designed using standardised components to obtain the required economies of scale for cost effectiveness.

¹⁸ Appleyard (2005).

Building efficiency is an important driver in the housing market, impacting on non-construction costs, price certainties and labour skills development, and the potential for better integration along the supply chain is enormous. Modular construction and mass-produced housing units offer greater pricing control, less downtime, and better procurement arrangements. Manufactured housing technologies over the past 50 years have, however, been very similar to stick-built homes built on site, with many simply utilising ‘under-roof’ prefabrication and assembly plants. There is a need to increase production efficiency standards to prefabricated and modular units that are not able to be replicated onsite. Such technologies would comprise lean manufacturing, automation (robotic and precision engineering), and IT practices (e.g. using electronic information directly from the customer order process to produce homes delivered to order in reduced times through the creation and use of pre-assembled ‘plug and play’ building blocks, most probably as service hubs). This would necessitate defined interface standards by which these modular components can be efficiently assembled on site. There is the likelihood also of such units not being repaired or reused in a building, but instead comprising a disposable sealed unit that is removed and replaced as a stock item, and designed for a pre-determined lifespan. This has implications for many subtrade practices, which currently rely heavily on ongoing home maintenance requirements for employment. It is likely that new robotic tools that can be rapidly reconfigured for different products will be used, requiring new factory production techniques. Factory produced homes might be imported and exported in accordance with international standards. Factory production techniques will bring opportunities for new materials to meet raised performance standards.

One of the major barriers to the supply of factory pre-assembled and mass-produced housing in New Zealand has been identified as our desire for some form of individuality in house form, and attributed to our pioneering history. Therefore, any factory-built housing will need to focus on lifestyle-solution-driven, rather than cost-driven, construction offerings, and recognition of adaptable requirements from building form and function over time. Other barriers to modular construction have been the sensitivity to damage during transportation; a lack of training on the installation and connection of pre-finished systems; the need for a ‘whole housing’ company that works along the entire value chain, creating all the components and delivering a finished home, complete with mortgage financing; and market reluctance to specify and use such housing components (which are seen in other parts of the world as ‘affordable homes’ or for the ‘lower-end’ market). New housing management practices and trade skills will therefore be required to support the production and marketing of factory-produced houses.

More houses/households relative to the population

Most New Zealanders live in permanent private dwellings, most (81.3%) of which are separate houses. However, apartment-style living has become slightly more popular — the number of three or more flats or houses joined together (such as apartments or townhouses) in a one-, two- or three-storied dwelling now exceeds 100 000. There were 894 homes for older people in 2001, a 21.6% increase from 1991.

The trend towards smaller households continues — occupancy rates fell from 2.8 people per household in 1991 to 2.7 people in 2001. Family households still dominate, although the overall proportion has dropped from 73.9% in 1996 to 71.3% in 2001. The proportion of one-person households has increased correspondingly, from 20.7% in 1996 to 23.4% in 2001. The remaining households were multiple non-family members, usually in a flatting situation.

While population ageing is an important contributing factor in the trend towards one-person households, other factors are also likely to be involved. Over 40% of those living alone were over the age of 65, and 26.4% were in their 30s and 40s. Most people under the age of 40 who were living alone had never been married.

There has been a gradual increase in the size of private occupied dwellings. The proportion of four-, five- and six-bedroom dwellings has increased from 19.3% in 1991 to 25.8% in 2001, whereas the proportion of one-, two- and three-bedroom dwellings has decreased from 80.5% in 1991 to 73.5% in 2001. However, the majority of New Zealand houses still contain three bedrooms¹⁹.

The total number of households is expected to increase by approximately 20 500 households per annum between 2006 and 2016. The pressure on the building industry from projected growth (excluding second homes not rented out) is unlikely to be greater than the levels of total demand over the last 5 years²⁰.

Ageing

The New Zealand population is ageing, but within the older population it is the older age groups that are increasing most rapidly, as a result of increased life expectancy. The ageing of the population will have significant implications for society and the economy as a whole and, as discussed earlier, housing has an important relationship with both. Life expectancy is higher for women than for men; thus women predominate among the older population.

Population projections confirm that the ageing trend will continue until the middle of the century and that growth will be particularly rapid for the 85+ age group. According to the Statistics New Zealand medium-medium-medium projection²¹ to 2051, New Zealand's population will reach just over 4.5 million by 2021, and 4.8 million by 2051. More than half of the total growth to 2021 will be people in the 65+ age group.

Numerical growth in the older Māori and Pacific Island populations will be significant, although current life expectancy trends would suggest that numbers in the 85+ age group will remain small. The population aged 65+ will remain predominantly Pakeha, with Māori, Pacific Islanders, and Asians combined expected to represent only 17% of the population aged 65+ in 2021. Given that their current combined total is only 9%, it is safe to say that the older population will become more diverse in its ethnic composition.

With no change in current tenure patterns, the numbers of older people in residential care could double by 2021. A shortfall in the number of rental homes available in the public sector is also possible. Given recent declines in home ownership rates and affordability, the “no change” assumption is very optimistic²² — in other words, the most likely outcome is that the numbers of older people in residential care will more than double by 2021.

Approximately 70% of 2030 housing stock already exists

Most of the houses that will be with us in 2030 already exist. Many require maintenance and the BRANZ House Condition Survey²³ shows that the cost of deferred maintenance in the New Zealand housing stock has risen to approximately \$7b. However there has been an improvement in condition among the oldest age groups, indicating a degree of selective retrofit for “desirable” homes.

¹⁹ Statistics New Zealand (2002a and 2002b).

²⁰ DTZ (2005).

²¹ Medium fertility, medium mortality, medium migration.

²² NZiRA and BERL (2004).

²³ BRANZ 2005.

There is a significant degree of uncertainty over the influence of this outstanding maintenance on the housing stock in 2030, especially when the investment decisions of New Zealand homeowners are considered. Creation of more space or amenity has been seen to take precedence over preventive maintenance; combined with the 35 000 consented (and anecdotally twice that number unconsented) additions and renovations there is the strong possibility that whilst today's stock may account for 70% of homes in 2030, they may be a very large fraction of the number of houses then in need of demolition or dramatic renovation.

The process of renovation introduces new technologies to existing buildings and can be seen as both "lowering" the age of the stock for the owners and providing a level of efficiency increase for the country as a whole as consented new work must be completed to latest code standards. However, if the existing maintenance trend continues, significant portions of the future stock will begin to lose value, thus reducing the likelihood that their owners will bring about these technological improvements.

The long-term social and economic costs of poor-quality housing mean that investing in good-quality housing has wider benefits, such as better health outcomes. Measures taken to improve the quality of some of New Zealand's present housing should not compromise affordability and availability, especially for those groups that are least well off²⁴.

Statistics New Zealand data²⁵ show that household composition can reflect the impact of changing social trends (e.g., later marriages, lower fertility rates and independent living), economic pressures (such as housing costs and tertiary education fees), and cultural preferences (e.g., extended family and intergenerational living). Changes in the number of households and people's living arrangements can have major implications for urban communities and their environments. These issues may directly affect the appropriateness of existing housing stock, the types of dwellings people choose to live in, the amount of residential land used, the location of housing, and growth in associated social and physical infrastructure. Changing household composition can also have an impact on the demand for housing.

Climate change

The debate over climate change continues unabated. The emerging consensus is that climate change and its effects are real, although there is still some disagreement as to whether the phenomenon has arisen as a consequence of human action.

The impacts on New Zealand's 1.4 million residential units²⁶ (as at 2005) will include those that precipitate physical building or infrastructure failures that would otherwise not have occurred, and indirect impacts including changes to society, behaviour, and institutions which result from efforts to future-proof various elements of the built environment — including houses. The most significant expected impacts, direct and indirect, are summarised in Appendix 5.

The main risks to New Zealand's built environment are likely to be:

1. Coastal and inland flooding.
2. Building overheating in summer.
3. Tropical cyclones.

²⁴ Housing New Zealand Corporation (2004).

²⁵ Social indicators, available at <http://www.stats.govt.nz/analytical-reports/linked-indicators/Social-indicators.htm>, [accessed 3 October 2005].

²⁶ Separate houses or apartments.

The anticipated impacts, whether direct or indirect, are not always negative. This depends on idiosyncrasies peculiar to geographic location and local climates, and individual and societal capacity to take adaptive measures. The responses employed will thus vary across regions and local governmental agencies; likewise across all elements of the building and construction industry.

It must be emphasised that land-use planning and building decisions that are taken today usually have long-term horizons due to the current permanency of infrastructure (roads, network utilities) and dwellings: as a result climate change effects will begin to have major implications for those decisions. It is therefore vital that planning considers climate change impacts, particularly where decisions are being made on issues with planning horizons of 50 years or more²⁷.

Regulatory changes in the New Zealand building industry

Background

As the “leaky buildings crisis” broke in 2001, it rapidly became apparent that the central Government’s approach to administering the New Zealand Building Code (NZBC) via the largely “hands-off” actions of the Building Industry Authority (BIA) was not working. The prevalent thinking in 1992 when the BIA was established was that of a centre-right Government which was attempting to dampen the oscillations of the economy resulting from the 1988 change from protectionist nanny-state to a totally free-market economy. In letting market forces establish the means by which the criteria of the performance-based building code were met²⁸, there was insufficient consideration given to the ability to review acceptable minimum performance as knowledge grew.

The people who create and pay for buildings are very seldom those who own them after less than 20% of their minimum required life has elapsed (in other words, the vast majority of new houses change hands inside 10 years). In such a situation, a very strong case can be made for establishing a stronger regulatory and compliance framework.

In November 2004, the Department of Building and Housing (DBH) was established, to carry out the work previously done by the Ministry of Housing, and to be responsible for administration of the new Building Act (including absorbing the functions and employees of the BIA) and the occupational licensing regulation associated with the building and housing sector. The DBH also manages the functions of the Weathertight Homes Resolution Service, administers the Retirement Villages legislation, regulates housing standards, and provides policy advice to central Government in relation to dispute resolution and regulatory responsibilities.

The Department was given more power as a regulatory authority, including the ability to specifically prohibit the use of certain materials or systems where they have been shown to be inappropriate if the aims of the Building Act 2004 are to be met.

Current Activities

The New Zealand Building Act (2004) includes sufficient Act-level changes to require a review of the NZBC — the means by which compliance with the intentions of the Act can be determined.

²⁷ BRANZ (2004).

²⁸ A performance-based building code, then employed in New Zealand for the first time in the world, stipulates what the building must achieve, rather than how it should be built and, ideally, makes it possible to prove the performance of buildings via a series of verification methods (tests or calculations) or acceptable solutions (cookbook solutions which have been deemed to satisfy the code).

The DBH runs a rolling review of each of the NZBC clauses, with the external moisture clause (E2) the first to be completed after the new Building Act came into force. The evidence from this first clause review is that the Acceptable Solutions to the new NZBC will be significantly more prescriptive than previous versions. It is also intended to provide quantification of the performance levels required for each of the code clauses, rather than just information on how to comply (which is the current situation).

The DBH has also signalled that it intends where possible to align the new Building Code to the Building Code of Australia (BCA). This will mean that many of the regulatory structures can be expected to be similar, along with the means of demonstrating performance. In the case of the latter, the Australian Building Codes Board has developed a building products approval/certification scheme (launched in September 2005), which is aimed at greatly increasing the public's confidence in the delivered quality of the components of buildings, and providing a (voluntary) path by which manufacturers can demonstrate compliance of their products with the intent of the BCA and NZBC.

The DBH will introduce practitioner licensing in 2007, for key participants in the building process. This includes a significant increase in the amount of training required to claim a license, and also gives rise to compulsory continued professional development programmes. The territorial authorities are also required to ensure that their building officials meet minimum competency standards, and continue to do so. Licensing will be voluntary from 2007 and compulsory from 2009 for designers, site supervisors and certain sub-trades.

FIVE SCENARIOS

FIVE SCENARIOS

Four groupings of critical uncertainties emerged from our analysis of the key drivers and trends in the New Zealand housing market:

- regional economics and communities;
- aspirations and attitudes, durability, economic lifetime, maintenance;
- resource availability and price, transport and infrastructure;
- demographics, communities, attitudes.

Four plausible scenarios were derived from these clusters, each offering a unique description of the future of housing in 2030 — ***Sunrise, Sunset, Change of Heart, the Vertical Village, and Gates of Heaven***. A fifth status quo-style reference scenario was then added to complement the four stretch scenarios. This reference scenario presents an alternative outlook based on extrapolations of current trends, especially the structure of the housing sector and government organisations.

Sunrise, Sunset arose from a closer examination of the effects of regional economics on housing. A fundamental assumption by many New Zealanders is that housing is a “safe” investment, however it rapidly became obvious that this could really only be said for city areas, and even then it was not a foregone conclusion. The impact of an unforeseen regional economic decline on house/land prices and regional demographics contrasts sharply with the same issues in a nearby city, where an economic upswing brings different problems.

Change of Heart is the result of discussions about durability issues and changing attitudes to home ownership. The implicit assumption made by many New Zealanders is that their houses will last forever. When combined with land shortages, and an emergent debt-tolerant younger population which does not value ownership as highly as experience, society’s former opinion leaders find that their assumptions may not just be wrong, but may actually be preventing them from enjoying their lives to the full.

Vertical Village emerged from questions about resource availability and transport policy. There is an interesting contrast between those who live on one side of the city, and those who live on the other, based almost entirely on transport policy. Although land in the city is scarce, the sheer impossibility of getting to work from some suburbs creates the economic conditions in which pleasant high-rise communities can exist in the city centre.

Gates of Heaven emerged from challenging conventional wisdom regarding demographics. Overseas, faith-based communities are emerging; can communities of this sort exist comfortably in New Zealand where many types of social segregation are frowned upon? The emergence of Real Estate Investment Trusts provides funds for investment in such communities.

Issues surrounding institutional structure, industry capability, and the regulatory response were found to be relevant to all four of these scenarios.

A fifth reference scenario was added to describe the “status quo”, which should better illustrate the points of difference in the other scenarios. This assumes that current regulatory initiatives surrounding housing continue in a fragmented and ill-coordinated manner, and provides an illustration of how the “social” houses provided today function when the occupant has no choice in the housing supplied.

In February 2000, Professor Jim Dator, Director of the Hawaii Research Centre for Futures Studies at the University of Hawaii at Manoa, delivered a seminar for the New

Zealand Futures Trust. During the course of his speech he opined that: "any useful idea about the future should appear to be ridiculous". We should expect such ideas to be rejected at first. The challenge for futurists is to sort out the shocking and absurd ideas from those we must think about seriously²⁹. Hopefully these scenarios will contain enough surprises to offer the reader food for thought.

We have chosen to convey each of the scenarios in dialogue form, the idea being that the everyday interactions of Brenda, our main character, offer a more compelling insight into her living arrangements than could narrative alone. Critical uncertainties represent turning points on the road to the future. Accordingly, the domestic circumstances of Brenda and her sometime partner Jack follow different paths in each story. Brenda's cat is more than a domestic companion: it acts as an extension of social and personal attitudes within each scenario.

The stories are followed by explanations and supporting data. It is not feasible to cover every detail in a report of this nature. To do so would render it unappealing to the intended audience — anyone connected with the New Zealand housing sector — thereby defeating the purpose of the exercise. Of course, absence of detail does not imply absence of rigour, and subjects that are not included should not be dismissed as unimportant.

The scenarios contain only vague references to age, ethnicity, socio-economic status, and so forth. We did not wish to make the messages unnecessarily narrow. Many of the issues raised by the interview and workshop participants feature, either directly or indirectly, in the scenarios. However, explicit references to such matters as people with disability, older people, and third-sector housing (to name but a few) are not made, because to do so would amount to tokenism and would inevitably lead to the exclusion of certain groups. Rather, we envisage that particular interest groups will use the scenarios as a means to establish how the forces that will affect the future of housing in New Zealand will impact on them and what steps can be taken to optimise the choices available.

²⁹ Carew (2000).

REFERENCE SCENARIO



“Can I help you?” Brenda held the door open and stared out at the well-dressed stranger standing out in the rain.

“Hullo. My name’s Sally Webb, I’m with Income Support Services,” the woman handed Brenda her card. “I’ve come to sort out the problem with your missing payments.”

Brenda felt a surge of anxiety as she stepped back from the doorway. “Please come in.”

As the woman stood at the top of the steps and shook her umbrella, Brenda hurried across her small living room to clear a space on the table. She was in the process of unpacking some of the bargains she had picked up at the local parish Op Shop. “You’ll have to excuse the mess, I’ve only just moved in and I’m not very well organised,” she muttered.

“It’s no problem at all,” Sally said in a business-like manner, sitting down at the table and pulling an E-Pac out of her briefcase. “I’ve found out that your payments were stopped because we did not receive your updated MK50 form.”

Brenda looked at her blankly. “MK-what?”

“It’s a sickness benefit continuation form — apparently it was posted to your previous address.”

Brenda fidgeted with worry. Every time she had to move, something like this would happen. It was such a shame that the council flat hadn't worked out, but the whole block — the infamous Millennium apartments — was badly built and due for commercial redevelopment, so all the tenants had to move out.

“Why did I need the form?”

The woman flicked open the E-Pac and tapped at the control pad. A list of details flashed up on the optasma screen. “You took a part-time job. This means your status changes automatically, unless we reverse it.”

“It was a relief teaching position. It only lasted a couple of weeks — I was told that it wouldn't affect my benefit,” Brenda protested.

“Not as such, but we still needed to complete the paperwork in order to override the automatic reassignment process.” She clicked at the screen and a form emerged from the E-Pac. “You can fill it in now.”

Brenda kneaded her forehead in dismay while scanning the form. Bureaucracy was bad enough at the best of times, but ever since her breakdown four years ago she had found any kind of paperwork an insurmountable challenge. Mind you — dealing with ISS was enough to drive anyone crazy, she thought, with a flash of wry clarity.

Casting her mind back, she could barely imagine how she had managed to juggle her full-time career in Nelson. It was like looking back on someone else's life. She had everything going for her down there, the city was booming and her social life was great. Nelson had become the Sunshine Coast of the South Island, full of people of all ages looking for fun.

Losing her job at the high school over the dreaded middle school certificate dispute had changed everything. How badly things had gone downhill after that — so badly, in fact, that Brenda could no longer lead a normal life. Friends and family didn't want to know after she went off the rails, and her career was in tatters. Once she lost her income and her reputation, Brenda could no longer afford the rent on her plush Nelson apartment. She had hoped that moving back to Hamilton would enable her to start afresh, far from the shame of her dark memories, but her lonely struggle had continued. She brushed the shadows of her breakdown aside and focused her attention once more on the form.

The woman reached across with a pen and indicated a shaded section. “Just complete this part and I'll handle the rest.”

Brenda chewed her lip as she filled in the details, and then handed it back.

“This looks straightforward,” Sally said, after scanning the form quickly. “Your payment should be restored within two weeks, subject to a health check.”

“Two weeks?” Brenda felt the panic lurch to her throat like a violent attacker. “But I can't wait that long. I just had to put a bond on this place and my power bill needs paying. Besides, I had a health check in April,” she added in despair.

Sally looked at her with a professional mixture of sympathy and dispassion and then cast her eye around the room. “Is your property with the city council, or Housing New Zealand, or any third-sector provider registered with the Department of Building and Housing?”

“No — it’s privately owned. It’s hard to get anything else these days,” Brenda replied.

“Yes, I’m aware of the difficulties. Do you have any dependants?”

Brenda shook her head. “No — I live alone.” She extended her arm. “As you can see, I’d be hard pressed to fit anyone else in here.”

“Any family support?”

Brenda sighed inaudibly. “No.”

“Just wait a moment, I’ll see what our options are.” Sally tapped earnestly at her E-Pac.

“Can I get you a cup of tea?” Brenda asked nervously. It was so rare for her to have visitors these days that she was keen to exercise some hospitality.

“No thank you, but a glass of water would be good.” Sally continued to scan the readout intently.

Brenda went over to her kitchenette and took two glasses from the cupboard. Pausing at the sink, she looked out across the compound at children playing hopscotch. This place wasn’t so bad, despite the inconvenience of being further from the bus routes. The best part was that the landlord didn’t mind her keeping pets. Brenda looked forward to getting her beloved Moggy back so she could have some company again. She just had to persuade her father to bring him up to Hamilton. It was a long trip from Nelson for a cat, but she knew her parents had no intention of keeping him anyway. They took so many overseas trips these days that a pet was just a nuisance.

Brenda felt another wave of panic at the thought of calling her parents. That particular challenge would keep for another day.

She walked back to the table and handed Sally the glass. “Thanks. I’ve confirmed that you qualify for an interim hardship grant, but you’ll need to go in to our office I’m afraid, in order to action it immediately.”

Taking a couple of deep breaths, Brenda glanced at her watch. At this time of the day it would mean catching two different buses. It had been much easier getting into town from her last place, even though it was located further away, because she was closer to the commuter rail link that ran between Auckland and Hamilton.

“I can get there by two o’clock this afternoon,” she said.

“That will be fine, just go to the main counter and ask for a case manager.” The woman gave her a brief smile and sipped at her water. “Nice little place you’ve got here,” she said politely.

“Yes, I got a lucky break,” Brenda replied.

REFERENCE SCENARIO — BACKGROUND INFORMATION

The purpose of this scenario is to present an alternative outlook based principally on extrapolations of current trends. We were particularly interested in the structure of the housing sector, more specifically the Government organisations that are included in it. There is little doubt that the structure will evolve over the course of the next 25 years, and you will see that it looks a little different in every scenario. This story concentrates on the high number of beneficiaries and anticipates the role of the Ministry of Social Development, and delves into issues such as social housing, rental accommodation, security of tenure, etc.

We referred earlier to Russell Ackoff's four species of futurists, and postulated that an interactive approach is needed for sector-level planning. Ackoff identified five phases of interactive planning (which are not necessarily consecutive):

- formulating the mess;
- ends planning;
- means planning;
- resource planning;
- design of implementation and control.

A recommended way of beginning the process is to work out the future the system is currently in — in other words, formulate the mess. This consists of a projection of the future the housing sector would be faced with if it did nothing, and developments in its environment continued in an entirely predictable way. Such a process yields what is known as a “reference scenario”.

It is important to recognise that this is not a “most likely” scenario — far from it in fact. The aim is to reflect current thought processes as much as possible. There is a startling lack of co-ordination amongst central and local government agencies relevant to housing, and effective long-term planning is also absent. Nelson fares significantly better than it does in ***Sunrise, Sunset***.

The effects of previous actions in the housing sector are catching up with the built environment as a whole, where the fate of the low-quality Millennium Apartments contrasts strongly with the by-then ingrained expectation of quality buildings.

At 30 June 2005, 290 466 working-aged³⁰ people were receiving income-tested social security benefits. This compares with 364 416 in June 2000 and 309 360 in June 2004. The number of working-aged people receiving income-tested benefits decreased by 18 894 (6%) in the 12 months ended 30 June 2005, and by 73 950 (20%) in the 5 years ended 30 June 2005³¹. The total working-age population in the June 2005 quarter was 3 168 500³². It is fitting, therefore, that at least one of our stories features a beneficiary.

The story touches on such issues as security of tenure, social isolation and lack of community support, and inefficient public transport systems. Questions are raised about who supplies rental accommodation for low-income people. Whilst it is likely that there will always be some sort of Government organisation charged with overseeing social housing, its future size, shape and scope are uncertain.

³⁰Those aged 18–64 years.

³¹ MSD June 2005 Benefit Factsheet.

³² Statistics New Zealand Labour Force Survey June 2005 quarter.

The average duration of all tenancies that ended in 2002 was less than 15 months³³. Over half of these tenancies ended within 10 months, 33% within 6 months and 13% in less than 3 months. The *New Zealand Housing Strategy* notes that the short duration of many tenancies can make it difficult for tenants to maintain schooling, contact with health professionals, and to participate in the community. Some tenants have special needs for support, or may be particularly vulnerable or at risk. Accordingly, options that promote tenure security for tenants have been given priority by the Government.

³³ Ministry of Housing 2003, *Housing and Health*, Wellington.

SUNRISE, SUNSET



When Jack walked into the kitchen it was as if a rain cloud had just entered the house — dark and threatening. It was bad enough having constant drizzle outside, without the gloom coming indoors as well. Brenda reached for the kettle. “Bad day at the factory?” She asked the question automatically, without really wanting to know the answer.

Jack sighed heavily, and slumped down in a chair. The cat rubbed around his ankles, meowing for food. “Piss off Mog.” He kicked at it. “The last thing we need around here is a bloody scrounger.”

“You don’t need to take it out on the cat,” Brenda growled.

“Why not? It’s just a scrawny bloody fleabag anyway.” The cat retreated in a huff and sat in the warm draught of the open doorway.

“What’s eating you?” she repeated.

“Bastards laid me off.”

Brenda’s hand hovered above the tap, and she put the kettle down heavily on the bench. Turning slowly towards Jack, she felt the panic swell in her stomach. This was the moment they had been dreading for six months now. First the fisheries had taken a hiding, and now the wine industry was suffering badly. No longer did they enjoy the hot, dry summers that Nelson had built its reputation on. Subtropical conditions had brought much higher humidity than anyone had predicted and the grape harvest had turned into a lottery. Now, it seemed, their luck had run out, like so many others that they knew.

“So what are we going to do?” she asked.

“I have no bloody idea.”

“We can’t meet our mortgage payments on my income.”

“I know that — Brenda!” He banged his fist on the table, sending the cat scampering out the door in fright. “I guess that makes you just about as useless as me then doesn’t it!”

Jack lurched to his feet, and the chair tipped to the floor behind him. Kicking it out of the way, he marched out of the house angrily, leaving Brenda in stunned silence at the sink. She listened to the squealing of tyres as he drove away.

Slowly Brenda walked out into the driveway and looked off in the direction he had gone, as if she were staring squarely at the end of the line. Glancing over the fence, she could see her elderly neighbour working in the garden, studiously avoiding notice. Brenda went back inside, poured herself a glass of gin and wandered out onto the back porch.

How on earth were they going to manage? Life had been so full of promise when they first came to Nelson. Up until a few years ago the region was booming and jobs were everywhere. They had stretched themselves to the limit buying this place. At the time it seemed like they couldn’t lose. She looked around at the plain exterior and modest back yard. They had paid a ridiculous amount for a tacky-tacky box that was now worth nothing.

House prices in the area had a long way to fall, and they had hit rock bottom with a thud. She heard stories everyday about people cutting their losses and leaving town — manual workers, tradespeople, accountants, managers. Everybody was affected.

Nelson was really feeling its isolation now that it was no longer the dream town. At this rate, the only people left would be the old, retired ones who couldn’t afford to go anywhere else to die. As if the mortgage wasn’t bad enough, the rates had virtually doubled since the council was forced to prop up all these elderly people, not to mention the cost of keeping rising sea levels at bay.

The cat reappeared from under the house and jumped up on the bench beside Brenda. Automatically she reached out to rub its head. “What do you reckon Moggy? Maybe you and me should just bugger off and be strays together, eh?” The cat purred loudly in response, and Brenda took comfort from its warm company.

“The IT industry has really taken-off down South. Maybe I could pick up a job in Christchurch. Mind you, they’re bringing in a lot of Indian immigrants to do the work.” She continued to rub the cat’s ears and it leaned heavily into her hand. “How do you feel like shifting, Mogs, you want to come as well?”

There were compensations in moving to Canterbury. She’d be nearer the kids for a start. She was surprised how much she had missed them since they went off to live with their father. Still, she couldn’t say she blamed them for taking off, Jack was treating them like dirt as well. All this trouble down at the factory had turned him into a real jerk. Once again he had left her in a rage, with no-one but the cat to talk to.

“Don’t you go fretting yourself, I’ll take care of you.”

The cat climbed onto her lap and started kneading earnestly. Brenda winced at its claws and gently lifted it off. She had been glad when the cat decided to move in after the family down the road abandoned it. That kind of thing was happening all the time these days. The neighbourhood was going downhill fast with all these hippy tenants moving in, homing in on the cheap rents and growing dope in the back yard. Maybe she should just walk out and leave the bank to foreclose on the mortgage like Moggy's family had done.

"We could end up out in the cold together eh Mogs?" Brenda could feel the effect of gin loosening the tension in her neck, and wasn't sure anymore whether she was talking to the cat or herself.

The thought of moving to Christchurch had tempted her more than once. The city had really got its act together in recent years and the city had grown without any of the same geographical hassles that Auckland and Wellington had experienced. It was the latest "place-to-go". But how would it feel moving even further away from her whanau? To them, Brenda's shift to the South Island had seemed bad enough. To her it felt like a real step up — at the time — good job, new bloke, nice area.

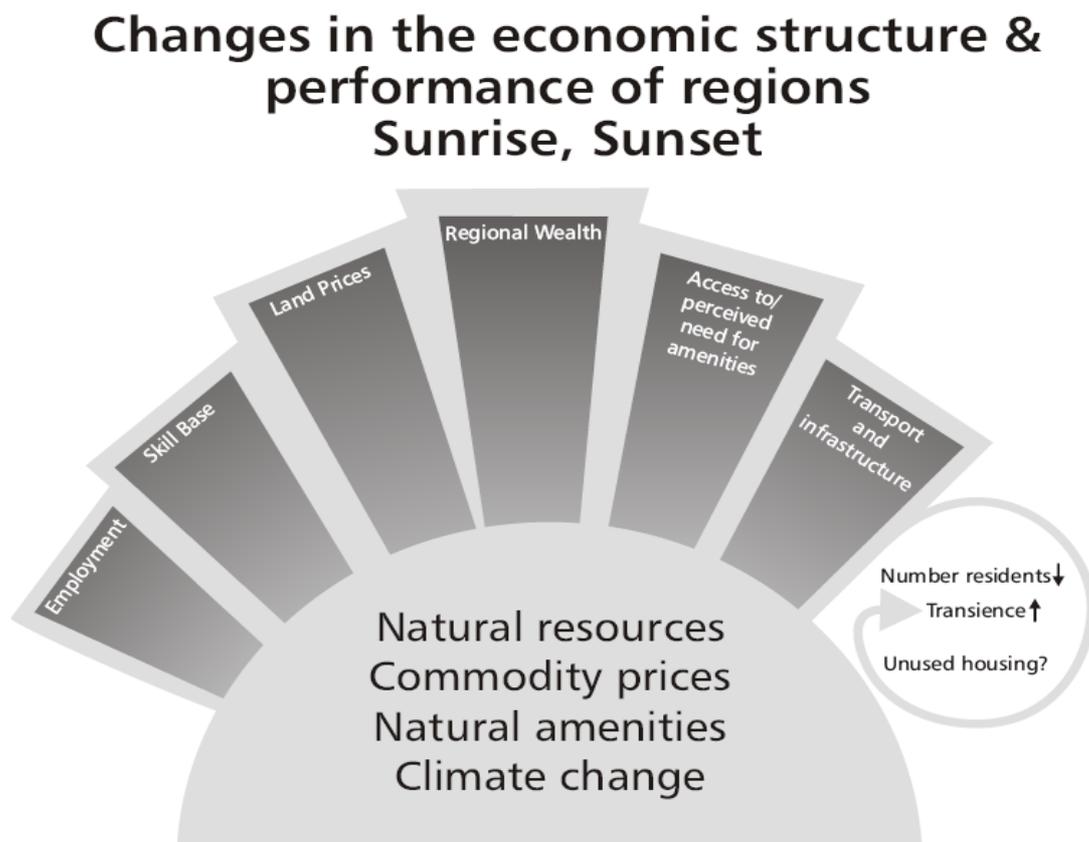
"Fat lot of good any of that did me, eh puss?" Brenda thought about her ex-husband who had bought a nice house in Rangiora at the same time she had brought in Nelson. His place had cost about two-thirds of what she had paid. Now it was probably worth about 50% more.

There was no way Brenda could afford to buy a house in Christchurch on the proceeds of this one, especially after Jack had taken his cut. There was no point in even trying to hold the relationship together any longer, he'd stormed out on her one time too many.

The cat climbed back onto her lap and continued to purr contentedly. Brenda took another sip of gin and stared out at the rain.

SUNRISE, SUNSET — BACKGROUND INFORMATION

This scenario arose out of a discussion about regional economics, more particularly regional decline. Regional decline is seldom planned for or managed gracefully. In reality it will occur. Please note that we have chosen the Nelson region for illustrative purposes only: the intent is to show how such change might occur and what the repercussions might be. It should not be seen as a prediction. The various elements of the story, which are shown in the diagram below, include natural resources, land prices, commodity prices, natural amenities, climate change, employment, regional wealth, and transport and infrastructure. Negative developments in terms of commodity prices and employment, for example, could result in a downward spiral whereby the number of permanent residents drops and the level of transience increases, raising questions over what happens to unused housing.



Regional economies and housing

Regional economies within New Zealand have experienced substantially different growth cycles over the past three decades. External events have frequently been the prime driving force of the differential growth trends. These events include international commodity price shocks affecting export commodities produced within the regions. They also include inward migration shocks as a result of international economic and geopolitical events. Positive inward migration is normally reflected in an upsurge in housing and related activity in the major urban areas, especially Auckland.

Growth rates in 14 regional council groupings over the past 30 years using National Bank of New Zealand data on regional economic activity (Nelson, Marlborough and Tasman are grouped together as a single region in this data) are summarised in Table 2. The differential growth rates over certain periods reflect the different economic

structures of the various regions and the different economic shocks faced by them. As an example, Gisborne, having grown at average annual rates of 3.4% and 3.6% over the two 5-year periods to 1985, then suffered a sharp fall in activity. Over 1985–1990, its annual average growth rate was -3.2%, a cumulative fall in activity of 15%.

Grimes *et al.* [2004a] uses these data to help explain median house price developments across regional council groupings for the period 1981–2002. Their estimates indicate that a 1% change in real economic activity translates into a 1.2% change in real house prices. Thus if a region experiences a 10% decline in activity relative to another region, the declining region's house prices will (all other things being equal) suffer a 12% relative house price decline.

Grimes *et al.* [2004b] takes this analysis further by explaining median house price developments at the Territorial Local Authority level. As well as determining the effect of economic activity, they determine the impact of TLA-specific commodity price developments on local house prices. They find that a 1% decrease in a local authority's real commodity prices is reflected in a 0.6% decline in real house prices in that local authority. The effects of this factor can be severe, since commodity prices are highly variable, and can move downwards sharply as well as upwards. If a rural region is intensively engaged in commodities that suffer a sharp fall in price, that authority's house prices can fall sharply. As an example, the median real house price in Kawerau (exposed heavily to the forestry sector) fell by 50% between 1981 and 2002; the median real house price in the Southland region (exposed to sheep and beef) fell by 27% over the same period³⁴.

Figure 1, sourced from Grimes *et al.* [2004c], demonstrates the relationship between commodity prices and house prices for two local authorities, Hauraki and South Waikato, both within the Waikato region. The "commodity price ratio" is the ratio of prices for commodities produced within Hauraki relative to those produced within South Waikato. This ratio rose after 1986 as dairy prices (Hauraki) trended upwards relative to wool, beef and forestry prices (South Waikato). The "house price ratio" is the ratio of the median house price in Hauraki relative to that in South Waikato. There is a strong relationship between the two after 1986. The jump in relative house prices prior to 1986 is likely a result of the removal of agricultural subsidies between 1984 and 1986 (especially important on commodities produced in South Waikato), which is not incorporated directly into the commodity price ratio. These effects demonstrate the impact that commodity-specific prices can have on house prices, especially in rural areas.

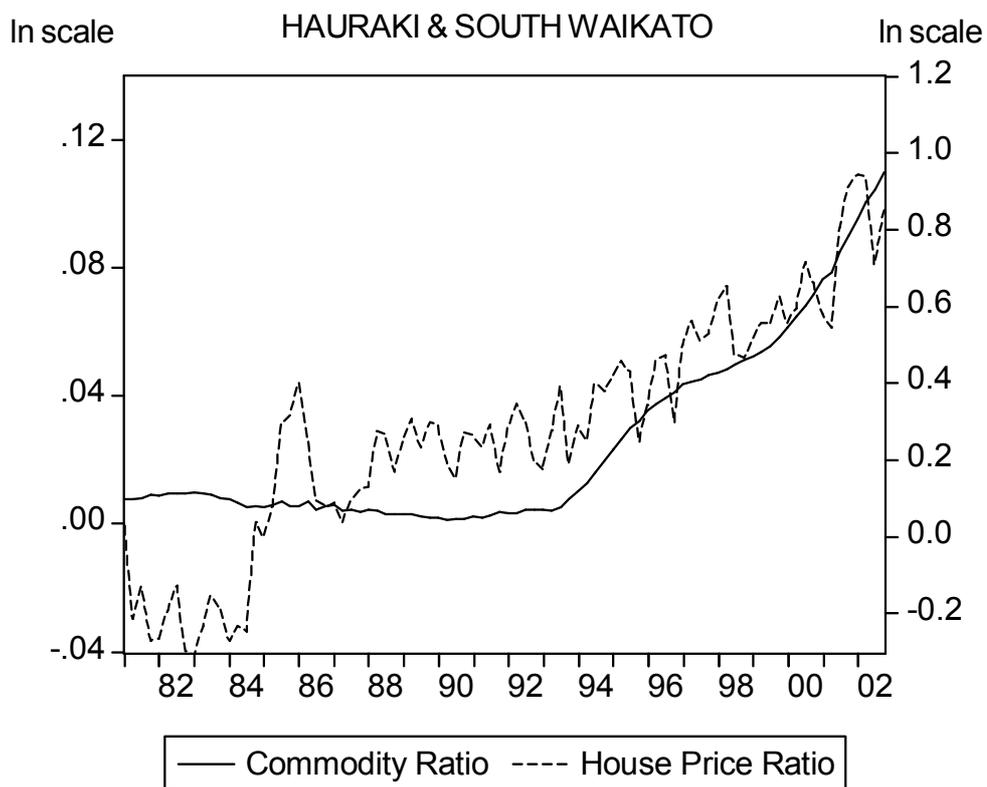
³⁴ Quotable Value New Zealand house price data, deflated by Consumers Price Index.

Table 2: Regional Annual Average Economic Growth Rates

	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005
Northland	4.0	7.3	0.5	4.0	2.4	3.7
Auckland	3.2	4.9	2.5	3.8	2.2	3.1
Waikato	3.4	4.2	1.6	3.9	2.7	3.7
Bay of Plenty	5.1	4.5	0.9	3.8	2.9	3.3
Gisborne	3.4	3.6	-3.2	3.0	1.5	3.3
Hawkes Bay	3.0	4.2	0.3	3.4	2.0	3.5
Taranaki	3.2	5.9	0.0	2.8	1.3	4.5
Manawatu-Wanganui	4.4	3.9	0.0	2.6	1.0	4.1
Wellington	2.1	3.6	1.8	2.0	3.6	2.7
Nelson-Marlborough	2.7	4.4	1.6	4.9	2.2	4.0
West Coast	1.4	3.3	1.1	3.2	1.6	3.8
Canterbury	1.7	4.5	2.1	4.6	2.1	4.1
Otago	2.5	3.3	-0.7	4.0	1.7	4.0
Southland	4.3	1.6	0.2	2.9	1.1	4.4

Source: National Bank of New Zealand, Regional Economic Activity

Figure 1



The evolution of Sunrise, Sunset

It is evident from the foregoing that exogenous factors have a major influence on regional wealth. In 2005, Nelson's relatively healthy economy was based on fish, wine, forestry, tourism, apples and sunshine. Nelson was always tipped to be the next golden region of New Zealand. As a city, it had everything going for it: sunshine, a rich hinterland, a range of lifestyle options, and plenty of job opportunities. These factors, combined with a rapidly growing population, meant that property prices rose steeply during the first two decades of the new millennium. At the same time, Christchurch was also experiencing steady growth, but Canterbury lacked the pulling power of its northern rival.

Brenda joined the mass migration to Nelson after separating from her husband. Keen to start afresh in a popular location, she was attracted to the promise of a good life in the vibrant city. Despite its growing population, Nelson lacks the diversity of North Island cities and there is a low Māori population. However, a high and growing proportion of elderly people does begin to attract growing numbers of Pacific Islanders, who provide homecare support in the community and manual labour in the primary sector.

By the time Brenda meets Jack, the region is on an all-time high. They stretch themselves to the limit in order to buy a house, on the assumption that property prices will continue to increase. Unfortunately, the economy goes sour and prices in Nelson have a long way to fall. All sorts of people move out of Nelson — manual workers, tradespeople, accountants, managers. The only workers still in demand are homecare providers who must continue to service elderly people who are unwilling to move. The local Council has failed to plan for this economic decline and rates revenue is insufficient to support the elderly population.

This scenario acts as a salutary reminder that investment in property is not always as safe as people assume. Some homeowners choose to rent out their property, rather than sell at a big loss. This leads to an influx of alternative lifestyleers, attracted by cheap rentals. Slowly we see the revival of a colourful hippy culture in Nelson, which had almost disappeared during the boom years. Some of the more conservative locals are less than impressed, while others welcome the diversity.

Inevitably, the economic decline hits Brenda and Jack as well. Reduced working hours in Jack's factory put a financial strain on the household, and an emotional strain on their relationship. This comes to a head when Jack is laid off. Brenda's job is safe, for now, but they are still lumbered with a big mortgage. Things have gone sour for her in Nelson and she turns her eye towards greener pastures. Christchurch now exerts the same pull that Nelson did previously. Will she make the decision to cut her losses and move on?

The electronics boom in Christchurch results in a very positive outlook for this city (the Sunrise element), although there are major infrastructure constraints. In view of likely population growth, growing transport demands, and increasing pressures on the natural environment, a range of options has already been developed by Environment Canterbury³⁵. The community has given a clear direction that much more planning is required, including a focus on higher-density developments and urban villages.

³⁵ Greater Christchurch Urban Development Strategy, *available at* <http://www.greaterchristchurch.org.nz/>, [accessed 29 September 2005].

CHANGE OF HEART



“I always warned you that Jack has never been one for commitments. This just goes to prove my point,” Brenda’s mother barked out her same old lament, while prowling around the house, scrutinising every fixture and fitting as if it were a dirty rag. Was there any aspect of her daughter’s lifestyle that she would ever agree with?

“Come on Mum — we’ve got two kids, we’ve just bought our first home — what’s that if it’s not commitment?”

“Home? This isn’t a home — it’s a glorified shanty!” The stylishly aging woman stood in the middle of the lounge with her fists planted squarely on her hips and looked around in disdain. Even though the room was light, warm and comfortable, she seemed determined to dislike it on principle. “Your home is supposed to mean future security — for goodness sake — not something you throw away after a few years like a used appliance,” she added.

“It won’t be thrown away,” Brenda protested. “It will get recycled, or bits of it will anyway, you can’t just throw a whole house away. It’s designed to be re-used.”

Her mother began to pace the narrow hallway, opening and closing cupboard doors — determined to find fault. Brenda took a deep breath, and forced a smile. “It’s a nice place Mum. It’s practical, it’s energy efficient. We like it fine. These modular designs are really clever, you can add an extra room if you need to — no problem.”

“It’s tinny Brenda. Look here, you just need to shut a door and you can feel the whole house shake. It’s got no substance. It will be shabby before you know it.” Brenda bent down to pick up her 14-month-old son, who was tugging at her skirt and grizzling in response to the argument. She gently stroked the boy’s hair as he nuzzled against her shoulder. “We just need a roof over our heads and a place to raise our kids, we don’t need a millstone around our necks for the rest of our lives. Attitudes have changed - attachment to a house is overrated.”

Walking over to the fridge, Brenda pulled out a kiddie drink, tore off the tab and popped it in the ultrawave. Within seconds, it ejected the perfectly warmed package, on which the child suckled happily.

“An investment is not a millstone, Brenda, it is an act of prudence,” her mother announced.

Brenda looked across at her and sighed. She knew that their decision to buy one of these use-by-date homes would raise her parents’ hackles, but she wasn’t expecting a reaction quite like this.

“We’re intelligent people Mum, we did our sums. It was much more economical for us to build this place, which is guaranteed to see us through the next 20 years than to keep paying rent. And there’s no way on earth that we could ever afford a place like yours.” She ran her mind fondly over the large home of her childhood in Ngaio, that her parents still slaved over. It was nice enough, for sure, but Brenda hated to think how much time and money had been spent on maintenance over the years.

Brenda thought back over all the summers her father had spent on the end of a paint scrapper, doing constant renovations to the “character” home they had originally bought as a “doer upper”. She and Jack had a far more interesting life than their parents ever had, so what if they didn’t have much to show for it? She thought about all the clutter her parents had acquired. What would happen to it all? What was the point of accumulating things that you didn’t actually need? She would much rather spend her money on a nice café meal or a holiday with friends.

Still, her mother was adamant that their way was right. “Look how much our home is worth now. When you go to sell this, it will be worth nothing!”

“Yes, but I’ll bet you’ve spent far more on your place over the years than you’ll ever get back — if you add up all the interest you’ve paid and the cost of maintenance.” Brenda was tired of the argument, but she felt compelled to defend herself. “From the minute it was built, your house started depreciating. The land is where the value is — not the house, and who can afford to buy land these days?”

Brenda wished she had a dollar for every person who had said a mortgage is compulsory saving. “A long term mortgage is just a black hole, pure and simple, just like every other form of debt.”

As soon as this statement slipped out of her mouth, she knew it would be like red rag to a bull. “If you feel like that, why didn’t you just keep on renting? What was wrong with that last place you were in? It was nicer than this,” her mother replied stiffly.

“This was the most affordable option, Mum. It was cheaper in the long run for us to put a deposit on this place and pay it off.” Brenda reflected on how much things had changed in the rental market since she and Jack had been students. Rentals were big business now, run mainly by Real Estate Investment Trusts, which traded shares on the stock exchange. Gone were the days that you had to take potluck with landlords,

the rental scene was all very slick, and rents were creeping up to satisfy the shareholders.

Still — in a city like Wellington, living was expensive no matter whether you rented or bought. The idea of use-by-date homes on leased properties was a welcome alternative. Once Jack finally paid off his student debt, they pulled a deposit together and became home-owners — something they never thought they would even *want* to do, let alone *afford*.

Her mother marched around the kitchen, pointing at the various appliances. “All this is rented isn’t it? Fridge, dishwasher, TV. What do you actually own?”

“We own the house.”

“A disposable house!” She spat the words out as if delivering a curse. “You will have nothing by way of an asset when you go to move on. Which you’re bound to do — you’ve never stayed put for very long in one place.”

Brenda looked out the window and sighed. Her mother was right, they had moved around a lot. Now that Kelly was at school, they really needed to put down roots for a while, and Ryan’s arrival had made them even less transient. It was much easier to settle down now that Jack had landed the job at the Immigration Development agency. It was right up his alley, since it combined his interest in social work and foreign affairs. Being the product of a German and Samoan intermarriage, he knew more than most about immigrant issues.

Brenda thought it was great that cultural barriers had begun to crumble at last. She smoothed her son’s coffee-coloured hair and gave quiet thanks for the miracle of hybrid-vigour. It was a blessing to have such healthy children at her stage in life. She never expected to be the mother of a toddler at the age of 42, but she was surprised at how much she was enjoying it.

Putting Ryan down among his toys, she went to empty the washing machine and hang the laundry in the solar drying cupboard. “What will happen to you and Dad once your place gets too much for you Mum? Okay — so you’ve got this big asset, but who are you going to sell it to? No one can afford to buy them. You can’t stay there forever you know.”

Her mother’s response was mercifully interrupted by Jack’s return. Carrying a grocery bag in one hand and a box in the other, he closed the door with his foot and greeted Brenda with a kiss. Kelly ran ahead of him, dragging her schoolbag and looking unusually pleased with herself. Father and daughter exchanged a conspiratorial expression.

“We’ve got us a little surprise here,” Jack said, placing the box gently on the bench. The family gathered around with interest as Ryan scrambled across the room, anxious not to miss anything. Jack opened the box to reveal a small, grey kitten. As it looked up at them and mewed pitifully Jack grinned at Brenda. “Well? What do you think? Now that we’re home-owners, we might as well go the whole hog.”

Brenda beamed back, gave him a hug and reached down to gently pick up the frightened creature. She’d always wanted a cat, but they had never been in any one place long enough to justify it. How things had changed. Turning back to her mother, she smiled. “What was that you were saying about commitment Mum?”

CHANGE OF HEART — BACKGROUND INFORMATION

This scenario arose from discussions about aspirations and attitudes, and the durability and economic lifetime of buildings.

Home ownership and affordability

New research carried out by DTZ³⁶ shows that, despite New Zealanders still wanting to own their own properties, home ownership rates are falling. This reinforces earlier DTZ work³⁷ showing that the ability of households in New Zealand to find good quality, affordable and sustainable housing has declined over the last 20 years. The hypothesis was that those aspiring to home ownership are facing increased difficulty in crossing the threshold into home ownership as the deposit gap increases. The new research confirms that reduced affordability in the face of rapidly appreciating house prices combined with the inability to save a deposit from current income, are seen as the key barriers to moving into home ownership.

Incomes have not kept pace with rising house prices, and finding money for a deposit is a big hurdle for people who may be paying off student debt, car loans, and credit cards. Since 1987, total housing costs for renters increased by 166%, whereas their incomes rose only 59%. The proportion of household income paid out as rent doubled between 1981 and 2001. If this trend continues, the deposit gap can only widen.

New Zealand's home ownership rates are projected to continue to fall from 75% of households in the late 1980s and 68% of households in 2001, to 61.8% by 2016. Whilst the actual number of owner-occupied households is increasing, the growth in the number of households renting has been significantly higher. The initial move into home ownership appears to be closely linked to the stability of a couple's relationship and the presence of two incomes in a household. The time taken for successive household cohorts to enter home ownership has lengthened.

The work by NZiRA and BERL (2004) revealed the need to start planning now to ensure that adequate and appropriate housing is available as the population ages. Reducing levels of home ownership mean that today's middle-aged renters would be most at risk in the future, with Māori and Pacific Island people worst affected.

According to the 2001 Household Disability Survey, half (52%) of adults with disability owned or partly owned the house, apartment or other kind of dwelling in which they usually lived. Thirty percent did not own or partly own their home, while the home ownership status of the remaining 18% was unknown. In every age group from 25–44 to 75+, adults with disability were less likely than adults without disability to own or partly own their home. In the 75+ age group, for example, 63% of people with disability owned or partly owned their home, compared with 73% of people without disability. Not surprisingly, Europeans with disability (58%), were more likely than Māori (31%) and Pacific Island (24%) adults with disability to own or partly own their home³⁸.

Housing affordability is important, particularly in urban regions, for six key reasons:

1. Successful regional economies risk alienating young, creative workers at the beginning of their careers if the struggle to get a foothold in the housing market is too great.

³⁶ DTZ (2005).

³⁷ DTZ (2004).

³⁸ Ministry of Health (2004)

2. Poor public perception of communities (in terms of poverty and crime, for example) can raise strong barriers to the influx of investors and key workers.
3. Successful metropolitan economies need a mix of low-paid service workers, medium-paid essential service workers and high-paid knowledge workers.
4. High housing costs contribute to upward pressure on local wages and salaries, which tends to undercut the competitive position of local producers.
5. Poor housing affordability can crowd out other consumption and expenditure and this constraint may impinge disproportionately on younger people, especially those carrying student debts.
6. People may be locked into areas where employment opportunities are shrinking, reinforcing their low-income status and further limiting their effective housing choices in a cycle of decline and deprivation.

The age of access

One of the key themes in this story is that the average person owns less and less. The factors contributing to this phenomenon are many and complex. In his book *The Age of Access* Jeremy Rifkin argues that we are making a transition from the market economy, which has been the core institution of the industrial age, into what economists call an “experience economy”. A growing chunk of production in the modern economy is in the form of intangibles, based on the exploitation of ideas rather than material things: a weightless economy. The top one-fifth of the world’s population (in terms of wealth) already spends as much time accessing cultural experiences as buying manufactured goods and basic services. Intellectual capital is the driving force of the new era. Concepts, ideas, and images are the real items of value.

Rifkin asserts that exchanging goods will become a thing of the past: in the hypercapitalist economy, characterised by continuous innovation and dizzying speed of change, buying things in markets and owning property become an outdated idea, while “just-in-time” access to virtually every kind of service becomes the norm. Markets give way to networks, property rights become secondary to access rights, and the exchange of goods becomes less important than the commodification of human time and culture. Suppliers hold on to property and lease, rent, or charge for its use. For example, Ford would prefer never to sell a car again. Instead, they would rather lease the car and have the client pay for the time he or she uses the vehicle. The client then becomes fully embedded in the Ford network. Nike owns no factories and has few physical assets. Its shoes are produced by anonymous subcontractors in southeast Asia. Nike is a design studio with a powerful brand and marketing distribution network.

Physical and intellectual property are more likely to be accessed by businesses than exchanged. Businesses are already well along the road towards the transition from ownership to access. They are selling off property holdings, shrinking inventories, leasing equipment and outsourcing.

Real Estate Investment Trusts

Real Estate Investment Trusts (REITs) buy commercial real estate (including office buildings, industrial sites, apartment blocks, and potentially anything else connected with real estate). US investors (including many small investors) commonly use them as a means to invest in real estate.

REITs are publicly listed and traded on the stock exchange. There are now approximately 300 REITs in the USA, and their combined worth (market capitalisation) rose from US\$758 million in 1981 to US\$284,510 million (i.e., \$284 billion) in 2001³⁹.

³⁹ Real Estate Economics (2005).

Property trusts are common in the US and there are also New Zealand examples (where the emphasis is on commercial property) — AMP Property Trust, Tower Property Trust, Property for Industry, Capital Properties. REITs are a form of unit trust that invests in property as opposed to equities or bonds.

In New Zealand, many people have superannuation savings in addition to owning their own house. A superannuation fund normally invests in property as part of its holdings. Currently they hold the types of property trust listed above. In some countries in Europe, most people do not own their own homes — it is normal to rent long term. International wealth data show that New Zealanders have fewer financial assets than people in most developed countries, especially Europe. This is largely because New Zealanders favour home ownership over other financial assets. If New Zealanders were to become more "normal" (in world terms) we would reduce our holdings of direct property ownership and increase the share of financial assets in our wealth portfolios. Some of these financial assets would, most probably, be property trusts (REITs). Thus ordinary people (frequently through superannuation funds) would own a portion of REITs. Foreign investors seeking portfolio diversification would also own some (as they already do with listed New Zealand property trusts).

While the New Zealand-based trusts predominantly invest in commercial property, there is no reason why they shouldn't branch out into residential property, especially apartment blocks and new subdivisions (so cutting down on management costs). In the same way that most businesses rent rather than purchase property (e.g., almost all bank branches have been sold by banks and leased back) and in the same way that leasing of cars is becoming increasingly common, one possible trend is for people to rent long term and hold more financial assets (including REITs). This yields a more diversified portfolio for the investor, and, as mentioned above, this behaviour is the norm in many countries in Europe.

Durability

The durability provisions of the New Zealand Building Code, introduced in January 1993, are intended to ensure that a building continues to comply with the Code after its date of completion. Various factors contributed to the decision that the life of a building should be not less than 50 years, including common construction methods, the youth of the country, rapidly changing technology, life styles and demographics. Structure, as the mainstay of a building, must have a durability equal to the life of the building, and building elements that are difficult to access or replace or for which failure would not be detected during normal use or maintenance must have a durability of not less than 50 years. Other building elements can have a shorter durability period.

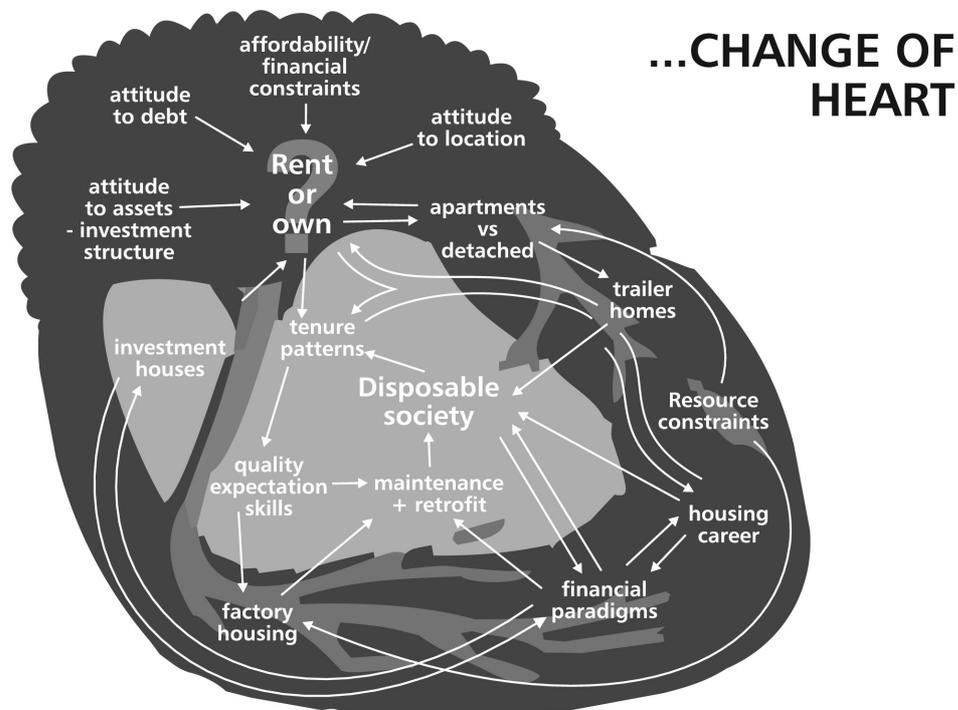
It is, however, possible to nominate the intended life of a building, because some buildings (e.g., temporary building, semi-permanent marquees, etc.) may not need to remain for a long period of time or because the life of experimental construction may not be known.

The durability clause is the key clause in the Building Act. The clause stipulates that for the life of the building, or some nominated lesser figure (as above), the building and its elements must continue to comply with the Building Code, assuming normal maintenance. Some elements (such as wallpaper) have no code function and thus have no minimum durability requirement. Others, which are a hidden part of the structure, must comply with the code requirements for earthquake, fire, wind loads, etc. for at least 50 years. The Building Act 2004 adds a stipulation that whole of life costs must be considered — emphasising (for instance) that stainless steel may be a more economic option than galvanised steel for some components in some environments.

Attitude to debt

In keeping with contemporary practices, Brenda and Jack have settled down and had children later in life. With the increasing focus on “lifestyle” and “experience”, New Zealanders are becoming increasingly blasé in their attitudes towards debt. Results of a global study carried out in 2004 by research company ACNielsen⁴⁰, showed that New Zealanders cited repaying debt as the most likely way of spending their spare cash. Among those who are reducing their level of debt, 61% are paying off credit/charge cards, the highest proportion of respondents in the Asia Pacific region. Globally, New Zealanders ranked in the top five countries (together with Malaysia, Philippines, Australia and the UK) likely to spend their spare dollars on debt, supporting reports of increasing debt across the country. But while the amount of debt held by New Zealanders is obviously increasing, the second most likely way New Zealanders spend their spare cash is out-of-home entertainment, indicating they are still looking to enjoy life and are not curbing their discretionary spending.

Evolving attitudes towards home ownership, maintenance and durability lead to a...



The evolution of Change of Heart

Wellington homeowners are often content to live in situations that other New Zealanders find untenable. They are prepared to build on precipitous hillsides and exposed coastal areas that make other urban areas look relatively tame. In 2030, developers have taken Wellington adaptability to the extreme as the city faces increasing pressure on available land. The latest trend is towards disposable housing, which is located on paper roads and other areas of insecure tenure.

⁴⁰ Available at <http://www.acnielsen.co.nz/news.asp?newsID=363> [accessed 2 October 2005]. The bi-annual online survey of 14,000 consumers in 28 markets across Asia Pacific, Europe and the US, was conducted in October 2004. Survey respondents were asked to identify how they spend their spare cash once all essential living expenses had been covered; their thoughts on the country's economic performance over the past six months and over the next 12 months; and to indicate their greatest concerns over the next six months.

Within this market, affordability and convenience are the key focus. The modular homes are constructed with a 15–30 year lifetime, on the assumption that little or no maintenance will be carried out during this period. Since these houses can be rapidly constructed, they offer a solution to the problem of widespread shortages within the building industry. At a time of rapid growth within the area, the local Council has facilitated this option by allowing a fast consent process.

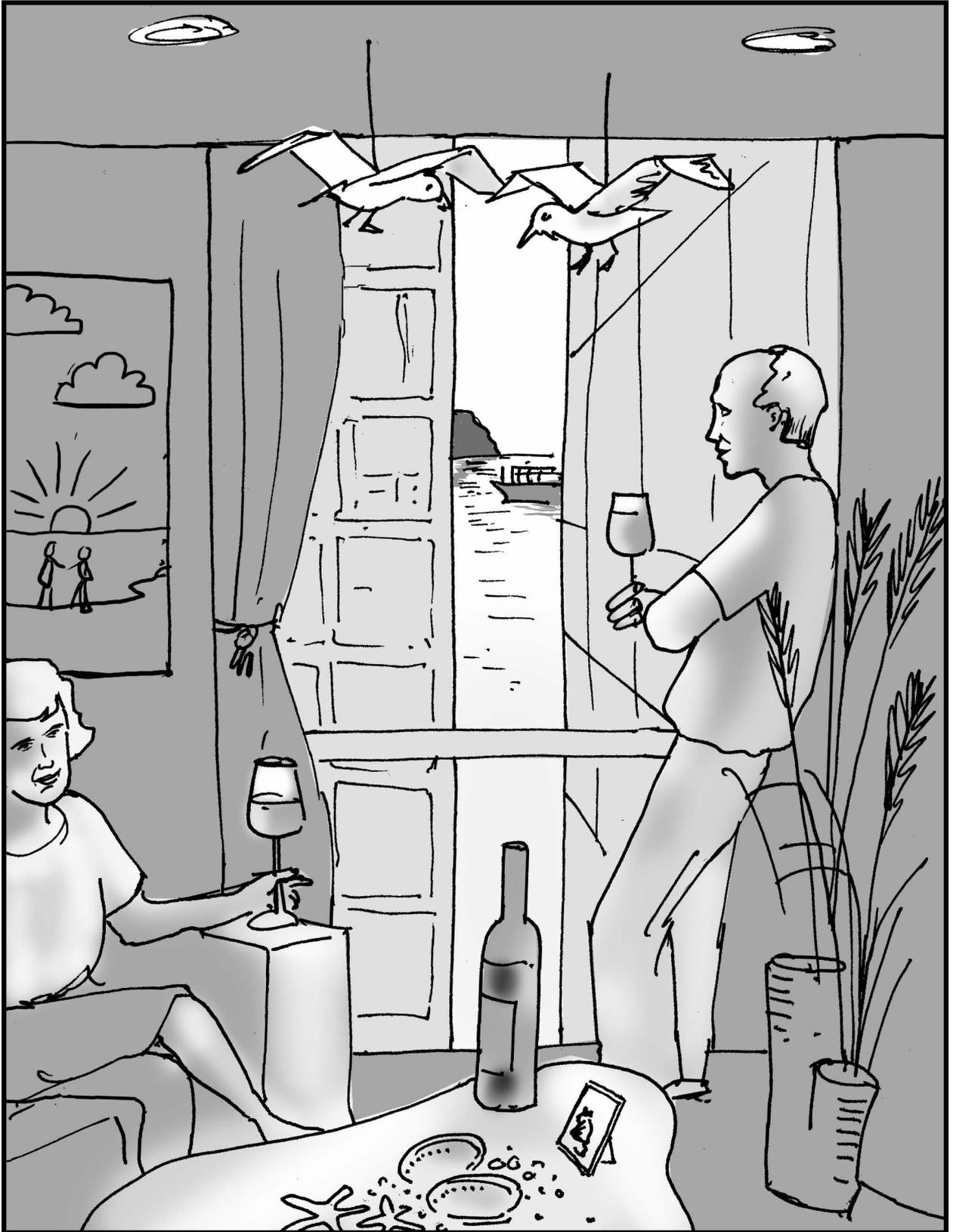
People are attracted to the idea of disposable homes because they offer fixed-term security at a relatively low cost. For those with young families, it can be an affordable way of living in a good school zone, or it can enable people to live in a desirable location on a short-term basis. As urban development continues to intensify, this option avoids the need for a massive deposit, or the risks associated with high-density rental accommodation.

Due to changing attitudes towards durability, a warrant-of-fitness system has been introduced for houses, giving them stamps for 20-, 50-, and 100-year expected lifetimes. Properties are priced accordingly. There is still an expensive niche market for large family homes made from “permanent materials”, but the appeal of these properties is decreasing.

Material goods of all kinds are seen as readily available and expendable, houses included. In a population that is inherently transient, there is less interest in accumulating large amounts of furniture and other possessions.

The debt commitment on disposable homes is comparable with rental costs, and cheaper in many instances. Brenda and Jack exhibit the attitudes typical of their generation. They borrowed in order to study at university, then they took on more debt when they went overseas. Slowly they have paid this off, but they have never bothered to form a saving habit. For this reason, buying a disposable home is a logical step. It’s all about borrowing to pay for “experiences” so that they can focus on quality of life, family and friends. Is fun really more important than future security?

THE VERTICAL VILLAGE



Brenda stood on the balcony and looked out at the neighbouring apartment tower. Between gaps in the building she could see a sliver of glistening water in the distance.

“You’ll find it almost impossible to get a water view these days. This is a rare opportunity,” the real estate agent gushed.

“Call this a view?” Jack muttered under his breath. Coming from Whangaparoa, they were used to watching the sunrise over the ocean while eating their muesli. The trouble is they rarely got to see the sunrise these days, because they had to leave so early in order to catch the bus. The cost of petrol had become so prohibitive, that even carpooling was uneconomical. On the flip side, they got a lot more reading done on the way to work.

“There is a mix of 1-, 2- and 3-bedroom apartments in this block. I can show you larger options in another building. It is possible to get 4 bedrooms in some areas, which is good for couples planning a family,” the agent continued, sounding more like a recording by the minute.

“Two bedrooms will be enough for us,” Brenda said firmly. Couldn’t this man see that they were well past the family stage?

“Absolutely — so many people are opting for smaller places now. There is quite a mixture of people living in this building. Families with young children, elderly couples, professionals like yourselves. It’s quite a community.”

He continued to rave on about the private courtyard and gymnasium while Brenda wandered back inside. The living area was well designed, with a pleasant open-plan kitchen that gave a surprising sense of space in a relatively small area. They would have to get rid of a lot of furniture, but it wouldn’t do any harm. They had far too much clutter in their lives as it was. The change of lifestyle was timely in many ways, and they were more than ready for the extra freedom that apartment living would allow. Just think — they would never have to mow the lawn again.

She opened one of the cupboards off the short hallway and visualised how much of their gear they could fit in. Fortunately the storage space had been generously designed, as the agent had so effusively pointed out. She liked the fact that it had two bathrooms as well, which was a real luxury. With all the hype about water shortages these days, it was surprising to see that the modern city apartments were still so generously plumbed. The pipeline from Waikato must be making all the difference.

“It’s a very well-appointed complex — one of the better ones — and with a fulltime doorman you never need to worry about security.” She could hear the agent talking in the distance, while Jack replied in a low monotone that she couldn’t make out.

A few years ago, Brenda never could have imagined they would end up living in the central city, in an apartment block with its own bouncer. Still, it made sense. Both of them had jobs that had become so demanding they barely spent any time at home anymore. Moving into the city was definitely the sensible option. Now, as the idea began to become a reality, she was starting to get excited about the prospect.

The agent had answered a call on his vi-phone and was engaged in earnest conversation at the breakfast bar. Brenda walked back outside to where Jack was still leaning on the balcony. The humidity of the air felt stifling after the pleasantly cool interior.

“What do you think?” she asked, unable to read his pensive expression.

“Not bad. I could get used to it. We could just about walk to work from here.” He picked a leaf out of the window box dropped it over the edge. They watched it float slowly towards the street, 25 storeys down towards the colourful hubbub of the city. It was bustling and alive down there — exciting in its way — and the melodic strains of a busker filtered up through the sounds of traffic.

“It’s amazing how little city noise you get once you go inside. Did you get a chance to talk to the neighbour?” Brenda asked.

“Yes — briefly. She said it’s much quieter here than the last place they lived. She’s got a large family living directly above her, but she can’t hear a thing. No footsteps or voices or anything. Apparently the place is well-built,” Jack said.

“That makes a change. The last apartment I lived in you could hear every toilet flush in the whole building. Still, that was a long time ago. I guess they’ve figured out how to get it right by now.”

“You’d hope so,” he snorted, looking around at all the apartment tower blocks. “They’re getting enough practice these days.”

Brenda and Jack leaned on the railing, lost in their own private thoughts as they contemplated the change that they faced.

“Apparently they have quite a few activities here. Dances and things — down in the common room,” Brenda added.

“Really? Whatever happened to the anonymity of city life?” Jack replied.

“Hmm. Don’t know. I think it’s part of this campaign by the local council to encourage social integration within the city. It’s a bit ironic when you need a swipe card just to get into the party, but the concept is good — I guess.”

“True — it can be lonely in the city.” Jack went quiet for a moment, staring at the building across the road. Brenda followed his gaze and saw what he was looking at. A large black cat was sitting on a balcony opposite, licking its paw. “We’d have to get rid of the cat you realise,” he said. “He’s used to having a backyard. We couldn’t keep him inside all day.”

Brenda felt a pang of sadness. There were sacrifices to be made whichever option they chose.

“Maybe we could take Moggy to your brother’s place. They’ve got plenty of room.” She pictured her in-law’s spacious property, near Pokeno. Brenda sometimes wished they had opted to buy in the south instead of the north, when properties were still available. The restrictions that had come in on new subdivisions meant that even in the Waikato, land was at a real premium these days. Urban development had been so much more proactive down there and public transport links were much better since the rapid rail had gone in. It was still possible to commute into Auckland easily from as far away as Hamilton. But it was just a shame that the cost of houses had become so prohibitive.

Meanwhile, the council had let things get out of control up north, and development had virtually ground to a halt. Public transport was non-existent and commuting was a nightmare, making it impossible for anyone but retired people to live there. Brenda's home town of Whangarei had virtually been choked and her sister had nightmare stories about working as a midwife for low-income families in the area. She shuddered at the thought of trying to raise kids in a trailer park; it was like an alien world compared to the coastal paradise they had grown up in.

The authorities had talked about the "Auckland problem" over the years. Now it was mainly a North Harbour problem, and no-one seemed capable of fixing it. Both Brenda and Jack were loath to give up their jobs, otherwise they would have moved away years ago. As it was, they were cutting their losses by selling their Whangaparoa home. The price they were getting for it would hardly cover the deposit on this apartment, but it was time to make the shift.

"Well folks, what's the verdict?" The real estate agent bounced out onto the balcony, rubbing his hands. "Any more questions. Can I show you anything else?"

Brenda and Jack looked at each other. "No, I think we're pretty set on this one," Brenda replied, looking across at her husband.

He nodded in reply. "We just need to call a man about a cat, and we'll let you know."

THE VERTICAL VILLAGE — BACKGROUND INFORMATION

Questions around resource availability and price, and transport and infrastructure were the starting points for this scenario.

Energy

No scenario planning process would be complete without making reference to the expected decline in global oil production. It is expected that peak production from global oil reserves will be reached between 2010 and 2015. World oil demand is projected to grow at between 1.5% and 1.8% per year. World oil production will have to be increased by one-third in the next 15 years to meet the rapidly rising demand. Furthermore, this significant increase in world oil demand will have to be met from supplies in the Persian Gulf, because it is expected that peak production will be reached in other fields first. As we know, the Persian Gulf is prone to water shortages, revolutions, sabotage, terrorism, wars, embargoes, and growing Islamic movements. Despite this, the price of oil is expected to remain relatively stable or even low, though susceptible to sudden price spikes or supply disruptions.

As a consequence of anxiety over oil reserves, international governments are expected to increasingly access non-conventional oil and coal reserves, invest heavily in energy efficiency technologies and alternative energy sources, and focus on alternative sources of oil supply as part of a diversification policy.

Shell's planners see renewable energy being potentially cost competitive with fossil fuels by 2020, and producing a significant proportion of the planet's energy by 2050. The platforms involved in the shift are: energy efficiency, transportation efficiency, solar power, wind power, bio-mass energy, geothermal power, hydro-power, tidal power, and hydrogen fuel cells. Others argue that it is not feasible that any major transition away from fossil fuels could be achieved in this time frame⁴¹.

New Zealand is self sufficient in all types of energy except oil; in 1995 80% of its total primary energy supply was produced domestically. Increased reliance on natural gas from the Maui field and hydro-electricity production have contributed to this. Large-scale hydro capacity produces about 70–80% (84 PJ) of New Zealand's electricity. New Zealand consumes approximately 200 PJ of gas per annum. The Maui gas field Crown contract expires in 2009, and the Kapuni contract expires in 2012. Some commentators predict that Maui will run out before 2009 and Kapuni long before 2012, especially if electricity demands increase. Low lake levels in the South Island have compromised electricity supply in recent times.

The increased demand for imported oil and related products since 1988 reflects an increased demand for domestic transport and a move away from the energy-efficient vehicles that were introduced following the oil shocks of the 1970s. Over the past decade, industrial and commercial energy consumption decreased by 2.9% and 0.55% respectively, whilst residential consumption rose by 8% and transport by 13%. However, residential energy use per square metre declined by 6.3% due to improved design of houses and appliances. New Zealand still has one of the lowest rates of residential energy use per capita amongst the developed nations, due to low levels of space heating. On average, New Zealand's levels of space heating are lower than desirable from a health point of view. If energy prices increase and houses are not upgraded, the health implications could be significant.

⁴¹ Data sourced from Forest Research's 2001 Future Insight STEEP analysis (unpublished).

New Zealand produces 37 PJ of energy from biomass and wastes, and 0.07 PJ of wind energy. Total energy demand will increase by another 30% by 2020, assuming the energy intensity will improve by about 1.5% a year. Energy use accounts for around 80% of New Zealand's carbon dioxide emissions.

Adherence to the Kyoto Protocol could bring about significant changes in New Zealand's transport and building sectors. Given that some commentators believe transport to be the prime shaper of urban form, regulation of both transport and buildings would substantially alter the nature of the built environment⁴².

Materials and waste

Building construction currently consumes 25% of the world wood harvest and 40% of the world energy production. Materials used for building account for 40% of natural resource usage, 30% of CO₂ emissions, and 40% of waste. Nearly 20% of Auckland's landfill waste was from the construction industry in 1995. In Australasia, 75% of construction waste is from concrete and cement-based products, and re-using aggregate is therefore becoming more important both to save on disposal costs and to limit the amount of quality aggregate that must be sourced from further afield.

Although only one-third of the world's population currently lives in modern, Western-style, resource-intensive housing, Western countries will struggle to maintain present new housing standards once the world population reaches an estimated 8.9 billion by 2050. As land resources are tightened, more urban dwellers will need to be accommodated on less urban land space, unless cities are allowed to occupy fertile land in outlying areas.

Timber-framed buildings are the most popular New Zealand building type for residential construction. However, newer products and systems are now well established, although these (imported) products do not always enjoy the same level of success as the traditional products because they often do not suit the harsher southern climates.

SmartGrowth developments have emerged as a solution to the problems of suburban sprawl in North America. In Auckland, the regional council plans for more intensive residential developments to be built using these principles. If not undertaken appropriately, however, public backlash against these restrictions to space and lifestyle can result. Christchurch is also seeing a move towards more intensive in-city apartments being built. Concerns with energy efficiency and resource constraints have led to demonstration housing projects in a number of countries. These projects demonstrate housing that is both energy-efficient to run, and more affordable, yet still comfortable and quick to erect⁴³.

⁴² Bates *et al.* (2001).

⁴³ Bates *et al.* (2001).

Land and transport

A little-recognised cost of private transport and of building motorways is the opportunity cost of the land⁴⁴. Bagnell (1998) asserts that New Zealand does not have a good record of land use, that we must seriously question the need to ever increase the potential for private transport development and use, and that besides the ongoing search for “clean energy” there are other factors that should be given increasing weight in any debate on the future development of roading and motorways. The opportunity cost of land is given insufficient attention in discussions.

Transport and infrastructure

Infrastructure is a key issue in relation to patterns of settlement, particularly housing, transport, communications, and the provision of public services. Current housing location results from previous patterns of settlement and transport networks.

However unexciting infrastructure may appear, it is what allows our society to operate on a daily basis. Infrastructure is essential to a vibrant economy. Roads, drinking water, drainage, heating, electricity, telecommunications, ports, and airports are all part of the formula for the smooth functioning of most urban areas. When essential infrastructure fails, the costs are alarmingly high.

It has been estimated that Auckland needs to spend in the order of NZ\$7 billion over the next 25 years on its infrastructure. Furthermore, as cities grow, meeting the demand for water and electricity can be challenging in the best of circumstances. Failure to plan can result in rationing and/or blackouts — Auckland’s 1994 water shortage and the 1998 power crisis are cases in point. Another recent high-profile example of what can happen when ageing infrastructure is not adequately maintained was the Sydney water scare during the build-up to the 2000 Olympics⁴⁵.

In this scenario we see a very proactive policy stance in regard to transport provision, with significant investment in public transport and the expansion first of the Auckland-Hamilton corridor and later the Auckland-Tauranga corridor. Given that active measures are also taken to encourage social integration, we can expect to see achievement of Objective 8 of the New Zealand Disability Strategy — “support quality living in the community for people with disability”. As well as enabling people with disability to live in suitable accommodation, proposed actions linked to this objective include:

- requiring all new scheduled public transport to be accessible in order to phase out inaccessible public transport;
- encouraging the development of accessible routes to connect buildings, public spaces and transport systems;
- developing nationally consistent access to passenger services where there is no accessible public transport⁴⁶.

⁴⁴ The term opportunity cost is used here more broadly than as commonly used by economic commentators. For example, arable land, land that can be farmed and used for food production is now a relatively scarce resource world wide. It is becoming better understood that for each square kilometre of paved road produced in the world there is at least one less square kilometre of arable (farming) land. This is happening as great pressure is coming upon the food resources of the world and more arable land is being covered by tarmac and buildings. This is not a sustainable use of land.

⁴⁵ Bates *et al.* (2001).

⁴⁶ Ministry of Health (2004).

Transport habits

Ian McChesney⁴⁷ contributed a very thought-provoking article to the *Future Times* earlier this year. The arguments that follow can all be attributed to this article.

New Zealand has a deeply embedded culture of freedom of movement: the country was settled by travellers, and the network of transport links developed both within the country and to/from other countries is regarded as the lifeblood of the economy and of social interactions. An increasing proportion of the population has known no other reality than a car-dependent lifestyle. Our mobility desires are not merely car based. Air travel has taken over as a sort of hyper-public transport, with daily inter-city air travel being the accepted norm for many within society. New Zealanders are also amongst the most mobile of international travellers. A day-return trip to Melbourne is considered in much the same way as day-return trip between two of New Zealand's main centres.

Transport is closely tied to economic activity. Wealth-generating activities such as tourism are transport and energy intensive. Freight transport has also been a major factor in New Zealand's greatly increased transport energy use in recent years. With limited stocks of goods being held locally or at the point of sale, supply chains are increasingly geared around just-in-time deliveries. This requires a flexible and extensive freight transport system. Consumers increasingly expect a 24/7 service.

If, during the debates of the late 1970s as we contemplated a future of permanently high oil prices, we had been told that in 25 years' time transport energy use would have doubled and the "low energy modes" of buses, rail, cycling and walking would all have lost mode share, some hugely, such a prediction would have been greeted with incredulity. But this is the current reality — the result of consumer choices in a market economy where mobility and transport-based interactions have been increasingly focused around motor vehicles, and where arguably, motorists have not had to pay the full costs of their transport choices.

However, there is a general understanding that our current transport patterns are unsustainable. There is also a general acceptance that solutions lie in two areas — technology transformations and behaviour change — but views differ as to the extent to which each can deliver desired outcomes. Rapidly accelerating technology change provides us with the tantalising prospect of developing a transport energy base that is affordable, can be sustained long-term, and has benign effects on the environment — hence enabling us to largely retain (and enhance even) our transport habits. The speed at which this occurs will be dictated largely by the rate of international developments, and the extent to which New Zealand might become a collaborator, or a "fast follower", in these developments.

Conversely, behaviour change choices revolve around choosing more benign modes of travel (public transport, walking, cycling), and actions that reduce the demand for travel (through things such as changes in land use, travel demand management strategies and so on).

⁴⁷ Ian McChesney is a private consultant specialising in energy, transport and strategic policy. His background includes work in local and central government, research, and consultancy. From 1994 to 2001 he was the Energy and Transport Planning Manager with Environment Canterbury. In 2000 he was seconded to EECA to work on development of the National Energy Efficiency and Conservation Strategy. He has a longstanding involvement in energy efficiency projects and is co-founder and Chair of Community Energy Action Trust. Ian McChesney has been involved in a range of transport projects including transport strategy development, passenger transport, transport demand management (TDM), vehicle emissions and road freight. He has a particular interest in public passenger transport, being involved in a number of Christchurch projects including development of the Passenger Transport Strategy, the Bus Interchange, and smart card ticketing.

While it is easy to say that the Government should be doing more, they face a balancing act between maintaining the expectation for continued mobility from the travelling public, and keeping costs down to businesses, while at the same time giving effect to policies that start shifting the balance towards more "sustainable" outcomes. Undoubtedly, the agenda for change is an enormous challenge which will not be overcome without a public affirmation on the future direction for sustainable transport policies. At present our debate on transport seems focused on single issues — speed cameras, petrol taxes, Auckland congestion, etc. This does not equate with a coherent understanding of the transport challenges ahead, or provide a solid basis for promoting the next wave of policies that will clearly be needed if more sustainable transport outcomes are sought.

Changes in patterns of family formation

This story features a child-free couple, a lifestyle choice which is becoming increasingly popular. All over the world, the birth rate has been declining steadily and has dropped below replacement levels in all but a few developed nations. Research published by Britain's Office for National Statistics in 2003 showed that nearly a quarter (22.5%) of women with a degree or professional qualification remain childless, compared with only 15% of women who have not continued their education after school. In other words, women with higher educational qualifications are less likely to have children.

In an article examining the prevalence of childlessness in Australia, Merlo and Rowland (2000) attribute this pattern to: "a combination of varied phenomena including: the decline of social pressures to marry and bear children, inability to find a partner, lack of interest in finding a partner, insufficient commitment in relationships, concern about the durability of relationships, financial problems and constraints, dislike of children, postponement of childbearing, declining fecundity at older ages of family formation, and pursuit of consumerist or careerist lifestyles for their own sake, rather than in conjunction with familism".

The 2001 Census revealed that the "couple with children" family is still the most common family type in New Zealand, but the proportions of "couple with children" families and "couple only" families are now quite similar (42.1% and 39% respectively). One-parent families are increasingly prevalent — 18.9% of families in 2001 as opposed to 17.2% in 1991.

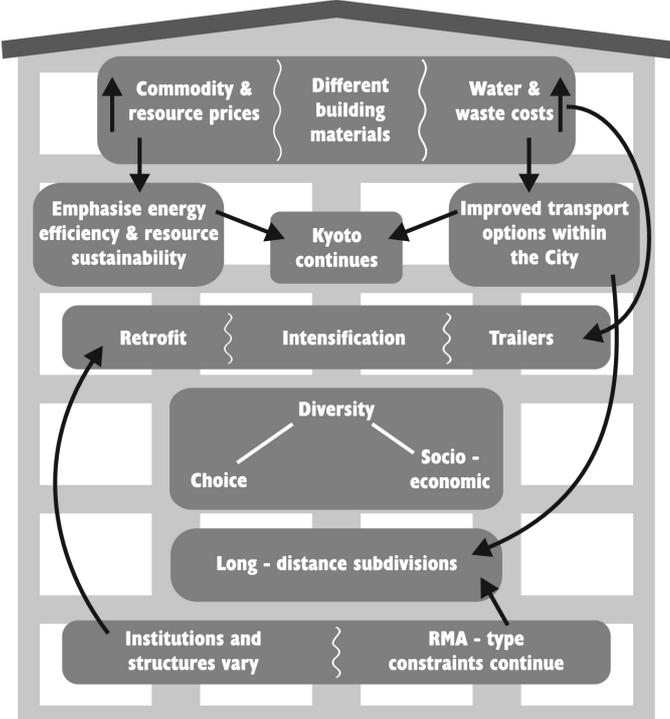
Birth numbers are constrained by the size of the childbearing population. Fertility rates are the result of the number and spacing of births of the childbearing population. The number and spacing of births are in turn related to the age, sex and ethno-cultural composition of the population, as well as other factors. The current trend is for the age of mothers giving birth to rise. The average age of New Zealand women having children in 2001 was 29.5 years. Those women who give birth have fewer children, and a growing proportion of women remain childless. The combined effect of these changes is that a return to higher fertility is unlikely. Moreover, in the face of economic and social pressures, ethnic, immigrant and religious groups who traditionally have had higher fertility are shifting toward smaller families⁴⁸.

⁴⁸ Ministry of Economic Development, Ministry of Social Development, Department of Labour (2003).

Whilst there is no doubt that the world’s resources are being placed under enormous pressure by its ever-increasing population, rapid shrinking of a country’s population is not without problems (witness the concerns raised in countries such as Japan and Germany). Demographer Ian Pool⁴⁹ asserts that for New Zealand to be demographically viable in the long term, replacement-level fertility is a must. Pool points to New Zealand’s “baby blip” — the temporary increase in the number of babies born during the late 1980s and early 1990s — as a potential window of opportunity. A large cohort will soon begin retiring from the workforce. It will be replaced by a smaller cohort. This puts a focus on the children who are the labour market entrants of the 2010s and 2020s. The priorities for these children should be raising the quality of their education and addressing health and social barriers, so that they can meet the challenges of the future⁵⁰.

Pool advocates family-friendly policies (in the workforce and elsewhere), whereas on-again/off-again immigration policies result in disordered cohort structures which can exacerbate ageing. Migrants should be welcomed for their ability to enrich society rather than as possible “cash cows”.

Momentum for a Vertical Village



The evolution of the Vertical Village

Auckland has continued to spread in a relatively uncontrolled manner, resulting in greater strains on resources — including land availability. Auckland has responded to growing water shortages by piping water from the Waikato and basic utilities are at a premium. The cost of living is high.

⁴⁹ Speaking at a New Zealand Futures Trust seminar in June 2002.

⁵⁰ Ministry of Economic Development, Ministry of Social Development, Department of Labour (2003).

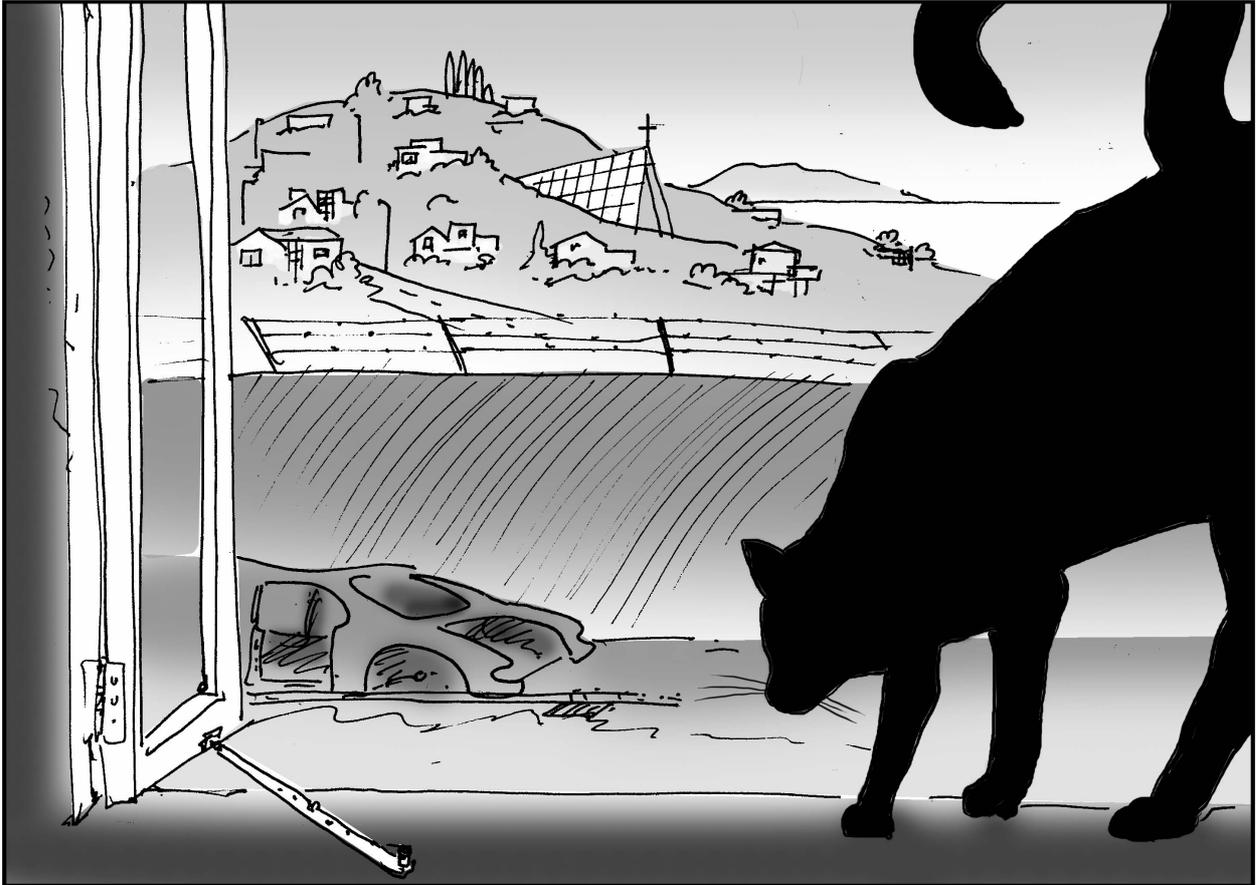
Urban development to the south has been handled well by local authorities and good public transport is provided, allowing rapid commuting between Auckland and Hamilton, extending as far as Tauranga. However, property is still expensive along the main transport corridor due to planning restrictions on new land. While the main focus of development has been on transport links, little thought has been given to health and education, so residents are forced to travel for everything: work, school and medical attention.

Urban development to the north has been hampered by inadequate roading and poor public transport, leaving North Harbour in a shambles and Whangarei in the doldrums. This situation means that professional workers in the Auckland CBD invariably choose between living in the city centre, or moving south. The resulting increase in high-density living has created a new type of residential culture within the apartment towers, whereby social integration is actively encouraged. The Auckland City Council is driving a vision of encouraging community life within the CBD, in an attempt to break down the social isolation that can result from urban living. This campaign is being met with varying degrees of success, depending on the effort of key individuals within each apartment tower.

The amenities and social support offered by apartment living have distinct appeal to people of all ages, as long as they can afford the cost. The vertical communities attract residents of all ages, ethnic backgrounds, and family compositions. In socio-economic terms, this makes for an exclusive central-city neighbourhood, pushing poorer people further out into the suburbs and outlying regions. Trailer parks have become a feature of depressed communities, providing the only affordable housing for people on low incomes.

Brenda and Jack are a child-free couple living on the beautiful Whangaparoa peninsula. A dramatic increase in oil prices prompts them to move into a city apartment where they can be closer to work. This move represents a significant change in lifestyle for the couple. Even though they will have less physical space, they look forward to freedom from both commuting and onerous home maintenance. Will the sacrifices be worth it?

GATES OF HEAVEN



The cat ran out from under the old building, meowing happily at the sight of the old woman. “There you go,” she said, as she bent down stiffly to put the saucer on the ground. As the cat lapped gratefully at the warm offering, the woman straightened up, leaning heavily on the balustrade. “You must belong somewhere, you’re too pretty to be a stray. Where’s home eh?”

“Here puss, puss, puss!” Brenda stood on the front deck and squinted into the dim light of dawn. It was unthinkable for Moggy to miss three meals in a row. Where on earth had she gone? She peered down the length of the private avenue, scanning the neighbours’ well-manicured front gardens for signs of movement.

In the distance, she could see a cat mooching around a child’s bike that had been left carelessly on the side of the cobbled street. Even from here she could see that it wasn’t Mogs. Consoling herself with as many positive thoughts as she could muster, Brenda reflected on how fortunate they were to live in such a pleasant community where the children could leave their bikes out and know they’d still be there the next day. It was so unusual to lose anything — it would be such a shame to lose the cat.

Muttering a quiet prayer she stepped across the lawn and walked a little way down the street. Taking deep breaths of fresh morning air, she listened to the distant rumble of traffic, which seemed to belong to a different world. Pulling her house-coat closely around her, she walked past their neighbourhood chapel, which formed the heart of their community.

She remembered the home she lived in as a child, which, like most suburban properties, was surrounded by a large fence, both for privacy and security. The Neighbourhood seemed so much more spacious by comparison. Living in a dog-free community, where everyone observed the same Christian values, it was no longer necessary for families to live within a fortress. Things had changed a lot since the Providence Party won the balance of power a few years ago. “This is the way communities should be,” Brenda thought to herself, stopping short of reflecting on the barricade that ringed their entire neighbourhood, discretely hidden by hedges and trees.

Walking towards the communal tennis court, she stopped and called out once again. “Here Moggy, Moggy, Moggy, where are you puss?”

The cat looked around warily as she drank the stranger’s milk. She needed to keep her wits about her more since venturing beyond the fence. That dog across the road was making her nervous. If it ever got off its chain it would eat her alive. She had never encountered a dog in the Neighbourhood, but she knew an enemy when she saw one, and this brute was worse than a human child. Out here, there seemed to be a dog snarling behind every fence.

“You can’t stay here you know. Tumara won’t have it.” The old woman squinted with concern at the scratch above the cat’s eye. “Maybe I should give the SPCA a call, they could look after you better than me.” The cat rasped the plate clean with her tongue before scuttling into the shadows once more.

Despite Brenda’s nagging feelings of anxiety about the family cat, she enjoyed the feeling of peace in the still, mild morning air. It was hard to get time to herself as it was, and Jamie’s arrival had made it virtually impossible. After having four children already, she expected the fifth one to be a breeze. How wrong can you be?

Still, at the age of 42, she could be forgiven for flagging in energy at times. Looking back, she could barely remember the marketing job that had consumed her attention for so many years. All that was behind her now. It was fortunate that Jack earned enough to keep them so well provided for. She couldn’t imagine having this many children if they had to go off to state schools and places where discipline could be such a terrible problem.

Brenda headed back up the street towards her home and admired it anew. A hint of dawn light was reflected off the leadlight windows of the turret. She loved to sit up there in a storm and pretend she was living in a lighthouse, protected and aloof, watching the ships come and go through the harbour entrance. The other houses in the street looked quite plain in comparison, despite their similar sprawling bases on multiple garages and lofty upper levels.

Any feelings of concern about Moggy were pushed aside as she ran through the schedule of the day’s events that lay ahead. She had volunteered as a parent helper at Bible Study in the girls’ school — which had become a highlight in her week. Maybe teaching was her true vocation. After class she needed to get away smartly to run Ruthie and Norm to their music lessons in time. It was all the more difficult with a newborn baby in tow, but she would manage. She always did.

Moggy licked her paw and ran it across her face, working thoroughly over the gash that had almost taken out her eye. Her labours were interrupted by a low familiar yowl and she wheeled around in defence, her back arched and tail inflated. The moment her enemy lurched from the shadows Moggy took flight, she knew there was no way she could win this battle. She sprinted across the road and set the dog off, barking wildly at the end of its chain. There was precious little cover in this part of town, so she dived under a large jumbo bin. This was all too much — maybe life with the human baby wasn't such a bad option after all.

Brenda strapped the baby into the carseat and ushered the other children into the back.

“Can we drive round and look for Moggy, Mum?” Ruthie asked for what seemed like the zillionth time.

“We don't have time honey. Daddy will do it later.”

“Ooooooh, but Mummmm.”

“Don't whine at me Ruthie, we're running late as it is. God will look after Moggy.”

Brenda started the car and pulled out of the driveway while the children bickered over a holo-faze in the back seat. She closed the auto partition so she wouldn't have to listen to them, and turned on the TVG player. The beautiful strains of Mozart surrounded her as they headed off down the street. Between the trees, Brenda could see Mount Maunganui silhouetted against the sparkling blue of the ocean. It was an unbeatable view on clear days, which were getting increasingly rare, it seemed. Turning a corner, Brenda flicked a switch on the dashboard and paused while the large gates slid smoothly open.

As the car pulled out of the Neighbourhood, the gates automatically closed behind it. Brenda frowned at the jogger who cut across in front of her. Why did young women insist on flaunting themselves so much in all this skimpy sportsgear? It was embarrassing. She glanced in the rearview mirror and was pleased to see the children engrossed in their game.

Moggy crouched in the shadow of a bush and watched the familiar car speed off down the hill. A sudden movement caught her attention, and she fixed her sharp eyes on a small lizard that was crawling up the face of the fibre-stone fence. With a flick of her tail, Moggy pounced on the lizard and batted it off the wall, leaving a small scratch in the plaster. She knew these things didn't taste any good, but at least she could have a bit of fun. Her frightening experiences outside the fence had stirred something inside her — like the forgotten memories of an ancient hunter. It felt good to be the aggressor — for a change — and she was in no hurry to get back home.

GATES OF HEAVEN — BACKGROUND INFORMATION

Questioning demographics

Elsewhere in this report we discuss the need to dig deeper into our assumptions about demographic trends (see p. 72). This particular scenario arose from questioning assumptions about birth rates, because nobody completely understands what determines birth rates in modern societies. Also included in the mix is the potent combination of conservative values, dis-satisfaction with the current way of life, less tolerance and more prejudice in society, and an increased prevalence of gated communities.

The USA's last Census, conducted in 2000, revealed an interesting trend, namely a significant reversal of the decline in fertility. The population of the USA increased by 13.2% between 1990 and 2000, from 248.7 million to 281.4 million. This is the largest census-to-census increase in American history and the population appears to be rising faster than expected. Not surprisingly, the reasons behind the reversal of America's decline in fertility are unclear. Higher-than-average fertility among immigrants only explains part of it, because fertility has also risen among native-born whites and blacks. Nearly every country in the world has seen its fertility rate fall recently, and the general rule of thumb is "the richer the country, the greater the fall". America's population growth during the 1990s was five times the average percentage increase of other industrialised countries during the same period.

The effects of this demographic shift must not be underestimated. For example, American business practices are likely to become even more dominant, and, perhaps more interestingly, American family and culture ties are likely to multiply and strengthen with the main sources of its immigration — Latin America, East and South Asia⁵¹.

The Statistics New Zealand Projection Series 5 data⁵² assume that New Zealand women will have 1.85 children each on average in the long-term (below the 2.1 children required for the population to replace itself without migration). Births are projected to decrease from 58 000 in 2004 to 50 000 by 2051. This reflects the combined effect of assumed sub-replacement fertility and fewer women in the childbearing ages.

However, to be demographically viable in the long term, replacement-level fertility is a must for New Zealand. This scenario looks at one possible combination of factors that might achieve such a result.

A religious revival (of sorts)

Spirituality is becoming more profoundly important than ever before, but at the same time it is becoming much more self-defined. Even though many people are declaring themselves to be spiritual beings, established churches are struggling. In New Zealand, the number of people who indicated that they had no religious affiliation increased markedly between 1991 and 1996, rising by 33% to make up over a quarter of the population in 1996. Fewer people are identifying with the major Christian denominations, while more people are identifying with the major non-Christian religions. Pentecostals were the only major Christian group to experience significant growth⁵³.

⁵¹ *The Economist* (2002).

⁵² Statistics New Zealand 2005.

⁵³ Statistics New Zealand (2000).

People are looking beyond Western traditions to alternative spirituality and healing, and a number of commentators suggest that the Baby Boomers are embarking on a belated spiritual quest. Winifred Gallagher (2000) argues that the Great Boomer Awakening will further weaken institutional religion and be spawning more and more “spiritualities” which will compete against each other to satisfy the boomers’ demand for choice and self validation. Bernard Salt (2001) argues that both the spiritual eclecticism and the reform of existing religious institutions may be stages in a transition to something quite different. He believes the boomers are ripe for something they call “spirituality”, rather than religion.

People at the centre of organised religions are reacting to the morphing of traditional religious practices and denominations by becoming more fundamentalist. Christian fundamentalism is being reborn in America and as we know, the fundamentalist, Bible-believing, Pentecostal or charismatic end of Christianity’s spectrum is growing in New Zealand. Destiny Church is a case in point.

Hip to be square — rising conservatism

In keeping with the apparent shift to conservatism around the world, New Zealand politics are moving to the right, as evidenced by the Labour Government’s “third way”, which has seen its British architect, Tony Blair, increasingly aligned with American neo-conservatives led by President Bush. The swing to the right in the recent election is another example. National leader Don Brash has both invigorated the electorate and divided it: observers point to a growing gender gap, women turning increasingly towards Labour, men towards National and Act. The Labour-led Government’s more conservative choice of coalition partners is also noteworthy.

The shift towards conservatism is particularly significant in the younger population. Colmar Brunton researcher Gabrielle Zerafa foresees an upcoming period of conformity, which she attributes to a desire for stability⁵⁴. “It’s a moral conservatism, coming through women but only slightly more than men, and especially in sexual attitudes, which are a strong indicator — celibacy, with younger people choosing to wait for their partner and avoiding sex before marriage, and a reaction against promiscuity.” In Britain, a group of “New Puritans” — young Catholics who are eagerly practising what they preach — are evidence of a new sexual counter-revolution. In America, chastity is the fastest-growing youth movement⁵⁵.

In the United States, the Agenda 2004 poll revealed that younger people were more likely to identify as conservative (including 51% of 18–25 year-olds and 52% of those aged 26–40) than were Baby Boomers (about 40%) and elderly voters (46%)⁵⁶. A 2002 survey conducted by the University of California at Berkeley, hardly a noted bastion of right-wing bias, found that today’s teens are far more likely than adults to support prayer in school, federal aid to faith-based charities, and restrictions on abortion. In all, approximately 40 million Americans now identify themselves as Christian conservatives.

The last time New Zealand saw such a strong conservative shift was in the 1950s, a period of morality and conformity, when a National government broke the unions and women stayed home with the children. We may face more of the same. Young women want to stay home with the kids, and the young view of a collective encompasses no more than their friends. Zerafa believes that people are becoming conservative in their

⁵⁴ Ansley (2004b).

⁵⁵ *Sydney Morning Herald* (2002).

⁵⁶ Hood (2004).

moral and social behaviour, which is feeding into political attitudes: "We're seeing a shift away from liberalism, from political correctness as aligned with liberals...there has been a big shift in attitudes towards conservatism, and it will be manifested through the political system." The most conservative age group is the 16–24s⁵⁷.

Gated communities

Although gated communities have existed since medieval times, they are currently experiencing a revival. The trend began in the United States, where more than six million households are now behind walls and gates or guards. Gated communities have since spread to many other countries, particularly South Africa. Most developed nations are caught up in the trend: Britain has at least 1000 of them, mostly small. The incidence of “gatedness” is rising in New Zealand cities⁵⁸ — enclaves surrounded by walls, accessible only through locked gates, rules governing the design of homes and the behaviour of owners who are generally older, childless or professional people intent on surrounding themselves with like-minded citizens⁵⁹. The exact number is uncertain.

According to Jill Grant (2003): “Gated enclaves represent the hope of security; they appeal to consumers searching for a sense of community and identity; they offer an important niche marketing strategy for developers in a competitive environment; they keep out the unwelcome; they often come associated with attractive amenities; they increase property values... The implications of the growth of this phenomenon are, however, deeply troubling. Gated communities increase housing costs; they enhance class and ethnic segregation; they privatize elements of the public realm (like streets, parks, and even schools); they may promote rather than reduce the fear of crime. Are gated communities appropriate in cities seeking to enhance integration and livability? Gating is clearly profitable, but can it be “smart” or “sustainable”?”.

Blakely (2001) says that professional planners have to take an ethical stand on this issue: silence, he argues, implies acceptance of a built realm in which a growing portion of the most affluent among us wall themselves off. Gated communities raise significant questions related to affordability, segregation, and connectivity. They present physical barriers within the community, limiting access to formerly open landscapes and to public space in coastal areas. As we try to plan sustainable communities with a place for everyone, we might ask whether gated areas represent an innocuous form of protected suburban development or a worrisome precedent for a divided urban realm.

A potent combination

When speaking of gated communities, New Zealand researchers David Thorns⁶⁰, Jenny Dixon⁶¹ and Ann Dupuis⁶² refer to the "new urbanism", with its nostalgic, romantic sense of past community. From this potent combination of nostalgia, conservatism, and Christian fundamentalist values emerged our ***Gates of Heaven*** story. It is not inconceivable that New Zealand's birth rate could increase significantly from the current level of 2.01 births per woman (which is already high relative to other OECD countries). Our story is focused on rising birth rates amongst the middle classes. However, impacts on the less well off must also be considered — life outside the gates is only referred to obliquely in order to emphasise the exclusive nature of this type of subdivision. Conservatism tends to lead to a more uneven playground, and gated communities are said to increase socio-economic discrepancies.

⁵⁷ Ansley (2004b).

⁵⁸ Dixon and Dupuis (2003).

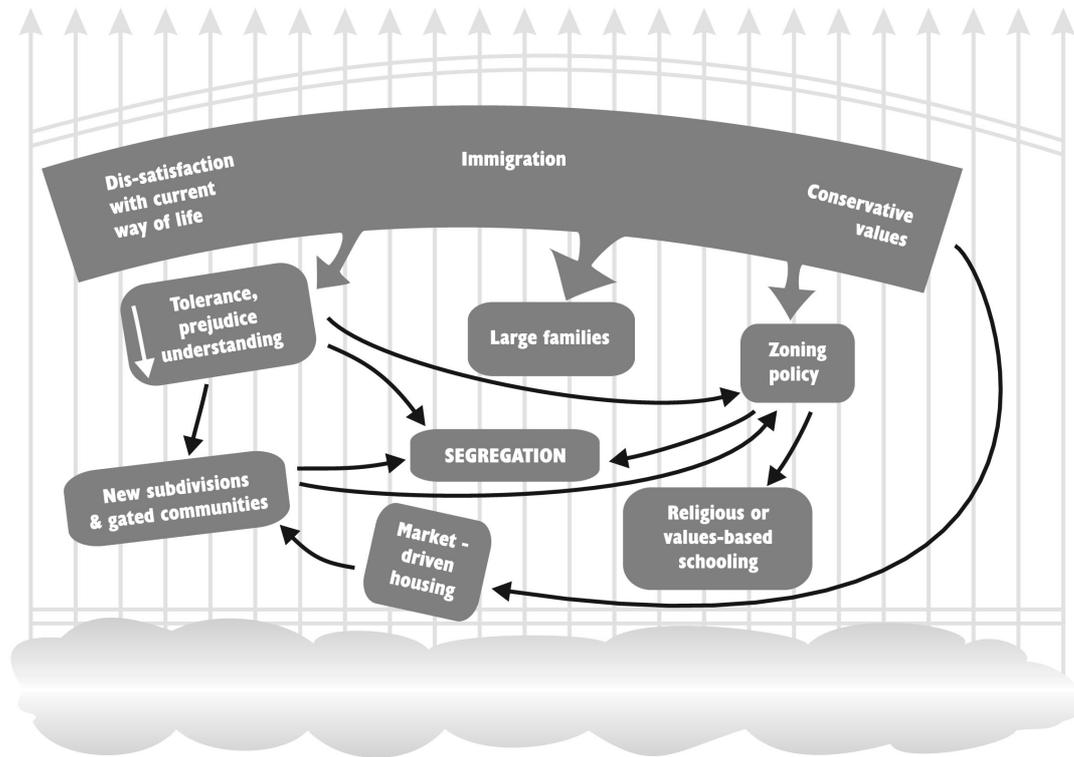
⁵⁹ Ansley (2004a).

⁶⁰ Professor of Sociology, University of Canterbury.

⁶¹ Professor of Planning, University of Auckland.

⁶² School of Social and Cultural Studies, Massey University, Albany.

The Gates of Heaven



The evolution of Gates of Heaven

Tauranga has continued to grow and prosper over the years. Unfortunately, the uncontrolled urban expansion has created an increasing gap between the haves and the have-nots. Meanwhile, the rise of conservatism has led to larger families and a greater desire for personal security.

The growth of faith-based communities enables privileged families to live within gated neighbourhoods, offering a safe environment for children, and good access to amenities. This trend has also fuelled growth in church-based schooling.

Protected from the evils of the outside world, these close-knit communities are bastions of old-fashioned values. Beyond the fence, it is business-as-usual, with social problems exacerbated by increased socio-economic exclusion. As the cat discovers, life outside the gate is fraught with increased dangers, but freedom has its rewards. The people she encounters are not all bad, and she feels the call of the wild.

Brenda sees things differently from her sheltered perspective. She has a beautiful home in a secure neighbourhood, and a comfortable routine that honours her spiritual values. The family is able to enjoy all the benefits of a rich and meaningful life, without being trouble by unpleasant influences. Have Brenda and Jack found the key to a perfect world?

ACRONYMS

APEC — Asia-Pacific Economic Co-operation.

BERL — Business and Economic Research Limited.

BIA — Building Industry Authority.

CBD — Central Business District.

CHRANZ — Centre for Housing Research Aotearoa New Zealand.

DBH — Department of Building and Housing.

HNZC — Housing New Zealand Corporation.

MfE — Ministry for the Environment.

MoRST — Ministry of Research, Science and Technology.

MSD — Ministry of Social Development.

NZBC — New Zealand Building Code.

NZIER — The New Zealand Institute of Economic Research.

NZiRA — New Zealand Institute for Research on Ageing.

OECD — Organisation for Economic Co-operation and Development.

REINZ — Real Estate Institute of New Zealand.

REIT — Real Estate Investment Trust.

WBCSD — World Business Council for Sustainable Development.

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APPENDIX 1

Source documentation for step 2 of research methodology

The documents listed below represent the base data for Step 2, which highlights the key forces in both the local environment (i.e. micro-economic dynamics) and the macro environment through a STEEP analysis.

- STEEP analysis documents from Forest Research's 2001 Future Insight Process.
- Room for a View: Three Visions of the Future Urban Environment in Australasia (Forest Research Bulletin No. 224, 2001).
- The New Zealand Housing Strategy.
- Scoping Bi-Directional Impacts of Economic, Social and Environmental Changes and the New Zealand Housing Market (July 2004) MOTU.
- Accommodation Options for Older People in Aotearoa/New Zealand (August 2004) BERL.
- Housing Costs and Affordability in New Zealand (July 2004) DTZ New Zealand.
- The Impact of Financial Circumstances on Tenure Choices in New Zealand (July 2004) BERL.
- Changes in Structure of the New Zealand Housing Market (June 2004) DTZ New Zealand.
- Housing stream papers from the Social Policy, Research and Evaluation Conference, 25–26 November 2004.
- Melbourne forward growth strategy (due to be completed 2005).
www.melbourne2030.vic.gov.au.
- Long-Term Housing Futures for Australia: Using 'Foresight' to Explore Alternative Visions and Choices.
- Outputs from other strategic futures exercises (worldwide).
- Demographics: Key Trends in New Zealand, Australia, and Around the World (unpublished report produced by the Forest Research Built Environment team).
- New Zealand city council growth strategies.
- Regional Development Strategies (selected Regional Authorities or Territorial Local Authorities (TLAs) — Auckland Regional Growth Strategy, TLA Long-Term Community Council Plans).
- BRANZ Household Energy End-Use Project (HEEP) reports, Years 6,7 & 8.
- BRANZ House Condition Survey reports, 1994, 1998, 2005
- "Using Non-Energy Benefits (NEBs) to Market Zero and Low Energy Homes in New Zealand", 2004 ACEEE Summer Study, Monterey.
- Wellington School of Medicine Health and Housing Group "*Retrofitting houses with insulation to reduce health inequalities: a community-based randomised trial*". Second WHO International Housing and Health Symposium, 2004, Vilnius , Lithuania.
- BRANZ economic indicators for the building industry.
- Urban Design Protocol.
- Population and sustainable development report (June 2003; MED, MSD, DoL, Statistics NZ).
- New Zealand Growth and Innovation Framework.
- Papers from Urbanism Down Under: Creative Urban Futures 18–20 August 2005, Wellington.

APPENDIX 2

Workshop and work-in-progress seminar participants

Workshop

The workshop was attended by representatives from:

Housing New Zealand Corporation
Department of Building and Housing
Building and Construction Industry Training Organisation (BCITO)
Ministry for the Environment
Auckland University of Technology
The New Zealand Institute for Research on Ageing
Statistics New Zealand
Motu
The Real Estate Institute of New Zealand
Invercargill City Council

Facilitators: Susan Bates (Scion) and Chris Kane (BRANZ).

Work-in-progress seminar

The work-in-progress seminar was attended by representatives from:

Housing New Zealand Corporation
Department of Building and Housing
Treasury
Reserve Bank
CHRANZ

Presenters: Susan Bates (Scion), Chris Kane (BRANZ) and Arthur Grimes (Motu).

APPENDIX 3

Interview questions

- 1. The vital issues.** What do you see as being the critical issues for the future for the future of housing in New Zealand?
Prompts: their area of expertise; socially/economically/politically; their industry; their workplace; if you could ask somebody who was able to foretell the future, what **three questions** would you ask them (i.e., what are their priorities?).
- 2. Favourable outcome.** What do you see as being a desirable outcome in relation to these issues?
- 3. Unfavourable outcome.** On the other hand, what would you worry about? What would be an undesirable outcome?.
- 4. Lessons from the past.** Can you pinpoint any events, either good or bad, that have led to the current situation?
- 5. Important decisions ahead.** What, in your view, are the actions that need to be carried out soon in order to achieve a favourable outcome? [*Where would help from a scenario project be particularly welcome?*]
- 6. What will need to change.** What things, both inside and outside your organisation/industry, are limiting what you can achieve?
- 7. Epitaph question — if you were responsible...** If all the constraints were removed and you were in total control, what would you do? How would you want to leave your mark?

APPENDIX 4

Determination of key issues for the future of housing in New Zealand

Views of interviewees and workshop participants

Opinions as to the critical issues facing the future of housing in New Zealand were sought from a wide range of experts. The following is a summary of their views (in no particular order).

- A number of respondents did not wish to see housing become a political football, and identified the need to transcend party politics. Some mentioned that a type of all-party accord might be necessary, whilst at the same time expressing doubt about the feasibility of such an outcome given that the superannuation accord was unsuccessful. The need for strong leadership and a champion for the cause was also identified.
- Land management issues, including the fit between the built environment and New Zealand's physical environment and using the land for the purposes to which it is best suited, were a popular topic. Resource sustainability was an associated topic, as was the integration of housing with urban form. Some participants questioned the need for increasing urban density when changing policy and attitudes would allow more of New Zealand's plentiful land to be made available.
- Fitness-for-purpose, with particular reference to the increasing numbers of elderly, people with disability, blended families and non-mainstream approaches to community living among different ethnic groups, was mentioned many times.
- Segregation was often viewed in a negative context. There were comments about socio-economic segregation and the widening chasm between rich and poor — gated communities and private schools were given as examples — and the resultant lack of understanding of other social groups. One person, concerned about the prospect of people with a disability being forced into ghettos, expressed a desire to move away from the situation where certain areas are associated with a particular socio-economic group. Another person talked about how immigrants (mainly African and Asian) are poorly integrated into Auckland society, to the extent that certain areas are now associated with particular ethnic groups. There was a common perception that too many issues are approached from a Pakeha, middle class perspective.
- Quality was perceived as important by many of the respondents, and several people expressed a desire to make a lasting contribution to improved quality standards. As the New Zealand housing stock continues to age, consumers will continue to expect higher levels of quality from it, in terms of warmth, air quality, sound control, whole-of-life cost efficiencies, etc. There are significant implications for the construction industry.
- An associated topic was accountability — not just for the quality of the buildings themselves, but also for the production of a regulatory structure to support it at every stage in the process, so that the end-user is protected.
- Another issue associated with quality was retrofitting existing housing stock to make it healthier and more resource efficient.
- Stability was another recurring theme, particularly in relation to health and education outcomes.
- Future developments in regard to the rate of home ownership were of almost universal interest — for example: What are the downstream effects of a delayed first home purchase on the elderly? How do we reconcile the increasing gap between incomes and the cost of housing with our home ownership culture?

- Finance and mortgage instruments seemed to be of particular interest to Māori and the elderly. The mainstream approach to encouraging home ownership has a limited impact on Māori because their incomes tend to be lower and their land is owned communally, therefore some Māori-specific options may have to be introduced. Multi-family loans could be an option. One person expressed concern about the long-term effects of the growing market in equity release products for the elderly.
- Education was mentioned in a variety of contexts. For example, it was suggested that schools should offer more financial education to children, that research on the correlation between education attainment and housing outcomes is required, and that tertiary (i.e., university) education is being promoted at the expense of apprenticeship schemes.
- Demographics, in particular population growth, the age structure of the population, urbanisation, and immigration, was a common theme. Associated topics were diversity and changing family formations.
- Housing was seen as a critical influence on the wellbeing of older people, although it must not be seen in isolation from other elements. Two significant challenges were identified: (1) maintain and upgrade the living conditions of older people in mainstream housing so that “ageing in place” remains viable and becomes increasingly so and (2) develop a range of alternative housing options to meet special needs, whether these be care needs, social or cultural preferences.
- The need for more research was identified by many respondents, in order to provide a strong information base for policy decisions.
- The need for more social (or public sector) housing was also identified a number of times.
- Every person interviewed made some reference to the need for regulation and/or intervention in the housing arena. Most people seemed to advocate more intervention, but the Resource Management Act and the Building Act were seen as excessive by at least one of the people consulted.

Synthesis

The respondents appeared to have three main areas of interest:

- finance and economics;
- process and quality;
- social outcomes.

Important themes were access to housing (expressed as concerns over land availability, affordability, and social stratification), political influence (expressed as an inability to squarely target one agency or sector to improve the access situation, and unease over macro-economic trends) and socio-demographic changes (expressed as an expectation that communities would begin to fracture into ethnic factions, that migration was perceived as the most important influence on housing in the future, and concerns over the level of education available to all parts of society). The final trend apparent was that of concern for the quality or nature of the houses themselves, rather than the role they had to play in society — this was expressed as doubt over the ability of houses to retain their value as maintenance was deferred, the nature of the house as an asset on which the economy is built, and questioning of the (configuration) flexibility of houses to meet future needs.

Distillation of key themes

An overview of the findings from the STEEP analysis and a summary of the interview analysis were presented at the workshop. The participants — a multidisciplinary team of experts — were asked to comment on the scope and validity of the material presented and to identify any gaps. The process of sorting the issues into pre-determined elements and critical uncertainties was started at the workshop and completed by the scenario development team at a later stage. Because the various streams of information were so closely inter-related, it is not possible to determine which of the issues arose from the STEEP analysis and which of them arose from information provided by interviewees and workshop participants.

Pre-determined elements

Pre-determined elements are driving forces that are firmly established along a particular trajectory and are completely outside our control. **They are the same in all scenarios.** Schwartz (1991) suggests the following guidelines for identifying pre-determined elements:

- Slow-changing phenomena — population growth⁶³, development of resources, human nature (adolescent exuberance and rebellion, 5000 years of conflict in the Middle East).
- Constrained situations — for example, the Japanese must maintain a positive trade balance because they have 120 million people on four islands who do not possess the resources to feed, clothe, warm or transport themselves.
- In the pipeline — teenagers, pensioners.
- Inevitable collisions — public demand for better social services *versus* a refusal to pay higher taxes.

A full description of the pre-determined elements identified in this study features on pages 13-19.

Critical uncertainties

Many things are uncertain. The critical uncertainties are those that are central to the focal issue of the exercise (in this case, the future of housing in New Zealand) and are impossible to predict. The focus must therefore be on those elements that are most important and most uncertain. A large number of uncertainties were identified with the help of the workshop participants. These divergent uncertainties were clustered

⁶³ Schwartz, along with many other writers of strategic futures and scenario planning texts, suggests that demographic trends can be treated as certainties. In reality, such confidence is unwarranted — we should dig deeper into our assumptions about demographic trends.

Predicting population trends is fraught with difficulty, largely because nobody completely understands what determines birth rates in modern societies (anywhere in the world). This makes demographics very difficult to predict and even more difficult to control. Demographers have become increasingly concerned about the accuracy of their forecasts, in part because the rapid fall in fertility in Western countries in the 1970s came as a surprise. Forecasts made in those years predicted birth rates that were up to 80% too high. The rapid reduction in mortality after the Second World War was also not foreseen. Demographers have coped with this uncertainty by using probabilistic population forecasts. Some of the many demographic trajectories are more probable than others, so demographic forecasts should contain two elements: a range of possible outcomes, and a probability attached to that range. However, these probability statements also need to be approached with caution as they vary according to the statistical method used and its assumptions. And irrespective of the method used, probabilistic forecasts of the youngest and oldest age groups still carry a high degree of uncertainty, because fertility and mortality are hard to predict.

Until recently, conventional wisdom dictated that the world's average fertility rate would continue its gradual decline and eventually stabilise at 2.1 children per woman. As this is the replacement rate, world population would plateau once the rate was achieved. This line of reasoning has subsequently been shown as flawed on two counts: (1) the fertility level in most industrialised countries has already fallen below 2.1 children per woman; (2) the number of children per woman has been declining more rapidly than anticipated in countries whose fertility rate currently stands somewhere between 2.1 and 5.

and mapped until some interesting patterns began to emerge. Eventually, they were distilled into seven key areas of uncertainty:

- aspirations and attitudes;
- resource availability and price;
- regional economics, communities;
- demographics;
- institutional structure, industry capability, regulatory response;
- durability, economic lifetime, maintenance;
- transport and infrastructure.

By a process of cause-and-effect modelling, it was possible to further refine this list into four groupings of uncertainties that were considered to be more important and more uncertain than any others:

- regional economics and communities;
- aspirations and attitudes, durability, economic lifetime, maintenance;
- resource availability and price, transport and infrastructure;
- demographics, communities, attitudes.

These groupings formed the bases of ***Sunrise Sunset***, ***Change of Heart***, the ***Vertical Village*** and ***Gates of Heaven***. In regard to institutional structure, industry capability, and regulatory response, it was considered that change of some sort is inevitable although the nature of it is uncertain. This element features in a different guise in every scenario.

APPENDIX 5

Table 3 — Summary of main direct impacts from climate change on buildings.

<p>Summer overheating leading to increased discomfort and heat stress for home occupants, as well as secondary factors stemming from this such as increased energy consumption due to air conditioner use.</p> <p><i>Fact: the average predicted temperature change for NZ is +0.3°C to +0.9 °C (by 2030) and +0.6 °C to +2.7 °C (by 2070)</i></p>
<p>Flooding of poorly sited buildings (in flood-prone zones) will become more common. Flooding leads to damage of building contents, possible contamination from sewage, and structural collapse. Insurance may not be available for some buildings in flood-prone areas.</p> <p><i>Fact: by 2030, the increased chances of flooding may be as high as twofold; by 2070 the probability of flooding is predicted to be four times that currently estimated</i></p>
<p>Increased rates of costal erosion, due to sea-level rises and storm surges, can have catastrophic consequences for buildings in vulnerable locations</p> <p><i>Fact: projected sea-level rises for New Zealand are 4 cm–24 cm (by 2030) and 10 cm–60 cm (by 2070)</i></p>
<p>Subsidence is expected to increase, due to increased temperatures, lower summer rainfall, increased evapo-transpiration and changes in water table levels.</p> <p><i>Fact: seasonal changes in the pattern of soil wetting/ drying means a re-evaluation of ground subsidence risk, especially for building foundations on expansive clay soils.</i></p>
<p>Increased driving rain and severe winds will buffet building facades and internal structures and lead to more rain penetration around openings.</p> <p><i>Fact: It is not certain (despite evidence in recent memory) that the incidence of storms and tropical cyclones/ typhoons/ hurricanes will increase with climate change. The best estimates suggest that there <u>may</u> be a 10–20% increase in severe storm activity.</i></p>
<p>More intense rainfall events may lead to drainage systems (including roof drainage, sewer systems, carriageway drainage, etc.) being unable to cope.</p> <p><i>Fact: by 2030, heavy rainfall events are predicted to increase by up to twofold; by 2070 heavy rainfall events are predicted to be four times as likely</i></p>
<p>Climate change is expected to reduce summer rainfall, so that pressures on urban water resources are likely to increase.</p> <p><i>Fact: the projected intensification of westerly winds across New Zealand is expected to result in rainfall increases in western regions and decreases for Gisborne, Hawkes Bay, Wairarapa, Marlborough and Canterbury regions</i></p>

Table 4 — Summary of main indirect impacts of climate change.

<p>Changes to buildings standards, codes and regulations which act positively to protect the industry from the worst potential primary impacts of climate change. <i>Fact: the Building Act (1991) has been repealed; the new Building Act (2004) signals significant changes to the ways in which buildings are designed and constructed.</i></p>
<p>Alterations to the fabric of soft systems in the built environment — social, behavioural and institutional. <i>Fact: systems of education and regulation, and the structures of contractual and professional relationships are expected to be durable and long lasting.</i></p>
<p>Pressure brought upon “weather event” insurance schemes and disaster relief. <i>Fact: insurance firms are already denying coverage or significantly increasing premiums for areas prone to natural disasters.</i></p>
<p>Increasing salination of water supplies due to non-sustainable water abstraction and aquifer depletion. <i>Fact: saltwater intrusion is expected to be greatest in alluvial plains subject to drought (on the eastern coasts) where there will be increasing demand on aquifers for urban or industrial water supply, or for irrigation.</i></p>
<p>The effect of post-Kyoto policies or strategies to mitigate future climate change. <i>Fact: The New Zealand Government has ratified the Kyoto Protocol and has in place a policy package (DMPC 2002) which deals with climate change mitigation and adaptation.</i></p>
<p>Migration of undesirable flora and fauna into regions where they have not already been established, including species which may threaten building infrastructure (reducing the lifespan of buildings) or precursor industries (i.e., forestry). <i>Fact: species such as termites, many of which thrive in warmer climates, have already been detected in southern parts of England where they have never previously been found. Their impact is as yet uncertain. In New Zealand, Scion is undertaking modelling work to examine how the behaviour of various species will alter under climate change.</i></p>



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