

AGEING POPULATION



It's costly to retrofit a home to suit the needs of ageing occupants. Instead, homes that are designed upfront to cater for lifetime needs make sound economic sense. Our population is ageing, so should lifetime design be included in all new houses?

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DESIGNED FOR ALL AGES

Homes designed to meet the lifetime needs of occupants, needn't take up more space. In fact, all age groups, especially children and the elderly, stand to benefit from a house that is carefully planned.

By Kay Saville-Smith, Director, CRESA

One of the most interesting aspects of our ageing society is easily forgotten – children and older people have many of the same housing performance and design needs as each other, albeit for different reasons. For instance, in terms of ambient air temperatures, both children and older people are physiologically less vulnerable when average temperatures are above the average 18°C often referred to as the World Health Organisation standard.

Both are also more vulnerable to accidents in the home and around the section. The

window that pushes out and obstructs outdoor paths presents real dangers to both. Children tend to be unaware of such hazards when running around outside, and older people, whose eyesight may be compromised, may find themselves walking into an open window.

Similarly, both groups are vulnerable to the poor separation of parking, driveways and domestic areas. In this regard, children are most vulnerable because of their size. About four children a year are killed on driveways in New Zealand, while, in Auckland alone, about 12 children a year are admitted to Starship

Hospital because they were struck or run over on a driveway. Both children and older people are vulnerable to injury from steps and stairs and to the dangers of burns from poorly controlled hot water or burns from badly placed appliances.

Everyone's needs can be met

This means that building homes in an ageing society is not only about building homes for old people. It means designing well for all. It is not simply thinking about a niche market of 'old people's' houses to which builders and developers apply design criteria such as those in the Lifemark™. Applying those sorts of standards is a benefit for all and will make homes work better, be more attractive and have more use and value over the long term.

Dwellings that last – not simply in terms of materials but in terms of use – are critical to a sustainable infrastructure.

Comparative costs

One of the anxieties around designing homes that are accessible and safe using the standards referred to under a variety of names – universal design, accessible design or lifetime design – is the fear that homes will be more costly and inevitably bigger than dwellings that do not employ those standards. Overseas evidence shows that costs are generally comparative with only marginal increases. This is often associated with a tendency to increase the size of the dwelling.

But is this increase in size necessary? The experience of the Marlborough Sustainable Housing Trust, currently developing affordable housing for people in their shared-ownership programme, suggests not. Increases in dwelling size are more likely if existing non-accessible designs are used and attempts are made to adapt existing layouts to make them accessible.

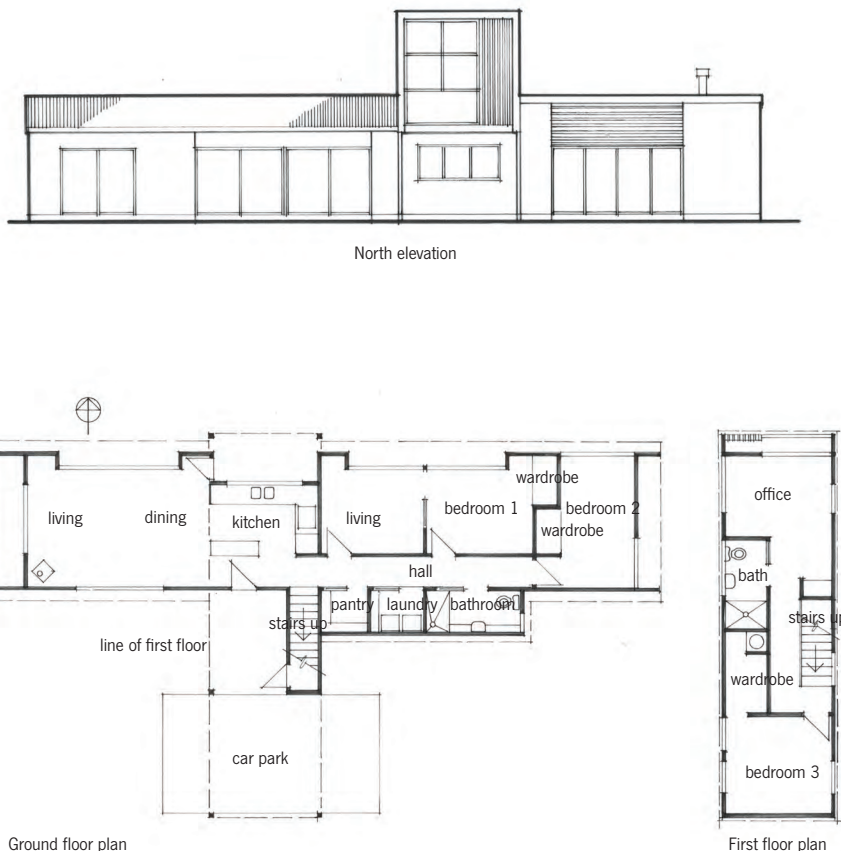


Figure 1: Two-storey house, designed by Kyle Davey and commissioned by Marlborough Sustainable Housing Trust, working with Ben Grady of Discovery Homes and Bev Doole.

Designing up from first principles, designing to the site and to lifetime design means that size can reflect the tastes of the occupants rather than simply be an inevitable outcome of accessibility and safety considerations.

Example 1: Flexible for all ages

Take, for instance, a Marlborough Sustainable Housing Trust dwelling (see Figure 1). Currently in the final design stages, it will meet the needs of three generations, including someone working from home. In less than 136 m², the house contains two downstairs bedrooms and a private sitting area for an older person wanting to maintain a space to entertain friends without having to go into the traditional 'granny flat'. There is a bedroom adjacent for a carer or another family member.

While there is no ensuite, an accessible bathroom is very close. The kitchen has a turning circle, and the ground floor has level access throughout. There is also level access onto the patio and level access at the main entrance. This area is cleverly covered by the second storey, providing shelter for people arriving by car. Upstairs, there is another bedroom, bathroom and work area with provision for a platform lift, should one be required in future.

The house is north facing, designed to let in the sun in winter and keep it out in summer, with a wood burner, solar hot water heating and a water tank for the gardening. The outdoor living areas are separated from the car circulation areas.

Example 2: Small and perfectly formed

Another example is a house designed for an 80-year-old seeking a new start after the Christchurch earthquakes (see Figure 2).

Designed from scratch to meet the Lifemark™, it has two bedrooms and a separate area with a

hobbies room and laundry under a single roof. It is north facing, with virtually no south facing windows, and a level entrance from the carport through to a covered breezeway that can be locked off entirely. The use of fencing and the breezeway make the domestic area inside and out very secure.

An accessible bathroom and kitchen take up the southwest corner of the main building, and there are no anxieties with hallways and corridors.

A roomy 2-bedroomer, which could cater for an additional bedroom in place of the hobbies

room, the house is still only 121 m², including the patio areas.

This is about space because of taste, not additional space because of fiddling around with adjusting hallways and corridors and pushing out existing kitchens to meet turning circles.

It all starts with the design

Designs like these have emerged because they have taken ease, accessibility, comfort and the desire to age gracefully at home seriously at the design stage. 🟡

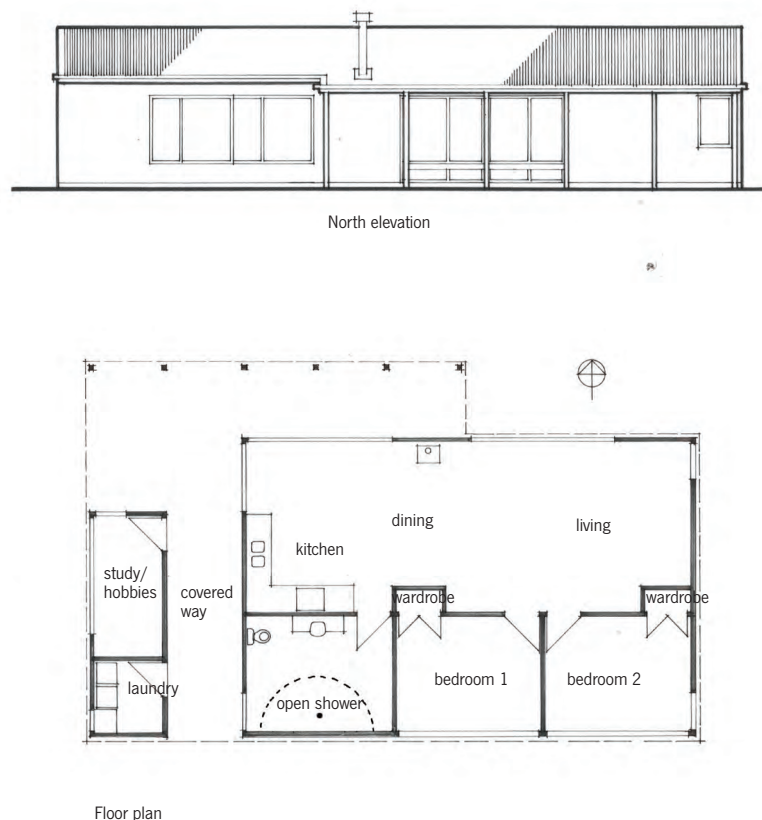


Figure 2: One-storey property designed by Kyle Davey with flexible use options.

HOME CARE TOOLS SUPPORT AGEING IN PLACE

BRANZ has developed tools to help older people keep on top of home maintenance issues so their homes are safe, comfortable, enjoyable and affordable to live in.

By Roman Jacques, BRANZ Building Environment Scientist

A multi-year research programme – *Ageing in place: Empowering older people to repair and maintain safe and comfortable houses in their communities* – is being spearheaded by CRESA, a Wellington-based social research and evaluation organisation. The programme aims to maximise New Zealanders' ability to age well in their own homes and reduce the isolation associated with poor house condition and performance.

The programme builds on research such as the *National repairs and maintenance survey* (2004), BRANZ's *House condition survey* (2000 and 2005) and reports such as *Older people's house performance and their repair and maintenance practices* (2008). Additional useful information was gathered from interviews with older people and service providers.

Reasons for poor maintenance explored

These surveys and interviews found:

- older people tend to overstate the positive condition of their dwellings and do not connect dwelling performance with dwelling condition
- repairs and maintenance are often put off because it feels too hard or people are fearful that it will be unaffordable
- most homeowners spend little, or nothing, on maintenance and repairs
- older people's dwellings are likely to be poorly insulated compared to the dwellings of younger people
- many older people find it difficult to heat their homes adequately.

Case studies conducted in Marlborough, Auckland and the Bay of Plenty as part of the

ageing in place research programme identified interviewees' main repair and maintenance problems as:

- difficulties in getting tradespeople to do small jobs, because it was not worth their while
- poor quality workmanship
- trusting workers, with some feeling vulnerable about unscrupulous providers targeting older people
- difficulties in getting reliable information and advice.

Tools provide practical guidance

In response, a suite of tools to help older people stay in their own homes longer by keeping on top of house maintenance and repairs is being developed. This includes checklist-style assessment tools to help:

- older people identify work that needs to be done around the home (checking both inside and outside) and who the best person is to do it
- the tradespeople who carry out the majority of the repairs and maintenance work.

The overarching aim of the tools is to help keep older people's homes safe, comfortable, enjoyable and affordable to live in. Written in plain language, they provide an area-by-area checklist of issues that may need addressing in terms of safety, health and comfort aspects.

Diagnostics are provided for issues that are fairly straightforward. For more detailed repair and maintenance requirements, BRANZ's *Maintaining your home* is suggested as a reference. The urgency of a particular job – in terms of safety, health and comfort aspects – is indicated, so that prioritising can be undertaken. Solutions targeted for the particular audience (homeowner or service provider) are

also provided. The assessment tools can be completed in 1 day or over several days.

Prototype revised after feedback

Prototype versions of the tools were workshopped in Marlborough and Kawerau in July and August 2011 to a mixed audience including householders, Grey Power, Age Concern, ACC, health boards, service clubs (such as RSA and Rotary), church groups and support service providers.

The assessment tools were favourably met, and it was felt that they would be useful in overcoming feelings of anxiety about common home maintenance and repairs. Suggestions made during the workshops have resulted in a revised version, which was tested in over 200 homes until the end of 2011. This will result in downloadable copies of the assessment tools.

Tool developed for housing providers

An additional tool for housing providers and housing service providers has been developed with the participation of Habitat for Humanity. This 'Repairs and maintenance assessment and solutions tool' gives a comprehensive checklist for an assessor. An electronic spreadsheet assists with decision-making by helping the housing provider prioritise tasks according to three variables:

- Costs (of the repair).
- Importance (in terms of safety, health and comfort).
- Specialist (who can carry out the repair).

This research was made possible by the Public Good Science Fund. For more information, visit www.goodhomes.co.nz.



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HOMES FIT FOR A LIFETIME

Retrofitting a house with mobility features is expensive, but including these upfront in new houses costs considerably less. There's a case for lifetime design, which would benefit not only the elderly but most people.

By Ian Page, BRANZ Manager Economics

The New Zealand population is ageing, and the question is often asked, 'Does the housing stock need to change to accommodate these people?'

Older people need a variety of features to facilitate easy access and mobility around the house. Low maintenance and cost-efficient heating are also important and many elderly people purchase retirement homes with these features in mind.

Mobility aspects of housing, commonly called lifetime design (LTD) or universal design, benefit not just older people. The names reflect the usefulness of these features to all age groups, including parents with young children, large-bodied people, the disabled and older people.

Design includes space and access

The types of facilities provided in lifetime design include:

- adequate space around the car parking area and easy access to the front door
- wide doors, both external and internal

- adequate passageway widths
- sufficient space in the kitchen, bedrooms and bathroom for wheelchair movement
- ground floor access to the bathroom and at least one bedroom
- strengthened walls in the bathroom for future grab rails and other fixtures
- entry level shower
- plugs and switches at appropriate wall heights.

New build versus retrofit

There are several specifications available for these user-friendly houses. The local one is the Lifemark™ specification from the Lifetime Design organisation. The cost of incorporating these features is usually quite low, typically about \$500 for internal features and another \$1,100 externally, depending on the ground topography. That is only about 0.4% of the new house-land package. Lifetime design houses do not look institutionalised and, when properly designed, have a feeling of spaciousness.

The economics is somewhat different if a house is being retrofitted with these features – the cost typically jumps to \$16,000 per house for internal changes and another \$6,000 if an external feature such as an access ramp to the front door is required.

The retrofit cost will vary considerably depending on the layout of the house and whether the occupants need the full range of features. However, clearly it is considerably cheaper to install lifetime design in new houses than to retrofit the same houses later.

Case to make it mandatory

A strong case can be made that all new housing should have lifetime design features included as standard. BRANZ Study Report 263 *Housing for the aged – the value case* found there are considerable savings if lifetime design is installed in all new housing. As the number of these houses rises and older people are encouraged to move to them, the need for costly retrofits declines.

Figure 1 shows projected households by type. The projections of disabled are from the Ministry of Social Development and all households from Statistics NZ. If all new housing has lifetime design after 2012, Figure 1 shows how the stock of these houses builds up.

Most post-2012 housing is projected to be occupied by ordinary households, with a small proportion by the disabled. The former will reap the benefits of the more spacious design inherent in lifetime design, even though many of the features are directed at the disabled. The last bar in the chart, for 2029, shows about 550,000 new and retrofitted lifetime design houses – still quite a small proportion of the total stock.

The sooner lifetime design is a common feature in new housing, the better.

For more information, *BRANZ Study Report 263 Housing for the aged – the value case* can be downloaded for free from www.branz.co.nz.

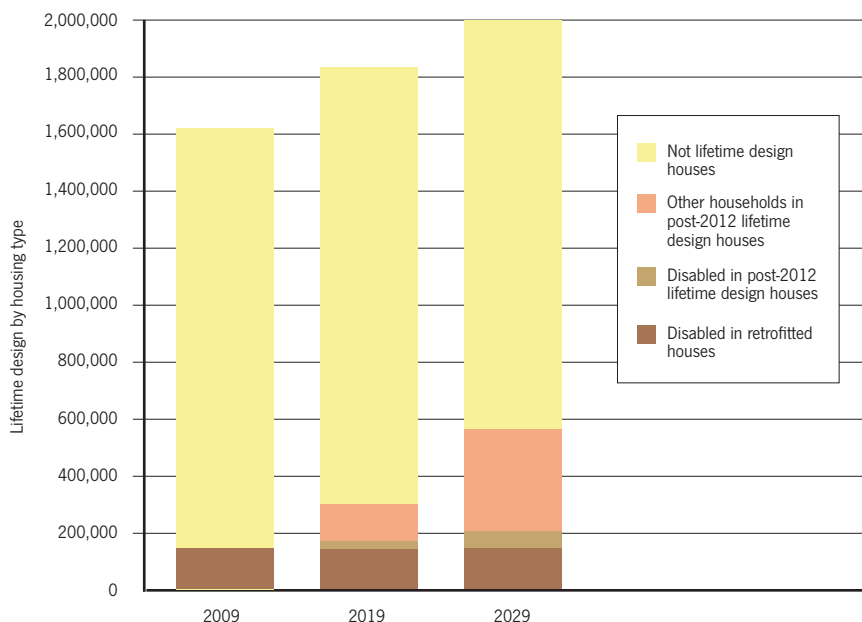


Figure 1: Projected levels of lifetime design housing stock over next 18 years. Assumes all new houses have lifetime design.

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LET'S LOOK LONG TERM

It makes sense that homes are designed for the lifespan of householders, continuing to meet their needs as they age. Using lifetime design principles, it's becoming easier for the elderly to stay in their homes.

By Andrew Olsen, General Manager, Lifetime Design

Soon, people aged 65 and over are going to outnumber children under the age of 5, a global trend that ushers in major challenges for all countries.

In New Zealand, life expectancy at birth will increase by about 6 years by 2061, and the 65+ age group is predicted to account for 27% of the population. Disability rates increase with age, and this means New Zealand will have proportionally many more people with sensory impairments and mobility issues.

Unfortunately, the design of most New Zealand houses does not yet take into account this dramatic shift in demographics.

Many live in unsuitable homes

Currently, around 45% of older people have a disability, and it is estimated that between 45–50% of disabled adults live in homes that are not modified for their needs.

The cost of modifying homes is significant, with a Ministry of Social Development report, *The economic effects of utilising Lifemark™ at a national level*, showing that ACC and the Ministry of Health spend more than \$33 million every year modifying houses so older and/or disabled people can stay in their own homes.

Don't forget the enormous emotional cost and trauma for those who are forced to leave their homes sooner than necessary due to not being able to afford modification costs.

Safety important for all

Even households that are not yet affected by age or disability can benefit from lifetime design principles as safety around the home becomes more of an issue. Slips, trips and falls make up the majority of all ACC home injury claims and, each year, cost around \$293 million in treatment and rehabilitation. In the supposedly safest place on earth, their homes, 250,000 people have accidents, 25,000 are hospitalised and 250 killed.

Caring for New Zealanders aged 65 and over who have been injured in falls costs ACC around \$60 million each year.

Boomers more demanding

The market is noticing an increasing trend towards older homeowners considering specific design features to accommodate them as they age – simply because there is nowhere else for them to go. In 2011, 74% of new homes were designed for clients over 50 years of age, with 85% of those designs including specific design features that will accommodate them as they age.

A key issue is that New Zealanders entering their golden years expect more than their parents and grandparents. The Baby Boomer generation is accustomed to living the life they want and will want to live independently in their own homes for as long as possible.

The house design is critical to enabling this – whether it's a family home or even a residential village. If the stairs are so steep that it's impossible to climb them carrying the laundry or the doors won't allow a walker or a wheelchair through, people are prevented from living independently in their own home.

Sadly, this is currently the case for the majority.

User checklist

A few simple questions can assess the accessibility of a living environment:

- How easy is it to use the shower and toilet? Is slipping a concern?
- Can light switches and power points be reached comfortably?
- Is there easy access to the main entrance or are there multiple stairs and steep paths?
- Are doors and hallways wide enough for comfortable movement round the house?
- Is it a challenge to cook in the kitchen? Or is it laid out to allow for easy movement and access to cupboards, benches, appliances and power points?

Lifemark™

With the new Lifemark™ seal of approval, it is now inexpensive to build homes with simple, common-sense lifetime design principles.



The kitchen is not a main thoroughfare and the dining area is close by. Appliances are easily accessible and positioned away from corners. Lever handles are on fixtures and fittings.



Space on the primary living level for a single bed with a minimum 800 mm clear space on one side and the foot and a clear path at least 800 mm wide from the door to the bed.



Dwellings have reinforced shower walls on the primary living level for the future installation of grab rails and a shower seat.



Doorways to all rooms on the primary living level have a minimum clear opening width of 810 mm. Internal corridors or passageways have a minimum clear width of 1,050 mm.

The building industry's equivalent to the Heart Foundation tick, the Lifemark™ is an independent seal of approval awarded to homes that have achieved quality design standards that make it easy and safe for people to live independently in their own home over a lifetime.

Retirement villages

The Lifemark™ is also of value to the retirement village sector, which must provide homes that take into account the wide variety of needs of not only prospective residents but also their friends and families.

For Summerset Retirement Villages, which recently completed its 200th Lifemark™ home, it has proved its value. Resident surveys have shown that the Lifemark™ was a key factor in decisions to choose Summerset over other retirement villages because homes with a level entry, widened doors and passageways, wet-area showers and easy-access toilets were available.

Changing house design

The Lifemark™ already has government support, and increasingly, the private sector is adopting it in the realisation that it is the solution to the future of housing New Zealand's ageing population.

Duncan Joiner, Chief Architect for the Department of Building and Housing, supports the incorporation of lifetime design principles in the design of houses to address the needs of our changing population.

Offering Lifemark™ homes gives builders the opportunity to stand out from the crowd in a competitive marketplace, and that's what one major developer in Christchurch is doing. Lifetime Design will partner with Christchurch-based design and build firm Maxim Projects Ltd, ensuring that hundreds of new dwellings in their Canterbury developments will consider the Lifemark™ design standards. They will become the first developers in New Zealand to adopt this design-led solution and pave the way for the future of home design for our country.

Ultimately, New Zealand's ageing population will not, and should not, adopt the attitude of our forebears to just accept things as they are and make do. The Lifemark™ is aimed at making lives easier by creating homes that are designed to be accessible for everyone, easy to adapt as our needs change over time and ultimately prevent accidents, save money and encourage independence.

To find out more about the Lifemark™, visit www.lifemark.co.nz. ■

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DETAIL IS IN THE DESIGN

Operator and developer of retirement villages, Summerset, finds that it's the small design decisions that can make a difference in supported living environments.

By Harriet Palmer, Communications Advisor, Summerset Group Holdings

Summerset opened its first retirement village in 1997 and its latest recently. In the 14 years that separate these two sites, the company has honed and then rehonored its design, and most recently brought it all in-house.

'In terms of design, we started out thinking like a residential developer,' says Summerset CEO Norah Barlow. 'Of course, we made some concessions for our customers – we've always had wide doorways – but our first villages look nothing like the ones you walk in to today.'

'The process involved in designing homes for older people is extraordinary – the things we are doing now wouldn't have entered my mind at the beginning.'

Clever thinking is employed

The company's move to bring design in-house reflects the special skills involved in designing retirement villages – they need to be completely inclusive.

The idea is that residents should be as independent as possible for as long as possible, and the impact clever design has on their lives cannot be underestimated.

Recent design innovations at Summerset retirement villages include:

- doorways that have no steps
- cupboards that are shallow and easy to reach

■ instructions where needed, including where to put the toaster.

'If a few features mean you can stay living in your own home for longer, then it is well worth it. People in homes in our villages have the benefit of living in a community with security and company while enjoying supported independence. It's incredibly important,' says Norah Barlow.

Lifemark™ seal assures customers

Summerset was the first retirement village developer and operator to enter into a partnership with Lifetime Design that administers the Lifemark™, an alliance that gives an independent seal of approval to design and is easy for consumers to understand.

Norah Barlow says that people don't often think about the effect design has on their daily life, and once it starts to really matter, it can be too late. 'There are people in the community spending hundreds of thousands on brand new homes only to discover they can't be lived in when circumstances change. It would be out of the question for our residents to find that an unexpected move to a walker meant they couldn't get in their front door.'

Making designs compliant is tricky

The design process can be difficult, and it can also be expensive to balance usability with

compliance. Rick Willoughby is Summerset's new lead designer. He has come from a property development background and says he was surprised at the level of thought required when designing retirement villages.

'They are in no way cookie cutter and are extremely different from your average residential development,' he says. 'Every access has to be completely level. There can be no steps anywhere. It sounds like it should be easy, but it's actually against the Building Code.'

The Code requires that there be a 150 mm set-down outside the door of every home, which means access cannot be level. Summerset design team has managed to resolve this situation using a complex hidden-trench system. The entry is level and the Code is met.

The advantages of going in-house

For Summerset's development team, cost, accessibility and appearance are factors that have to be constantly weighed up. Developments manager Tonchi Begovich says the most important thing is to incorporate the Lifemark™ features without making the villages look institutional.

'We could have dealt with the level access issue by having ramps up to every door, but that's not what people want.'

'We know what works. Most of it isn't expensive – it's making minor adjustments or making sure homes have the ability to be adapted. For example, glass shower screens can be taken away and all our vanities in the bathroom have a section that can be altered to ensure accessibility.'

'Another example is at the front door. Lifemark™ requires that there be a 1200 × 1200 mm level platform and that platform has a cover over it in case someone ends up in a wheelchair. We always had a platform at the front door but it had a slight slope. That small change makes a big difference. It's about clever thinking.' ♦



Summerset's Manukau village under construction.



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