



Final Report

Dwelling, land and neighbourhood use by older home owners

authored by

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ACRONYMS

ABS	Australian Bureau of Statistics
ADU	Accessory Dwelling Unit
AHS	Australian Housing Survey
AHURI	Australian Housing and Urban Research Institute
AURDR	Australian Urban and Regional Development Review
BCA	Building Code of Australia
BCR	Benefit to Cost Ratio
CACP	Community Aged Care Packages
CALD	Culturally and Linguistically Diverse (groups)
CBA	Cost Benefit Analysis
CNOS	Canadian National Occupancy Standard
COP	Community Options Projects
CURF	Confidentialised Unit Record File (ABS)
CPTED	Crime Prevention Through Environmental Design
CSF	Census Sample File
DCF	Discounted Cash Flow Analysis
DoHA	Commonwealth Department of Health and Ageing
F	Female Interviewee (in interview excerpts)
FaHCSIA	Australian Government Department of Families, Housing, Community Services and Indigenous Affairs
EACH	Extended Aged Care at Home program
EACH-D	Extended Aged Care at Home — Dementia program
HACC	Home and Community Care program
HILDA	Housing, Income and Labour Dynamics in Australia longitudinal survey
INT	Interviewer
M	Male interviewee (in interview excerpts)
MCG	Melbourne Cricket Ground
NPV	Net Present Value
NVIVO	Qualitative data management software
PMSEIC	Prime Minister's Science, Engineering and Innovation Council
QOL	Quality of Life
RESP	Respondent (in interview excerpts)
SLA	Statistical Local Area (ABS geographic category)
SPSS	Statistical Package for the Social Sciences

TAFE	Technical and Further Education college
U3A	University of the Third Age

EXECUTIVE SUMMARY

Background and aims of the study

This research responds to a research question in the Housing and Ageing research area of the 2007 AHURI Research Agenda which asks the following questions: 'What are the types, sizes and locations of dwellings occupied by older home owners? How do these patterns vary for different household sizes? What incentives or disincentives could encourage or discourage the efficient use of dwellings and land occupied by older home owners?' With the co-funding of the Department of Health and Ageing (DoHA) the scope of the project was expanded to include a number of issues identified in the recommendations of the National Speaker Series report entitled A Community for All Ages particularly in regard to neighbourhood design, cost-benefit analysis of housing design approaches to improve housing suitability for older Australians, consumer acceptance of these approaches, and economic modelling of the consequences of these not being adopted.

The context for this study is the phenomenon of the ageing of the Australian population and its social and economic implications for the housing needs of older people, and in particular the efficiency of their use of the housing stock and the suitability of housing land and neighbourhood design for the needs of an ageing society. Ageing in place is accepted as being both in the interests of older people's independence, health and wellbeing as well as reducing the economic burden on government of the ageing society through the provision of institutionalised aged care. As a consequence, there has been a growing body of supporting policy, research and program development over the last 25 years.

Key national policy initiatives have included the National Housing Strategy (NHS1992), the New Homes for Old Strategy (AURDR, 1994) and the National Strategy for an Ageing Australia (Andrews, 2001) all of which accept ageing in place as an important priority. Important background research reports include Howe's (1992) Housing for Older Australians: Affordability. Adjustments and Care background paper for the National Housing Strategy, Treasurer Costello's two Intergenerational Reports (Australian Government, 2002; 2007), the Prime Minister's Science Engineering and Innovation Council's Promoting Healthy Ageing in Australia (PMSEIC, 2003) and the Department of Health and Ageing's National Speakers Series report, A Community for All Ages (DoHA, 2006b). Program development commencing with the Home and Community Care (HACC) program in 1984, has progressively offered increasing levels of care in the home (Community Options Projects (COPs), Community Aged Care Packages (CACPs), Extended Aged Care at Home (EACH) and EACH-Dementia, the latter providing nursing home level care in the home.

Yet, despite these important government initiatives, many questions remain about the capacity of the Australian housing stock and urban environments to support a rapidly ageing society. The predominance of home ownership among older Australians suggests that appropriate housing design and market responses are critical to support healthy, active and productive ageing. However, it also raises questions about the efficiency with which older people utilise the dwelling stock, the adequacy of existing design and housing market responses, and the role of neighbourhood design and infrastructure in supporting ageing in place.

The aims of the research were to:

- Provide an understanding of the relationship between older home owners and their dwelling types, sizes and locations.
- Examine the variation in these factors by the age of occupants, their level of ability, household type and cultural background.
- Assess how efficiently the housing stock is, and could be, used by older home owners, considering changes in their household size and composition over time.
- Explore measures that might help to improve efficient use of the housing stock while improving liveability for older Australians.
- Establish the costs and benefits of Adaptable and Universal housing design and propose an economic model to assess the consequences for older Australians if these are not adopted now.
- Investigate the level of demand and consumer support among older home owners for Adaptable and Universal housing design.

Methods

Given the complex range of physical and social issues involved in ageing and housing, an important aspect of this project was its multidisciplinary, multi-method approach, including researchers from sociology/social gerontology, architecture/urban design, industrial design and economics disciplines, and using a combination of quantitative and qualitative research methods in the following stages:

Stage 1

Literature review of the ageing population, housing and households of older Australians, meaning of home, care and support options, housing design approaches and industry responses to ageing, community participation of older people and ageing related urban design issues. These findings are reported on in the Positioning Paper for this project (Quinn et al., 2009).

Stage 2

Quantitative analysis of 2006 ABS Census Data using commissioned tables and the one per cent sample file, selected ABS Census time series data (1996, 2001, 2006), and the 1999 ABS Housing Survey for data on temporary residents.

Stage 3

Australia-wide survey of subscribers to the National Seniors magazine *50 Something* — using both a hard copy and an on-line version. This was conducted in late 2007 and early 2008 with 1782 respondents (1680 hard copy and 102 online) of whom 1604 met the homeownership criterion for inclusion in the analysis undertaken using SPSS statistical analysis software.

Stage 4

Qualitative in-depth interviews of 70 survey respondents aged 55 and above across a range of socio-economic groups, urban and regional locations and CALD groups in five states and territories (NSW, Victoria, Queensland, Western Australia and the ACT). The interviews were undertaken between June 2008 and February 2009 and analysed using NVivo qualitative data analysis software.

Stage 5

A Cost Benefit Analysis of three housing design approaches (Adaptable, Universal and Visitable Design) compared to modifying a conventionally designed home, and the development of an economic model of the housing market to test a range of scenarios using these design approaches.

The following set of research questions were generated from the aims of the research:

- What are the variations in housing type, size and locations for older Australian home owners?
 - What are the housing types, sizes and locations for older Australian homeowners and how does this compare with other housing tenures?
 - What are the sizes of older home owners' dwellings in terms of the sizes and functions of rooms?
 - What is the effect of age, ability and CALD background on variations in housing type, size and location?
- How efficiently do older Australian home owners utilise the housing stock they occupy?
 - What are the sizes and compositions of older home owners' households, considering usual and temporary residents?
 - What is the frequency of change in household size and composition among older home owners, and how do they respond to these changes in their use of their land and dwelling?
 - What is the effect of lifestyle and care requirements of older home owners on their utilisation of their land and dwelling?
- If there are inefficiencies, what incentives or disincentives could encourage more efficient use of dwellings and land occupied by older home owners?
 - What are the policy options for more efficient use of dwellings and land occupied by older home owners?
 - What are the incentives and disincentives for older residents making more efficient use of their land and dwelling?
- What are the costs and benefits of Adaptable and Universal Design of housing compared to conventional design and retrofitting?
- What is the level of demand and consumer support among older home owners for Adaptable and Universal Housing?
- What are the levels of participation of older home owners in locally based activities and social networks and how important is residential location in maintaining these?
- How important is access to familiar support services (e.g. medical, health etc) for older home owners and hence residential location in maintaining such access?
- How important is propinquity to family and friends for older home owners, and hence location in respect to maintaining such access?
- How important are design elements external to the land and dwelling (urban design) in maintaining access to local services, activities and amenities for older home owners?

Summary of key findings

Older people and their housing in Australia

Based on ABS Census data, this project has shown that in a period of rapid ageing of the population, the majority of older Australians lived as couples (66%) or single persons (23%) in separate houses (82%) of three or more bedrooms (83%) which are owner-occupied (84%). If measured according to the Canadian National Occupancy Standard (CNOS), which is widely used in Australia, the vast majority of older people's dwellings (84%) appear to be significantly under-occupied, and hence under-utilised, though this decreases somewhat in the older age groups due to some downsizing. Time series data for the 1999, 2001 and 2006 Censuses shows that under-occupancy by older homeowners has increased substantially in all states and territories in the last 10 years, during which time the floor area of new dwellings has also increased significantly. There was little information available from ABS and other statistical sources about the floor area of existing dwellings.

However, the use of the CNOS to indicate under-utilisation is problematic, since it is a formula that relates the number, ages and relationships of permanent residents to the number of bedrooms and does not take into account the floor area of the dwelling, the size of rooms and space used to accommodate temporary residents, and a range of other home-based activities that often increase after retirement. Nor does it take into account the additional time spent in the dwelling after retirement. The most recent data on temporary residents¹ from the 1999 Australian Housing Survey indicated that around 12 per cent of older households contained one or more temporary residents and that the majority (68%) of these had at least one bedroom set aside for this purpose.

While half of older Australians 55-64 are working either full or part-time, few older Australians are working after 65 years of age and therefore are spending more time in the home, and involved in more home-based activities, factors that impact on utilisation of space in the home. Also, the percentage of older Australians requiring assistance with core activities due to illness or disability increases dramatically with age from 5 per cent of those aged 55-64 to nearly half (47%) of those aged 85 and over, and this assistance is provided primarily by family members within or outside the household. This can also place demands on space and fixtures and fittings in the home to assist with mobility and manoeuvrability or to allow for carer assistance.

Older home owners' dwellings and space utilisation

This national survey of older home owners found that over three quarters (79%) of respondents lived in separate houses, 10 per cent in attached houses and 9 per cent in flat/apartment housing. The majority (72 per cent of separate and 70 per cent of attached houses) were of single storey construction — which is important to many older people. The vast majority lived in the general community (93%) as opposed to senior's developments (2%) or other accommodation (5%).

In terms of dwelling size, 81 per cent lived in dwellings with three or more bedrooms, around half (49%) in dwellings with a floor area of between 100 and 199 m² and more than a third (36%) in dwellings with a floor area of 200 m² or more. Half of all separate houses were on allotments of 500-999 m² and an additional 37 per cent on allotments of 1000 or more m², whereas attached houses were almost all on allotments of less than 500m². Many interviewees were dissatisfied with the amount

¹ Temporary residents are defined as those staying at least 20 nights per year (ABS, 2001:78)

of space in some rooms, especially bedrooms, to accommodate their furniture, for manoeuvring around beds, for increased storage or to accommodate a wider range of activities within the room. Likewise bathrooms were often regarded as too small or poorly laid out. This demonstrates that number of bedrooms and total floor area are not always a good indicator of space usability.

A very high (95%) of the older home owner survey respondents had one or more bedrooms not used for sleeping by permanent residents of the dwelling and 63 per cent had two or more. However, in many cases these were used for other purposes such as a home office or study (34%), a guest bedroom (27%), hobbies (12%), storage (9%), ironing (4%) and reading (2%). Multiple use of 'bedrooms' for two or more activities was also evident from some of the interviews. This demonstrates that just because bedrooms are not used for sleeping, it does not mean that they are not used for other purposes that are important to their lives and supportive of healthy and active ageing.

Outdoor space was also intensively used by interviewees for a wide range of activities including outdoor eating, gardening, entertaining grandchildren, and simply enjoying the outdoors. Decks, verandahs and patios were considered particularly useful for outdoor eating and entertaining family and friends. Only a few had difficulty maintaining their private open space, and these were mostly in the older age groups or women who had been widowed or who had a disabled partner.

Age, need for assistance and CALD factors

Age of respondents appeared to have little relationship to dwelling type, but was associated with the prevalence of single storey dwellings, having fewer bedrooms and lock up garage facilities. Likewise, there was no strong association found between the need for assistance and dwelling type, but there was some association between dwelling type and the kind of assistance required, mostly in relation to home and garden maintenance. While, in the survey responses, being born overseas appeared to have only a marginal influence on dwelling type and size, the interviews revealed that cultural background could affect choice of location, dwelling type, dwelling size and layout to support multi-generational living, spatial orientation to accommodate sacred geometries (e.g. feng shui, or vastu shastra), individual room design and the layout and use of outdoor space.

Older home owners' households and space utilisation

A little over half (54%) of survey respondents lived in two person households, 38 per cent in single person households, and only 9 per cent in households of three or more. As would be expected, single person households increased markedly with age. Close to one quarter (23%) of surveyed households contained one or more temporary residents and this was almost double that in the general population (12%). This is a significant finding as it suggests that the prevalence of temporary residents, and hence their impact on space utilisation in the home, among older home owners, is greater than for older people at large. Temporary residents were comprised mostly of adult children (37%), but also included grandchildren (18%), other relatives (20%) and friends (14%) who stayed over regularly or came for extended periods. The interviews indicated a diverse set of circumstances leading to temporary residents including the need for emergency or transitional accommodation arising from relationship breakdown, returning from overseas, undertaking studies, or the need or desire to take in boarders.

In the five years leading up to the survey, a little over a quarter (29%) of the households of the older home owners surveyed had changed in size, most of which (22%) had decreased in size. Decreases were mostly due to children moving out

(53%) or the death or end of a relationship with a partner (28%). Increases were mostly adult children moving back (41%), establishment of a new relationship (12%) or a boarder, grandchildren or aged parent moving in. For half of the households that had changed in size in the last 5 years, no change to the dwelling resulted, in 45 per cent it had precipitated a change of dwelling and in only 5 per cent of cases modifications to the existing dwelling. Modifications were more likely for increases in household size (10%) than for decreases (3%) and moving was more likely the result of a decrease (48%) than an increase (31%). This suggests that staying put with no changes to the dwelling is marginally more likely a response to changes in household size than moving.

One third (33%) of respondents were self-funded retirees, 28 per cent were full or part pensioners, and 61 per cent were not in the work force. This was a considerably lower percentage not in the work force than in the general older population (74%) and the percentage working full and part time were accordingly higher (36 as opposed to 26 per cent in the general population). This indicates that older home owners are more likely to be working than those in other tenures. Household income reflected this with 25 per cent earning less than \$25,000, 36 per cent earning between \$25,000 and \$49,000 and 39 per cent earning more than \$50,000.

Interviews revealed that retirement generally meant more time spent at home and changed patterns of use of space in the home and associated outdoor space. This could be to accommodate hobbies or other lifestyle activities or even the need for a couple to each have their own individual personal space to retreat to. Hobbies and recreational and lifestyle activities were diverse including some that did not require separate space allocation (e.g. reading, games & puzzles, playing cards), but others that did require dedicated space and facilities in part or all of a room (e.g. card making, scrapbooking, sewing and dressmaking, art and craft work, model railways, gym and exercise equipment, and storage for bikes and other sporting goods). Many of these activities are important to active and healthy ageing.

Seventeen per cent of all respondents had at least one person in the home who required assistance. In 57 per cent of these cases, it was the respondent themselves and, in 26 per cent of cases, their partner. In close to half of all cases (48%) where a member of the household required assistance, the carer was from the same household and in 10 per cent of cases a visiting family member or friend. In only 14 per cent of cases was the care provided by a visiting professional carer. A common theme in the interviews was the desire to maintain care within the home for as long as possible rather than relying on outside care. In only a few cases the respondent (generally female) was the carer for an elderly parent and the interviews revealed that this could be a demanding and difficult role.

Only seven per cent of respondents had children younger than 20 years of age in the household for whom they provided care. Interviews revealed that these were mostly in circumstances arising from single parenthood, relationship breakdown or working parents needing assistance with child care. A small number of respondents had their own older adult children living with them who required care.

The interviews revealed that the need for assistance within the household can place additional demands on space in the home by requiring more room for manoeuvrability, assistance by a carer, assistive devices and in some cases additional rooms because of the need for partners to sleep in separate bedrooms or for a carer to be accommodated.

These findings challenge currently accepted methods of calculating under-occupancy using the CNOS based simply on the number, age, gender and relationships of

permanent residents and the number of bedrooms. It is clear that a number of other factors including temporary residents, visitors, more time spent at home, home based hobby and lifestyle activities following retirement, and the need for assistance can all make demands on space in the home, and therefore need to be considered in any method for determining dwelling use.

Options for improving efficiency and liveability

Despite the apparent under-utilisation of their dwellings according to the CNOS, a very high percentage (91%) of survey respondents regarded their home as suitable or very suitable for the number of permanent and temporary residents. This was consistent over the three dwelling types (separate, attached and flat/apartment). The interviews reinforced this view with many emphasising the importance of having space for family and friends to come and stay and to be able to host family gatherings. Some with partners needed individual personal space following retirement that they could each retreat to. Where assistance was required for someone in the home, only a lower 56 per cent rated their home as suitable or very suitable. Some interviewees required separate bedroom accommodation from a partner needing assistance, or for another carer. Common concerns were stairs and the design of kitchens and bathrooms.

In the interviews there was an overwhelming desire to remain in their own home for as long as possible for a host of reasons including suitability of the dwelling, proximity to family and friends, shopping, transport and health services, and because of familiarity with the local community and neighbourhood. Some had considered moving but for these reasons had decided against it, while others realised that moving may become necessary because of illness, frailty or the death of a partner.

One third of the survey respondents (34%) had already made modifications to their home — mostly in the form of grab rails (28%), bathroom renovation (26%) or stair modifications (23%). Forty per cent were likely to modify their home in the future, again mostly in regard to stairs (32%), ramps (23%), grab rails (22%) and bathroom modifications (20%). However, only a little over half (54%) felt they would be able to afford the modification, 35 per cent were uncertain and 11 per cent felt they would not be unable to afford it — suggesting a level of anxiety among many older home owners about the likely cost of future modifications. Inability to afford (20%) or uncertainty (52%) were greatest in the lowest pensioner income group (<\$25,000) and overall women were less able to afford (56%) than men (69%),

When asked to consider the importance of a number of staying put and moving options for improving housing efficiency, most were negative about having children live with them (42%), living with their adult children (18%), or renting out part of their house (13%). Respondents were more favourable about having the option of moving to a more suitable dwelling in a self-care retirement village (63%), an over 55s seniors living development (56%), or residential aged care facility (57%), but the most favoured option of all (91%) was to stay in their own home with professional care services. The interviews revealed that those who would have children live with them would do so mostly to help them out in an emergency, rather than to use the dwelling more efficiently.

Reasons given by interviewees for not wanting to live with their children were mostly the desire for independence and autonomy (both for themselves and their children), the potential for conflict because of different values and lifestyles, not wanting to be a burden to their children, and not wanting to be used for babysitting. However, when asked if separate self-contained accommodation attached to the home would make a

difference to living with family, most interviewees were much more attracted to the prospect.

Despite the majority of respondents favourable to the option of moving to a retirement village in the future, considerable concern was expressed in the interviews about the cost of entry fees and service levies. Others did not favour living in an aged-based community because of concern about cramped living conditions and isolation from family, friends and the outside world. However, some who had moved to retirement villages were positive about the advantages of having well maintained, safe and secure accommodation. Residential aged care was considered by many interviewees as an option only in the event of being unable to remain at home, and others were negative about this option based on experiences of family and friends.

Some CALD differences emerged from the interviews including the need to have space for visiting overseas family and friends who could stay for extended periods of time, reconciling conflicts between cultural preferences for multi-generational family living and local norms of housing design and family life, and preference among some interviewees for culturally specific retirement homes.

Cost-benefit analysis and consumer acceptance of housing design approaches

Design analysis

Three different approaches to the design of accessible housing were explored in comparison with modification of conventional housing. These were:

- **Visitable Design:** providing access features in all housing so that wheelchair users can visit the homes of their friends and family, and will have the most critical access features in their own home. Design criteria were based on the Visitability criteria in Australian Standard AS4299-1995 Adaptable Housing.
- **Adaptable Design:** aimed at minimising the complexity and cost of future adaptations. Design criteria were also based on AS4299-1995 Adaptable Design Category C.
- **Universal Design:** whereby the dwelling is designed in the first instance to provide for a wide range of abilities without any need for further modification. A minimum set of 10 design criteria were developed based on three recent Australian sources.
- **Home Modifications:** being changes to conventional housing to provide the same requirements as AS4299 — Category C. Modifications were limited to the ground floor of two storey houses and aimed to match the existing quality of finishes and fixtures.

Three dwelling types were chosen for analysis from the portfolio of a leading residential developer — a two storey separate house, a two storey attached house and a single storey apartment. The design of each was modified to meet the criteria of the three design approaches.

The design study found that virtually all of the design criteria for each approach could be met in each of the dwellings within the existing floor space, but varied in the complexity and design time involved. Visitable Design was found to be the easiest to implement, having the fewest criteria and the least changes required to meet the 'no step' path of travel to the entrance. Adaptable Design proved to be the most difficult because of its complexity and ambiguity in the criteria, suggesting considerable cost of design time, which is generally not factored into cost-benefit analyses.

Applying the various design criteria to different dwelling types provided a valuable comparison of their implications for low and higher density housing. The availability of

products to meet criteria was found to have a direct bearing on implementation of the criteria, suggesting that product availability needs to be considered more in further development of the criteria, and provides opportunities for new product development in the Australian market.

Economic analysis of design approaches

The cost benefit analysis was undertaken for the four approaches: Home Modification (the base case), Visitable Design, Adaptable Design and Universal Design. Two variations of Adaptable Design were considered — one applying only to the ground floor level of the two storey dwellings and the other including the entire dwelling. Costs of the modifications and design alterations were calculated using the Cordell Housing Building Cost Guide, supplemented with direct information from suppliers.

Due to time and resource constraints, a benefit transfer approach for calculating non-construction cost savings was adopted using the findings of the former Hill PDA (1998) study. The study identified the savings as: reduced need to move into residential care; reduced cost of rehousing; reduced government administration costs; savings in home care costs; savings in health care costs; and savings in reduced falls at home. The projected savings were converted to 2009 values and adjusted to take into account the relative benefits of the four approaches. Finally, the figures were adjusted to explore two different policy scenarios — a 20 per cent application to new housing (assuming a self-regulated industry approach based on projected demand) and a 100 per cent application to all new housing (assuming a regulated approach). Linear forecasting of household types based on the 1996, 2001 and 2006 ABS Census data was undertaken for the period 2011 to 2026. A discounted cash flow analysis (DCF) was undertaken assuming a 20-year time frame (2010-2030), a 6 per cent discount rate, and a 0 per cent real cost inflation in construction costs.

The findings of the cost benefit analysis are summarised in Table 1 below.

Table 1: Benefit to cost ratio summary

	<i>Single storey</i>		<i>Multi storey</i>	
	<i>Full CBA</i>	<i>Marginal CBA</i>	<i>Full CBA</i>	<i>Marginal CBA</i>
Home Modifications				
100%	0.07		0.07	
20%	0.01		0.01	
Visitable Design				
100%	2.48	2.41	2.48	2.41
20%	2.48	2.46	2.48	2.46
Adaptable Design				
100%	0.21	0.14	0.04	-0.03
20%	0.05	0.04	0.01	-0.01
Universal Design				
100%	0.29	0.23	0.29	0.23
20%	0.29	0.28	0.29	0.28

Visitable Design was found to be the only option to consistently deliver a positive Benefit to Cost Ratio (BCR) (i.e. greater than 1.0) indicating that its benefits exceeded its costs. This was influenced by two factors: it had the lowest costs of any of the

alternatives, and the assessment of benefits compared to other policies may have been too generous.

Overall, the CBA suggests that Visitable Design, Universal Design, or ground level only Adaptable Design are the most viable policy options. Home Modification performed poorly, and its high cost relative to the other options indicates it is a suboptimal policy.

Visitable Design is the least costly policy alternative, but it delivers fewer benefits than the other options. Universal Design is a more expensive option, but it delivers a higher level of benefits. Adaptable Design also delivers a higher level of benefits compared to Visitable Design, but the costs of accessing the second level of a dwelling in Adaptable Design are prohibitive.

Consumer acceptance and demand for design approaches

Consumer acceptance of the three design approaches indicated the highest level of support for Adaptable Design (85%) followed by Universal Design (78%) and Visitable Design (mean of 65 per cent based on four variables). Of the four Visitable Design features, having a toilet on entry level was the highest rated (72%) followed by having the kitchen and dining room on entry level (65%), no steps to the entrance (63%) and a bedroom on entry level (58%). Support for the importance of Universal Design increased with age, and for moving to a more suitable home decreased with age while other options remained fairly consistent throughout the age groups.

The interviews revealed some sharply different opinions about whether Visitable Design should be mandated through legislation. Support often came from people who had experience of a disability in the family or could see its value in an ageing society, or even to assist people with temporary injuries. Opposition was more ideological, based on concern about infringements to personal freedom, and the unfairness of imposing additional costs on people who did not need those features.

Community participation, transport and neighbourhood design

Participation in activities

An analysis of 11 activities revealed that the highest participation rates were in the necessities of life — shopping, banking and retail followed closely by medical and health appointments — then by visiting family and friends and having family and friends visit them. Participation in theatre and cultural activities was also quite common. A second tier of activities included visiting community and social clubs, volunteering and sport and recreation. Least participated in of the 11 activities were religious services and educational courses, at less than half those involved in the six highest rated activities.

Frequency of participation by respondents in these activities was also greatest in shopping, banking and retail (88 per cent 1-4 times per week) followed by sport and recreation (67%). Other activities participated in by between 50 and 60 per cent of respondents once or more per week included attending religious services (67%), visiting family and friends (61%), volunteering (56%) and community and social clubs (55%). Four activities were participated in more on a monthly or annual basis: medical and health appointments, theatre and cultural activities, dining out and having family and friends visit.

Anticipated participation in the same activities in five years time showed a very similar pattern, but with three activities showing the greatest anticipated increase in frequency 1-4 times per week: medical and health appointments (+5.5%), having family and friends visit (+4.5%) and attending religious services or activities (+3.7%).

Importance of proximity

The importance of close location of these activities to the home was highest for shopping, banking and retail (83 per cent important or very important) and health and medical services (80%), but was also important for more than half of the respondents for visiting family and friends (67%), having family and friends visit (67%), sport and recreation activities (65%), community and social clubs (62%), volunteering (58%) and dining out (56%). Least important for close location were religious services (50%) and education classes (45%). This shows that for most of these activities the majority of respondents regarded close proximity to home as important.

In all but one activity, anticipated importance of location in five years time was greater than at present. The largest increases being for visiting family and friends (+7.0%), theatre and cultural activities (+5.4%) and medical and health appointments (+4.9%). Only religious services and activities showed a small decrease (-1.2%) in five years time

Gender differences

A number of gender differences were evident. Women were much more frequently involved 1-4 times per week in educational activities (+32%) than men and considerably more in visiting family and friends (+10%), having family and friends visit (+5.0%) and community and social clubs (+3.9%). Men were more frequently involved in volunteering (+3.9%) and medical and health appointments (5.8%).

Women also placed greater importance on close location than men in particular for involvement in education classes (+13%), shopping banking and retail (+5%) and dining out (+5%). Anticipated importance in five years time was even higher for women for education classes and activities (+19%); with community and social clubs, having family and friends visit, visiting family and friends and theatre and cultural activities each +9 per cent; shopping banking and retail and volunteering each +6 per cent; and dining out (5.2%).

The interviews reinforced that many older home owners are involved in numerous activities outside the home often for many days of the week and, in some cases, involving multiple outings in one day. In couple households, partners could be involved in similar or different activities. Despite their physical limitations and need for assistance, those with disabilities also regarded activities outside the home as important to their wellbeing. Importance of close location of services and activities was regarded as important and this was often given as a reason for not wanting to move from their existing neighbourhood, or conversely for moving from an area with poor local facilities or services.

Transport to activities

Most respondents (85%) had access to public transport of some form, most commonly to bus (79%) or rail (46%) with only a few having access to light rail (4%) or ferry services (3%). The level of satisfaction with public transport was highest for tram (68%) and train services (60%), but lower for bus (47%) and ferry services (42%).

In terms of transport to activities outside the home, the older home owner respondents were found to be very highly car dependent with between 82 and 95 per cent of respondents using private motor vehicles for the 11 nominated activities, and over 90 per cent for the majority and most frequent of these. The interviews revealed that the reasons for preferring to use private motor vehicles over public transport were primarily the freedom and independence offered, but also dissatisfaction with public transport services. Barriers to public transport use included: non-existent or poor provision (especially in regional areas); irregularity or unreliability of services;

confusing timetables; distance or steepness of route to transport nodes; queues and lack of seating at bus stops; excessive waiting times due to infrequent services; transfer times between modes, crowding in vehicles or carriages; terminated or changed bus routes; negotiating steps at stations or onto buses; lack of parking at stations (particularly outside of commuter hours) and concerns about crime and safety on trains and at railway stations.

Neighbourhood design

The interviews revealed that neighbourhood design and provision of local facilities were important to participation in activities outside the home. Quality of neighbourhood design and provision of community facilities varied considerably between locations. Seven key elements of neighbourhood design identified in the Positioning Paper were used as a framework for analysis.

1. **Paths of travel:** provision and quality of pedestrian paths was quite varied from area to area. Where considered inadequate, the key issues were mostly related to pedestrian safety and security and were a barrier to participation in outdoor activities. Perceived safety risks included: absence or poor provision of footpaths; poorly maintained or damaged paving surfaces; inadequate footpath width; location of footpaths dangerously close to busy roads; obstructions due to overhanging shrubs or trees; lack of pedestrian crossings, traffic lights or underpasses; confusing or ambiguous paving cues; and inadequate lighting on paths at night.
2. **Transport:** a number of transport related neighbourhood design issues were often found to be barriers to participation. These include excessive distances to transport nodes, steep topography, lack of seating and shelters at transit nodes, poor signage and confusing timetable and route information, stair access to railway stations and onto buses, and crime and safety problems at railway stations.
3. **Buildings:** while the study did not focus specifically on public and commercial buildings, a number of issues were raised by interviewees that were barriers to participation including lack of seating in public buildings and shopping centres, stair only access to important commercial and public buildings (particularly in regional locations), and lack of handrails on entrance stairs.
4. **Public open space:** open space provision and quality also varied considerably between locations. Where well provided it was highly valued and well used for walking, exercising dogs and as a place to take grandchildren. Poor provision or design was a disincentive to participation in outdoor activities.
5. **Street fixtures and furniture:** likewise, the standard of provision of street furniture and fixtures was varied. In some areas seating was limited to shopping centres rather than in public spaces. A number of interviewees also raised issues about public toilets including: inadequate provision in public spaces; vandalised and poorly maintained toilet facilities; inconvenient closing times; and objection to the cost of pay toilets. Cafes were also important to many interviewees as places to sit, relax and read the paper, but their provision also varied considerably between locations.
6. **Wayfinding:** issues identified in the interviews included curved street layouts that were confusing for visitors to negotiate and confusing bus routes.
7. **Safety and security:** safety from crime and anti-social behaviour was an important issue for many interviewees, and some had either been victims themselves or knew others who had been victims of crime. Perceptions of safety also varied from area to area, but many interviewees did not feel safe walking in

the neighbourhood at night. Anti-social behaviour of young people, hotels and poor lighting were regarded as risks, and for some fear of crime limited their participation outside the home, particularly at night.

Conclusions and implications for policy, industry and older people

The findings reported above raise a number of important issues for policy makers, the housing industry and consumers.

Implications for policy

The key implications for ageing and housing policy are in the following five main areas:

Measuring housing utilisation and efficiency among older home owners

- There is a need to review currently accepted measures of housing utilisation in order to gain a more accurate picture of how efficiently older home owners use space in their dwellings. This would also require more systematic collection of data about temporary residents, floor area of dwellings, and the number and type of rooms in the dwelling. These data could either be collected as part of the five yearly Census, or via a more regular inter-Census sample survey such as the Australian Housing Survey.
- In Australia, there is a lack of knowledge among home owners of the area measurement of their dwelling and the common unit of measurement varies with location and age of the resident. Also, the different functions of designated 'bedrooms': bedroom, study, library, rumpus room etc. makes the interpretation of the number of bedrooms in a dwelling ambiguous. These factors will need to be considered in future housing utilisation data collection.

Improving efficiency and liveability for older home owners

- The strong preference for older Australians to remain in their own home for as long as possible with appropriate support suggests that the focus of policies for the future housing of the ageing homeowner population should be on appropriate housing in the community rather than increasing the provision of segregated and specialised aged-specific housing developments, including retirement villages.
- Though 'downsizing' may have appeal for some home owners and those who see a benefit in releasing overly-large land and dwellings to younger, larger households; the demand is not for very small dwellings or one-bedroom units, as might be suggested by the predominance of single- and couple-households. Future space-efficient dwelling types could include smaller three-bedroom dwellings; flexible dwellings with spaces that can convert to temporary bedrooms for guests at the times they are required; and multi-purpose rooms that can accommodate different uses, including hobbies, child care (grandchildren), fitness equipment, or private personal space, depending on the changing interests and life stages of the residents.
- House sharing with family or boarders is not an attractive option to most older home owners although older people would be prepared to help their children out in an emergency by providing temporary accommodation. However, many responded positively to living with children if self-contained accommodation was available. This supports further development of accessory dwellings, which would have the added benefit of providing a supply of affordable accommodation for lower income older people, and facilitate multi-generational living arrangements important to some CALD groups.

Improving housing design to support ageing in place

- There is strong support among older homeowners for the Adaptable and Universal Design approaches, more so than Visitable Design or Home Modifications, in the event of them developing a disability or an increased need for assistance. However, opinion was divided concerning the merits of regulating Visitable Design, with those having some experience with a disability supporting the idea and others strongly opposed on the grounds of freedom and the likely increased cost of housing.
- Two possible pathways to implementation of Universal, Adaptable or Visitable Design are: via a market based, self regulated approach with guidelines developed and incentives provided by government; or a regulated approach through the Building Code of Australia (BCA), as has been implemented for minimum access features in the UK and is currently being considered by the US Congress.
- For those older home owners who choose, or are forced to move, there is potentially a strong market demand for housing that already includes access features (whether basic Visitable features, or more comprehensive access features that have been provided through Adaptable or Universal Design); and a preference for this housing being provided in the general community rather than a segregated age-specific development.

Adaptable, universal, visitable or just keep modifying housing?

- The cost-benefit analysis comparing Visitable Design, Adaptable Design and Universal Design with the current practice of Home Modifications confirmed the results of previous Australian and international cost analyses: that allowing for access in the initial construction of a dwelling is more cost effective than making changes in the future.
- Taking a more detailed approach than prior work to the design and costing of the dwellings also revealed three important and quite separate issues relevant to future consideration of policies for more widespread implementation of Visitable, Adaptable or Universal Design: first, the preferable design approach is to provide access from the start, that is, a Universal approach; second, that irrespective of the design approach, the design criteria need to be based on data that represents the needs of residents; finally, these criteria need to be presented in a format that is feasible in the design process.
- Though design approaches such as Adaptable, Visitable and Universal Design are often linked to specific standards, guidelines and lists of criteria; the design approach and the design criteria need to be evaluated separately, as criteria could be common to, or interchangeable between, all three approaches. There has been a concentrated effort in recent years to implement regulations in the building codes, as has been the practice in other countries. However, these discrepancies suggest that there needs to be a greater focus on which features are needed.
- The need for regulation of minimum access features has been a recurring debate in Australia. Features have been proposed for the BCA, similar to Part M requirements in the UK and Visitability regulations in the USA. Despite the reservations of some interview participants regarding regulations, the survey and interview findings appear to support some type of regulated access in all housing so that older residents could minimise the degree and cost of making their home accessible. The design study undertaken for the cost-benefit analysis also supported some type of regulated minimum access in all housing. The recommended regulated features are: accessible path to a main entrance to the dwelling; accessible path from this entrance to the kitchen, a toilet, a living area

and a space that could be used as a bedroom; and sufficient space surrounding the toilet area for a wheelchair user to enter the room, close the door and use the toilet.

- The current Adaptable Housing standard AS4299 is focused on having accessible features contained on the entry level of a dwelling, there is no reference to stair design or vertical travel. This could be due to a traditional Australian approach of providing single-storey dwellings for people with reduced physical ability. However, increases in two-storey dwellings due to market preferences and land efficiency mean that single-storey dwellings can no longer be the sole solution for accessibility, and access in multi-story dwellings will need to be managed as it is in UK standards and regulations. Requirements for stair design and vertical lifts will need to be considered.

Improving neighbourhood design for an ageing society

- This study has confirmed that the design of the neighbourhood and provision of neighbourhood facilities can enhance or inhibit participation. The activities in which older home owners participate outside the home, and the importance they place on having these within close proximity suggests that older home owners wish to live in areas that are well serviced by a range of commercial, retail, cultural and community service facilities. This aligns with current urban design principles and guidelines that advocate higher density, transit-oriented, mixed use neighbourhood and town centres and have recently been adopted in most metropolitan strategy plans of major Australian cities.
- Older home owners are highly car-dependant and low users of public transport. This is partly due to the autonomy and freedom that the motor vehicle offers, but also to the often poor provision, convenience and service of public transport in many metropolitan and regional areas. While improvements have been made since the introduction of the Disability Standards for Accessible Public Transport (Attorney General's Department, 2002) there is a long 25-30 year time frame for full compliance. While the five-year review draft report currently under consideration (The Allen Consulting Group, 2008) does recommend improvements in monitoring compliance, there is still clearly a long way to go before we have public transport services that are age friendly.
- While the quality of neighbourhood design and facilities varied considerably, the research demonstrates that inadequate provision or poor quality of paths of travel, transport nodes, public open space, and access to public buildings, street furniture, local cafes and public toilets can be a barrier to participation for some older people. While the needs of older people are covered to some extent in broader urban design, healthy city, sustainability and CPTED principles and guidelines, a national set of age-friendly guidelines for cities and neighbourhoods has yet to emerge.

Implications for the housing and development industry

The findings of the research also raise a number of issues relevant to the development industry. As the Australian population ages, there is little doubt that there is a growing market for age-friendly housing and that this will impact the housing industry. The major question for the industry is how should it respond to this demand?

Meeting preferences for housing type, size and density

- There are two possible responses for the industry to an increasingly older population and their housing needs: whether to continue to produce specialised aged housing in enclaves (retirement villages or seniors living developments) designed around the needs of older people, or to increase the supply of

mainstream housing designed to accommodate a wider range of ages and ability levels. While the prevailing approach of the industry to date has been to focus on age-specific developments, the findings of this research present a strong case for an increase in the supply of more accessible mainstream housing, based on the preference of most people to remain in their own home in the general community.

- The research suggests that small household size (predominantly singles and couples) does not reflect their preference and utilisation of larger dwellings. Generally, at least one 'additional' bedroom was needed for temporary residents or guests and often another for office or other uses important to their lifestyle, health and wellbeing. This suggests that dwellings in new residential developments would need a good mix of three bedroom dwellings, and/or flexible rooms that can be used to accommodate guests, participate in special interests and hobbies, and undertake office work.
- While the preference for dwelling type was mixed, single-level dwellings were considered very important. This is in conflict with recent industry trends towards two storey dwellings on smaller allotments and also to an increase in attached two storey dwellings. Whether apartments, town-houses or separate houses, it is important that dwellings for older home owners are low-maintenance, have a small private outdoor area, good safety and security and the ability to have pets.
- During the design analysis it was evident that the feasibility of applying the design approaches was very dependent on the availability of appropriately designed fixtures and fittings and that in some areas there was a lack of suitable products. This suggests a considerable market opportunity for innovation in new product designs, important among which is the need to develop lower cost vertical lifts than are currently available on the market.

Designing housing that provides the safety, usability and access required

- Increased application and regulation of access features in the general housing market has been met with concern by the development industry, particularly due to perceived effects on cost and marketability. The regulation of minimum access features in the USA and UK; rapidly increasing demand for, and cost of, Home Modifications; and the overwhelming preference by the ageing population to remain living at home with the assistance of care services; suggest that at least the minimum access features will be regulated.
- As for more comprehensive access features, it was clear from the study that these features are better integrated into the construction of the dwelling, and planned future adaptation be minimised. Home owners were clear in their preference for adaptations that were easily implemented, at low cost.
- The expectation of many respondents that they could move to housing in the community that better meets their needs, highlights the need for more housing that is designed to provide access from the start. The challenge for residential designers, builders and developers is to provide this housing in a manner that is marketable to all, to avoid enclaves of older people's housing.
- There is potential for marketing housing features that would be useful for all residents, and in particular, older residents including: more flexible and usable storage space; kitchen designs with adjustable or variable bench heights, easy access storage and appliances with safety features; adjustable lighting levels in all rooms; and slip resistant flooring in all areas of the dwelling.
- The larger circulation space requirements for wheelchair use, ambulant support devices such as walking frames, or the assistance of a carer which would usually lead to the recommendation for open plan spaces, compete with the respondents'

preferences for multiple bedrooms and private spaces. This suggests potential for better configuration of space and flexible room division.

- The study findings indicate that simply adopting current standards such as AS 4299 as guidelines or regulations is not feasible for the broader housing market due to the potential inaccuracy in specified features and dimensions, and the complexity of the standards themselves. There is a role for industry in helping to determine the most appropriate format for design criteria and supporting information.

Meeting preferences for location and community facilities

While many of these facilities are the responsibility of state and local governments, developers have the opportunity to provide features onsite in their residential developments, including:

- Most importantly, accessible pathways throughout the site (separated from traffic) and to nearby transport stops and retail services.
- Communal parks and playground areas for residents, that could be shared with the local community.
- Adequate seating along pathways and at parks and playgrounds.

Opportunities for innovation in the housing industry

During the design analysis, it was evident that the feasibility of the design approaches was very dependent on the availability of appropriately designed fixtures and fittings and that in some areas there was a lack of suitable products. This points to a considerable market opportunity for new product development. Some key areas requiring innovation in developing new products include:

- Methods of vertical travel (lifts, inclined stair lifts and platform lifts) which have the single greatest impact on the feasibility and cost of providing accessible two storey dwellings. Currently in Australia, domestic vertical lifts remain a prestige product or a disability product and are priced at a premium. Until there is increased competition from more lift suppliers and there are more cost-effective lift products designed for domestic use rather than adapted from commercial use; product volumes will remain low and costs high.
- There were some design criteria across the different design approaches that had few or no products on the market to comply. AS 4299 required a kitchen sink bowl with a maximum depth of 150mm deep, yet no such sink could be sourced on the Australian market. Similarly, kitchen bench tops at the lower end of the AS 4299 height range of 750-850mm did not fit a standard under-bench dishwasher, and there was only one brand of dishwasher that could be accommodated. The availability of a vertical support rail for attaching a hand-held shower was very limited; despite there being a very wide range of vertical bar/hand shower systems, most rails could not be used as a support.
- It was not only meeting the specific design criteria where product availability was problematic. For example, sliding doors were useful where there was insufficient space for a door to swing, particularly in the bathroom/en-suite etc. and potentially between the garage and adjacent living area in the dwelling to make use of the unoccupied garage as living space, and increase circulation space around a vehicle.
- Also, there were very few floor tiles that had been tested for slip-resistance and provided these ratings for purchasers. Increasing the variety and volume of slip-resistant tiles and providing test ratings for purchasers will assist not only the

housing industry, but also home owners, to build or renovate safer bathrooms, kitchens and living environments in their housing.

Innovation in building methods

- The traditional approach of achieving accessible housing through custom modifications has involved labour-intensive building practices, with materials adapted from other uses, for example, reinforcing bathroom walls for grab rails with localised blocking to frames and layers of ply underneath or inserted into sections of fibre cement sheet wall linings. These practices could have been the most appropriate and cost effective solution for modifications and specialised housing designs. However, broader implementation of accessible design approaches provides opportunities to devise labour-saving construction methods, using innovative materials that will better meet accessible design criteria, in a more cost-effective manner.

Implications for older Australians

Finally, the research has a number of implications for older home owners and their advocates to consider.

Dwelling size and design

- This research confirms the desire of older home owners to remain in their own homes and neighbourhoods for as long as possible. It has also found that while older homeowners live predominantly in free-standing dwellings of three or more bedrooms, they regard their homes as suitable for their needs and do not under-utilise space in their homes to the extent assumed in current methods used to measure housing utilisation.
- Older homeowners also recognise that their needs will change over time and the importance of the design of the dwelling for remaining independent and participating in the community. Since most existing housing is not suitable in its current form if they were to develop a disability or need for assistance, they are confronted with the options of making modifications to their home or moving to a more suitable dwelling — both of which are potentially costly and disruptive to their lives and social networks.
- There is strong resistance among older home owners to share housing with their children or a boarder to improve efficient use of the dwelling, but more willingness to consider this option if independent accommodation was available in the home in the form of an accessory dwelling or 'granny flat'. Encouraging these could help to provide an affordable alternative to individual home ownership and for those who culturally prefer multi-generational living.
- There are approaches to the design of housing that can better facilitate ageing in place. These are identified in the research as Visitable, Adaptable and Universal Design. Older homeowners appear to support the principles behind Adaptable and Universal Design more than the option of moving to a more suitable home or an age-specific development, but are divided on the issue of regulating Visitability. This aligns broadly with the findings of the cost benefit analysis where Universal and ground floor applied Adaptable Design delivered greater benefits than Visitable Design or Home Modifications.
- However, there is inconsistency and ambiguity within and between them as to the essential criteria and detailed specifications, and this is confusing to older people. There is a need for clarification of terminology, benefits and consistency in criteria in order for government and the industry to communicate effectively about options to consumers.

- Despite the divided opinion among older home owners concerning regulation of more accessible housing design, a strong case can be made for regulation of a minimum set of criteria to ensure an increasing supply of housing that is suitable for a wider range of ability levels either without modification (Visitable or Universal Design) or that can be more easily modified (Adaptable Design).
- Moving to a more suitable dwelling or an age-specific development, with or without care provided, will always remain a preferred option for some older home owners and both government and the industry should facilitate well informed choice while minimising associated transaction and stamp duty costs for older consumers.
- For the majority of older home owners living in conventionally designed housing and wishing to age in place, home modification will remain a necessary option. This research has shown that around one third of those who expect to undertake modifications were either unable or uncertain about their ability to pay for them, and women more so than men. Possible initiatives to assist low income older home owners could include tax subsidies for Home Modifications, the inclusion of a home modification benefit within superannuation schemes, or a voluntary support program using the skills of older building and construction trade workers.

Neighbourhood design and facilities

- Home owners are also conscious of the importance of the wider neighbourhood to the ability to ageing in place and in encouraging active and healthy ageing. They value convenient access to public transport, retail, medical, community, cultural and recreational facilities. They require well maintained and safe pedestrian networks, crossings and lighting at night. They want places to walk, sit, have a cup of coffee and read the paper. They need good seating, bus shelters and public toilets.
- However, bringing about the necessary changes to achieve more age-friendly housing and neighbourhoods also presents some challenges for consumers that will require trade-offs. It is unlikely, for example, that current forms of low density suburban development can deliver the mixed-use neighbourhood outcomes and better quality transport systems that best support an ageing society. Mixed use neighbourhood centres and improvements to public transport will require more dense neighbourhoods with more reliance on accessible multi- unit housing forms and this may be a difficult adjustment for many older home owners to make given current preferences for the low density detached suburban house. Likewise, the necessary patronage to support improved public transport systems will require less reliance on the private car to which older people seem strongly dependent.
- The increasing percentage of older people in the community will see a growing influence on all levels of the political system, support services and the housing/development industries to achieve more appropriate housing options and more age-friendly neighbourhoods and transport infrastructure that will support the desire to remain living in their own homes and familiar neighbourhoods for as long as possible, or to make other informed and appropriate choices.

1 INTRODUCTION

1.1 Background

This Final Report details the findings of a national multi-disciplinary research project investigating the experiences and expectations of older Australian homeowners concerning their use of the home, its land and the neighbourhood as they age. It comes in the context of a rapidly ageing society and increasing recognition by government of the implications for the economy, social policy, community services and housing of these demographic changes and the desire on the part of older Australians and the Government alike for people to remain in a private home of their own choice for as long as possible.

It comes also in the context of a longstanding debate about under-occupancy and inefficiency in Australian housing, particularly on the part of older people. This debate has been well articulated by Batten (1999) as originating in the early 1970s (King, 1973) continuing in the 1980s (Neal, 1985) and later in the 1990s in the National Housing Strategy (NHS, 1991a,b; 1992a,b) and the Australian Urban and Regional Development Review (AURDR, 1994). The assumption, based on a simple extrapolation of the number of permanent residents and the number of bedrooms, is that older people underutilise their dwellings and that this is an inefficient use of the housing stock. It has been suggested that older people should therefore be encouraged to trade down into more appropriate accommodation, thus releasing larger homes for the use of family households (AURDR, 1994). However, others suggest that older people require such 'surplus' space for other uses, such as visiting family and friends, office space, hobbies and so on (Davison et al., 1993; Kendig and Nuetze, 1999; Sweeney Research, 2006; Wulff et al., 2002). This research provides evidence to inform this debate.

An ageing society also raises questions about the suitability of the design of housing to accommodate people into their older age, and a number of different design approaches have been proposed to address their needs. In addition to the well established practice of 'home modification', these include concepts such as 'Visitable', 'Adaptable', and 'Universal' design and the various guidelines that have emerged around these. Just how suitable housing is for ageing in place, what design strategies might be most cost effective and how these might be implemented are also important questions in the ageing and housing debate. In considering design for ageing, there is also an increasing appreciation of the need for the house to be seen as part of the broader residential environment including its private open space and the surrounding neighbourhood and its facilities and its importance to the social and economic participation of older people.

An investigation of this type therefore requires a multi-disciplinary approach. The research team brought together academic expertise from social gerontology, architecture/urban design, industrial design, and economics. It used a range of quantitative and qualitative methods including ABS data analysis, a national social survey, in-depth interviews, photographic evidence and cost-benefit analysis to address the research questions outlined later.

The original research project was funded via an AHURI research grant, but this was later supplemented with additional funding from the Commonwealth Department of Health and Ageing to address some additional research questions arising from the recommendations of the National Speaker Series 'A Community for All Ages: Building the Future'.

The project builds on a growing portfolio of AHURI funded ageing and housing research of the authors on intergenerational housing transfers in later life (Olsberg & Winters, 2005), older homelessness (Judd et al., 2004) and Universal Design and ageing (Quinn, 2006).

1.2 Policy context

Policy makers, planners and researchers are increasingly interested in the changing patterns of how people live, their use of dwellings and land, their approach to housing tenure, and changes to their housing situation. Changing demographic trends and social trends in Australia, in particular the ageing of the population and changes in family structures, mean that such issues have become one of the primary foci of the policy agenda.

In recent decades there has been an increasing policy focus on implications of the ageing of the Australian population. The HACC program, commenced in 1984, recognised that it was in the interests of older people to be able to remain in their own homes for as long as possible with appropriate support services, and that this also reduced the cost to government of institutional based care. Since then, the level of support available in the home has progressively increased through the introduction of a succession of programs providing increasing levels of care in the home. These include Community Options Projects (COPs) and Community Aged Care Packages (CACPs) introduced in the early 1990s and the Extended Aged Care at Home (EACH) and the EACH Dementia program introduced in 2002 that provide an equivalent to nursing home care in the home. In October 2007, 777,471 older Australians were receiving HACC services and there were 48,050 Community Aged Care places (including EACH and EACH-Dementia) compared to 199,013 permanent residential care places and 37,349 residential respite care places (DoHA, 2007b).

Also in the early 1990s came a new focus on the wider social and economic policy implications of an ageing society, including on housing and urban policy. The Keating Labor Government's National Housing Strategy report on Housing for Older Australians (Howe, 1992) used data on dwelling and household size to identify considerable underutilisation of housing by older Australians, and the New Homes for Old Strategy Paper prepared for the Australian Urban and Regional Development Review (AURDR, 1994) outlined new policies and programs to increase housing choice for older people to better suit their needs and encourage more efficient use of the housing stock.

In the early 2000s the Howard Liberal-National Coalition Government recognised the important social and economic impacts of the ageing phenomenon in its National Strategy for an Ageing Australia (2002) taking a long-term, whole-of-government approach, and identified housing design as an important issue in assisting older people to support independent living and ageing in place or moving to more appropriate accommodation. The Howard Government's first Intergenerational Report (Australian Government, 2002) undertook a 40 year projection of demographic trends and identified the economic sensitivity of many government programs (e.g. health, social security and education) to the ageing of the population, suggesting that its impact on the cost of health, aged care and pension support would result in an unsustainable budget blowout and the resulting public debt would see an increase in interest rates and threaten private investment. Five years later, a second Intergenerational Report (Australian Government, 2007) provided a policy framework for maintaining fiscal stability and economic growth and called for long term planning across every government portfolio to achieve increased 'population, participation and productivity' in the face of the ageing population. This has led to changes in the

superannuation and taxation systems to encourage greater self-provision and increased participation in the workforce beyond normal retirement age.

Two other Howard Government initiatives focused attention on the role of the built environment in promoting healthy and productive ageing. The first was the Prime Minister's Science and Innovation Council's report on Promoting Healthy Ageing in Australia (PMSEIC, 2003) which set out '...a vision for an additional 10 years of healthy and productive life expectancy by 2050' covering a range of areas including health promotion, disease prevention, work and social environments and the built environment. It identified a need for technical innovation in housing, local neighbourhoods, transport, and urban planning to improve the '...long term viability and economy of the built environment' through '...land use and building designs that anticipate, and are responsive to, the diverse needs of people over the life course' (PMSEIC, 2003:50). A second initiative of the Office for an Ageing Australia within the Department of Health and Ageing was a National Speaker Series on ageing and the built environment entitled 'A Community for All Ages: Building the Future' which aimed to '...raise awareness of the need to plan and build better communities to meet the long term needs of a future Australian population which will have a higher proportion of older people' (DoHA, 2006b:7). A report on the Speaker Series set forth a number of recommendations and actions required to improve the quality of the built environment for an ageing Australia and identified the need for more research into the demand for and cost and benefits of 'Adaptable Housing' and the development of an economic model to examine the consequences if not implemented. These recommendations have been important in forming the aims and research questions for this research project and have resulted in supplementary funding support for the project from DoHA.

Though aimed at tenants rather than home owners, two recent initiatives of the Rudd Labor Government also take into consideration the needs of older people in the design of housing. The National Rental Affordability Scheme which provides incentives for investment in 50,000 affordable housing units (FAHCSIA, 2009), and the Social Housing Initiative under the Nation Building — Economic Stimulus Plan (Australian Government, 2009), both of which include criteria for improving access for older people and those with disabilities.

The policy concerns driving this research are intensified still further in the context of the current global financial crisis which, while undoubtedly having an impact upon the lives of all Australians, is having a particularly deleterious impact upon older men and women and their families in this country. Self-funded retirees have seen their investments decline, sometimes by 50 per cent or more in recent months, and those on fixed incomes are cutting back on everyday household expenses. There are already reports of an increase in demand and eligibility for take-up of the Commonwealth Age Pension as a result of the diminution of private savings and retirement income (O'Neill, 2009).

The aged pension has increased as a result of changes announced in the 2009 Federal Budget. And, for those still working or having to find paid work to augment their retirement income, an immediate issue is security or possibilities of employment in the current downturn. The demands and expectations of the elderly for assistance and support will impose further fiscal burdens on all levels of government already facing the pressures of coping with the economic downturn.

While the empirical field research for this project was conducted before the effects of the Global Financial Crisis, it may be regarded as an important benchmark to evaluate the current circumstances of older Australians with regard to housing efficiency and liveability. Current economic pressures will impact upon short term and long term

spending and expectations and attitudes regarding housing tenure for older Australians. The findings of this project will provide valuable indications of the policy priorities and personal and familial options to accommodate those pressures.

1.3 Aims

This project is a response to the following research question in the 2007 AHURI Research Agenda, Research Area 2.2 Ageing and Housing, which stated:

‘What are the types, sizes and locations of dwellings occupied by older home owners? How do these patterns vary for different household sizes? What incentives or disincentives could encourage or discourage the efficient use of dwellings and land occupied by older home owners?’

Following the awarding of the project, interest was expressed by the Department of Health and Ageing (DoHA) in providing additional funding to address two actions identified in the Report on the Findings and Recommendations of the National Speakers Series ‘A Community for All Ages: Building the Future’. These were:

Action 7.1 — In consultation with the Australian Housing and Urban Research Institute, identify the scope and need for a research brief into the cost-benefit of Adaptable Housing.

Action 7.2 — In consultation with the Australian Housing and Urban Research Institute and the development industry, identify the scope and need for a research brief into the level of demand for Adaptable Housing and the level of consumer support for Adaptable houses (DoHA, 2006b).

It was also agreed in discussions with DoHA to extend the research to include:

- Participation of older home owners in local activities and social networks and the importance of residential location with respect to maintaining these.
- The perceived importance of access to familiar support services (e.g. medical, health etc) and the importance of residential location in respect to maintaining such access.
- The perceived importance of propinquity to family and friends and the importance of residential location in respect to maintaining such access.
- Design issues external to the dwelling and its land — in particular urban design and its importance in accessibility to local services, activities and amenities.

The project aims were therefore expanded as follows:

- Provide an understanding of the relationship between older home owners and their dwelling types, sizes and locations.
- Examine the variation in these factors by the age of occupants, their level of ability, household type and cultural background.
- Assess how efficiently housing stock is, and could be, used by older home owners, considering changes in their household size and composition over time.
- Explore measures that might help to improve efficient use of the housing stock while improving liveability for older Australians.
- Establish the costs and benefits of Adaptable and Universal Housing design and propose an economic model to assess the consequences for older Australians if these are not adopted now.
- Investigate the level of demand and consumer support among older home owners for Adaptable and Universal Housing design.

From these aims a series of research questions and sub-questions were developed as follows:

- What are the variations in housing type, size and locations for older Australian home owners?
 - What are the housing types, sizes and locations for older Australian homeowners and how does this compare with other housing tenures?
 - What are the sizes of older home owners' dwellings in terms of the sizes and functions of rooms?
 - What is the effect of age, ability and CALD background on variations in housing type, size and location?
- How efficiently do older Australian home owners utilise the housing stock they occupy?
 - What are the sizes and compositions of older home owners' households, considering usual and temporary residents?
 - What is the frequency of change in household size and composition among older home owners, and how do they respond to these changes in their use of their land and dwelling?
 - What is the effect of lifestyle and care requirements of older home owners on their utilisation of their land and dwelling?
- If there are inefficiencies, what incentives or disincentives could encourage more efficient use of dwellings and land occupied by older home owners?
 - What are the policy options for more efficient use of dwellings and land occupied by older home owners?
 - What are the incentives and disincentives for older residents making more efficient use of their land and dwelling?
- What are the costs and benefits of Adaptable and Universal Design of housing compared to conventional design and retrofitting?
- What is the level of demand and consumer support among older home owners for Adaptable and Universal Housing?
- What are the levels of participation of older home owners in locally based activities and social networks and how important is residential location in maintaining these?
- How important is access to familiar support services (e.g. medical, health etc) for older home owners and hence residential location in maintaining such access?
- How important is propinquity to family and friends for older home owners, and hence location in respect to maintaining such access?
- How important are design elements external to the land and dwelling (urban design) in maintaining access to local services, activities and amenities for older home owners?

1.4 Report structure

Following this introduction that outlines the background, aims and methods used for the research (Chapter 2), this report is structured around the research questions into the following main sections:

Chapter 3

Older people and housing in Australia: an overview: providing important background and comparative data for the study and to address Research Question 1.1.

Chapter 4

The dwelling characteristics of older home owners: addressing Research Question 1 and its sub-questions 1.1 to 1.3.

Chapter 5

Household composition, change and housing utilisation among older home owners: responding to Research Question 2 and its sub-questions 2.1 to 2.3.

Chapter 6

Attitudes to, and options for, improving housing efficiency and liveability for older home owners: Incorporating findings relevant to Aim No 4 and providing an important user perspective for Research Question 3 and sub-questions 3.1 and 3.2.

Chapter 7

The costs, benefits and consumer acceptance of various design approaches for more age friendly housing: informing Research Question 4 and 5.

Chapter 8

Community Participation, support and neighbourhood design: in response to Research Questions 6–9.

Chapter 3 is based largely on an analysis of ABS Census and Australian Housing Survey Data, Chapters 4–7 use a combination of quantitative analysis of the national survey and qualitative analysis of the in-depth interviews, and Chapter 8 is based entirely on qualitative data from the in-depth interviews. The Conclusion reviews the key findings and outlines their implications for policy, the industry and older housing consumers.

2 METHODOLOGY

The empirical research for this project was conducted over a one and a half year period from October 2007 to January 2009 (though some supplementary CALD interviews were carried out later). The field research comprised multiple stages of data gathering and combined a broad range of integrated quantitative and qualitative research methodologies including: secondary analyses of existing national ABS Census and Australian Housing Survey data sets; primary field research of selected older population cohorts using both survey and interview techniques; design and cost data from industry, and primary cost benefit analyses and economic modelling.

The efficient use of dwellings and land by older home owners was the master narrative. These older Australians have equity in their housing and are able to make housing equity choices such as moving to another dwelling or modifying their dwelling and the efficiency and liveability of their domain will direct or influence their dwelling choices as they grow older. Four age cohorts were selected for general analysis and examination throughout this report. A cohort is a demographic concept for any group of people born within the same prescribed period whose common experiences, particularly in life passages, make them different from other groups before and after. The first and youngest cohort comprised men and women aged between 55 and 64 years. They are the baby boom generation born after World War Two and imminently facing or just having entered retirement. The baby boomers have generally enjoyed both fortunate global and local prosperity and opportunities in terms of the acquisition of real estate and employment. The second cohort comprised those aged 65 to 74, the so-called 'young old', generally active and independent and mostly already in retirement. This is the cohort that in their youth had to deal with the aftermath of the Great Depression and War, yet post-war they enjoyed opportunities for higher standards of living, virtually full employment and affordable housing and access to education, occupational and social mobility, and high consumption. The third cohort comprised those aged 75 to 84, the 'older old', some already facing dependence and the need for residential care. The fourth cohort comprised respondents aged 85 years and over, the 'oldest old', fewer of whom remain living independently or unassisted in their own homes.

Consideration of the efficient use of dwellings and land requires a multiplicity of theoretical approaches. In analysing the responses from the research sample a socio-economic and gender-based framework has been adopted in order to examine not just a diversity of people's responses but to gain a meaningful understanding of the sociological and psychological influences of people's life experiences in regard to the use of their dwellings and land and the liveability of their domain. The categories chosen for analysis include age, gender, dwelling type, location and length of residency in current dwelling, work and lifestyle, birthplace and length of time since arrival in Australia if an immigrant, family type, household income and access to the key resources of wealth, health and social support, and personal care requirements and responsibilities (particularly with regard to those with disability or health issues). Temporary residents (as defined by the ABS for the Australian Housing Survey) and visitors to the household constitute a particular focus of the research and analysis, as does community participation, general social support and experiences of neighbourhood design. It is the interaction of all these factors which will influence the attitudes, preferences, behaviour and possible housing choices of people as they age.

The various methods used in the research are discussed in detail below.

2.1 Literature review

A wide range of literature was reviewed from a number of disciplines relevant to the use of dwelling, land and neighbourhood by older home owners in Australia. It included a review of evidence concerning:

- The ageing population phenomenon and its implications for the health, disabilities, social activities and financial resources of older Australians — all important to the ability of older people to remain living in their own home.
- The housing and household characteristics of older Australians including their housing tenure — in order to ascertain their current housing choices and behaviour.
- The meaning of the home, the desire of people to remain at home, and the care and support options available to older people to enable them to remain longer in their own home.
- A range of housing design approaches aimed at assisting older people to remain in their own home.
- The role of urban design and planning in supporting older people's desire to age in place.

A full report on the findings of the literature review is included in the Positioning Paper for this project (Quinn et al., 2009).

2.2 ABS data analysis

Three potential sources of data on ageing and housing and older home owners in particular were originally identified. These were 2006 Australian Bureau of Statistics Census data (including selected time series data from the 1996 and 2001 censuses), the 1999 Australian Housing Survey (particularly for its unique data on temporary residents that is not available from the Census), and the HILDA longitudinal data set.

It was originally intended to use the ABS Table Builder facility to analyse 2006 Census data on older Australians generally and older homeowners specifically as this was scheduled for release in September 2007. However, this tool was not available within the time frame of the research and so alternative sources of Census data were sought. These included the 2006 1 per cent Census Sample File (CSF) which is described by the ABS as '...a comprehensive Confidentialised Unit Record File (CURF) of Census variables, containing a small random sample of private households and associated persons, and a small random sample of persons in non-private dwellings...produced for model testing and statistical analysis'. This was used in Chapter 3 to provide a profile of older people and their housing in Australia. However, this data did not enable separate analysis of older home owners, so two additional data sets were commissioned from the ABS. The first of these was the number of older Australians by age group, country of birth and statistical division for the 1996, 2001 and 2006 Census, which was used for producing maps included in Chapter 3 of the location of older Australians and tables showing the growth in the percentage of older persons in the population over the 20 year period. The final commissioned table was household data for home owners by number of usual residents by age group, tenure and statistical division. This was used to produce a map of the location of older homeowners, and graphs of their household size for each of the four age cohorts compared to home owners under 55 years of age also included in Chapter 3.

In the initial project proposal, the HILDA survey was identified as a resource to provide a quantifiable base from which to assess the land and property utilisation of older Australian home owners. Subsequent analysis of the HILDA resource suggested

that, aside from the ability to generate information at the national level, the sample frame was too small to reliably discuss sub-national variations. This, in part, was due to the nature of the cohort under analysis which substantially reduced the number of useable records. To this end, a subsequent methodological approach was decided upon. This approach made use of the 1 per cent Census sample file as a resource to both generate statistically reliable cross-tabulations at the sub-national level and also as a means to construct specially commissioned tables from the full Census in order to gain further spatial resolution. As indicated in this research, there are distinct sub-national (and even sub-state) variations in land and property utilisation by older Australian home owners. While the HILDA resource would have hinted at these variations, and the researchers would have been able to use such findings in a subjective manner, the subsequently deployed methodology provided a more robust spatial frame.

2.3 National survey of older home owners

2.3.1 Survey design and administration

The national survey, which comprised the primary quantitative data collection, has produced a unique original database of the characteristics, use, attitudes and expectations of older Australians with regard to their dwelling, land and neighbourhood. The development of the self-report questionnaire benefited from the participation and contributions from members of the Project User Group Meetings, which included representation from AHURI and DoHA. The survey form was then piloted with 12 older home owners known to the researchers and refined following their feedback. The final version of the survey is included in Appendix 1. An online version of the survey was also developed and made available on the UNSW City Futures/AHURI Centre website.

The survey form was inserted as a four page centrepiece in the October 2007 edition of the bi-monthly National Seniors' Association journal *50 Something* with reply paid envelopes for respondents. The National Seniors' Association represents the majority of Australia's community and service organisations for people over 50. The journal *50 Something* was selected as it offered the most cost-effective and appropriate means of targeting a wide national sample of older home owners from which it was possible to identify a range of respondent categories for subset data analyses. Readers of the journal include those sectors of the population who have equity in their housing asset and who are in a position to make domain choices, and are thus the primary target population for this project.

A reminder notice was also included in the following December edition of *50 Something* (see Appendix 2). The majority of completed survey forms were received by the end of January, 2008. The survey responses were coded and a data file was created using the Statistical Package for the Social Sciences (SPSSx).

According to information provided by National Seniors Australia, in late 2007 when the survey was conducted there were 172,743 subscribers to the magazine *50 Something*. A total of 1,782 surveys were completed, 1,680 (94%) of which were returned by mail as paper responses, and 102 (6%) completed on-line via the web based survey.

This level of response to the survey is considered relatively accurate for the time of the study. An approximate accuracy was then statistically calculated. Assuming the population follows a normal distribution with the proportion of 0.5 and a confidence level of 95 per cent, based on the number of samples and population, the confidence

interval of the data was just below 5 per cent (4.55%).² This value is considered to be good for data accuracy.

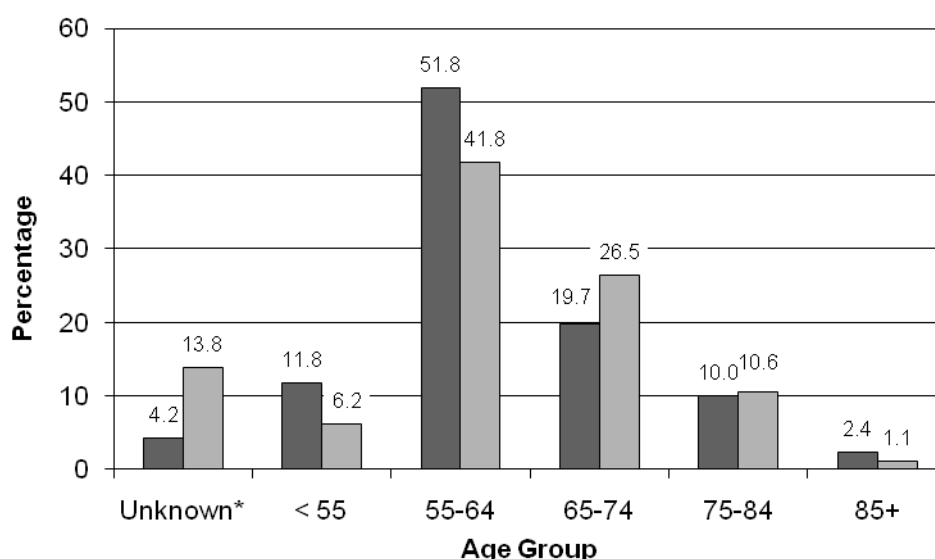
Upon analysis of the survey responses, it was found that not all were home owners. A total of 103 respondents were private renters, 29 public housing tenants, 40 other tenure and 7 non respondents to the tenure question — a total of 10.0 per cent of non-home owner respondents. Since these did not comply with the specified housing tenure, they were eliminated from the data set for the purposes of the analysis. This resulted in a data set of 1604 older home owners.

Since the national survey was based on subscribers to the *50 Something* magazine, and not a random sample of all Australian older home owners, it is not possible to claim these responses are representative of all older Australians. However, as indicated below when compared against data from the ABS 2006 Census data for the key variables of location and age (Figure 3 and Figure 4), there are reasonable similarities with the national data to enable some generalisations to be made.

2.3.2 Profile of survey respondents

Figure 1 shows the age profile of respondents compared to subscribers of *50 Something*, according to data provided by the National Seniors Association. Survey respondents are slightly under-represented in the 55-64 age group and slightly over-represented in the 65-74 age group. There were 13.8 per cent of respondents who did not state their age, and an additional 6.2 per cent were under 55 years of age. As noted above, in the following analyses non responses are treated as missing data, and those who were not homeowners are excluded from the analysis. Those not stating their age are assumed to be 55 years of age or older for the general analyses, but where cross-tabulations are made against age, only respondents in the four age cohorts (55-64, 64-74, 75-84 and 85+) are included.

Figure 1: Age profile of *50 Something* subscribers and survey respondents



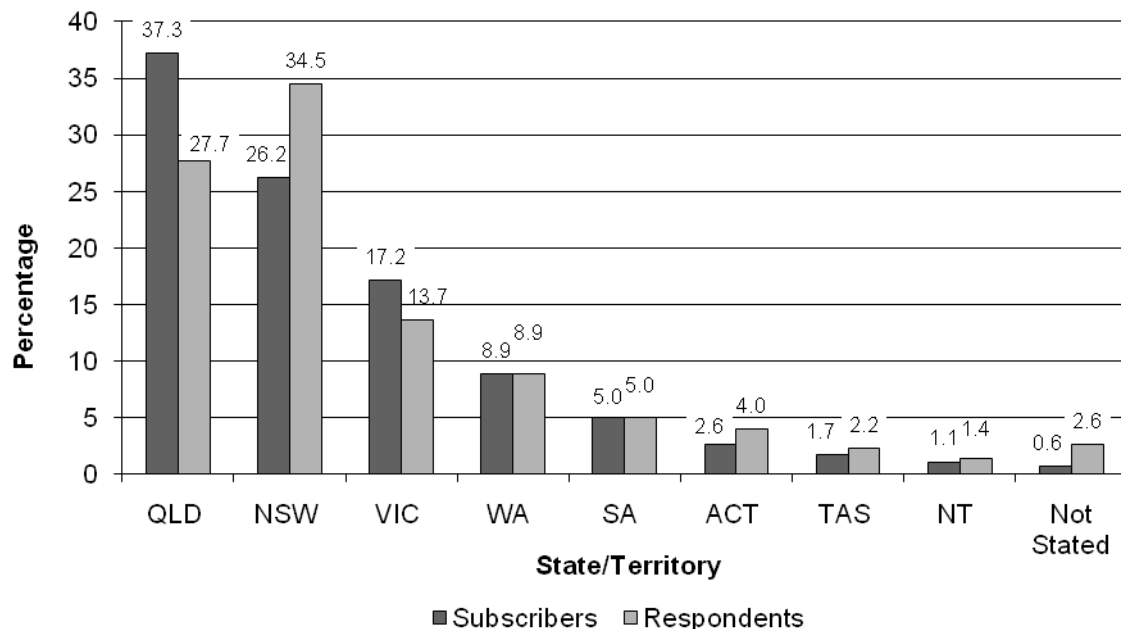
Source: National Seniors Australia <http://www.nationalseniors.com.au> and survey data.

* Includes some apparently erroneous age categories in the NSA data and non responses to this question in the survey data.

² Statistical formula was taken from Churchill Jr. (1995) with further explanation from Cochran (1977).

The responses came from all states and territories as indicated in Figure 2 and despite a 9.6 per cent under representation from Queensland and an 8.3 per cent over representation from NSW, compared to subscribers, respondents represent reasonably well the distribution of *50 Something* subscribers by state and territory.

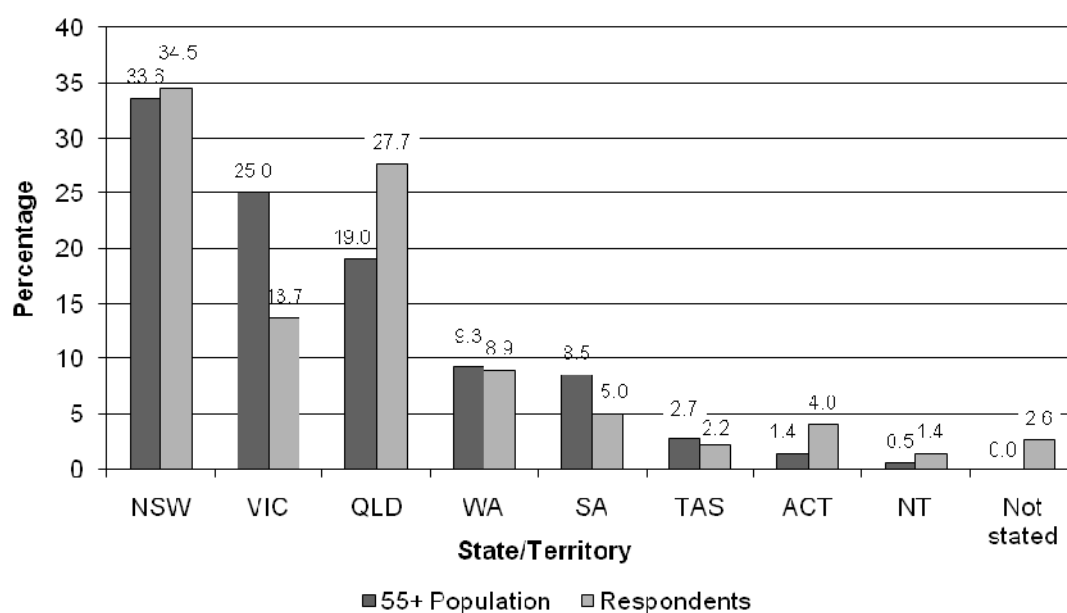
Figure 2: *50 Something* subscribers and survey respondents by state/territory



Source: National Seniors Australia <http://www.nationalseniors.com.au> and survey respondents.

When compared to the older (aged 55+) Australian population at the 2006 Census there was an over representation of respondents from Queensland of 8.7 per cent and a corresponding under representation from Victoria of 13.3 per cent. Otherwise the response pattern represents fairly well the distribution of subscribers by state and territory for the general population.

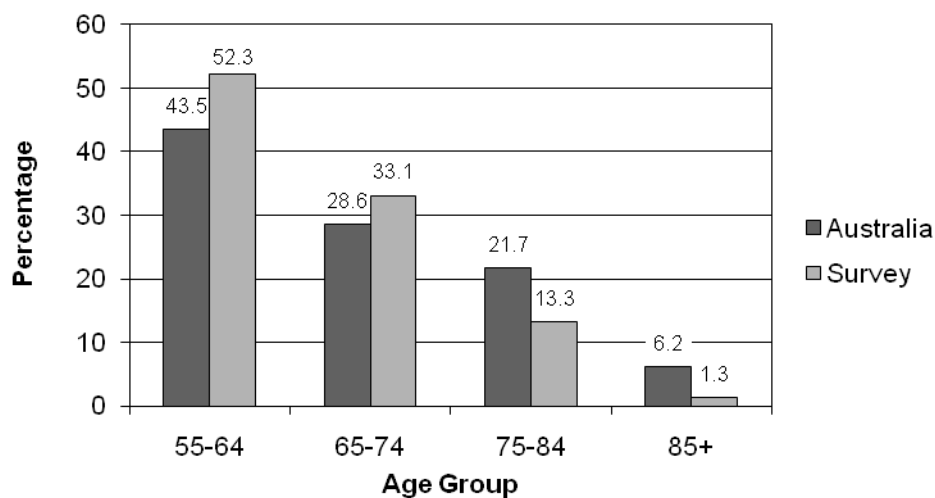
Figure 3: Older Australian population 2006 and survey respondents



Source: ABS 2006 Census data and survey responses.

Compared to older home owners (55 yrs and over) in the Australian population, survey respondents were a little over-represented in the two older age cohorts and under-represented in the two lower cohorts as shown in Figure 4. There were a small percentage of respondents in the survey who were aged between 50 and 54 years (7.2%), but who still fall within the readership of the *50 Something* magazine. These have been excluded from Figure 4. The strong representation in the two younger cohorts is, however, useful. Such data and analyses offer valuable predictive information for policy makers and planners, as these older men and women are part of the expected huge growth in the older population and are expected to enjoy increased longevity as discussed later in the report in Section 3.1.

Figure 4: Age of survey respondents and Australian home owners aged 55 and over, 2006



Source: ABS 2006 Census tables www.censusdata.abs.gov.au and survey data
 Note: Excludes respondents under 55 or not stating their age.

Women were also over-represented (61.2%) in the responses compared to the Australian population (47.2%) (ABS 2006 Census). No data was available on gender from National Seniors on *50 Something* subscribers.

Of all respondents, 83.4 per cent were outright owners and 16.6 per cent were owners with a mortgage.

Close to three quarters of the respondents (72.8%) were born in Australia and 27.2 per cent were overseas born. As illustrated in Figure 5, of the 427 not born in Australia, the largest group was from North-Western Europe (279) predominantly from the UK and Ireland (217).

Figure 5: No. of survey respondents born overseas

(n=427)

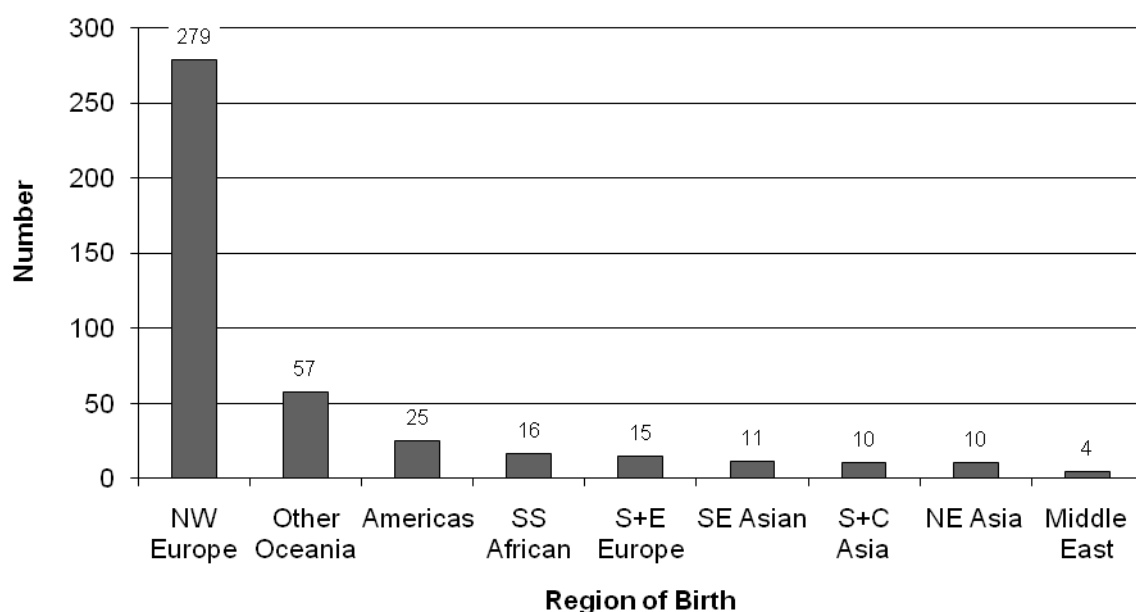
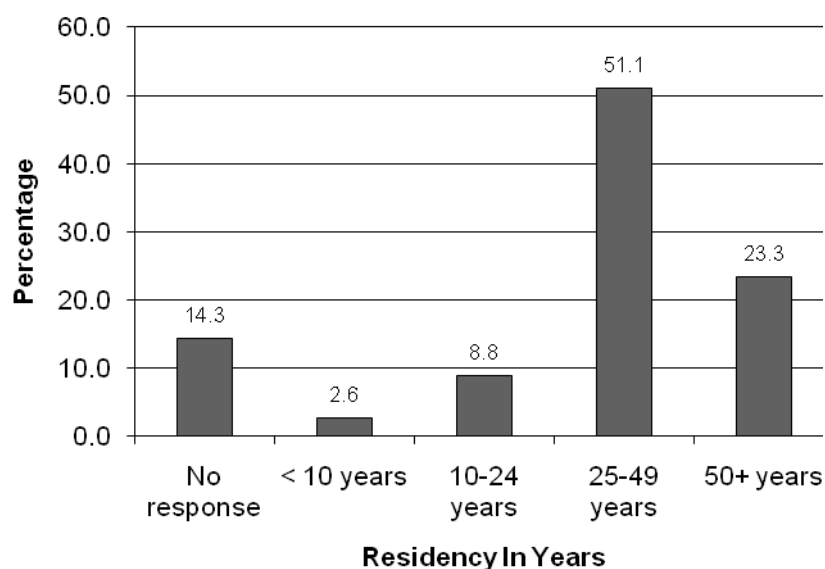


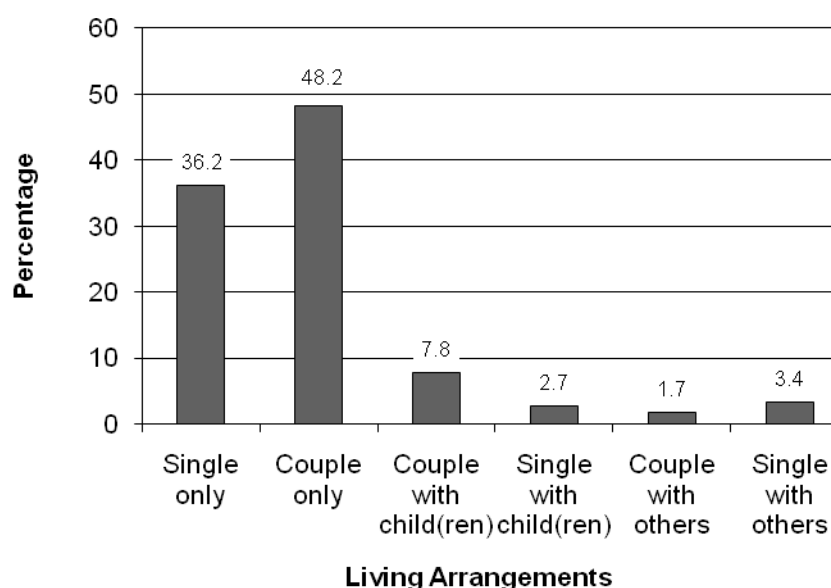
Figure 6 below shows the length of residency in Australia of overseas born respondents. Most (73.8%) had lived in Australia for 25 years or more and very few had lived here less than 10 years.

Figure 6: Length of residency in Australia, non-Australian-born respondents



As shown below in Figure 7, nearly half (48.2%) of all respondents were couple households and a further 36.2 were single person households. Only 10.5 per cent had children living with them and even fewer (5.1%) were either couples or singles living with others.

Figure 7: Living arrangements of respondents



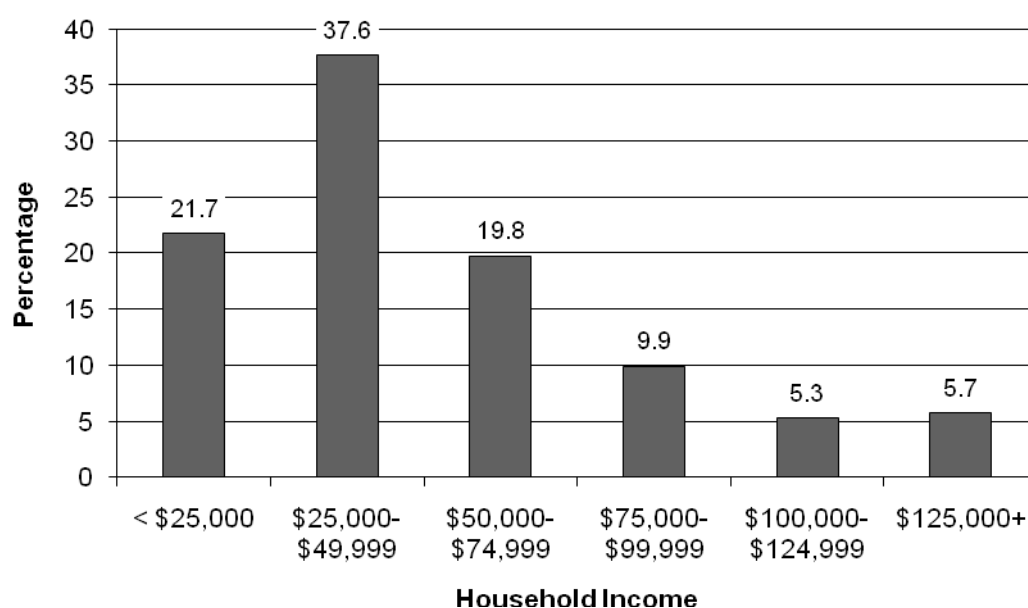
A good range of employment/retirement status was represented among the respondents, the highest proportion being self-funded retirees (35%) followed closely by full or part pensioners (25.4%). A smaller but almost equal number were working full and part-time, in total 36.4 per cent were in the workforce.

Figure 8: Employment/retirement status of respondents



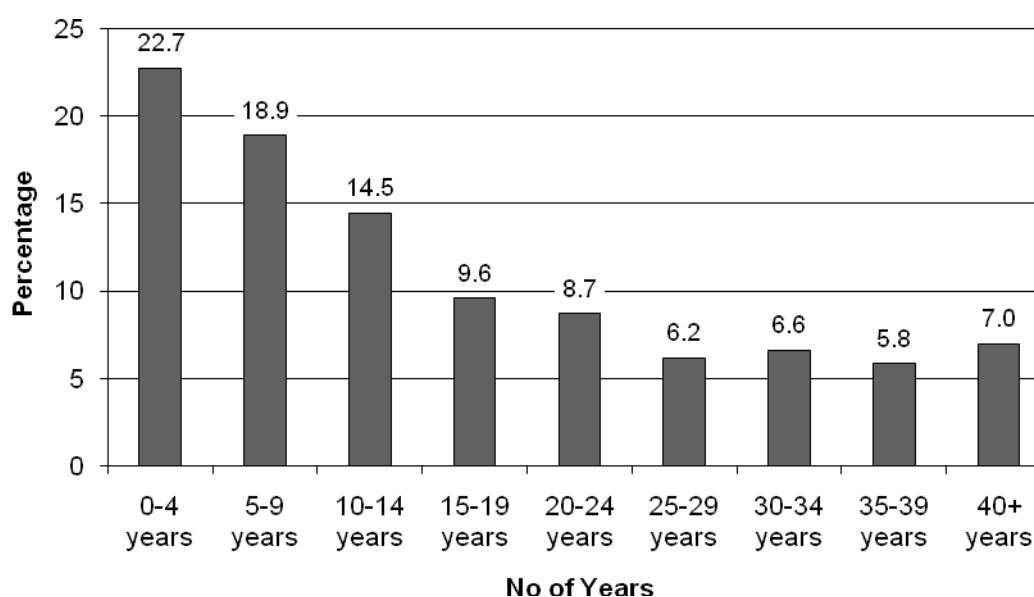
The employment profile of respondents is also reflected in the household income of respondents, with 21.7 per cent earning \$25,000 or less which would include singles and couples receiving the full pension. The highest percentage (37.6) however were earning between \$25,000 and \$49,000, with a slightly higher proportion (40.7%) earning \$50,000 or more.

Figure 9: Household income of respondents



In terms of length of residency, close to a quarter (22.7%) of respondents had been living in their current dwelling for less than five years and 41.6 per cent for less than 10 years.

Figure 10: Length of residency in current dwelling



Although not completely representative of *50 Something* subscribers or the older Australian population at large (not all of whom are homeowners), the sample was found to be robust with good representation from most of the categories considered important for the purposes of this study and sufficient for broad generalisations about older home owners. The most serious deficiency was the under-representation of those 85 and older which does require caution in interpreting data for this cohort in some cross-tabulations.

2.4 In-depth interviews

Efficient use of dwellings and land is inextricably linked to the liveability of dwellings and land as expressed in the attitudes and the experiences of older residents. Liveability can best be analysed in the context of Quality of Life (QOL) measures which are commonly used as an outcome measure for economic, health and social policy. Yet such QOL measures have suffered from a paucity of research elucidating the meaningful perspectives of older people themselves (Hambleton, Keeling & McKenzie, 2009, 6).

This project extends the QOL paradigm by integrating quantitative and qualitative analysis in order to explore how older people themselves evaluate the linkages between their domain and their experiences, their sociological and psychological responses, personal feelings, attitudes, preferences, and judgements about their dwellings and land, and so the liveability of older people's domains. With specific focus upon core domains and dimensions of liveability, the researchers were able to more fully assess, understand and evaluate the liveability of older people in their use of land and dwellings and to consider policy options of incentives and disincentives to improve liveability for older residents.

The qualitative approach, which comprised this stage of the research, offered opportunities for both face to face in-depth interviews with older men and women and to include some written responses to open ended questions in the paper and on-line surveys. Seventy in-depth face to face interviews were conducted by the researchers in Queensland, New South Wales, Victoria, Western Australia and the ACT covering both urban and rural areas. The interviews were conducted with respondents who had previously indicated in their response to the quantitative survey that they would be willing to participate in a follow-up in-depth interview.

The interviews were undertaken in the dwelling of the respondent which offered the opportunity to discuss special features of the dwelling mentioned by the respondents in their previous responses to the survey, but also the unique opportunity for the researchers to photograph and record features of the home environment. This important photographic record of the lived domain of older Australians provided a valuable support for the analyses and a library available for the future use of policy research, evaluation and planning. Some photographs are included within this report. The full photographic library is cross referenced to the interviews by respondent number, but actual names and addresses and any details that may personally identify the respondents are confidentially protected. The library and interviews are stored on a password protected secure site on the UNSW server.

The interviews were professionally transcribed and then thematically coded and analysed using the NVivo qualitative data management software.

2.5 Cost-benefit analysis and economic modelling

The cost-benefit analysis of the different access-focused housing design approaches was added to the project in response to the interest and support of the Commonwealth Department of Health and Ageing. The planned analysis involved an examination of the design requirements and costs of providing more accessible housing, through:

- Custom modifications of conventional housing design.
- Adaptable Design to Category C of Australian Standard AS 4299-1995 Adaptable Housing [AS4299].

- Universal Design based on current Australian guides for the ten critical features for Universal Design, and a selection of housing design criteria identified by Quinn (2006).

An additional design approach was included in the cost-benefit analysis:

- Visitable Design

Due to the critical nature of these minimum design features (no-steps to the entrance, wide doorways and Accessible toilet) for wheelchair users, the much higher cost of their inclusion after dwelling construction, and the current international prevalence of regulating minimum access 'Visitability' features in all housing.

The economic analysis was conducted on four policy scenarios over the next twenty years; tested against the basecase of continuing with modification of conventional housing at the current rate, with the present resident outcomes:

- Policy of requiring all new dwellings to be Visitable.
- Policy of requiring all new dwellings to incorporate the Adaptable features of AS4299 Category C.
- Policy of requiring all new dwellings to incorporate Universal features.
- Policy of accelerated home modification of conventional housing to the same rate of new housing construction under the other three policy scenarios.

As a comparison, a policy of implementing each of these design approaches in just 20 per cent of all new housing was also tested.

2.5.1 Costing of design approaches

Prior cost analyses have been conducted on the inclusion of the Adaptable Design features in AS 4299-1995 Adaptable Housing, in Australia (Landcom, 2008; Hill PDA, 1998). The findings of these studies were consistent with similar international studies: inclusion of Visitable and Adaptable features in housing at the time of construction has a minimal effect on cost (Landcom, 2008; Hill PDA, 1998; Concrete Change, 2003; JRF, 1997), and it is far more cost effective to include these features at the time of construction than modify a conventionally designed dwelling to have these features at a later date (Hill PDA, 1998, Concrete Change, 2003; JRF, 1997).

In the recent Landcom analysis (2008), the costs of including twelve design elements of AS4299 considered 'critical' for all housing (see Appendix 5) were examined for typical project homes (no apartments), including single and double storey separate, semi-attached and attached homes; and concluded that modifications to non-complying home designs would add only 1-2 per cent to the initial construction cost (Landcom, 2008:7). The report provided a range of design examples for these design principles, as well as five model housing designs; but did not include details of the designs costed and the costing method.

The earlier cost-benefit analysis of Adaptable Housing (Hill PDA, 1998) similarly considered a range of dwelling types: single dwelling, high rise, low-mid rise, and townhouse. The detailed costs of AS4299 Category B and C features were prepared by Quantity Surveyors, and reviewed in workshops by representatives from government and peak ageing and disability bodies. The method of costing the design features was not provided in the resulting publication (Hill, 1999), and was not available to the researchers in the project report (Hill PDA, 1998).

This current project had the objective of providing a detailed examination of the type of design changes that would be required for current dwelling designs to meet Adaptable, Visitable and Universal Design criteria, the impact of these changes on the

design process, and the resulting costs. To provide the desired level of detail, this project applied these design approaches to three recently designed and built dwellings (an apartment, an attached house and a separate house) in an Australian residential development, and the results were then compared to the design and cost of modifying the conventionally designed dwelling at a later date. Full details of each dwelling's 'before' and 'after' design and the costs assigned are to be provided.

Accordingly, in this cost-benefit analysis it was not the intention, nor was it feasible, to draw conclusions on the cost of applying these design approaches to all housing. Different developers', builders' and architects' new dwellings would vary in the degree of accessibility that is provided in the standard design, and the design changes made to have them comply with VISIBLE, ADAPTABLE or UNIVERSAL criteria could also differ widely. However, this analysis aimed to provide a detailed examination of the types of access features that are currently being included in leading residential developers' dwelling designs; the comparative ease (and difficulty) in meeting VISIBLE, ADAPTABLE and UNIVERSAL criteria, while continuing to address market trends, preferences and amenity in the dwelling design; and an example of the additional cost involved for one such redesign.

It is important to note that when these case study dwellings were designed, they were not intended to comply with ADAPTABLE, VISIBLE and UNIVERSAL criteria; and in this project they were not expected to do so. Hence, any findings that housing features do not meet these criteria should not in any way be construed as criticism of the design.

Dwelling structures

To consider the effects of dwelling size on the provision of access features, three different case-study dwelling structures were used for the analysis:

- A compact, two-storey, four-bedroom separate house.
- A two storey, three-bedroom attached house.
- A two-bedroom apartment.

The dwellings were selected from recent master-planned estates in Sydney, developed by one of Australia's leading residential developers, Delfin Lend Lease. The separate house and attached house were located in the same residential estate; however, due to a lack of design documentation for apartments on this site being available for the analysis, an apartment located in another nearby residential estate was chosen. The dwellings were variously designed by the developer's in-house architects or consultant architects to the developer's specification, and built by different residential builders.

The individual dwellings chosen for analysis were selected jointly by the researchers and the developer/builder. The four-bedroom separate house design was recommended by the builder, due to its popularity in the market and the variety of options available, including a version that was designed to AS 4299-1995. The three-bedroom attached house design was selected by the researchers due to it being one of the few attached dwellings in the estate that was attached on both sides, and on a narrow site. Following unsuccessful attempts to obtain sufficient design documentation for a non ground-level apartment in a medium-rise block on the same site, an equivalent apartment design was selected by the developer in one of their more recent nearby residential estates.

The case-study dwellings selected are a reflection of the current state of the art in new residential housing designs by a leading Australian residential developer, in line with the focus on design of new housing in this study. They are not intended to represent

the most prevalent housing types in existing residential stock. The two-storey dwellings in the case studies follow the more dominant and popular housing type in this new residential development (in contrast with existing housing stock occupied by older home owners (Figure 36). which in the survey was mostly single storey). Though inclusion of an additional single storey house would provide a useful addition to the analysis, this was not feasible in this project. Likewise, inclusion of an apartment in a walk-up two or three-storey block (the more common type of apartment currently occupied by older home owners) would provide an interesting contrast to the apartment building selected, which is accessible via a lift; but was not feasible in the time constraints of the project. However, the advantage of this cost-benefit analysis is the detailed approach taken to design and costing of the dwellings; which enables a focus on individual features of the dwellings, and straightforward future comparison with additional housing features and typologies.

The design and construction documentation, including floor plans, elevations, schedule of finishes, electrical specifications and PC schedule, were obtained for each dwelling. Photographs of the selected dwellings and/or similarly designed dwellings were provided by the developer for clarification of visual details. In addition, the researchers visited the sites and photographed the selected dwelling, or (if not available for viewing due to occupancy or being under-construction) a similar dwelling design.

The documentation for each dwelling design was analysed to ascertain its compliance with each of the design approaches. The floor plans and relevant elevations of each dwelling were then either electronically or manually transferred into Rhinoceros® design software, and then altered so they did comply with each design approach.

The cost of each of the design alterations was calculated using *Cordell Housing Building Cost Guide — New South Wales December 2008 [Cordell]* and entered into a Microsoft Excel® spreadsheet that was developed for each dwelling design. The most detailed costs available from Cordell were used; however, it was recognised that some of these costs would not accurately reflect the cost paid by the builder, due to the effect of supplier relationships, fluctuating building costs, and some cost details that were not available in the cost guide. In some cases, where the costing details in Cordell were too general (such as a single approximate price for several widths of door), quotes were obtained from suppliers³. Despite the potential for costs to differ from actual housing industry cases, the costing method provides developers and builders with costing transparency to determine how closely these cases would reflect their own; and a template that could be used for their own costing, using confidential data from their developments.

2.5.2 Design analysis

Following comparison of the existing dwelling designs and the design requirements of the design approaches, each of the dwelling designs was altered to comply. In the design alteration, a number of restrictions were placed on the alteration:

- No changes to the overall floor area of the dwelling or the dwelling footprint.
- No changes to the size or location of structural walls or columns; and in the apartment, no changes to location of windows.
- Minimise changes to the external appearance of the dwelling building.

³ Where quotes have been obtained it has been noted in the spreadsheets. For consistency with *Cordell* costs, the 'architectural or project price' (ex-GST) was requested.

- Where there was a toilet and en-suite, retain the bathtub and shower in their current rooms, as it was assumed to be the market preference.
- Retain the laundry facility in the same location (eg. within the bathroom) or very close by, as it was assumed to be the market preference.

Home Modifications

Home Modifications are usually a customised response to the needs of a resident, so for a comparison of the cost of modification and other design approaches, standardisation was required. Accordingly, for the analysis it was assumed that the modification required was equivalent to the post-adaptation features in AS 4299-1995. There were two modification scenarios that were considered. The first scenario: that the modifications would be made long after construction as part of a timely major renovation (including a complete new kitchen or bathroom), and the second scenario was a government-funded modification, e.g. through Home and Community Care [HACC]. Due to time constraints, only the latter scenario was undertaken for the redesign. This was the more critical enquiry, as the budget would be restricted and building changes and cost would need to be minimised.

Visitable Design

The Visitability features were taken directly from the corresponding specification in AS 4299-1995 Adaptable Housing (Standards Australia, 1995:8). That is, a step-free entrance, a Visitable toilet, and doors and circulation space on the path of travel to the living area and toilet complying with AS1428.1. The selection of bathroom or en-suite for the Visitable toilet was based on the available bathroom space and ease of achieving the circulation requirements.

Adaptable Design

The Australian Standard AS 4299-1995 Adaptable Housing's 'Category C' requirements formed the basis of the Adaptable Design analysis. This standard refers extensively to AS1428.1 and AS1428.2, which were in turn consulted. There was some perceived ambiguity in application of the Standard, particularly regarding the extent to which it is intended to apply to the upper levels of a multi-storey dwelling, and clarification was twice sought and obtained from the relevant Standards Committee. Otherwise, the Standard was applied as written. In the two storey dwellings (attached house and separate house), there were two design options examined: providing access on the ground floor only, and providing access to the first floor via an appropriate means of vertical circulation as an alternative to stairs.

Universal Design

The Universal Design criteria used for the cost benefit analysis were derived from three Australian sources. The Commonwealth Government's Top 10 features for all stages of life (DoHA, 2007a) was the primary source, as it had been recently developed by the Department of Health and Ageing. This was supplemented by The Australian Network for Universal Housing Design's *Top 10 Housing Features for inclusion in a Universally designed home*⁴ including 'Better Practice Design Features' (ANUHD, 2008); and another similar ten-feature recently published Universal Design guideline being proposed for regulation in Victoria: Universal Housing Standard (Nissim, 2008). These sources are shown in Appendix 6.

The Top 10 Housing Features replaced an earlier ANUHD source that the researchers had intended to use: '10-point minimum criteria for inclusion in a Universally designed

⁴ This recent publication replaced an earlier ANUHD source, which the researchers had intended to use: *10-point minimum criteria for inclusion in a universally designed home (ANUHD, 2006)*.

home' (ANUHD, 2006). The earlier criteria included a number of supplementary features, which differ slightly from the newer publication's 'Better Practice Universal Design Features'. Most notably, the minimum parking space size is no longer included.

A single set of criteria was developed by combining the criteria from the three sources and breaking them down into individual items. Some of the items were clearly identifiable and measurable; however, others resembled principles more than performance requirements. For example, there is no definition of 'a shallow sink', 'slip resistant flooring', 'appropriate lighting levels' or 'reinforced wall'. Similarly, there are no dimensions provided for the 'kitchen bench space', or the amount of space for an accessible bathroom. Where there were variations in measurements between the sources (eg. door and corridor width), the DoHA source was prioritised.

Where performance requirements were provided (eg. dimensions), they were directly adopted. For those features that were more generalised, and hence could not be objectively measured, additional data was sourced from Quinn's Universal and Flexible Housing Design Criteria (2006) to provide measurable performance requirements. The criteria and performance requirements were again categorised into ten features, shown in Appendix 6.

Earlier in the project it was proposed that the cost-benefit analysis incorporate the full set of Universal and flexible design criteria from Quinn. Time and cost constraints, as well as the current policy emphasis on these 10-feature styles of Universal Design implementation, led to the analysis being restricted to these more concise guides. A cost benefit analysis of the full set of Universal and flexible design criteria is planned following completion of this project.

2.5.3 Economic modelling

Cost benefit analysis was undertaken for the different policy options. Cost benefit analysis (CBA) is an economic analysis tool to assist decision makers choose between policy options. The main advantage of CBA is that costs and benefits are all, where possible, expressed in monetary values; and therefore directly comparable. CBA takes a society wide perspective, rather than assessing costs and benefits accruing to a particular group or individual.

Policy scenarios

In order to assess the impact of a policy scenario, it is important to define the 'basecase', or what would happen if the policy was not implemented. Costs and benefits associated with a policy can therefore be measured as 'marginal' to the basecase. Under the basecase, home modification would be undertaken. It was assumed that home modification would be done in response to needs, and the rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.

In the analysis, three alternative policy scenarios were tested against the basecase, Visitable Design, Adaptable Design and Universal Design. The costs associated with each policy scenario were calculated. These included construction costs and modifications costs.

The major benefit arising from the alternative policy scenarios was from avoiding home modification costs. However, non-construction cost benefits were also included. Due to time and resource constraints, it was not possible to complete detailed independent calculation of non-construction cost savings for this study. Therefore, a benefit transfer approach was adopted. The benefit transfer method is used to

estimate economic values by transferring available information from studies already completed in another location or context.

Two sources were investigated for estimating non-construction cost savings.

The first source used data collected by Hill PDA in their 1998 *Adaptable Housing Study*. Hill PDA (1998, p.17) identify the non-construction cost economic savings associated with introducing Adaptable Housing as: reduced need to move into residential care, reduced cost of rehousing, reduced government administration costs, savings in home care costs for elderly, savings in health care costs and savings in reduced falls at home.

The second source used data collected by Cobbold (1997) in A Cost Benefit Analysis of *Lifetime Homes*. Cobbold calculated the value of future savings per dwelling of introducing Lifetime Homes' features into every home. The savings included delayed moves into residential care, reducing the need for temporary residential care and savings in home care costs. Note that these figures do not include non-quantifiable savings in health care costs, reduced re-housing costs, or quality of life benefits.

The two sources set out above each have advantages and disadvantages as follows.

The Hill PDA study is an Australian study, which makes the social and economic context more comparable, and includes relevant policy savings, such as HACC. However, the disadvantage of using the Hill PDA data is that savings were calculated on a total savings basis, not per dwelling. This makes scaling the savings up or down based on the number of dwellings modified difficult.

In the Cobbold data, savings are calculated on a per dwelling basis. This makes scaling the savings up or down based on the number of dwellings modified easier. However, it is a UK study, which makes the social, economic and policy context less comparable, and the benefit values per dwelling appear to be very low (around \$270 when converted to 2009 Australian Dollars).

Taking these advantages and disadvantages into account, it was decided to include only the Hill PDA benefits in the analysis.

Dwelling projections

In order to assess the impact of the policy scenarios over the timeframe (2010 to 2030), it was necessary to estimate the number and type of new dwellings that would be built, or existing dwellings that would be modified, each year. The following methodology was used to derive this estimate.

The methodology was based on the rationale that dwelling types are selected based on household types. A linear forecast of household types based on the 1996, 2001 and 2006 Australian Bureau of Statistics Census data was undertaken for the period 2011 to 2026.

The dwelling type occupied by the different household types between 1996 and 2006 was then calculated, and the trend of household types over this period derived, and then projected to 2026. The 1996 to 2006 trend in household types was extrapolated to 2016, and held constant thereafter. This enabled dwelling type projections to be derived for 2011 to 2026.

The change in dwelling numbers in each five- year time period was used to calculate the number of new dwellings by type per annum, between 2010 and 2026. The number of new dwellings per annum was then assumed to be constant between 2026 and 2030.

Rate of policy application

It was necessary to make an assumption about the rate of demand for dwellings built or modified under the policy scenarios. Previous studies of Adaptable Housing have estimated that between 8 per cent (Hill PDA, 1998) and 20 per cent (Cobbold, 1997) of new dwellings would need to be built as Adaptable. The 8 per cent figure was based on the number of new dwellings that would need to be adapted immediately upon completion to meet the requirements of the purchaser. The 20 per cent figure was based on the number of dwellings that would need to be adapted to meet the needs of their owners over a longer (30 year) period. In the CBA, the following rates of policy application were assumed:

100% policy application scenario

- Home Modification — rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.
- Visitable Design — 100% of new dwellings per annum built to policy standard.
- Adaptable Design — 100% of new dwellings per annum built to policy standard, 20% of existing dwellings modified every 15 years, which equates to 1.33% of existing dwellings modified per year.
- Universal Design — 100% of new dwellings per annum built to policy standard.

20% policy application scenario

- Home Modification — rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.
- Visitable Design — 20% of new dwellings per annum built to policy standard.
- Adaptable Design — 20% of new dwellings per annum built to policy standard, 20% of existing dwellings modified every 15 years, which equates to 1.33% of existing dwellings modified per year.
- Universal Design — 20% of new dwellings per annum built to policy standard.

Discounted cash flow analysis

In order to model the costs and benefits arising from each option over time, discounted cashflow analysis (DCF) was undertaken. The key assumptions of the DCF were a 20-year timeframe, 2010 to 2030, a 6 per cent discount rate, and 0 per cent real cost inflation in construction costs. The results of the cost benefit analysis are set out in Chapter 7.

3 OLDER PEOPLE AND HOUSING IN AUSTRALIA — AN OVERVIEW

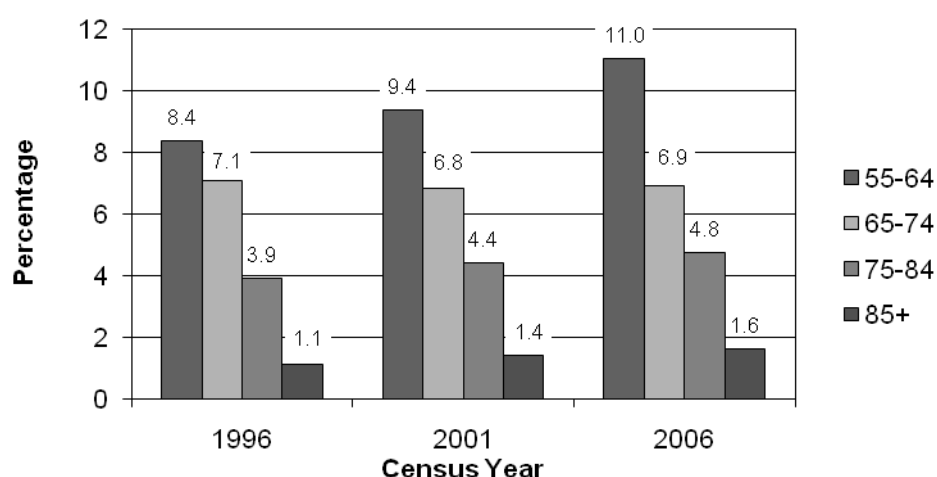
Before looking at the results of the survey of older homeowners conducted for this project, it is important to put these in the context of a broad understanding of the characteristics of older people in Australia and their housing. The overview in this section is based on two main data sources: 2006 Census one per cent sample data from the Australian Bureau of Statistics and 2006 Census tables specially commissioned from the ABS for this project. It analyses the Census data according to the four age groups that will be used in the analysis of survey results later in the report.

3.1 Population ageing

As noted in the Positioning Paper (Quinn et al., 2009:32-36), the ageing of the Australian population is a well established phenomenon. It is fuelled by three main factors: low fertility, increased longevity and the post-war baby boom cohort reaching their 60s (including many post-war immigrants who have contributed largely to the population growth). In the 10 year period between the 1996 and 2006 censuses, the number of people aged 55 years and over had increased from 3.63 million (20.5 per cent of total population) to 4.84 million (33.1 per cent of total population).

Figure 11 shows the growth in the older population (aged 55 and over) over the last three censuses (1996, 2001 and 2006) for each of the four age groups to be used for analysis throughout this study. In 10 years, the older Australian population had grown by one third (33.1%), three times the growth in the overall population (11.84%). The most dramatic growth rate however was in those 85+ which increased by a staggering 62.0 per cent, followed closely by 55-64 year olds, which almost doubled at 47.9 per cent growth. Growth of those 75-85 was also substantial at 36.7 per cent, but for 65-74 year olds was only 9.2 per cent (ABS 2007a). Growth at both ends of the older age cohorts demonstrates the impact of increased longevity (at the older end) and the entry of the baby boomers into old age (at the younger end).

Figure 11: Growth in percentage of older Australians by census year, 1996-2006



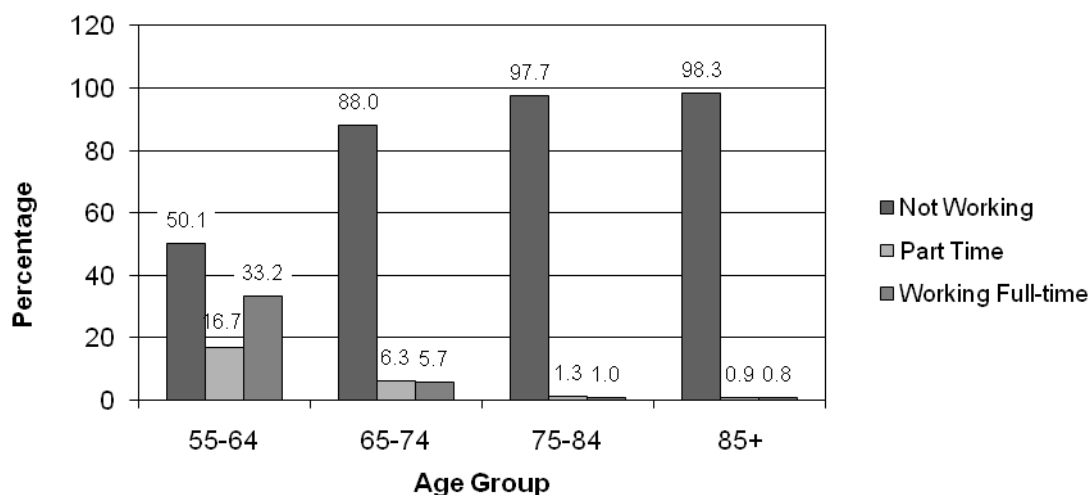
Source: ABS 2006 Census

The Positioning Paper noted that it is projected that the percentage of people aged 55 years and over in the population will increase from approximately one quarter in 2007 (ABS 2007a) to 30 per cent by 2021 and at least 38 per cent by mid century. The percentage of people aged 60 years or more is expected to double by mid century and those 85 and over to quadruple (ABS 2006:83, as cited in Quinn et al., 2009:33).

3.2 Employment status of older people

Figure 12 shows the employment status of older people in Australia. It can be seen that in the 55-64 year age group half the population (50.1%) is not working, one third are working full-time, and 16.7 per cent working part-time. The percentage not working increases dramatically to 88.0 per cent in the 65-74 age group and thereafter to almost all in the two oldest age groups.

Figure 12: Employment status of older Australians, 2006



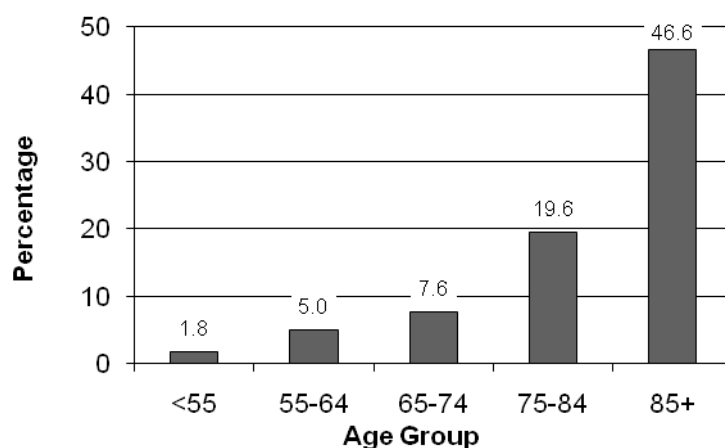
Source: ABS 2006 Census 1% sample file

Note: Not working refers to those not in the labour force.

3.3 Need for assistance with core activities

A critical aspect of the ageing experience, and in particular of the ability to remain living independently, is the increasing deterioration of ability with age and the increasing likelihood of requiring assistance with core activities. According to the 2006 Census, 11.3 per cent of people 55 and over are in need of assistance compared with only 1.8 per cent under 55 years. However, as Figure 13 shows, the need for assistance increased dramatically with age, particularly in the older two age groups.

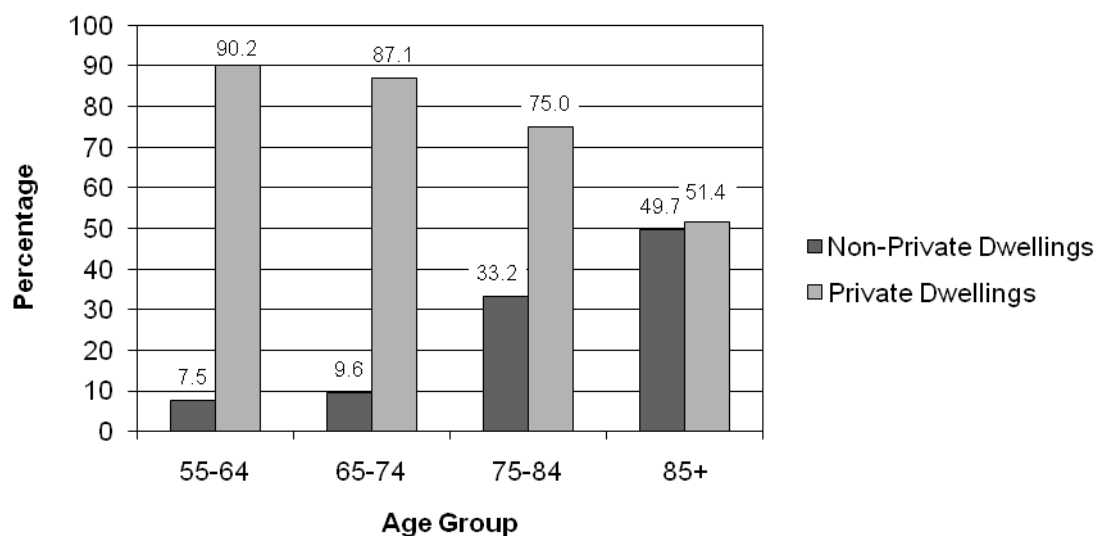
Figure 13: Australians in need of assistance with core activities, 2006



Source: ABS 2006 Census 1% sample file

When need for assistance is analysed according to whether older people are in private or non-private dwellings (the latter including residential aged care), it is noteworthy that the majority of older people receiving assistance still live in their own homes. However, the percentage in non-private dwellings can be seen to increase rapidly in the older two age groups. It is not until the 85+ age group that the percentages in each type of accommodation are close to equal.

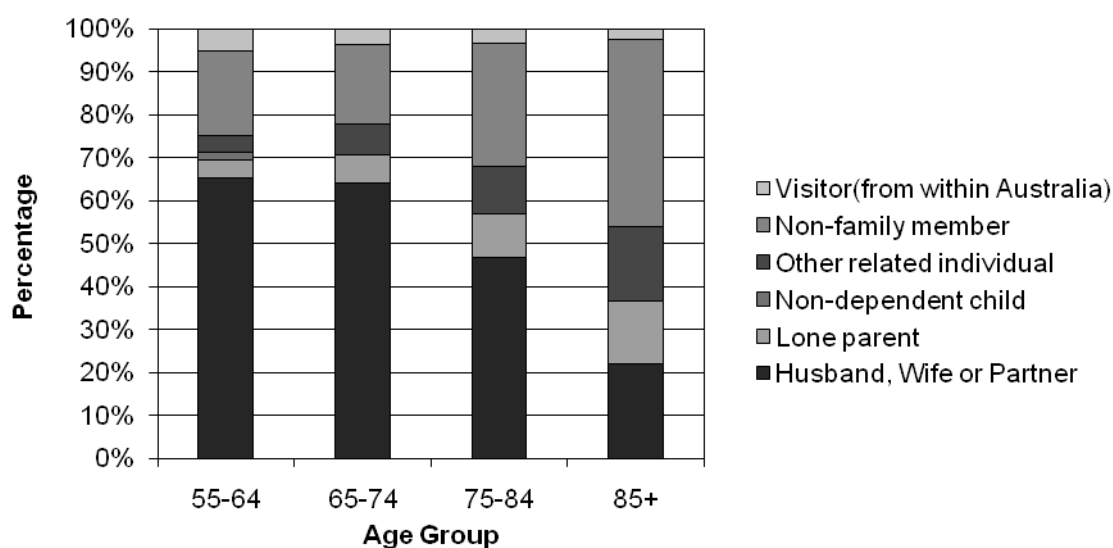
Figure 14: Older people requiring assistance by age and dwelling type, 2006, Australia



Source: ABS 2006 Census 1% sample file

An important aspect of requiring assistance is who provides the assistance. Figure 15 indicates that close to two-thirds of older people in the 55-64 and 65-74 age groups (65.3 and 63.9 per cent respectively) are cared for by their husband, wife or partner. While this reduces to a little under half (46.7%) in the 75-84 age group, they remain the majority carers with non-family members (28.8%) as the major other type of carer. Only in the 85+ age group is the major carer more likely not to be a member of the family. The role of parents and non-dependent children also increases significantly with age.

Figure 15: Carers of older people requiring assistance by age group, 2006, Australia

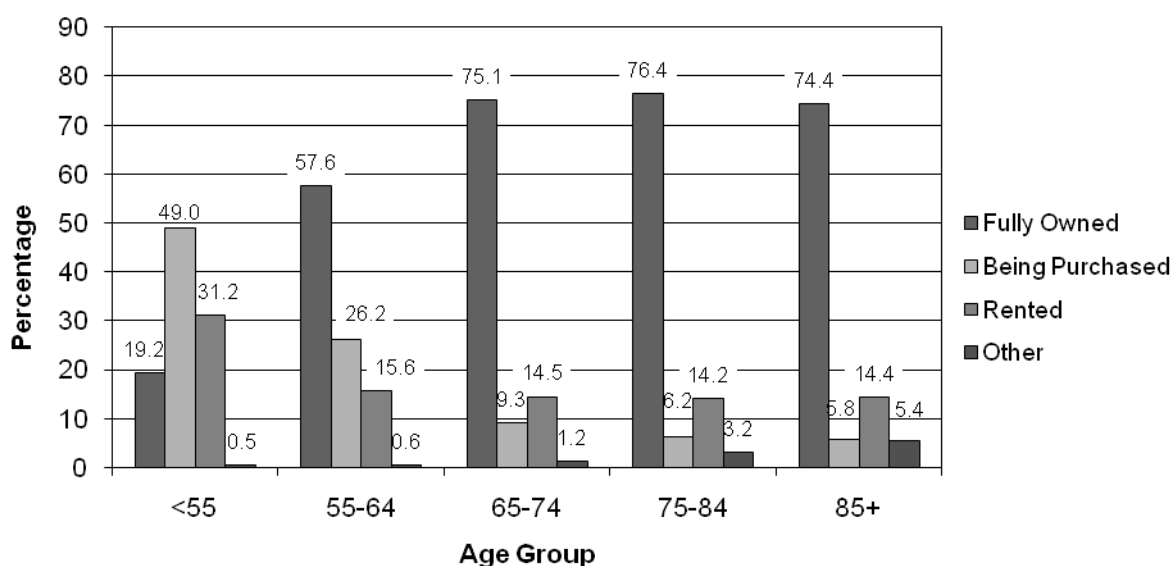


Source: ABS 2006 Census 1% sample file

3.4 Home ownership among older Australians

The rate of home ownership is high among older people as indicated in Figure 16 with 83.5 per cent of people 55 and over living in owner occupied dwellings in contrast to 68.2 per cent of the population under 55. However, the percentage of outright owners increases markedly between the 55-64 and 65-74 age groups and remains at around three quarters for the remaining three age cohorts compared to only 19.2 per cent of persons under 55 years of age. It is significant that in the 55-64 age group more than one quarter (26.3%) still have a house mortgage.

Figure 16: Tenure of persons by age, Australia, 2006



Source: ABS 2006 Census 1% sample file

Note: 'Rented' includes those in dwellings being occupied rent free, but not owned.

3.5 Location of older Australians

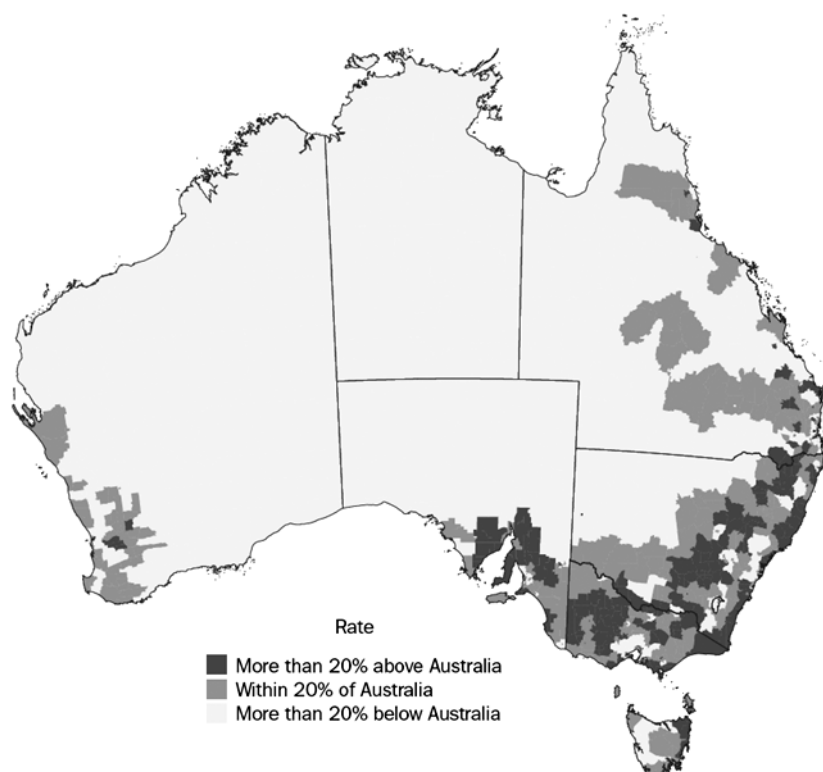
3.5.1 Location of older persons

A simple way of visualising the spatial concentrations of older Australians is to map Census data for areas compared to the concentrations in the Australian population as a whole.

Figure 17 on the following page maps the concentration of the over 55 population by Australians by Statistical Local Area (SLA) at the 2001 Census (ABS, 2003:15). High concentrations (more than 20 per cent above that for Australia as a whole) can be seen in on the South Eastern seaboard , inner western NSW, Western Victoria, the regional areas to the north of Adelaide and around Spencer Gulf in South Australia and in selected locations in South Eastern Queensland.

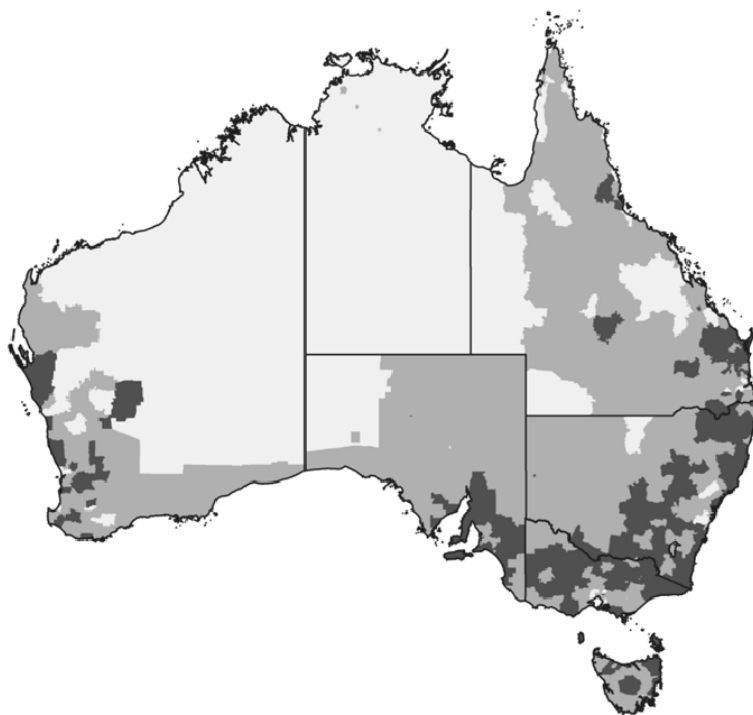
Mapping of similar data from the 1 per cent sample data of the 2006 Census is shown in Figure 18 on the following page. It shows considerable expansion of the higher concentrations of older population in a number of SLAs in South Eastern Australia (the North Coast of NSW, North Eastern Victoria) as well as in South Eastern South Australia and the mid north coast of Western Australia. No doubt the effect of the early cohort of the baby boomers living in these areas and entering the older population during this Census period is a factor here.

Figure 17: Location of older Australians by SLA, 2001



Source: ABS, 2003:15, Graph 1.14

Figure 18: Location of older Australians by SLA, 2006



Source: Generated from ABS 2006 Census 1% sample data

Table 2 below shows the growth in number of dwellings in Australia in which older people live. For the whole of Australia, the number of properties with older people increased by 28.1 per cent over the 10 year period from 1996-2006. It shows also that growth in properties differs markedly between some states and territories. The most rapid growth has taken place in the Northern Territory (78.8%) and in the ACT (56.3%). Of the remaining states, South Australia (21.8%) and Tasmania (21.2%) have the lowest growth rates in both these jurisdictions.

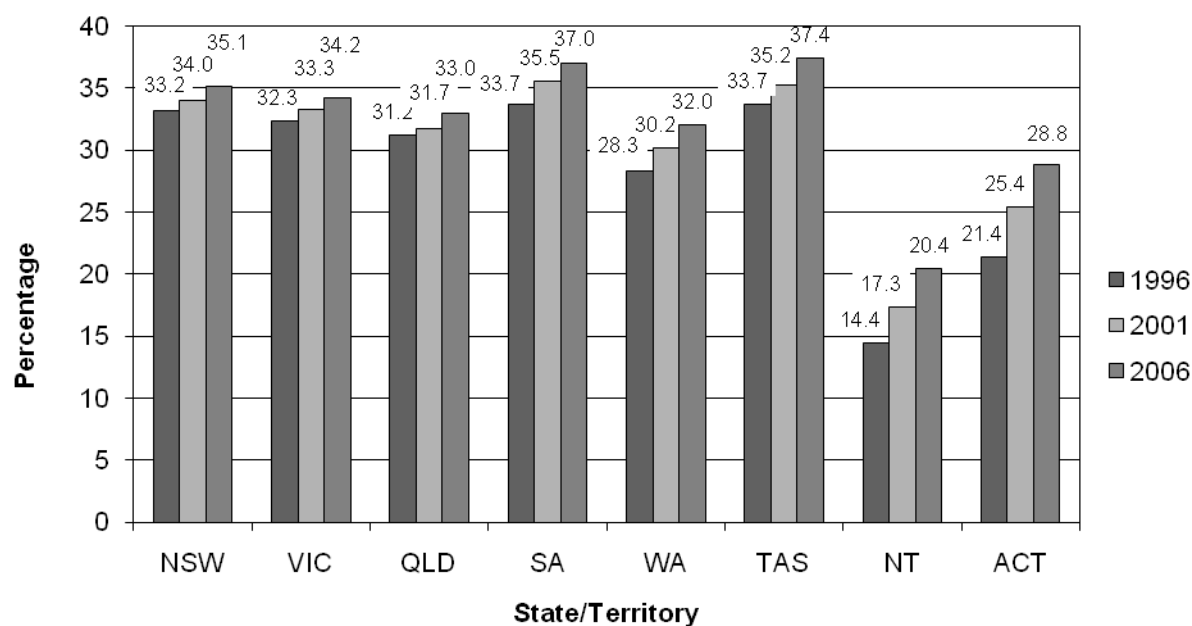
Table 2: Growth in properties containing older Australians, 1996-2006

<i>State</i>	<i>1996</i>	<i>2001</i>	<i>2006</i>	<i>% Change 1996-2006</i>
NSW	693,585	776,003	853,831	23.1%
VIC	499,449	566,952	633,745	26.9%
QLD	355,362	412,840	483,072	35.9%
SA	183,400	203,909	223,341	21.8%
WA	170,610	203,197	237,039	38.9%
TAS	57,836	62,722	70,083	21.2%
NT	6,833	9,693	12,215	78.8%
ACT	22,602	28,881	35,325	56.3%
Australia	1,989,677	2,264,197	2,548,651	28.1%

Source: Australian Bureau of Statistics, 2006 Census data

Figure 19 shows the percentage of dwellings with one or more older persons in each of the states and territories. Most noticeable is the low percentages in the Northern Territory and the ACT — despite the higher growth rates.

Figure 19: Percentage of dwellings with persons aged 55 and over, Australia, 1996, 2001 and 2006

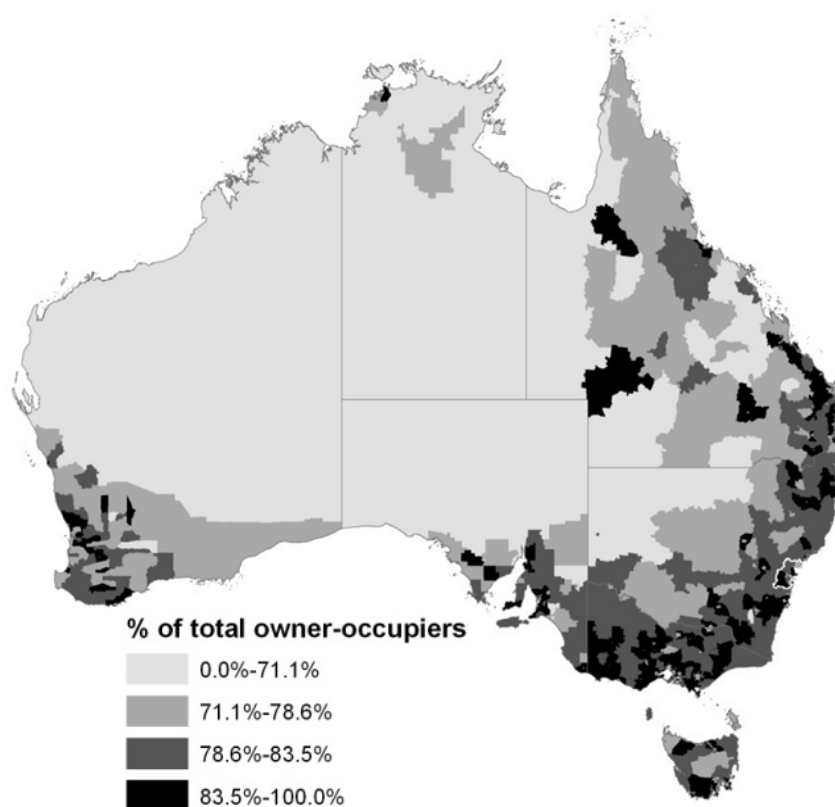


Source: ABS 1996, 2001 and 2006 Census

3.5.2 Location of older home owners

The factors influencing the location of older home owners are clearly complex including social networks, socio-economic status, affordability, environmental amenity and climate. As indicated in Figure 20, areas of concentration include certain urban regions (see Figure 21) as well as coastal and regional areas. Not surprisingly coastal concentrations are prominent in south-east Queensland, the north and south coast of NSW, the south-east and south-west coastal areas of Victoria, the Fleurieu Peninsular and the York Peninsular in South Australia and coastal areas to the north of Perth and around Albany in Western Australia.

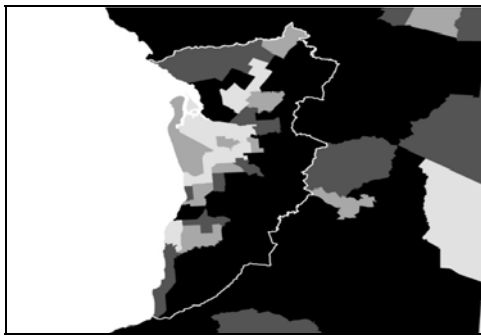
Figure 20: Location of older home owners, SLA, Australia, 2006



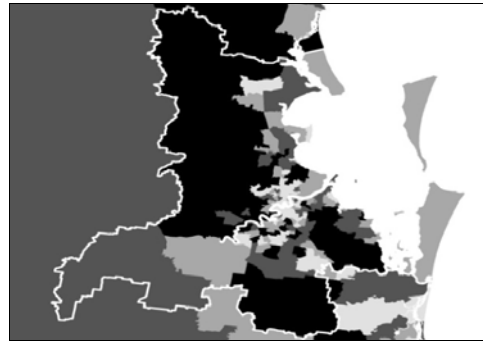
Source: ABS 2006 Census

Figure 21 on the next page shows the distribution of older home owners for each capital city of Australia using the same categories as Figure 20 above. It can be noted that the distribution of older people is uneven within urban areas. The highest concentrations of older homeowners can be seen in Sydney's outer south-western suburbs, the north shore and the Sutherland Shire; in Melbourne, the northern and eastern suburbs; Brisbane's northern, southern and south eastern coastal suburbs; Adelaide's hillside southern, eastern and northern suburbs; Perth's eastern, south eastern and certain western and north western beach-side suburbs; and Hobart's Sandy Bay and Mt Nelson areas. Clearly this corresponds with the more affluent and the more popular retirement areas of these cities.

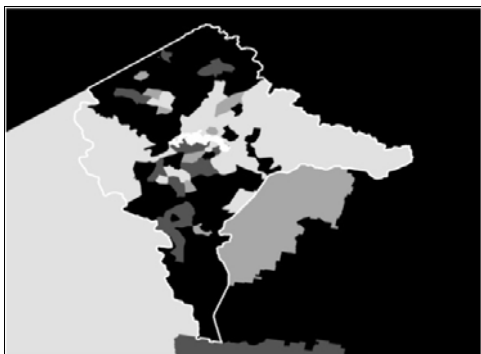
Figure 21: Location of older home owners in capital cities



Adelaide



Brisbane



Canberra



Darwin



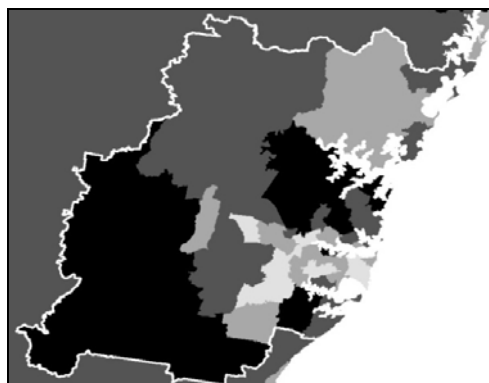
Hobart



Melbourne



Perth



Sydney

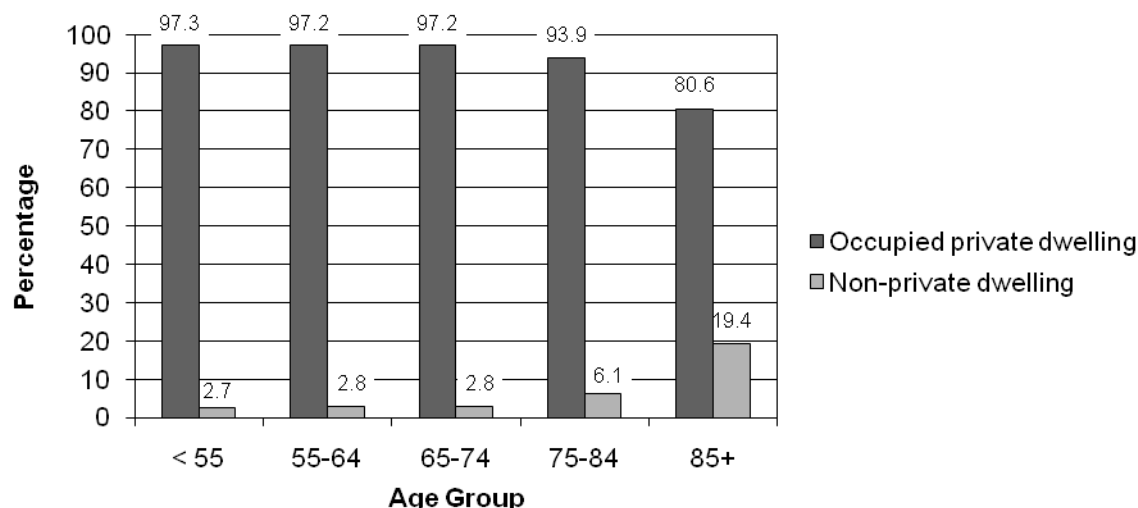
Note: See Figure 20 for Legend

3.6 Dwelling type

The vast majority of older Australians (96.5 per cent, 55 years and older) live in private dwellings as opposed to residential aged care or other institutional accommodation.

Figure 22 indicates that this reduces only marginally over the first three age groups then more markedly in the 85+ age group, though still remaining at over 80 per cent in private dwellings compared to less than 20 per cent in institutional care.

Figure 22: Persons in private and non-private dwellings by age group, Australia, 2006

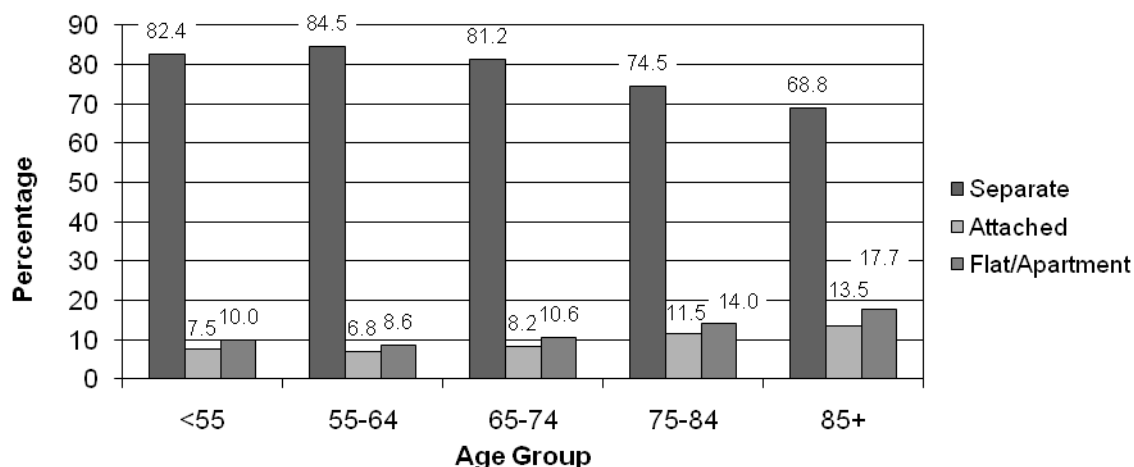


Source: ABS 2006 Census 1% sample file

Likewise, a substantial majority of older Australians (80.8 per cent of those aged 55 and over) also live in separate houses as opposed to attached or flat/apartment forms.

Figure 23 shows how this reduces over the four age cohorts from 84.5 per cent among 55-64 year olds to 68.8 per cent for those 85 years and older. There is a corresponding doubling of the percentage living in both attached and flat/apartment housing forms across these age groups from 8.5 per cent to 17.7 per cent for flats/apartments, and from 6.8 per cent to 13.5 per cent for attached housing forms over these age groups.

Figure 23: Persons in private dwellings by dwelling structure and age, Australia, 2006



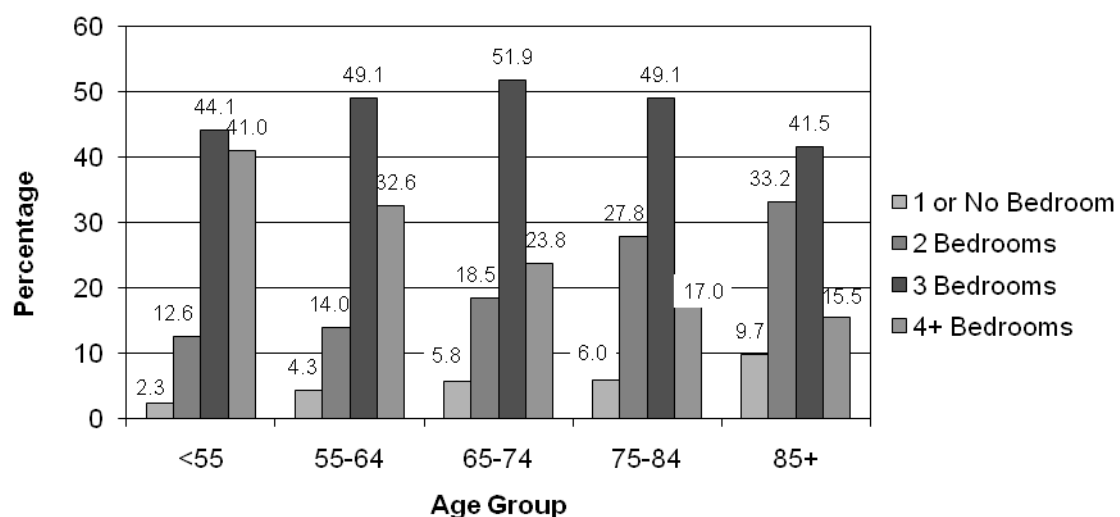
Source: ABS 2006 Census 1% sample file

3.7 Dwelling size

3.7.1 No. of bedrooms

Census data on dwelling size is limited. The only indicative measure that is recorded is the number of bedrooms per dwelling. At the 2006 Census, nearly half (45.4%) of all older Australians lived in three-bedroom dwellings with an additional 37.5 per cent living in dwellings with four or more bedrooms, or a total of 82.9 per cent living in dwellings of three or more bedrooms. However, this does change over the four age groups as shown in Figure 24. Four bedroom dwellings peak among those under 55 years of age. Three bedroom dwellings peak in the 65-74 age group and reduce thereafter, while the percentage of those living in dwellings of four or more bedrooms reduced from 32.9 per cent for 55-64 year olds to only 14.7 per cent in the 85+ age group.

Figure 24: Persons in private dwellings by number of bedrooms and age group, Australia



Source: ABS 2006 Census 1% sample file

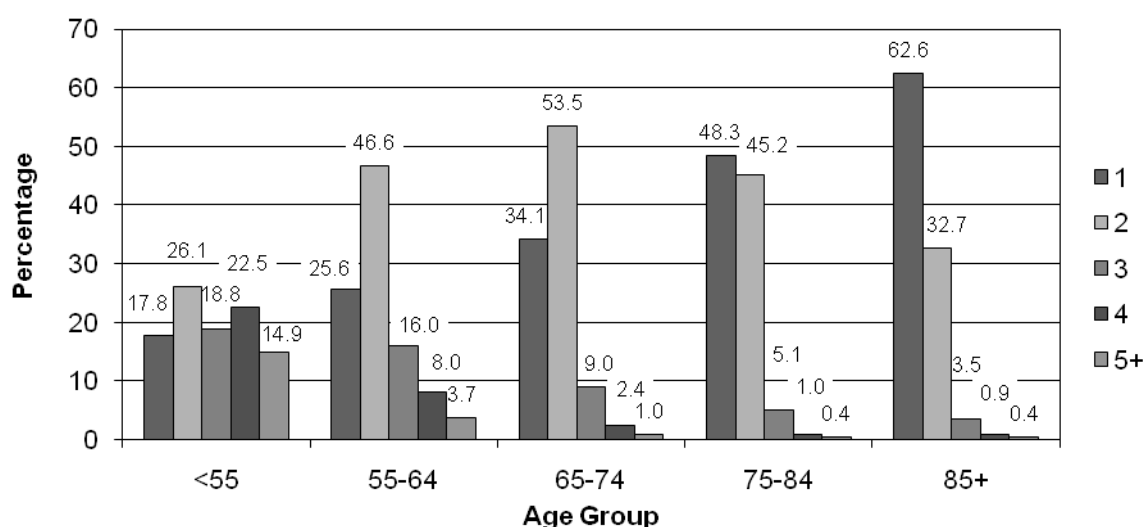
Note: Excludes 'Not Stated' and 'Not Applicable'

3.7.2 Household size & composition

The household size profile of older Australians is markedly different from that of the under 55 population. As would be expected, over 55 year old household heads have a much higher percentage of one and two-person households than their younger counterparts. Figure 25 shows the distribution for each of the four older age groups used for analysis in this study compared to the profile for under 55s. Dwellings with a reference person under 55 years are relatively evenly distributed between dwelling sizes of one and four or more persons, with 26.1 per cent having two persons and 17.8 per cent one person. For those over 55 years of age, the percentage of single and two-person households is almost double (47.4 and 35.5 per cent respectively).

Two-person households peak in the 65–74 year age group and then decrease over the last two age groups due largely to the greater longevity of women. The number of one-person households grows from a little over a quarter for those 55–64 to around a third for those 65–74, and then to nearly half for those 75–84 and eventually to over 60 per cent of 85+ year olds.

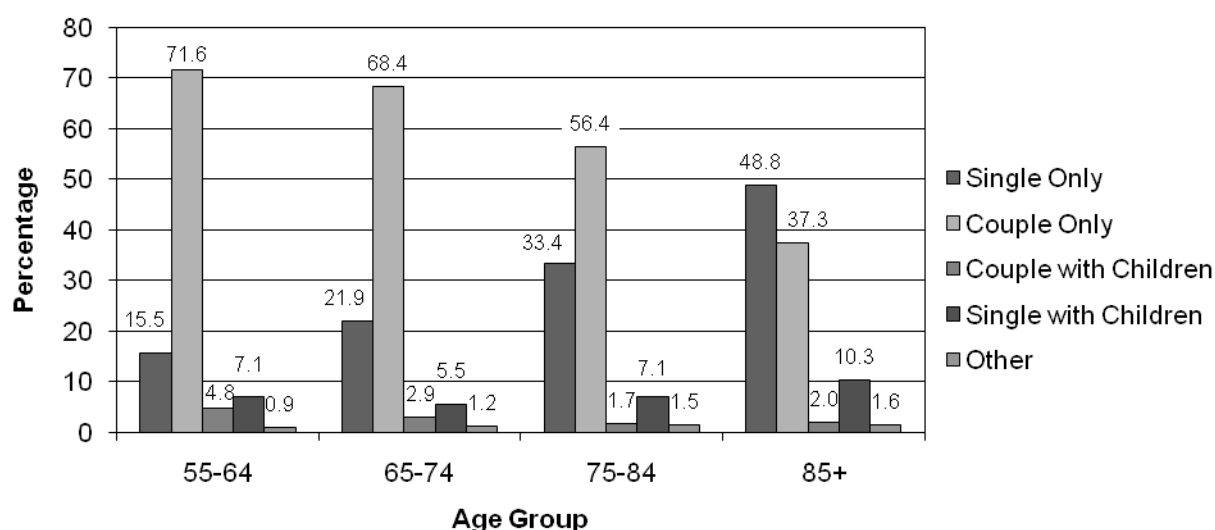
Figure 25: Number of usual residents by age of reference person, Australia, 2006



Source: ABS 2006 Census

In terms of family type, at the 2006 Census two thirds (66.0%) of Australians aged 55 and over were living in couple families and just under one quarter (22.5%) were living alone. Single people living with one or more child accounted for an additional 5.3 per cent, and couples living with one or more of their children 3.5 per cent of households. Figure 26 on the next page shows how this changes over the four age cohorts. Single households increase dramatically with a corresponding decline in couple households until in the 85+ age group singles outnumber couples.

Figure 26: Family type of people 55 years and over, Australia, 2006



Source: ABS 2006 Census 1% sample file

3.7.3 Temporary residents

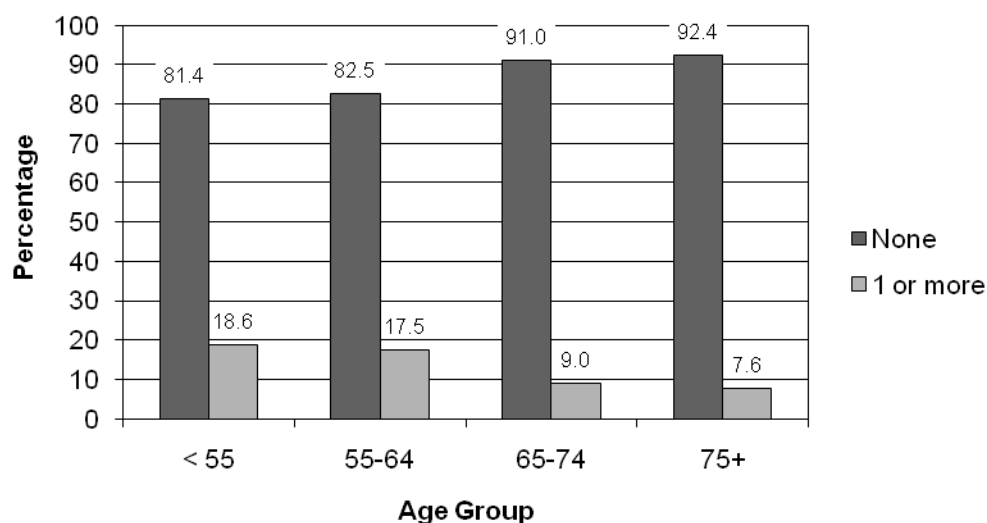
Information on temporary residents is not collected in the five yearly Censuses, but has been included in the ABS Australian Housing Survey (AHS), a sample survey last conducted by the ABS in 1999. Whereas permanent residents are defined by the ABS as "...those who have lived there for or plan to live there for at least six months" (ABS 2006b), a temporary resident is defined as "a person who is not a usual resident but

stays in the dwelling for at least 20 nights a year” (ABS, 2001:78), a definition which is also used for this research project.

The 1999 AHS provides the most recent Australian data on temporary residents.

Figure 27 shows the percentage of households with and without temporary residents for home owners both under 55 and in three age categories over 55. Overall, 12.0 per cent of home owner households with a reference person of 55 years of age or older contained one or more temporary residents. While the percentage of households with a reference person of 55-64 years of age (17.5%) is very similar to those under 55 (18.6%) it reduces to less than half (9.0%) for 65–74 year olds and even further to only 7.6 per cent of those 75 and older.

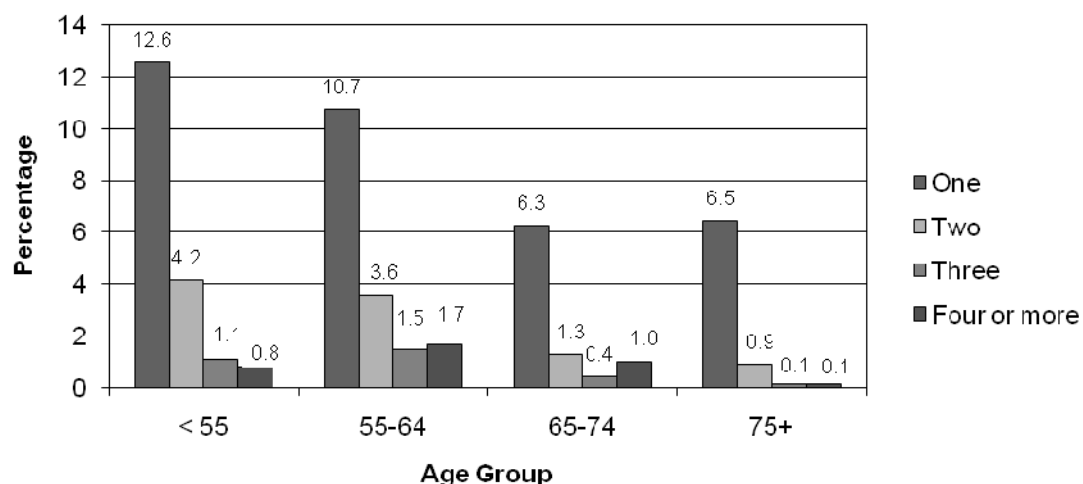
Figure 27: Temporary residents by age of reference person, 1999



Source: ABS Australian Housing Survey, 1999

For all older homeowner households with temporary residents (Figure 28), over two thirds (67.4%) contained only one such resident. However, the percentage sharply decreases over the first three age groups. It is among the 55–64 and 65–74 age groups that the percentage of households with larger numbers of temporary residents (three or more) is the highest (6.1 and 6.8 per cent respectively).

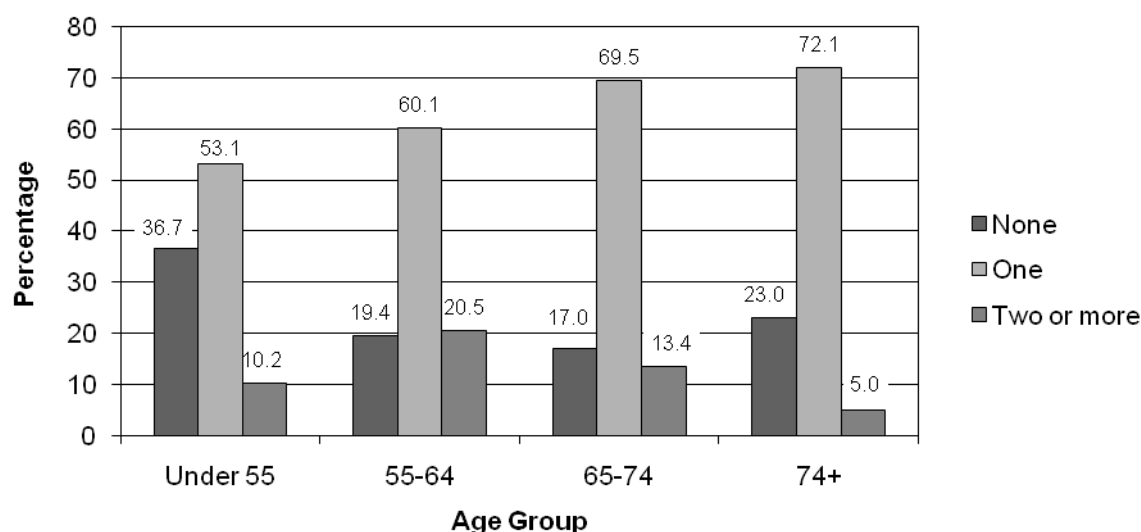
Figure 28: Number of temporary residents by age of reference person, 1999



Source: ABS Australian Housing Survey, 1999

Figure 29 indicates how many bedrooms were set aside for this purpose and how these vary with age of reference person. It shows that older homeowners are more likely to set aside one or more bedrooms for temporary residents than younger homeowners — and this increases in the 55–64 and 64–74 age groups and decreases only slightly for those 75 and over.

Figure 29: Number of bedrooms set aside for temporary residents by age



Source: ABS Australian Housing Survey, 1999

In this study, both permanent and temporary residents will be considered as they both impact on housing utilisation and efficiency.

3.7.4 Housing utilisation

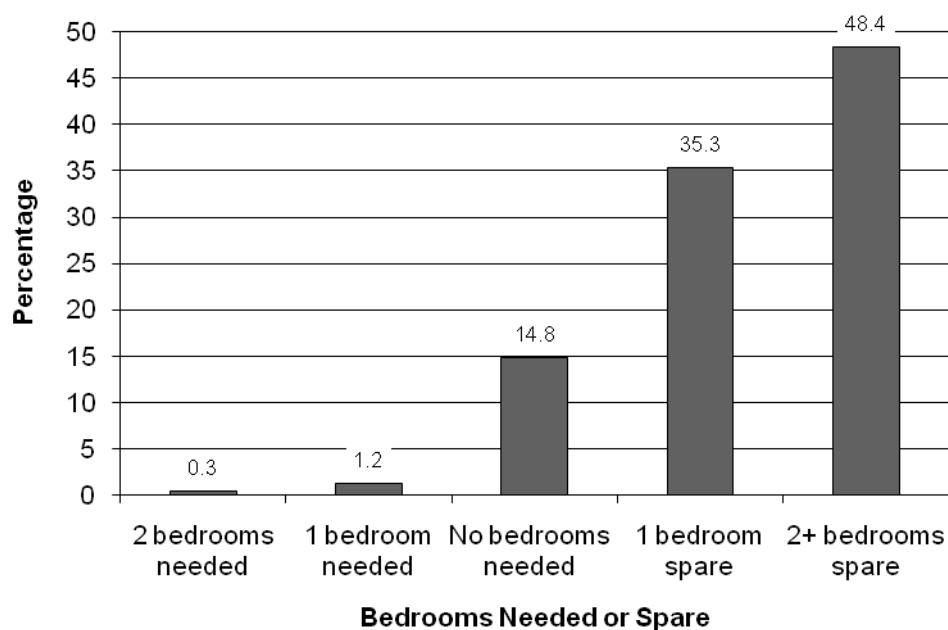
The ABS utilises the Canadian National Occupancy Standard (CNOS) to assess the efficiency of housing utilisation (ABS 2007b). This methodology is based around the following framework:

- Children under the age of five of either gender can share a bedroom.
- Children from five to 15 years old of the same gender can share a bedroom.
- Those aged 16 or older, either married or in a de-facto partnership, can share a bedroom. (ABS, 2000).

While this methodology is quite crude (number, size and suitability of all other habitable spaces in the dwelling are not considered, for example) it nevertheless provides a useful indication about additional space capacity within a property; space that could be utilised for adaptations or providing the ability to maintain relationships with family and friends (facilitating visits, for example).

For this research, the data has been classified into five categories, ranging from the need for two or more additional bedrooms (representing 'extreme' overcrowding) through to having two or more bedrooms spare (for example, an older couple retaining residency in their existing family home). Using these five categories, the CNOS profile for Australian households in 2006 is shown in Figure 30. According to this, the vast majority of households (83.7%) underutilise their dwellings, 14.8 per cent fully utilise their dwellings, and only 1.5 per cent of dwellings are 'overcrowded'.

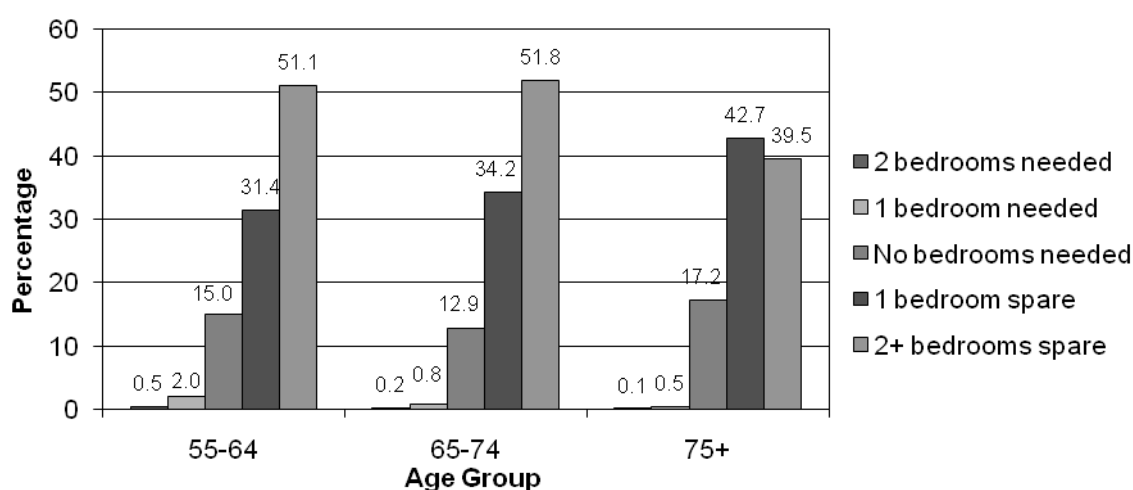
Figure 30: Bedroom standard profile of older Australian households, 2006



Source: ABS 2006 Census data 1% sample file

When broken down by age group it can be seen in Figure 31 that the level of under-utilisation among older age groups (according to the CNOS) is very similar for the 55–64 and 65–74 age group, with approximately half of all dwellings having two or more ‘spare’ bedrooms and around one third having one spare bedroom. In the 75+ age group, while having one ‘spare’ bedroom is marginally higher than having two or more, over 80 per cent remain underutilised according to the CNOS.

Figure 31: Bedroom standard profile for Australia by age group



Source: Australian Bureau of Statistics 2006 Census

Table 3 on the following page presents the profile of the bedroom standard broken down by state and capital city therein. Aside from the Northern Territory, Darwin and Sydney (albeit marginally), all locations provide a profile where 85–90 per cent of dwellings are underutilised (i.e. have one or more spare bedrooms) and 50 per cent are grossly underutilised (i.e. have two or more spare bedrooms).

Table 3: Bedroom standard* profile for older Australian households by state, 2006

<i>State</i>	<i>2 or more extra bedrooms needed</i>	<i>1 extra bedroom needed</i>	<i>No extra bedrooms needed</i>	<i>1 bedroom spare</i>	<i>2 or more bedrooms spare</i>	<i>% of properties with spare bedrooms</i>	<i>Total properties</i>
NSW	0.2%	1.1%	12.7%	31.5%	54.5%	86.0%	853831
<i>of which Sydney</i>	0.3%	1.5%	15.3%	33.0%	49.9%	82.9%	481167
VIC	0.2%	0.9%	11.3%	31.7%	55.9%	87.6%	633745
<i>of which Melbourne</i>	0.2%	1.1%	12.5%	33.1%	53.1%	86.2%	434749
QLD	0.2%	0.7%	10.9%	28.5%	59.8%	88.2%	483072
<i>of which Brisbane</i>	0.2%	0.7%	11.0%	27.5%	60.7%	88.2%	203854
SA	0.1%	0.5%	10.1%	33.5%	55.8%	89.3%	223341
<i>of which Adelaide</i>	0.1%	0.6%	10.8%	35.0%	53.5%	88.5%	162467
WA	0.2%	0.5%	8.8%	25.4%	65.0%	90.5%	237039
<i>of which Perth</i>	0.1%	0.5%	8.9%	26.0%	64.6%	90.6%	177713
TAS	0.1%	0.5%	10.2%	32.5%	56.6%	89.1%	70083
<i>of which Hobart</i>	0.1%	0.5%	11.0%	33.9%	54.5%	88.4%	28494
NT	4.1%	3.0%	21.9%	30.0%	40.9%	70.9%	12215
<i>of which Darwin</i>	0.7%	2.3%	21.1%	31.9%	44.0%	75.9%	8016
ACT	0.1%	0.5%	8.5%	22.0%	68.9%	90.9%	35325
Australia	0.2%	0.8%	11.4%	30.5%	57.1%	87.6%	2548651

Source: Australian Bureau of Statistics, 2006 Census data

* Based on the Canadian National Occupancy Standard (CNOS)

When the percentage change in utilisation is examined over the 10 years 1996 to 2006 (Table 4 below), it is evident that the percentage of dwellings with an older reference person has increased in every state and city to a varying degree, but most dramatically in the Northern Territory and to a lesser extent in the ACT.

Table 4: Change in bedroom standard for dwellings with older Australians, 1996–2006

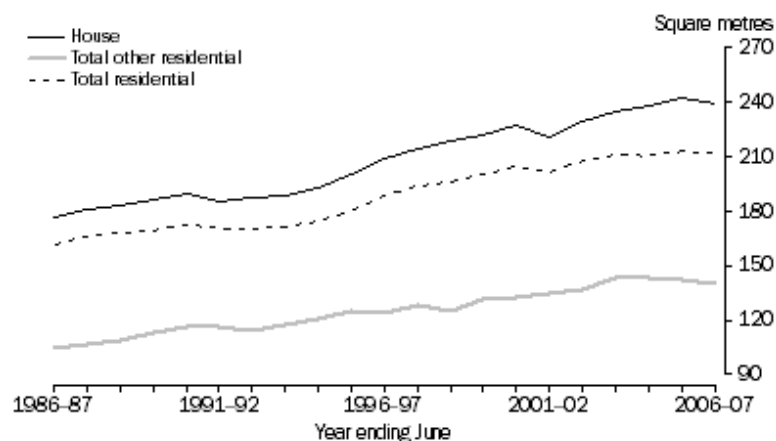
<i>State</i>	<i>2 or more extra bedrooms needed</i>	<i>1 extra bedroom needed</i>	<i>No extra bedrooms needed</i>	<i>1 bedroom spare</i>	<i>2 or more bedrooms spare</i>	<i>Total</i>
NSW	-21.6%	-12.5%	-4.9%	5.9%	48.9%	23.1%
<i>of which Sydney</i>	-24.1%	-12.4%	-4.4%	4.6%	48.7%	20.1%
VIC	-23.0%	-17.9%	-2.6%	10.9%	49.9%	26.9%
<i>of which Melbourne</i>	-23.9%	-19.4%	-3.6%	11.0%	53.5%	26.5%
QLD	9.6%	6.5%	13.1%	19.8%	51.9%	35.9%
<i>of which Brisbane</i>	2.7%	-6.9%	3.9%	10.7%	43.2%	27.1%
SA	-5.1%	-13.1%	-11.0%	5.4%	45.6%	21.8%
<i>of which Adelaide</i>	-5.6%	-12.5%	-12.1%	4.8%	45.2%	20.0%
WA	-14.4%	3.6%	-5.7%	14.1%	64.2%	38.9%
<i>of which Perth</i>	-9.1%	-5.4%	-8.8%	11.7%	63.2%	36.7%
TAS	37.5%	9.2%	-8.5%	9.4%	38.0%	21.2%
<i>of which Hobart</i>	47.1%	2.7%	-6.9%	13.7%	46.5%	26.0%
NT	14.5%	19.2%	39.7%	78.4%	136.6%	78.8%
<i>of which Darwin</i>	9.3%	13.6%	34.8%	76.8%	143.1%	83.6%
ACT	141.7%	28.5%	17.6%	39.0%	70.2%	56.3%
Australia	-13.14%	-9.63%	-1.68%	10.63%	51.12%	28.09%

Source: Australian Bureau of Statistics, 2006 Census data

3.7.5 Floor area

No data on floor area of dwellings is collected in the Census, so estimates of the floor area of existing dwellings are not available. However, floor area data for new dwellings is collected by the ABS from building approvals (Figure 32).

Figure 32: Average floor area of new residential dwellings, Australia, 1986–87 to 2006–07



Source: Australian Bureau of Statistics, Building Approvals Australia, Feb 2008

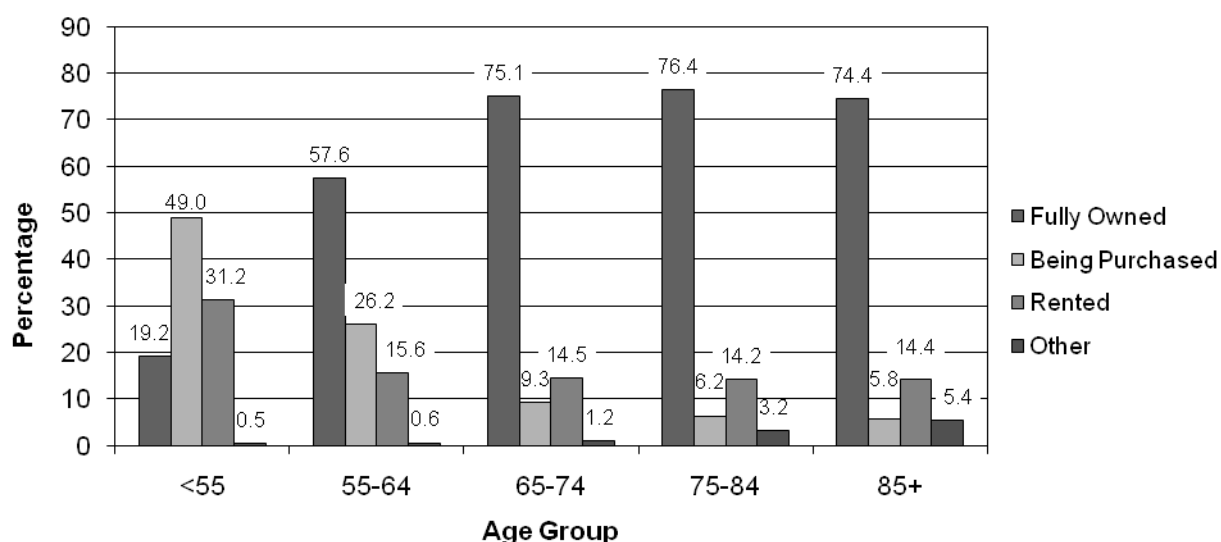
This shows considerable increase in new dwelling floor area over the 20-year period 1986–87 to 2006–07 from around 176.9 to 239.2 square metres for houses — an increase of 35.3 per cent — and an only slightly lower increase of 34.2 per cent for other dwellings (attached houses and flats/apartments) of around 40 per cent from around 104.7 to 140.6 square metres (ABS, 2008).

3.8 Comparison with other tenures

3.8.1 Tenure characteristics of older Australians

Home ownership, and particularly outright ownership, is at its highest among older Australians. Figure 33 below shows that half of those aged under 55 live in homes with a mortgage, while of those Australians in the 55–64 age group well over half (57.6%) own their homes outright and only one quarter (26.2%) have a mortgage. In the last three age cohorts, around three quarters own their homes outright and the percentage with a mortgage decreases from 9.3 to only 5.3 per cent.

Figure 33: Tenure of persons by age group, Australia, 2006



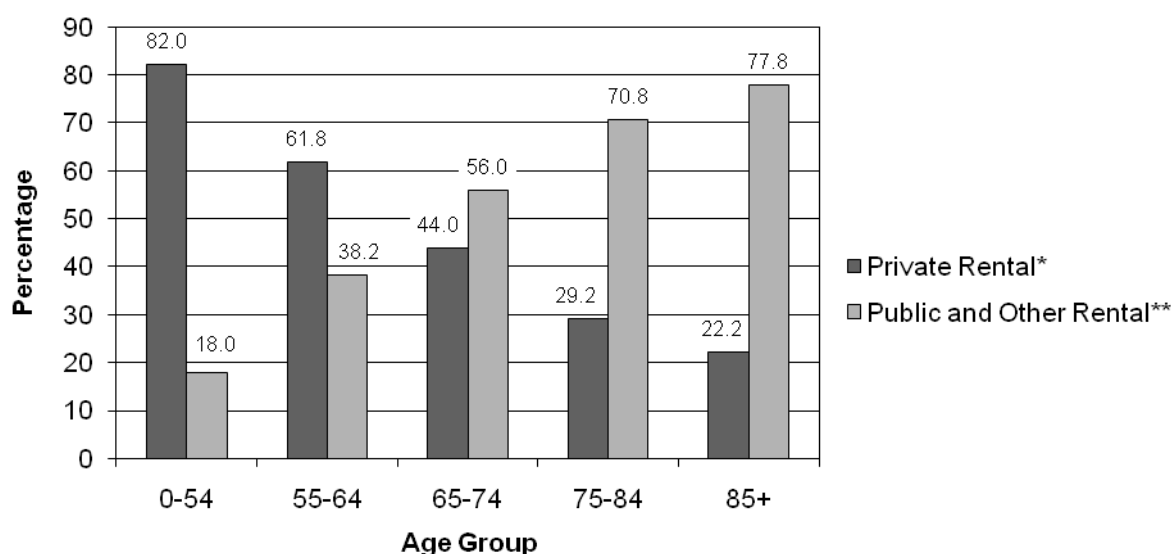
Source: ABS 2006 Census 1% sample data

3.8.2 Renters

Figure 34 shows the percentage in private as opposed to public rental. Among those older Australians who are renters, for those aged under 55 years private rental dominates by 4 to 1. In the older age groups only those aged 55–64 are majority private renters. From the ages of 65–74 onwards, the percentage in private rental progressively decreases with a corresponding increase in public rental. This reflects the difficulty of older people on the pension being able to afford private rental and the advantages of greater tenure security and rents limited to 25 per cent of income for public housing tenants.

Normal male retirement age and eligibility age for the pension (65 years) appears to be the point at which private rental becomes untenable for many older Australians who are not homeowners.

Figure 34: Older persons in public and private rental by age group, Australia, 2006



Source: ABS 2006 Census data

* Private rental includes mobile home parks and rent free private accommodation

** Public and other rental includes public, community and government employee housing

3.9 Conclusions

This chapter has reviewed evidence on the ageing of the Australian population and the dramatic increase in the percentage of dwellings containing older people over the last 10 years. According to ABS projections, this is likely to continue (ABS, 2006a). This has important implications for the design of housing and the neighbourhood. The small number of Australians over 65 years of age in the workforce and the increased need for assistance with age will require new approaches to the design of housing, the provision of care in the home, and the provision of appropriate age friendly neighbourhood facilities and transport infrastructure. The concentration of older people into certain urban, coastal and regional areas suggests that some areas will be more impacted by population ageing than others, and consequently require regional responses in terms of housing and neighbourhood design and the provision of support services.

Since the vast majority of older people live in private, owner-occupied three or four-bedroom separate dwellings on their own land, but in households of only one or two people, at face value it would appear that they are grossly under-occupied when measured according to the CNOS that has also been widely adopted in Australia. This raises legitimate questions about the efficiency of their utilisation of housing and land resources. However, this does not provide a full picture of housing utilisation as it fails to take into account increased time spent in the dwelling, the 12 per cent of households that have at least one temporary resident (staying for 20 nights or more), visiting family and friends, or alternative uses of bedrooms and other space in the dwelling for other activities.

The high rate of outright ownership among older people clearly represents an important financial security. This is evident when contrasted with older private renters, who predominate in the pre-retirement older age group (55–64 years), but quickly decline to a minority thereafter with a commensurate increase in public rental from retirement age (65 years) which ensures greater affordability and security of tenure.

4 DWELLING CHARACTERISTICS OF RESPONDENTS

This chapter will provide information on the dwellings occupied by older home owners who responded to the survey, supplemented by comments and photographs from interviewees describing their dwelling. It provides original data on older home owners and their dwellings to inform the following research questions.

Research Question 1: What are the variations in housing type, size and location for older Australian home owners?

1. What are the housing types, sizes and locations for older Australian homeowners and how does this compare with other housing tenures?
2. What are the sizes of older home owners' dwellings in terms of the sizes and functions of rooms?
3. What is the effect of age, ability and CALD background on variations in housing type, size and location?

4.1 Dwelling type, size and location of respondents

4.1.1 Dwelling type

For the purposes of this study, housing types are based on ABS Census categories aggregated into three main categories — separate houses, semi-detached, row or terrace houses (referred to in this study as attached houses) and flat, unit or apartment (referred to as flats/apartments). These are also differentiated by the number of storeys in the dwelling for separate and attached houses, and in the building for flats/apartments.

Figure 35 shows that more than three quarters (78.7%) of survey respondents lived in separate houses with slightly more of the remainder in attached houses (9.9%) than in flats/apartments (8.7%). This fairly closely represents the older Australian population at large, of whom 74.5 per cent live in separate houses, 8.0 per cent in attached housing, 9.6 per cent in flats or apartments, and only a very small percentage in other housing types (ABS 2006 Census).

Figure 35 Dwelling type of respondents

(n=1603)

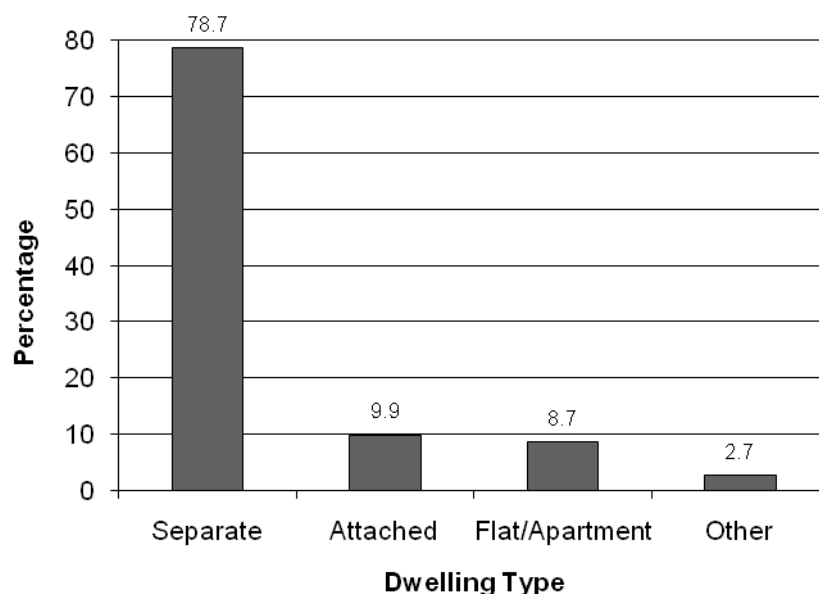
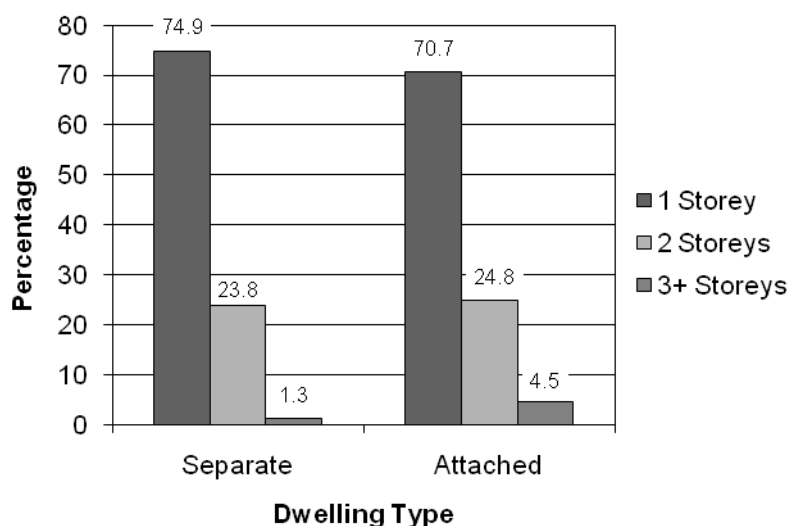


Figure 36 shows that the percentage of single storey dwellings was slightly higher for separate houses (74.9%) than for attached houses (70.7%).

Figure 36: Dwelling type by number of storeys, separate and attached dwellings

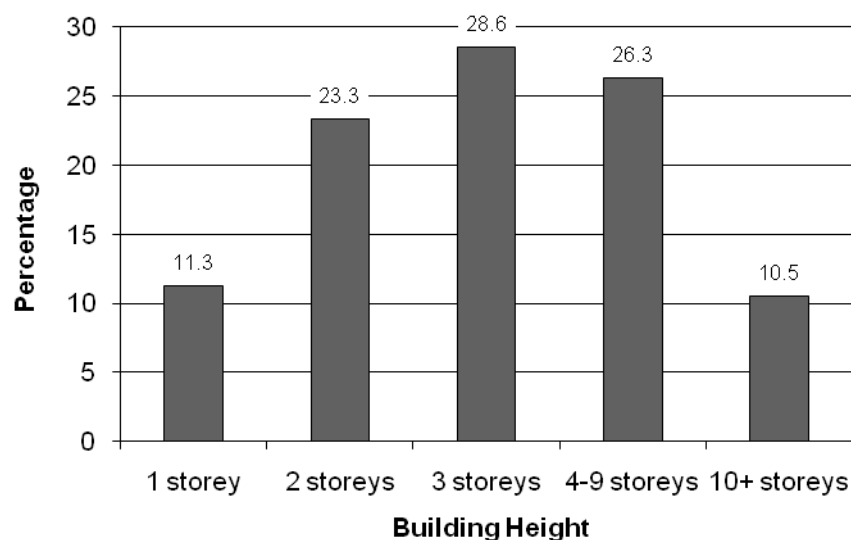
(n=1376)



Of the 133 (or 8.7%) of respondents living in flat/apartment blocks, the height of the building in storeys is shown in Figure 37 below. Three storey blocks were most common followed closely by those of 4-9 storeys, but with a significant proportion also of two storey blocks. Single storey and ten or more storey blocks were less common.

Figure 37: Number of storeys in flat/apartment blocks

(n=133)



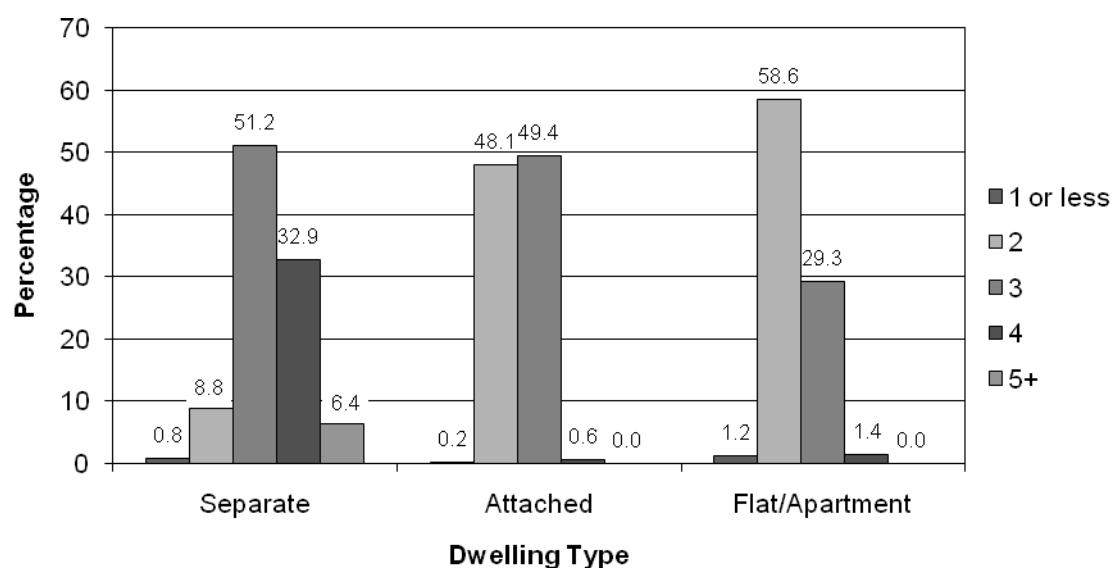
The vast majority of respondents' dwellings (92.5%) were located in the general community and only 2.3 per cent in a seniors residential development (including retirement villages) and 5.2 per cent in some other type of development, including a few in farms (14) and caravan parks (8).

4.1.2 Dwelling size

Measures of dwelling size available from the survey include the number of bedrooms and the floor area of the dwelling. For separate and attached houses, size of allotment was also included. Figure 38 below shows that separate houses had predominantly three or four bedrooms; attached housing forms almost equally two or three bedrooms, and apartments mostly two bedrooms.

Figure 38: Dwelling type by number of bedrooms

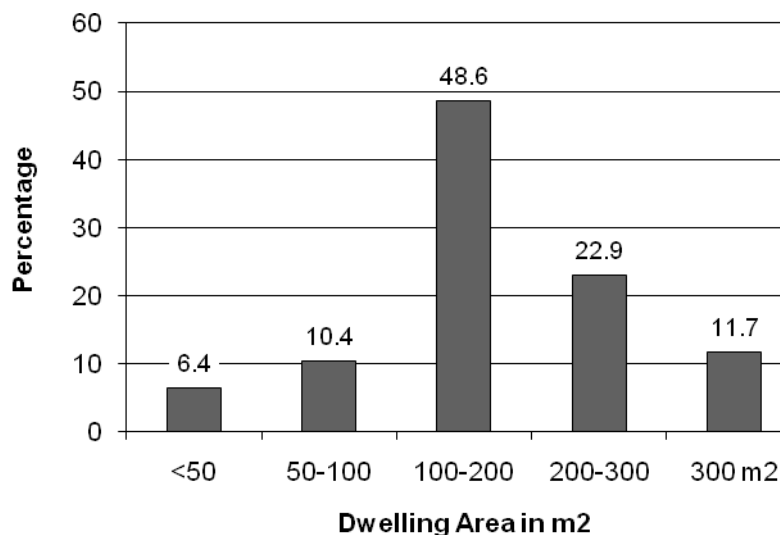
(n=1549)



When asked to estimate the floor area of their dwelling, approximately one third (34.9%) of those answering this question did not know. Of the two thirds who did (n=965), almost half had dwellings (48.6%) with a floor area of between 100 and 199 square metres, almost a quarter (22.9%) with 200–299 square metres and only 11.7 per cent with 300 square metres or more. This corresponds to the similarly high percentage of houses with three bedrooms.

Figure 39: Floor area of dwelling where known

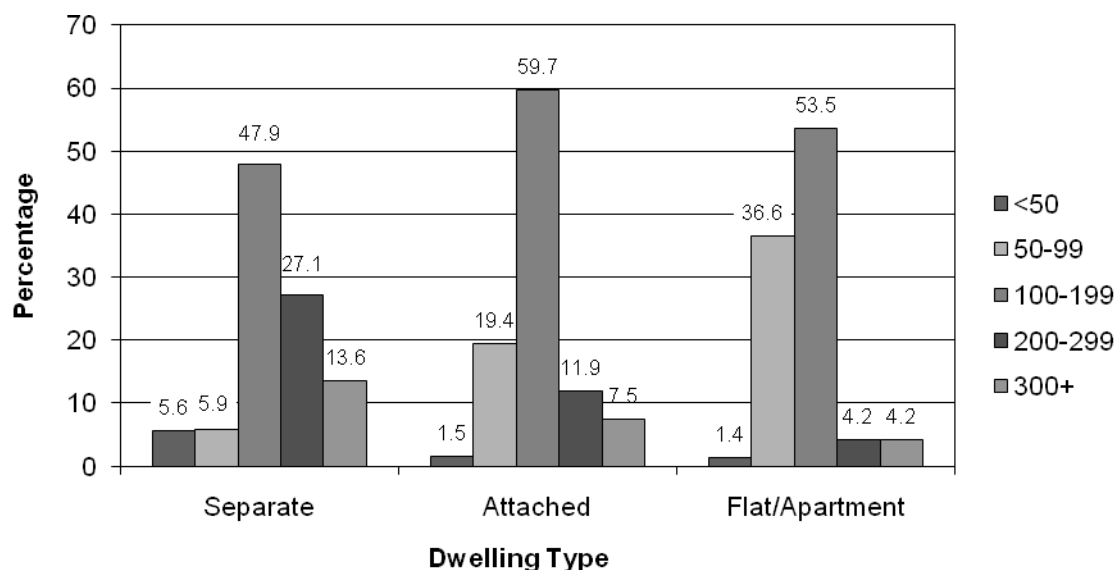
(n=965)



When floor area is broken down by dwelling type, it is evident that a similar pattern exists for each of the three dwelling types with 100–199 m2 dwellings dominating, though separate houses have a higher percentage of larger (200–299 and 300+ m2) dwellings and attached dwellings and flat/apartment dwellings a corresponding increase in smaller (50-99 m2) dwellings.

Figure 40: Floor area of dwelling (m2) where known by dwelling type

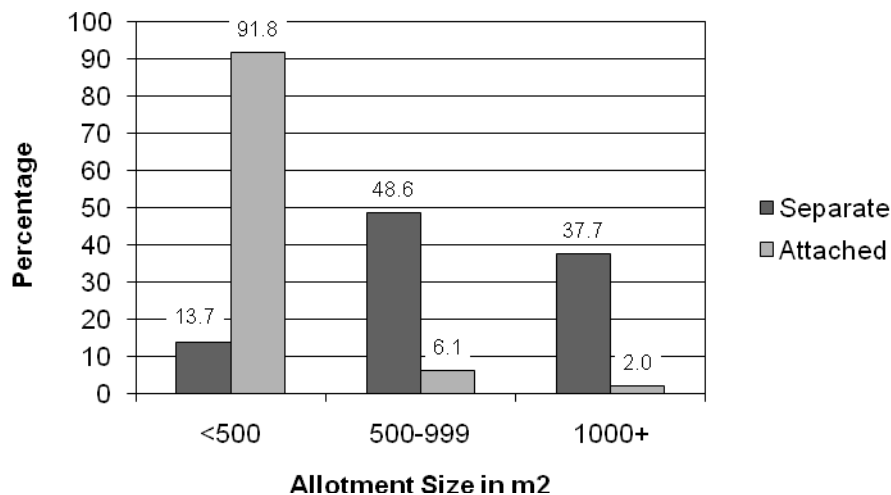
(n=873)



Allotment sizes are shown for both separate and attached dwellings in Figure 41 below. Many respondents (particularly in attached housing) did not know the size of their allotment, but those that did indicated that separate houses were mostly on lots of 500–999 or 1000+ and attached houses on smaller lots of less than 500 m2.

Figure 41: Allotment sizes for separate and attached houses

(n=706)



4.1.3 Dwelling location

Location of respondents by postcode is shown on Figure 42. Responses were received from all states and territories, capital cities and other major urban areas including areas with significant proportions of older people, such as the coastal areas of northern NSW and southern Queensland. The distribution compares favourably with the areas of concentration of older Australians and homeowners according to the 2006 Census (see Figure 18 and Figure 20).

Figure 42: Location of respondents by postcode

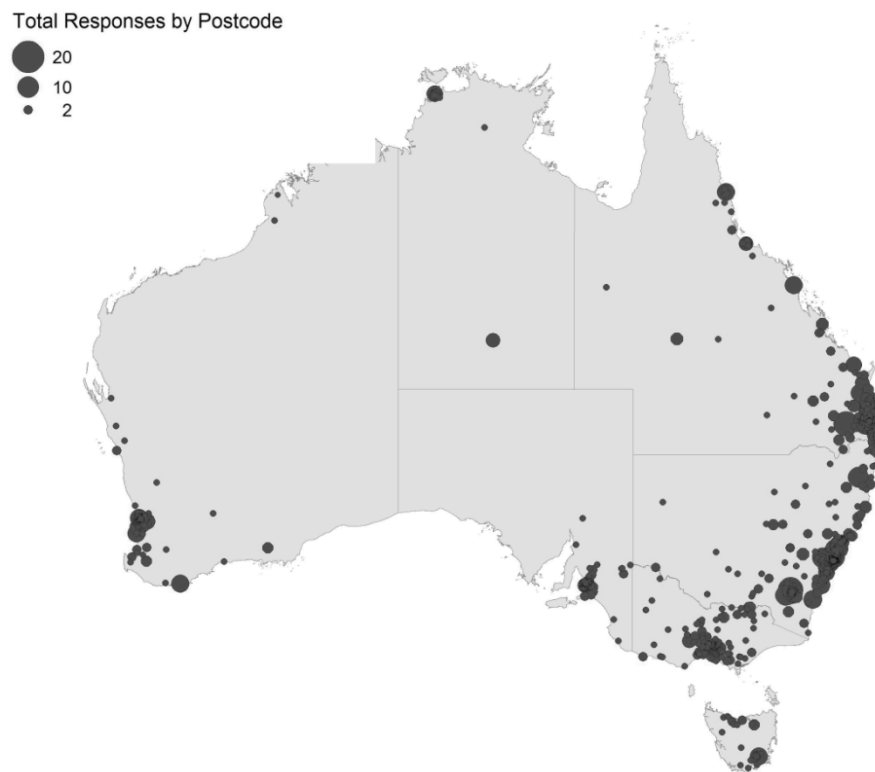
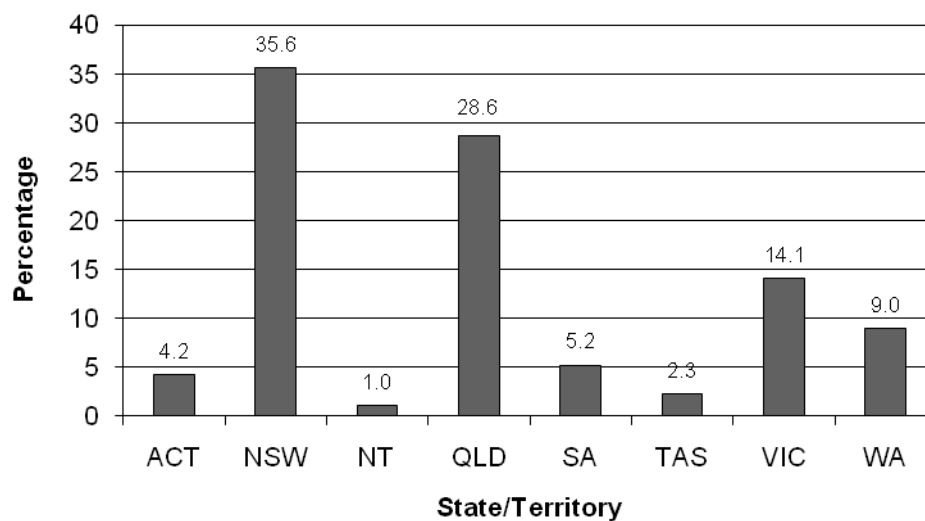


Figure 43 below shows the location of respondents by state and territory, indicating representation from each jurisdiction, but with strongest representation from NSW, Queensland, Victoria and Western Australia.

Figure 43: Survey respondents by state/territory

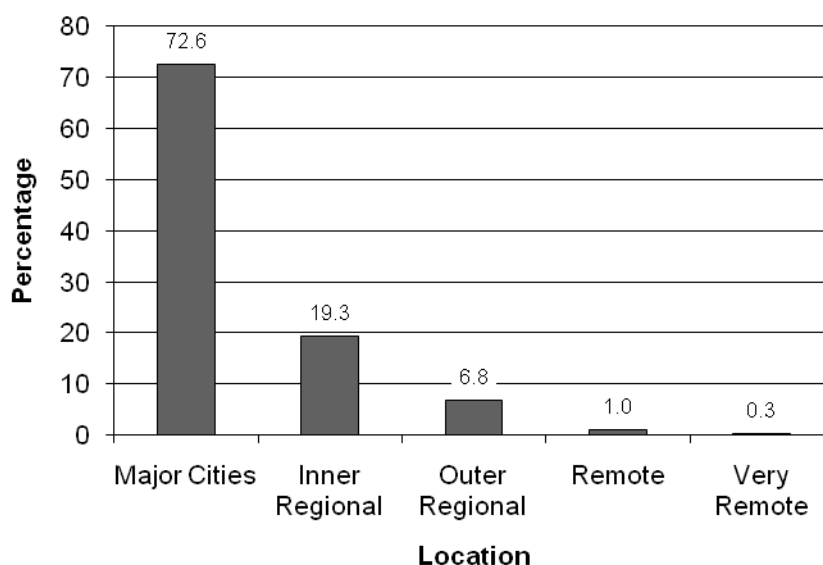
(n=1532)



Distribution by region is shown in Figure 44 and shows strongest representation from major cities with more modest but reasonable response from inner and outer regional locations.

Figure 44: Respondents by type of region

(n=1532)



4.2 Size and function of rooms

4.2.1 Size of rooms

There were no questions included in the survey on the size of individual rooms as it was too complex to include in a four page self administered survey form. However, to the question: 'How suitable is your current dwelling for...accommodating the number of permanent and temporary residents?', the response was overwhelmingly 'very suitable or suitable' (98.1%) (see Figure 83 in section 6.1.1). Despite this, in the interviews, when invited to discuss any rooms they would like to be bigger, many expressed dissatisfaction with inadequate room size. Some wished all or most of the rooms in their home were larger for a variety of reasons including for entertaining, increased storage space, or to provide greater flexibility for furnishing and use of rooms.

All of them [need to be bigger]. I like space. I say the house is just big enough for me, but it's not a well designed house at all. I would prefer an open plan, a more open plan house. I think they lend themselves to more activities than this house does. I can't entertain a large group of people here for instance, ...can't fit them in...I have plans to actually extend the back and make the single room that my son uses into a double room with an en-suite and walk in wardrobe and the dining will be bigger, more sort of open type of thing. (P1076 — female 75–79 years, living alone, separate house, suburban, working part-time.)

The most common desire for larger rooms was, however, in relation to bedrooms. In some cases, all the bedrooms were regarded as too small.

Well, I would have liked all the bedrooms to have been much larger. Because in spite of the fact you are downsizing, furniture is still quite big — so, yes. We're happy with the size of the lounge room now that we've got it furnished the way we want it and built stuff especially to fit in spots and that sort of thing. But the bedrooms are pokey basically, not nearly enough wardrobe space. And the en-suite in the main bedroom is small and pokey too. The main bathroom is quite adequately sized I think, but the en-suite is very small. (P784)

— Female with partner, age not specified, suburban, separate house, self-funded retiree.)

Some were concerned only with the size of their own bedroom (the main bedroom) with varying reasons given for the need of more space, including the size of furniture, inadequate manoeuvring space, to accommodate a wider range of activities, for more storage, or simply because of a preference for larger rooms.

Yes, my bedroom [needs to be bigger]. Even another metre each way. [T]he way it was built, the bed almost knocks against the door...and you can't move the door to the other side of the wall because that's a little corridor. (P1581 — female 65–69, living alone, attached house, pensioner, assistance required.)

Most frequently, however, interviewees identified the other bedrooms as those that could benefit from more space. In these cases, the reasons were most often related to the needs of visiting family or friends, but also to include other activities, furniture and increased storage space.

The second and third bedrooms are tiny. The main bedroom probably is too big and the other two are too small in a way. That's units for you though, I think. [T]hey're only about ten by ten [feet] I think... An extra metre all round would be great. (P1183 — female, age not specified, living alone, CALD, suburban, flat/apartment, self-funded retiree.)

Definitely wished the spare room was larger. ...[M]y daughter and granddaughter used to stay there, and it was just rather cramped. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

Of course wish my daughter's one [bedroom] bit larger. It suited the purpose when she was young and now at her age if I can, [I would] increase the size. (P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

Bathrooms also featured strongly among rooms interviewees would like to have been bigger — often because of their close association with bedrooms as en-suite bathrooms.

I would have liked my en-suite to be larger. I just feel that it's a little cramped and not laid out very well. Looking on the plans it looked ok, but in reality, it could've been laid out better. (P1204 — female 60–64 with partner, suburban, working part-time, assistance required.)

In a number of cases, a spare bedroom or study was considered inadequate in size to accommodate home office requirements.

F: [Partner's name]'s study, that could be 12 times as big. You've never got enough space, but that's about all.

INT: How much larger do you think the study ideally would be?

F: How long's a piece of string?

M: I'd say double the size.

INT: Double the size? What would it be at the moment in metres do you reckon?

F: Four by three. (P1274 — Couple 60–64 years, suburban, separate house, self-funded retirees.)

Likewise bedrooms or other rooms used for hobbies or craft activities were considered too small in some cases.

If I had to make any changes, my wife would say, 'Yes, I would like that room two times the size', two times bigger. She would like it bigger, yes. Because she gets friends over and if you want a wedding dress made, and so [they] come all over [into] that room...temporarily and [then] put it back. So she would have that. But she's never thought to go out to do these activities. But with any grandchild, any dress they wear, trousers were made by her, and shirts she made for me, and jackets she made for me. (P1153 — male, 65–69 with partner, CALD, regional, self-funded retiree.)

Kitchens were often also mentioned as rooms that were too small. In some cases, people have moved from larger dwellings to find the new kitchen too small, In other cases, because of the enjoyment of cooking and entertaining.

The kitchen [needs to be bigger]. I took the things out of my pantry at home and bought them here and about a third of them went in to the pantry here, so I mean. The whole kitchen is small here. It was an awful kitchen before [renovation]. (P1183 — female, age not specified, living alone, CALD, suburban, flat/apartment, self-funded retiree.)

Living rooms were only rarely included in rooms that interviewees wanted bigger, as in the following example:

This part [family room] I want a little more bigger. Yeah, because I sit there. Maybe to accommodate say one more three seater. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

Garages were mentioned on a few occasions, because of difficulties that respondents had getting in and out.

We have one of the smaller garages and our car is a Camry and it's rather large, so maybe the garage a little larger. I've been doing it for 34 years so I back in so I can nose straight out. I hate backing out, I would rather back in. (P422 — female 70–74 years with partner, capital city, flat/apartment, pensioner.)

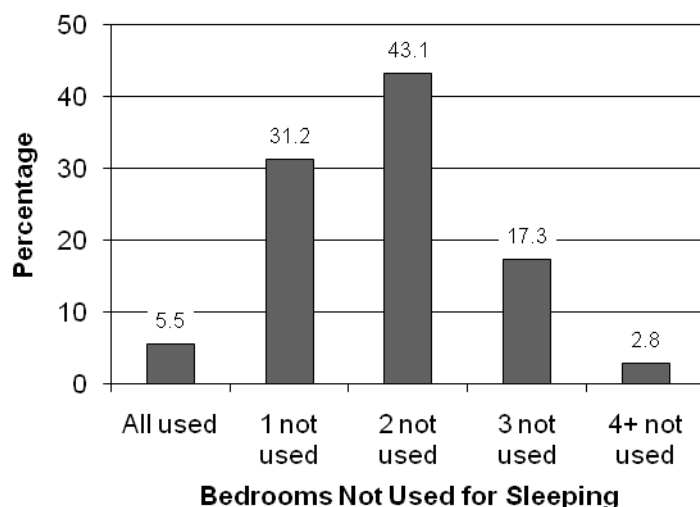
Many of the issues raised by interviewees are relevant to the debate about the application of Universal or Adaptable Design standards in housing to facilitate ageing in place. Among these are the need for more manoeuvring space in bedrooms and bathrooms, and easier to access kitchen cupboards. Other desires for more space in rooms are directed more towards quality of life issues associated with having space for friends and family to visit, accommodating hobbies, for entertaining family and friends, or simply for improved amenity and sense of wellbeing through not feeling cramped.

4.2.2 Use of bedrooms

A critical issue when considering the efficient use of space in the dwelling is the number of bedrooms that are not used regularly for sleeping and what other purposes they are used for. As indicated in Figure 45, the vast majority (85.5%) did have one or more 'spare' bedrooms.

Figure 45: Number of bedrooms not used for sleeping

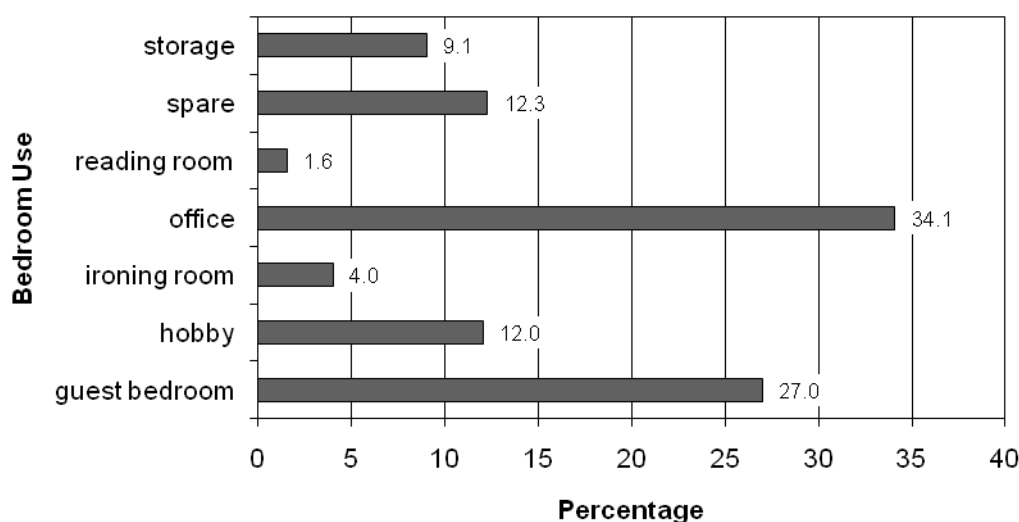
(n=1551)



A reasonable question then is: What are these additional 'bedrooms' used for if not for sleeping? Figure 46 below shows that these rooms were most often used as offices, but also very often as guest bedrooms. Less common, but significant uses were for hobby or storage rooms or were ambiguously described as 'spare' rooms. Only rarely were they used as ironing or reading rooms.

Figure 46: Alternative uses of additional bedrooms

(n=1215, multiple response)



The interviews provided the opportunity to discuss in more detail the kinds of alternative activities bedrooms were used for if not used for sleeping by permanent residents of the household. Examples of those used primarily as office space were as follows:

I have a room which is a study, it was a very small bedroom originally, it's bookcases and a desk and I will use that. But it's not big enough to put a computer and printer in, so that in fact is downstairs. (P173 — female 70–74 years, living alone, separate house, suburban, self-funded retiree.)

In the following case, both extra bedrooms were used to create two separate study spaces.

Well the two other rooms that can be bedrooms but are not used, one is my partner's study and the other one is being made now into my study. (P1405 — female 55–59 years, living alone, capital city, flat/apartment, working part-time.)

Many interviewees used spare bedrooms as guest rooms to accommodate family and friends. In one case, the room was used to accommodate members of a travel club they participated in.

We have one of the bedrooms is now a guestroom. Set up as a guest room. We're members of the affordable travel club which offers that room to people as well (P1274 — male 60–64 years with partner, suburban, separate house, self-funded retiree.)

Spare bedrooms were also often used by interviewees for sewing, craft work or hobbies.

Then I have, like I said, the sewing room. That is another room that it used to be a bedroom and has also got a closed up robe. ...I keep my bits and pieces in there. (P668 — female 65–69 years with partner, suburban, separate house, assistance required.)

Well I've got a little back room along there because I make rugs for homeless children and I've got the TV...I've got a TV in here too, but I use...that one at night... Yeah and I've only got two rooms as bedrooms here and I use that one to sit in at night so I probably use that as much as anything because I'm out a lot. (P1183 — female, age not specified, living alone, CALD, flat/apartment, suburban, self-funded retiree.)

In some cases, bedrooms were used as exercise rooms.

Well I use [the second bedroom] quite a lot to do exercise. I have an exercise bicycle there and [the] spare bed sits up so that I can do exercises every day, because I find I need it to unwind. (P1252 — male 80–84 years with partner, suburban, flat/apartment in seniors' development, self-funded retiree.)

However, many interviewees used their spare bedrooms for multiple purposes, among which accommodation for guests was very common.

I've got one of the bedrooms is converted into a study where I've got computer and office and all that sort of thing, so it's never been furnished as a bedroom, it's always been furnished as [an office], and I'm losing the war with paper so it's crowded with paper, walls, ceilings. I've got a computer on the table here, so I can work out here by choice if I wish, and also it's got the visitors, and television and what not in it, so this room would be the predominant room. And things like, I deal with the mail here, but I've also got a sort of business computer on the table in here which I use randomly, but the other one is the main computer which I use for my emails and things like that. And it varies enormously, but you know, I might spend an hour in the other room a day, and maybe two hours in here, just to sort of break it down into time frames. (P374 — female 65–69 years, living alone, flat/apartment, capital city, self-funded retiree.)

This is not to say that extra bedrooms were always used regularly. When asked in the interviews which rooms were used the least, second or third bedrooms were the most often mentioned.

...[T]he two spare bedrooms. Sometimes they are not used for months. Well I go in. You know, I just air them and whatever and I just dust them, every so often. (P72 — female 75–79 years living alone, CALD, regional, separate house, pensioner, assistance required.)

[The] bedroom where the computer is. The third bedroom, ...my son's got one, I've got another and there's the spare one. (P1063 — male living with child, age not specified, CALD, suburban, separate house, pensioner.)

However, as suggested in most of these comments, infrequent use did not necessarily mean that the uses were unimportant, as having friends and family stay even occasionally was highly valued.

A photographic selection of different alternative uses for bedrooms is provided in Figure 47. This demonstrates that just because bedrooms are not used for sleeping, it does not mean that older home owners do not use them. In fact, more often than not, they are fully utilised for office/study space, guest rooms for temporary residents and regular or even infrequent visitors, sewing and ironing rooms, craft and hobby rooms, media/television rooms, or even as store rooms. If calculations of housing utilisation are to be meaningful, they need to take into account forms of utilisation other than the assumption of being a place for permanent residents to sleep, especially when these involve activities that contribute to well-being and active and healthy ageing.

Figure 47: Alternative uses of bedrooms by older home owners



Home office and library



Home office



Exercise and store room



Guest room with double bed



Guest room with two single beds



Bedroom for grandchildren



Model train room



Sewing and utility room



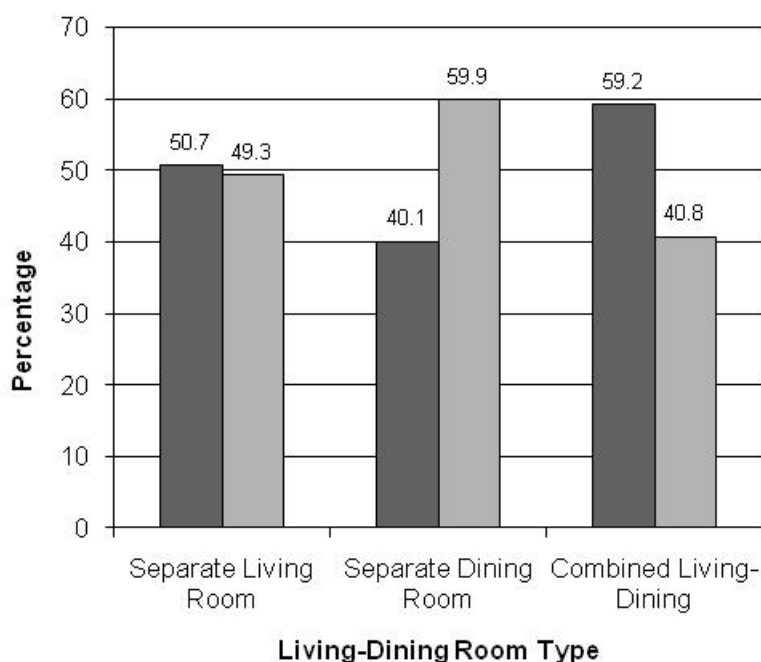
Media room

4.2.3 Living rooms and their use

Figure 48 shows the number and type of living areas in the homes of survey respondents. It reveals that close to 60 per cent of the homeowners had at least one combined living dining room, and an almost equal proportion had separate living rooms and slightly fewer separate dining rooms. Included in these figures are a small number of dwellings that had more than one living or dining area.

Figure 48: Type of living-dining room arrangement

(n=1602)



When interviewees were asked which rooms they used the most, living rooms were most often mentioned. Common among the activities were sitting, reading, socialising with friends, playing with grandchildren, watching television, listening to music, doing crosswords or puzzles.

Read, watch television, entertain visitors, have tea. We don't eat in this dining alcove. We have a table in the kitchen because it is much more convenient when there is just the two of us. We don't entertain here very much except for close family, you know. So this really is just almost a talking space. (P1252 — Couple 80-84 years, suburban, flat/apartment in seniors' development, self-funded retirees.)

Sometimes there was a favourite part of a living room that was used the most.

Well, this is, well, that's my corner where I sit, have my little file there which is my essential file. Yes, where I watch television, so that's my little corner there where I spend my evenings. [P1204 — female 60-64 with partner, suburban, working part-time, assistance required.)

Some open planned living-dining-kitchen areas were the centre of most of the activities in the home.

You can sit here and read, you can cook, eat, rather. The grandkids tend to play in here. So, friends come over, they all tend to sit in here. So, just a

general room where people gather. (P1204 — female 60–64 with partner, suburban, working part-time, assistance required.)

From the interviews, it is evident that living rooms (often including dining rooms and kitchens) are often central to the lives of older home-owners, where much of their time is spent for a wide range of activities, both personal and social. Sometimes there is a special cosy place or corner within a living room that is especially favoured. This range of activities can be seen in the following Figure 49.

Figure 49: Use of living rooms by older home owners



Favourite nook in a living room



Living room with library



Dining room used as work desk



Family room used as craft room



Family room used as double office



Dining room used as computer room



Rumpus room as exercise room



Rumpus room as resident son's gym



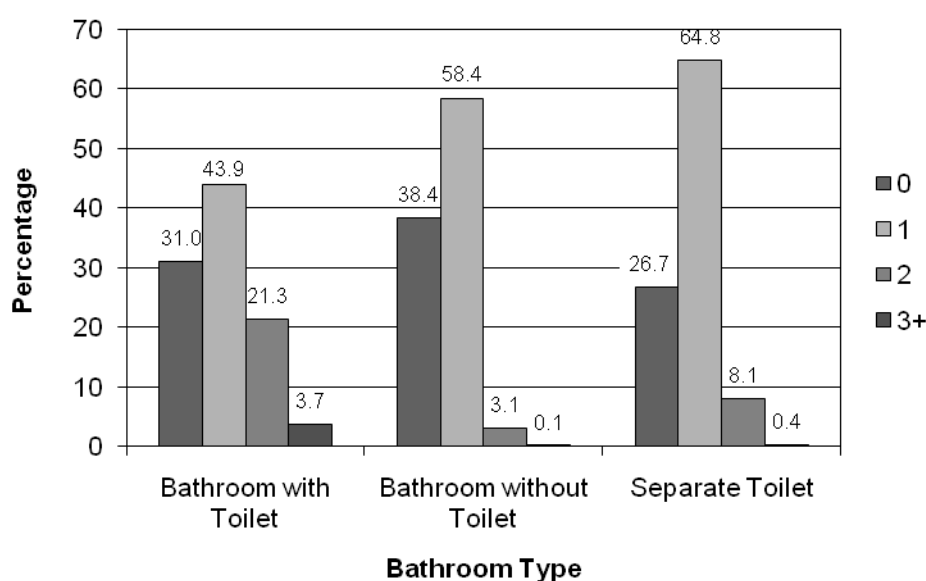
Rumpus room as recreation room

4.2.4 Bathrooms and their use

Bathrooms are also important when considering housing utilisation and efficiency, since many houses now have two or three bathrooms, and when the number of permanent residents is small, i.e., a couple or a lone person, it can be argued that this is not necessary and downsizing would be more appropriate. Figure 50 shows the number and type of bathrooms per dwelling of survey respondents. It is evident from the graph that a quarter (25.0%) of the respondents lived in a dwelling with two or more bathrooms, each of which included a toilet. Where the bathroom and toilet were separate, the number of second bathrooms (3.1%) was much lower. The figures for toilets are more difficult to interpret as many dwellings may have a toilet both in the bathroom as well as in a separate room.

Figure 50: Number and type of bathrooms

(n=1602)



Second bathrooms were often mentioned by interviewees as rooms used least often, along with rarely used second or third bedrooms. They were also regularly mentioned among rooms that respondents would like to be larger (see Section 4.2.1). Bathrooms also featured strongly among rooms that had been modified or were expected to be modified in future (see below and Section 6.3.1). In the following case, the modifications were undertaken for a disabled mother (shown in Figure 51).

My mum had a stroke and could not walk and talk... We had to do major alterations to the bathroom because it had to be wheelchair accessible to the shower. We threw the bath out. There is no bath there now. We put the toilet in there that was in the back of the laundry, so it is accessible (P516 — female 60–64 years, living alone, separate house, regional.)

Having two bathrooms was seen by some as an advantage for temporary residents or when family or friends were staying over.

INT: Now, when you have temporary residents here, how does that affect the space you need in the home? Do you find it still adequate...?

RESP: Yes, because there's two separate bathrooms, and I think that would be the thing where I would find it most intrusive, if I were sharing a bathroom with somebody. But sharing kitchen, sharing dining areas, sharing balconies,

that's not a problem. (P374 — female 65–69 years, living alone, capital city, suburban, flat/apartment, working part-time, self funded retiree.)

The same interviewee also had an interesting other use of her main bathroom (see photograph in Figure 51).

Yes, my bathroom, the main, the larger bathroom of the two, is my water activities bathroom. So my kayaking and rowing and swimming gear are all in there. So the bathtub is just full of, chockers with, [kayaking gear] so then I can just pick it up and go off on Fridays with...the lifejackets and all...the clobber...you've got to have to do these things. (P374–continued.)

Figure 51: Bathroom modifications and an alternative use



Modified bathroom, grab rails



Modified bathroom, hobless shower



Modified bathroom, shower grab rails



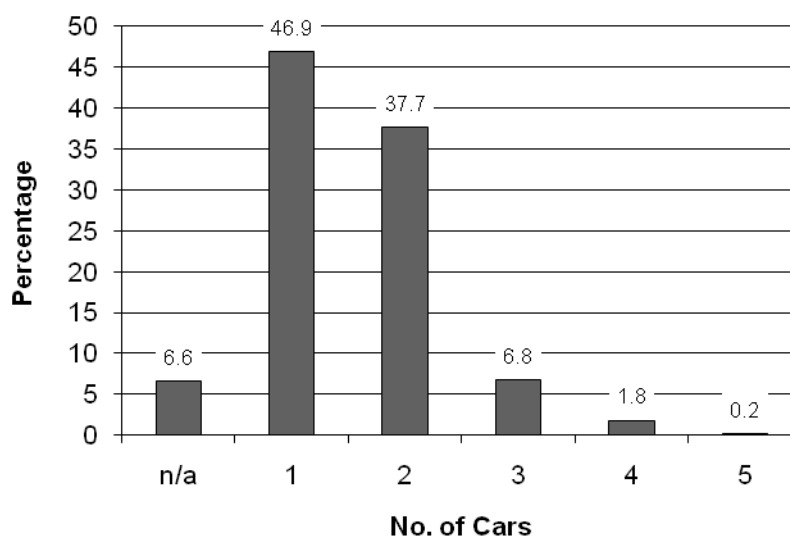
Bathroom used for storing kayaking gear

4.2.5 Motor vehicles, parking and the use of garages

Motor vehicle ownership was very high (96.3%) among the respondents' households, in fact nearly half of all households (46.5%) had more than one vehicle, and two car ownership was only around 10 per cent less than single car ownership (Figure 52).

Figure 52: Number of cars in the household

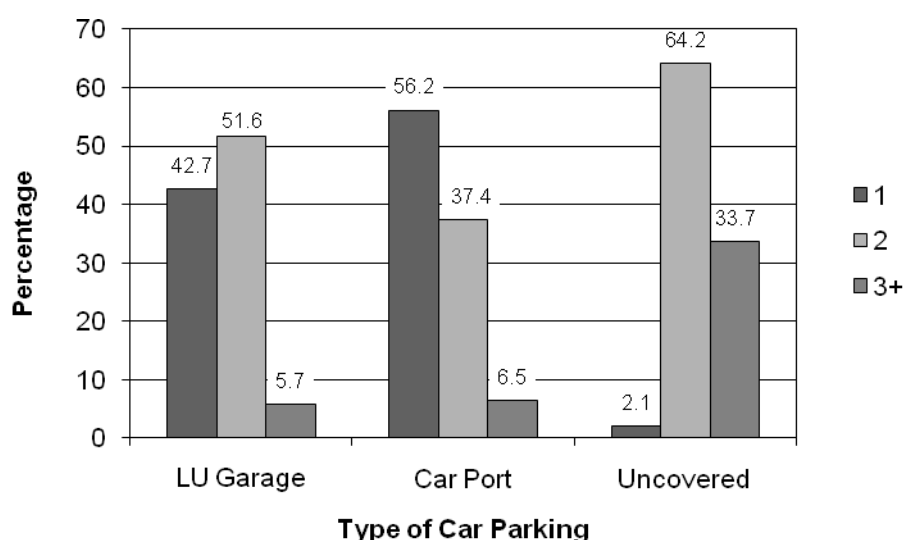
(n=1318)



Likewise, nearly all (96.3%) dwellings had off street parking of some kind. The number and type of car parking spaces per dwelling is shown in Figure 53. Double garages exceeded singles by a small amount, whereas single carports exceed double ones. Uncovered spaces were rarely single and double spaces dominate over those accommodating three or more vehicles. Some of the latter were large semi-rural or rural properties. Some dwellings had more than one type of vehicle accommodation.

Figure 53: Number and type of car parking spaces per household

(n=1260)



Despite the high car ownership and garage provision, garages were often not only used for parking vehicles. A very common use of the garage was for storage.

[We have] one car and we use the balance of the space for storage. Because living here is quite different from living in [country of origin]. We didn't, when we arrived, didn't realise that for instance the thing that we would give our eye

teeth for in the apartment is a store room and there is not such a thing. In fact, if you don't use part of the garage as a store room we are really messed over. we do actually have a second refrigerator in there, because we find that we can't manage with one fridge, so we keep...cool drinks and things out there. We used to have, when we were in South Africa, we had a store room with a freezer in it so that we had extra freezer capacity, but again you have got to readjust your life and that takes time. (P1252 — male 80–84 years with partner, suburban, flat/apartment, self-funded retiree.)

A number of interviewees used their garage as a workshop.

INT: Do you use the garage for anything else?

RESP: Well I've got bits and pieces in there, yes. But I have to move the car out and then I play around in it.

INT: So is that [a] workshop sort of things or just storage?

RESP: Yeah, yeah, workshop. Everything — well, I've got to move the car out. Then, not that I'm a good handyman, but I get things done. (P1063 — male living with child, age not specified, CALD, suburban, separate house, pensioner.)

Some used the garage for hobbies.

He said he's into model railways. So since he's left work he's trying to — you know he's got a table out there he's trying to do that. (P1543 — female 80–84 years with partner, separate house.)

It's a workshop and houses a vintage car. And the usual car is under a carport, adjacent. (P334 — female 80–84 years with partner, regional, separate house, pensioner, assistance required.)

Garages were also used by some for recreation and entertaining.

F: ...We've got the dart board set up in there.

M: We play darts and that. Yeah. It's good, it's lovely.

F: It's got a carpet in it.

M: Beer and...a [barbeque] and play a game of darts, get on well with the neighbours and have a yarn.

F: We like to have people over for a barbeque or the family. It's got a carpet so we use it as an extra room like that you know clear the bench and that's an extra room as well. (P621 — male 60–64 with partner, regional, separate house, pensioner, assistance required.)

A range of other uses in addition to car parking were also identified.

F: Well, all the tools and things like that are kept up there and we had recycling that we store up there until we go, take it to the tip or take it to wherever.

M: Yes, we take all paper, bottles and so on. Usually every day we take a load. (P1019 — male 65–69 years with partner, separate house, regional, self-funded retiree.)

Homeowners' garages, therefore, serve many more functions than storage for cars (see Figure 54). They can be used for storage, workshops, hobbies, entertainment and recreation. Many of these activities are also important to keeping older people active and are important to their wellbeing. Sometimes these alternative uses even displace the vehicle.

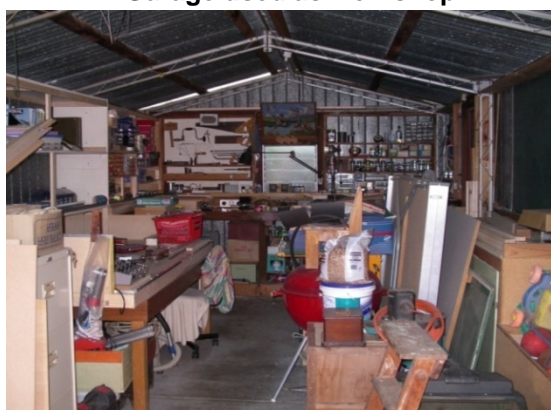
Figure 54: Alternative uses of garages by older home owners



Garage used as workshop



Workshop corner in garage



Garage used for hobby and storage



Car and other storage in garage



Carport used to park gopher



Carport as outdoor living area

4.2.6 The use of outdoor space

Since this study is concerned with housing, land and neighbourhood use by older home owners, it is important to consider the role of outdoor space associated with the home, how it is used, and what role it plays in the ability to remain living in the home, or the decision to move. This section deals with the first part of these questions — how open space associated with the home is used — based on information collected in the in-depth interviews.

It has already been noted earlier in this chapter that three quarters of the older homeowners surveyed lived in separate houses on their own allotment (Figure 35), and that these were mostly single storey houses (Figure 36) of three or four bedrooms

on allotments of 500 m² or more (Figure 41). A common argument is that this is inappropriate for older people because of the maintenance burden and lack of use of large amount of open space. The interviews provided an opportunity to obtain older home owner's perspectives on their use of private (or, in the case of multi-unit housing, semi-private) open space and its importance to active and healthy ageing. Since most were in separate houses with a large land area, a number of people gave accounts about their activities and frequency of use.

Oh, [we have] breakfast out there most days when it's not raining, and spend time out there, just out there. So, weather permitting, I'm a minimal once a day, and you know I'll have lunch out there if possible, spend a lot of time out there because it's big and open and also it's nice to have a little bit of greenery around me. So it serves as sort of the best I can for a garden when you live in a unit, a garden is difficult. (P374 — female 65–69 years, living alone, flat/apartment, capital city, self-funded retiree.)

We use this all the time. It is warm enough to have breakfast, it is nice enough to have lunch, even at night apart from midwinter, we can drop these blinds down and even entertain guests out here...I used to have a motorbike and a boat and my wife said all I liked to see was motors, so I started playing with pot plants. I grow palms and ferns. I know nothing about flowers. (P473 — male 65–69 years with partner, separate house, suburban, working part-time, assistance required.)

Even for people with severe disabilities (in this case advanced Motor Neurone Disease), access to outdoors at home was considered an important, if challenging, activity.

Yes. I can walk — I used to go in and out that door, hence the rails on the door so I could get out, and my son built the step up so that I would be able to get out 'cause the step was just too high for me to step down — I felt uneasy. So he built the step up. We actually did have somebody come and talk about some Home Modifications, but the ramp that they suggested would've gone out to the end of the paving, and I thought that was invasive for the rest of the family. So we accommodated and modified it and it worked really well for quite some time until I no longer felt safe doing it. So now with the walker I can actually walk out the front door and walk right round the house if I choose to. So I can get my exercise if I get out there. (P161 — female 55–59 years with partner, separate house, regional, pensioner with a disability.)

Porches, verandas, decks and patios closely associated with the house were particularly important and highly utilised by many respondents.

Yes, we've got lovely decks and this lower one here is new with this room and that is another outdoor...area that we now use more, ...it wasn't there before. But it's lovely sitting out there in the evening. We don't so much do that when we're on our own but...if we have friends here, friends over...we should go and do it. (P1019 — female 65–69 years with partner, separate house, regional, self-funded retiree.)

For those living in attached dwellings with smaller yards or courtyards, these more compact outdoor spaces were also actively used and highly valued.

It depends partly on the weather. But again, since I've retired, I find even things like pulling out weeds more pleasurable. It's nice being out in the garden, so I'm spending more time outdoors. In the outdoor area, instead of, you come home from the end of a day's work, it's dark, you know, it's all

focused inside. So I guess more time outdoors. I might sit out there and have a coffee, or do a small amount of gardening. I might not spend long out there, but there's lots of birds out there and that sort of thing, so it's a pleasant place to be. (P1287 — female 60–64 years, living alone, attached house, suburban, self-funded retiree.)

To many respondents, gardening was an enjoyable and satisfying pursuit.

INT: How often do you use the outdoor areas?

M: Oh, we're out[side] all the time, yes.

INT: You like gardening?

F: Yes.

INT: That's mostly what you do out there, is it?

M: Oh, we're out all the time, yes. [Partner's name] [has] been retired less than I have. In her case that was only the start of last year so there was some gardening to catch up on. You know, you always think that you can keep a place in order and then it gets away from you so there was — the part that she prefers to do, that was a bit behind, if you like. But she found a novel way to solve that. She's entered us in...an open gardens scheme.

F: I had to get it ready.

M: So there's been a fair bit of emphasis on gardening. (P1019 — couple 65–69 years, regional, separate house on a 14 ha property, self-funded retiree.)

A few respondents, however, mostly in the older age groups or with a disability or women widowed or with a disabled partner, found the maintenance of a large garden difficult.

Well let's put it this way, I was starting to use it [the courtyard] before I broke my arm, I did that eight months ago. Out there in the courtyard. I was putting up some wire netting so I could grow some vegies and my passionfruit vine and what have you, and I turned around and tripped on what I left on the path and I went splat on the concrete in a brick edging around the garden bank. I severed the bone and, as it turned out, I also put out my knees and my chin and the knees and the chin I've only just... got organised because it wasn't [diagnosed] at the time that I'd hurt those. (P43 — female 75–79 years, living alone, attached house, regional, pensioner requiring assistance.)

One couple explained how they had planned the landscaping of their yard in anticipation of the impacts of ageing on their ability to maintain a garden.

M: We set it up so that for a long term thing so that once the holidays are finished we've still got our little bit of paradise out the back and I suppose that is for my part a little bit of spin off from my parents who had a similar type thing that they did. And all we've done is modernised that a bit. It's just that if we can't get around we want the outside to be serene and nice to look at and tranquil rather than just a brick walk and nothing to look at. So we've got a little bit of nature because we've got plants growing all the time, different times of the year, different colours all that type of thing there. So that...even that the legs give up and we can only walk to sit outside then we want that to be as nice as possible. (P784 — couple, and age not specified, suburban, separate house, self-funded retiree.)

For flat/apartment homeowners, the smaller open spaces in the form of balconies were also well used and highly valued.

And we also got a balcony. The balcony's quite huge. Sometimes we go outside and enjoy the fresh air. [It's] over a hundred square feet. [We have] comfortable chairs, all outdoor in case it rain and a dining table with four chairs and also the barbecue stove. [It faces] south east. ...Morning sun come[s] from one side and the south, mainly it's facing south. I think depending on the wind, because it can be a quite windy condition, when it's less windy I stay outside and do some reading, newspapers and relax. [It's a] two-hundred square foot for the balcony. It is a big one. (P2005 — male, age not specified, with partner, CALD, suburban, flat/apartment, part-time work.)

For some apartment dwellers, use of communal space or facilities was also referred to.

It's only a small balcony. I wished I had more but some of the units have a little terraced area. The flat underneath me has an outdoor terraced area, but there's obviously only a few of those. When I purchased, there were none available. I would like a little bit of outdoor area but to compensate that, as I say there is the communal outdoor area upstairs. Because there's not a lot of people living here, it's not that you go up there and there's a cast of thousands. You know you could pop up there of an afternoon and be the only one up there and have a couple of hours in the sun and just read a book or whatever..(P746 — female 60–64 years, living alone, flat/apartment, working full-time.)

The comments of interviewees on the use and value of outdoor space provides a rich understanding of the importance of having access to private open space for a wide variety of personal and social activities. The longer time spent by retired people in the home environment also means that it is possible that older homeowners are actually greater users of open space around the home than their younger counterparts who are more often away from the home during working hours.

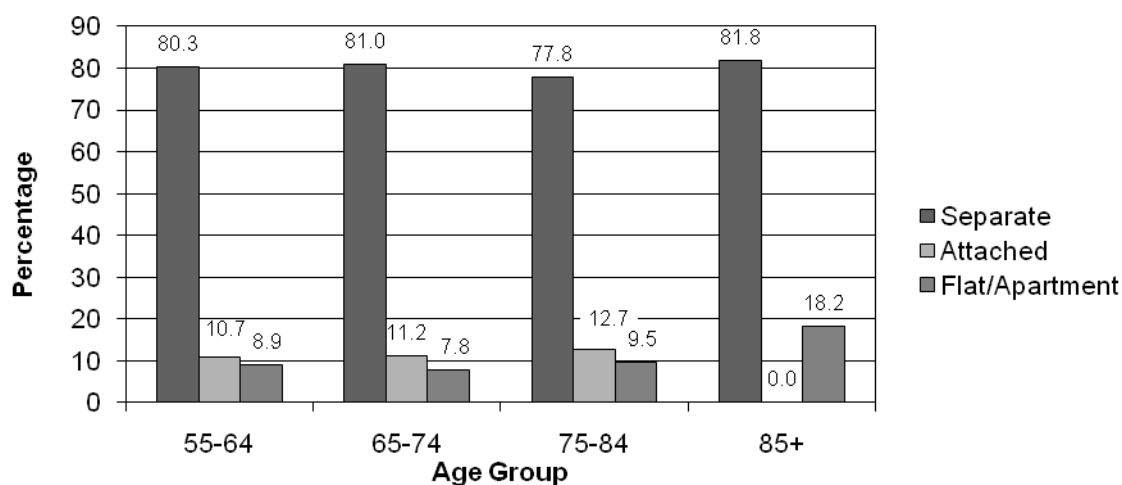
4.3 Effects of age, ability and cultural background

4.3.1 Effects of age on dwelling type, size and location

Among the survey respondents, age seemed to have little impact on choice of dwelling type (see Figure 55). All age categories predominantly occupied separate houses with only a slight increase in attached and flat/apartment housing forms with age. However, the other age groups are reasonably representative of the distribution for older persons in the Australian population (see Figure 19) except that the percentage in attached houses was higher among survey respondents indicating that flat/apartment dwellers are less likely to be home owners.

Figure 55: Dwelling type by age

(n=1034)

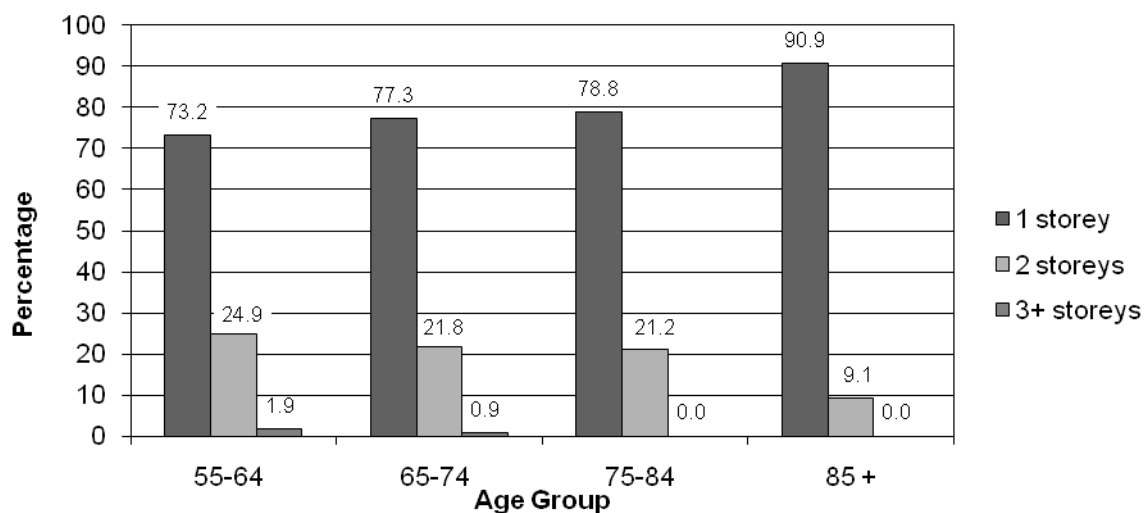


Note: 85+ figures to be used with caution due to small number of respondents (n=11).

In terms of age and the number of storeys, Figure 56 below indicates high levels of single storey dwellings, but increasing with age over the four age cohorts, with a corresponding decrease in the percentage of two storey dwellings — most marked in the oldest age group.

Figure 56: Number of storeys in separate houses by age of respondent

(n=1016)

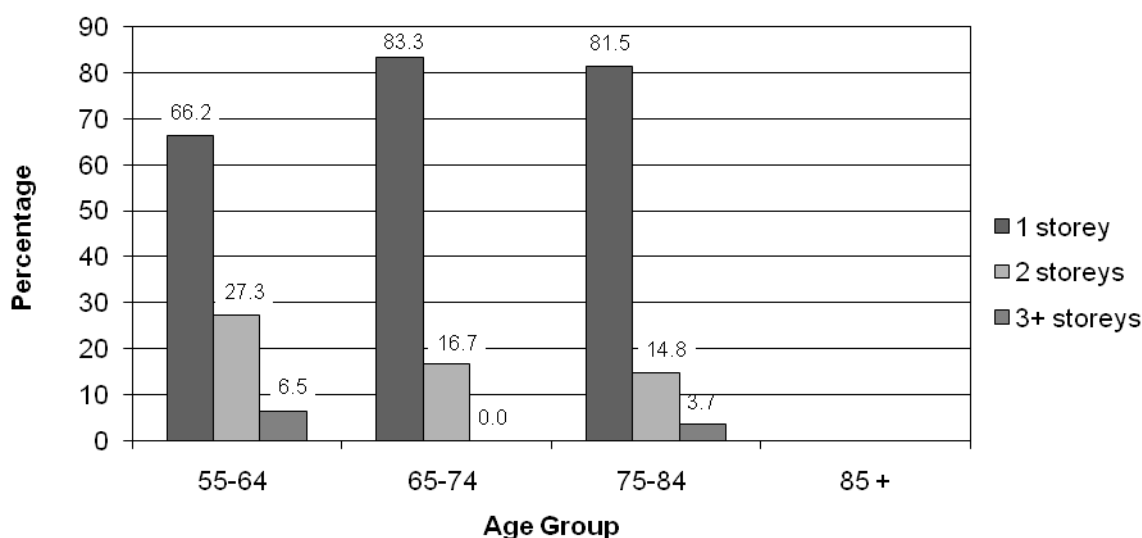


Note: 85+ figures to be used with caution due to small number of respondents (n=12).

Figure 57 shows similar data for the much fewer number of respondents in attached houses with a larger reduction in two storey dwellings over the first three age cohorts. This reflects the greater likelihood of attached dwellings being more than one storey.

Figure 57: Number of storeys in attached housing by age of respondent

(n=164)

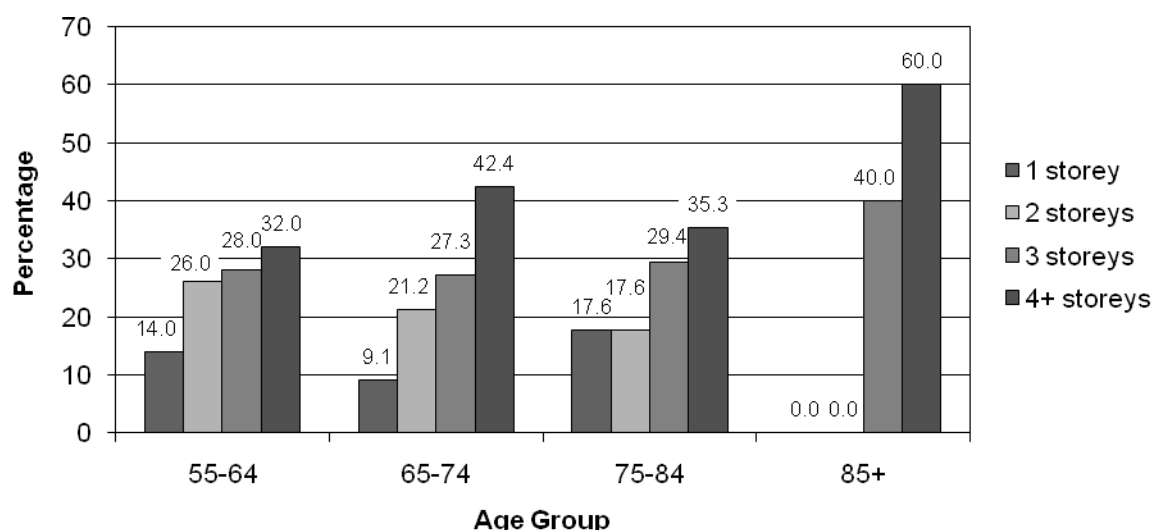


Note: There were no 85 or older respondents in attached housing.

For apartment buildings, the height of the building is a more important indicator of building form. Figure 58 shows the height in storeys of the flat/apartment buildings of respondents broken down by age. Four or more storeys predominate in each age group, though only marginally in the 55–64 age group, possibly because they are more likely to have lifts as opposed to stair only access which is common for many three storey blocks.

Figure 58: Height in storeys of apartment buildings by age of respondent

(n=105)



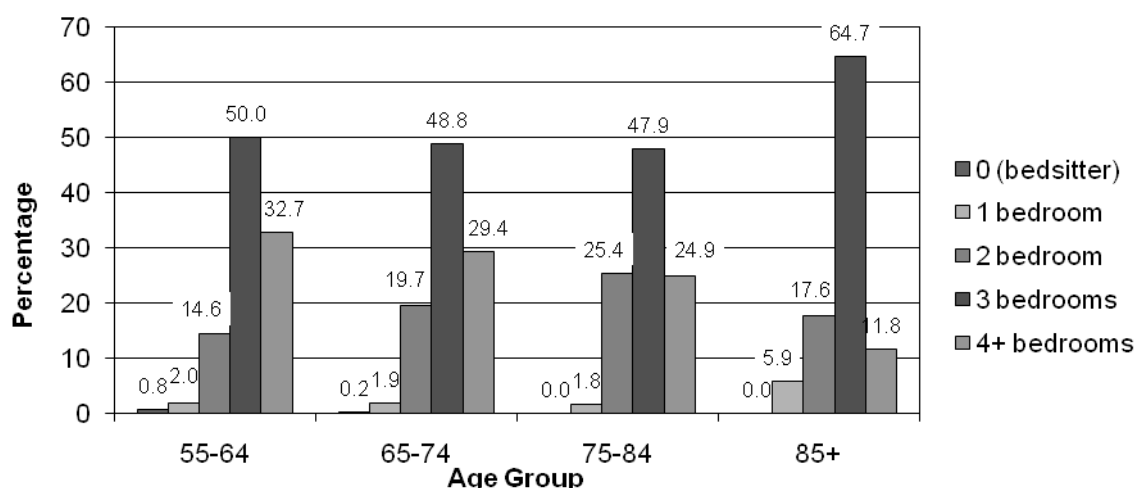
Note: 85+ figures to be used with caution due to small number of respondents (n=8).

Although the changes in housing type and form (height in storeys) are fairly subtle, it is evident that dwelling size does vary with age, whether measured by number of bedrooms or floor area of the dwelling. From Figure 59, it can be seen that while the

percentage of respondents occupying three-bedroom dwellings reduces only very slightly with age over the first three age groups, the percentage with four bedrooms reduces markedly from 32.7 to 11.8 per cent, with a corresponding increase in two-bedroom dwellings over the same age groups. The increase in three-bedroom dwellings for the 85 and over age group is difficult to explain and may be unreliable due to the small number of responses in this category.

Figure 59: Number of bedrooms by age group

(n=1274)

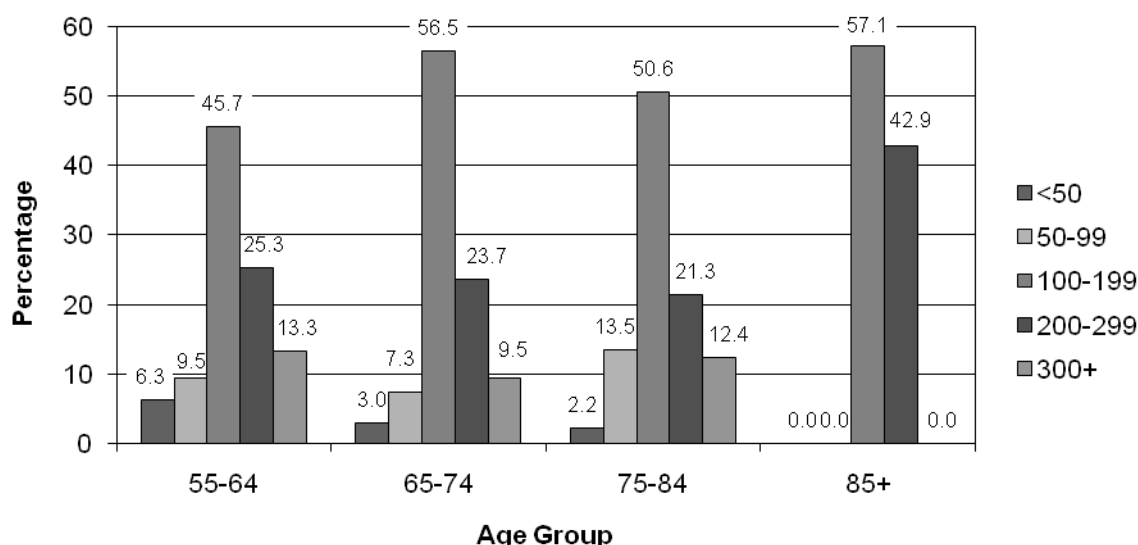


Note: 85+ figures to be used with caution due to small number of respondents (n=17).

A much more accurate measure of dwelling size is the floor area. Responses from the 65.4 per cent of respondents able to answer this question are indicated in Figure 60 below. Dwellings in the range 100–199 m² predominate throughout the age groups but there is a steady decrease in larger (200–299) m² dwellings over the first three age groups.

Figure 60: Floor area of dwelling by age group

(n=696)



Note: 85+ figures to be used with caution due to small number of respondents (n=11).

Age did not appear to be a factor in the type of living room arrangements in the dwellings of respondents as illustrated in Figure 61. Around two-thirds of respondents in each age category occupied dwellings with a combined living/dining area, around one third with a separate living area and around 40 per cent with a separate dining area. Presumably those with separate living areas, but no separate dining areas, had either an eat-in kitchen or family room used for dining.

Figure 61: Type of living room arrangement by age

(n=1281)

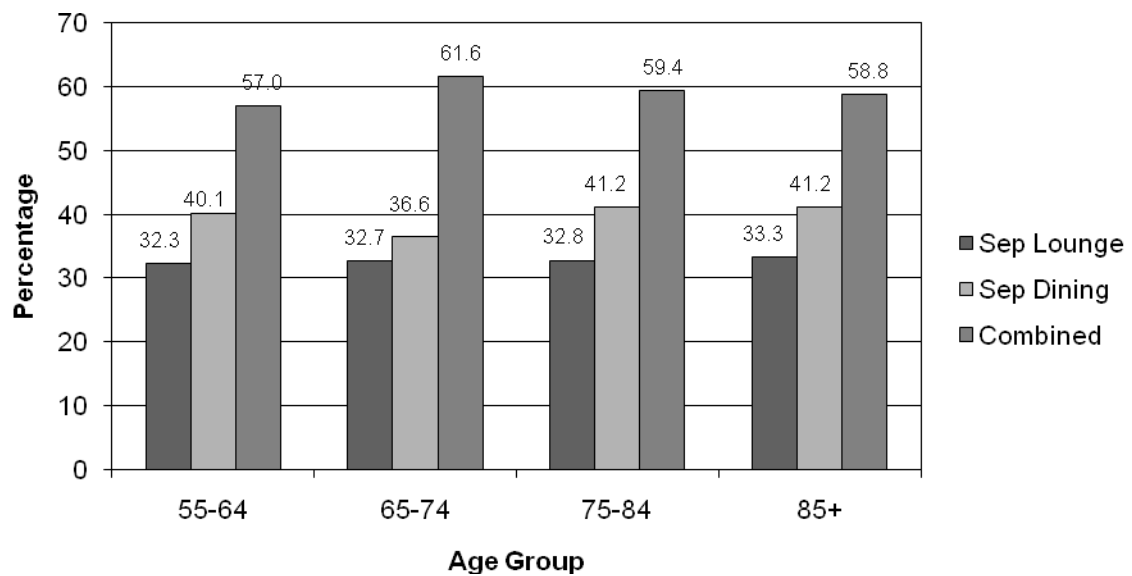
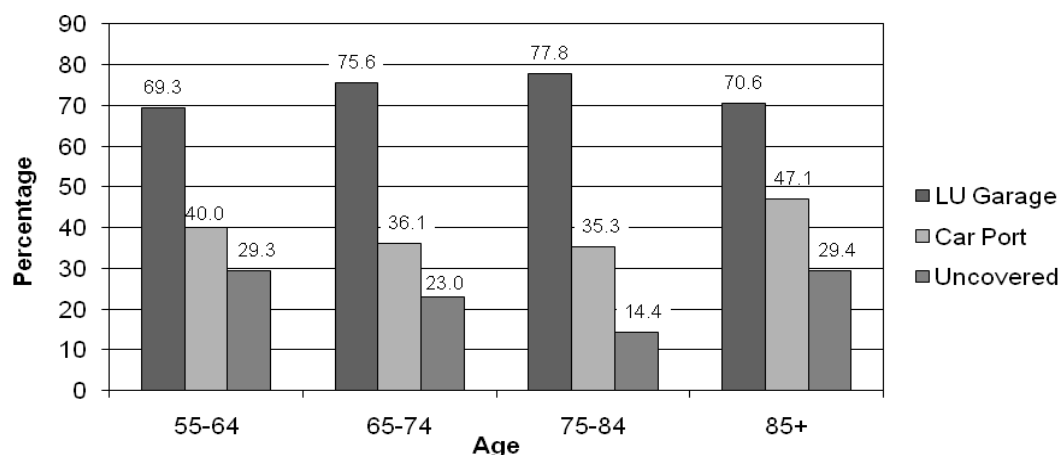


Figure 62 below shows the differences in car parking provision between the four older age groups. There is a slight increase in lock-up garage facilities over the first three age groups and a corresponding decline in uncovered car spaces, probably reflecting an increasing concern among older people for security of their vehicles. The apparent reversal in the 85+ age group may be explained by higher numbers in multi-unit retirement villages or apartments where group parking is more prevalent, or by unreliability of the figures due to the small number of respondents in this category.

Figure 62: Type of motor vehicle accommodation by age

(n=1260)



Note: Figures for 85+ are unreliable due to small number of respondents (n=17).

A more nuanced understanding of the issues of age and housing choice came from the interviews. A number of interviewees who had recently moved commented on the factors behind their housing choices. For some, housing type and its implications were key considerations.

One woman who had moved from a two storey townhouse where she had lived with a disabled husband to a single storey attached house explained her reasons for this preference.

Yes as you get older, yes, you realise this. Well it would either have had to have been a house or a villa. A [separate] house I feel you're too open to things going wrong that you've got to pay for. I'd rather have... strata, and I always felt pleased to have it. ...A lot of people said why didn't I go into a retirement village and I possibly would have, but there is only one here which didn't have any vacancies anyway. But no, the villa suited me, but only the front villa. I couldn't have handled a back villa because I came from a townhouse looking onto a road and I needed that space. I wouldn't go into a townhouse again because of the stairs. People said to me would I go back to the one I own and I said no, I couldn't live there because it's very sort of straight walls and restricted. It wasn't as wide as this for starters. I realise now how you mentally are better off, you've got a different mentality when you've got the space. (P1114 — female, 55-59 years, living alone, coastal regional, single storey attached dwelling, self-funded retiree.)

She went on to explain how important having a single storey dwelling was — not just for her, but to enable friends with disabilities to visit.

INT: Thinking about the future, yourself?

RESP: Yes absolutely and having people here. One time I had problems because the toilet was upstairs. ...I've got people now, friends here that are in wheelchairs, and they can come and visit me. All that sort of thing made such a big difference. (P1114 continued.)

The importance of single level living was echoed by a number of other interviewees. In this case, a health problem ruled out more than one storey, and the idea of living in a small scale multi-unit development appealed because of a desire to belong to a community.

Certainly single-level because I've had arthritis in my knees, and I couldn't have stairs. My last house was in just a quad and I didn't have much to do with a couple of those people, but it was like a duplex with the place next door, and I found it nice having that neighbour that I could sort of hear them through the wall and you weren't completely alone, I sort of enjoyed that. So when I had some sort of a complex, not too big, I didn't ever really want to go into a really big one, but I just liked the idea of living in a community. I was looking for at least two bedrooms; I wouldn't have wanted anything smaller. Single storey because of my legs. (P729 — female, 70-74 years, living alone, separate house, suburban.)

In some cases previous injuries had sharpened attention to the problems of stairs and the desire for single level living.

INT: Was it important to you to have a single storey house?

RESP: Yeah, it was. The house we moved into when we were first married was split level on the lower side of the house and had external steps leading onto the front porch and then internal steps inside. I'd had a stint on crutches

in the late 70s and it's not fun going upstairs with crutches. And it's not fun with very small children and internal steps either. So when... we were designing this we decided on a no-steps block of land and let's make it easy in that respect. (P278 — male, 55–59 years with partner and son, suburban, separate house, self-funded retiree.)

Anticipating ageing, one couple had designed and built a new house on a rural property, where they could live on one level as they got older and with wider doorways for potential wheelchair access.

The separate pavilion also had a couple of characteristics. This is our only concession so far to ageing that we like to stay on the same level so that's one thing. Also, it's specifically facing northwards, about 10 degrees off north so it collects a lot of winter sun. The other thing we did was into the bathroom out there we made the doorway wide enough for wheelchair access and... that's only just been built on recently and there's no shower screen. The shower's in the corner and the water just flows. It's low pressure, anyway. (P1019 — female, 65–69 years with partner, separate house, regional, self-funded retiree.)

Reducing maintenance was an objective of many who had moved recently.

RESP: We pretty much had a fair idea about what we wanted to build. We wanted something that would be fairly easy to maintain as we got older. We didn't want particularly large rooms, apart from this room...

INT: Now, both the houses are single storey. Was that important?

RESP: Well, it's important for the upkeep of the home, you know, climbing ladders and things when you're older, reaching the gutters, things like that... Something simple, something easy to look after. Something that didn't really need much in the way of heating or cooling. We wanted to be able to live here without it costing us a fortune as we got older, and really we just need to keep the fans on and it keeps the place cool. In the winter, I've just got one heater down there, but that's it for the whole house. And that's what we wanted — something we could easily afford to run. (P1204 — female, 60–64 years with partner, suburban, working part-time, assistance required.)

Preference for apartments or attached housing was often associated with eliminating or reducing maintenance of open space and the building.

And I wanted to get something that I didn't have to worry about a garden. ...Garden is not my forte or my interest. I wanted something fairly secure that I could leave if I wanted to go and travel, and that I could come back and not have any responsibilities like that. And also the cost thing. Because when the family home was sold, I needed all the money from that home before I was able to afford a place that I had before. Because the reason that the family home was sold in the first place was that it was just too darn big. So it was a more modern place, and easy-care place, more light. I needed a place that had lots of sunlight, nice and bright, not dingy and dark and everything... (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

However, for others it was important to have a good sized garden for visiting family.

INT: The outdoor space was important?

RESP: Yes, and I think it will be important for grandchildren visiting. The back is basically lawn. There's a Hill's hoist for clothes drying and quite a big area of

lawn. One thing I haven't done yet, but I might do when I'm older, although we've got a fence around the back of the garden, there's none at the front and if I want to have a dog I've got to do something around the front or at the sides to put gates. But I haven't done that yet. I know it sounds ridiculous, but we'd lived for 16 years in [foreign country] where there was theft, muggings, the usual problems, lots of stealing. This house has bars on the downstairs doors and all the downstairs windows. Security, so no problem. I'm saying it's all secure all around downstairs and rooms and I don't have to worry. (P173 — female, 70–74 years, living alone, separate house, suburban, self-funded retiree.)

Some felt it important to still have an outdoor living area for entertaining, but of a more modest size.

Well, somewhere we could have someone come to visit. Somewhere where you could enjoy [a] barbeque [and] outdoor living. Somewhere where you could have a cocktail party. Somewhere where [you could] just invite children, and feel children were safe. Somewhere [where] there's a bit of light. ...But, didn't really want lawns to mow and a big garden. As you can see, the front garden I've still got to get to. But yes. I know my husband doesn't want to do any maintenance anymore. So I couldn't find something that needed maintenance or much garden. (P22 — female, 60–64, with partner, attached house, capital city, pensioner, assistance required.)

For others, multi-unit living just did not appeal for a variety of reasons. In this case due to concerns about privacy and the need for autonomy.

I would never consider an apartment or a townhouse, given a choice, because I don't like living with people too close to me. I like to have my own space and my workshop where I can go and do things at night and not worry about disturbing neighbours or something like that. So to me units, townhouses are something I would never contemplate, given a choice. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

For others, choice of housing type was about superior safety and security of some dwelling types such as apartments.

INT: I'm interested in learning [about the] particular reasons why you chose an apartment on the third floor?

RESP: Security and safety. (P746 — female, 60–64 years, living alone, flat/apartment, working full-time.)

Some were more concerned about environmental amenity and room sizes in choice of apartment.

Water view, good outside sunny sort of area, reasonable sized rooms. And I have to say I looked at an awful lot of rooms with poky little bedrooms, the kind of bedrooms where you've got two foot on either side of the bed, which I just couldn't live with. So sizeable bedrooms, and something that feels good, and it's sometimes hard to pin point what that is, except for me this felt good. (P424 — female, 60–64 with disabled partner, separate house, suburban, self-funded retiree.)

Sometimes having pets was important in choice of housing type.

Okay, all right. The prime objective at the time was — I had become, I didn't like unit living. I found it very restrictive and I do enjoy having cats. Cats have always been a part of my life. So, the prime objective was to find somewhere I

could have cats. My initial search was at semis, you know, creatures of habit. I have lived in the Lane Cove area for, since the seventies, so it is always, I have always moved around this area. So, I was looking at semis, unfortunately the unit does not have many semis and the one's it did have were very old and needed a lot of repair, which, I am not into renovating or you know, and so, it just so happened that in my search, one Saturday I saw this villa complex, pets allowed, so the pets was the thing that attracted it to me. (P1321 — female, 55–59, living with child, CALD, suburban, attached house, working full-time.)

Some interviewees who had moved recently covered a number of the issues mentioned above in their response to the question about choosing their present home.

F: Low maintenance, brick.

M: Brick, yeah. Three-bedroom, low maintenance.

F: One level.

M: One level, preferably double garage.

F: We wanted, yeah.

M: Or we wanted. Central heating because it was...

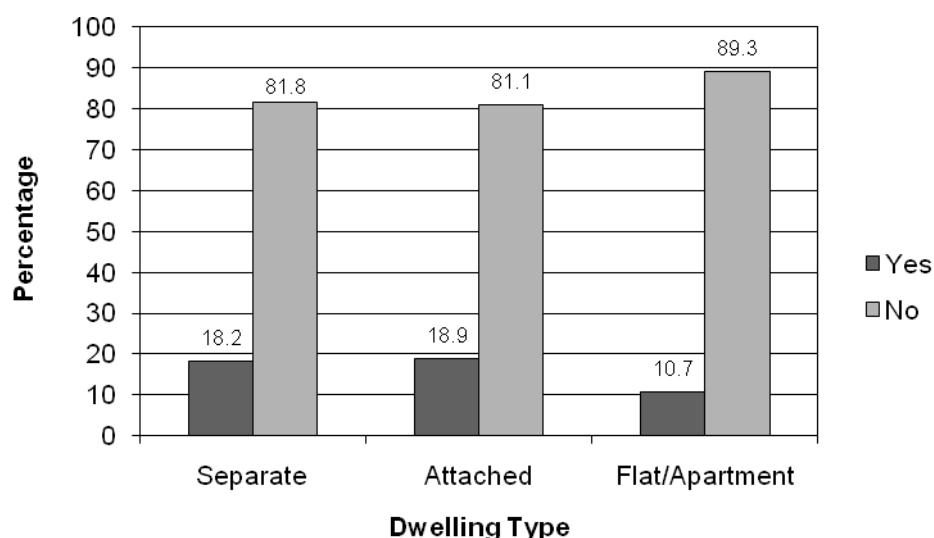
F: Easier to heat. (P621 — Couple, 60–64 years, regional, separate house, pensioner, assistance required.)

The key issues pertaining to housing choice for older home owners that emerged from the interviews are therefore the need for low maintenance (both house and yard), preference for living on a single level (or without stairs), a concern for safety and security, the desire for small but useable outdoor space (be this a smaller yard, a courtyard or a large balcony) and, for some, the ability to have pets or to live in a supportive social environment.

4.3.2 Effects of level of ability on housing type, size and location

A total of 275 (or 17.1%) of the 1,604 survey respondents had at least one person in the household who required assistance and in 191 or 69.5 per cent of these cases the respondent themselves required assistance and in 75 or 27.2 per cent of cases their partner required assistance. Figure 63 below shows dwelling type for all households with at least one member requiring assistance. Flats/apartments can be seen to have less households where assistance is required than separate and attached houses.

Figure 63: Assistance required within the household by dwelling type
(n=1560)

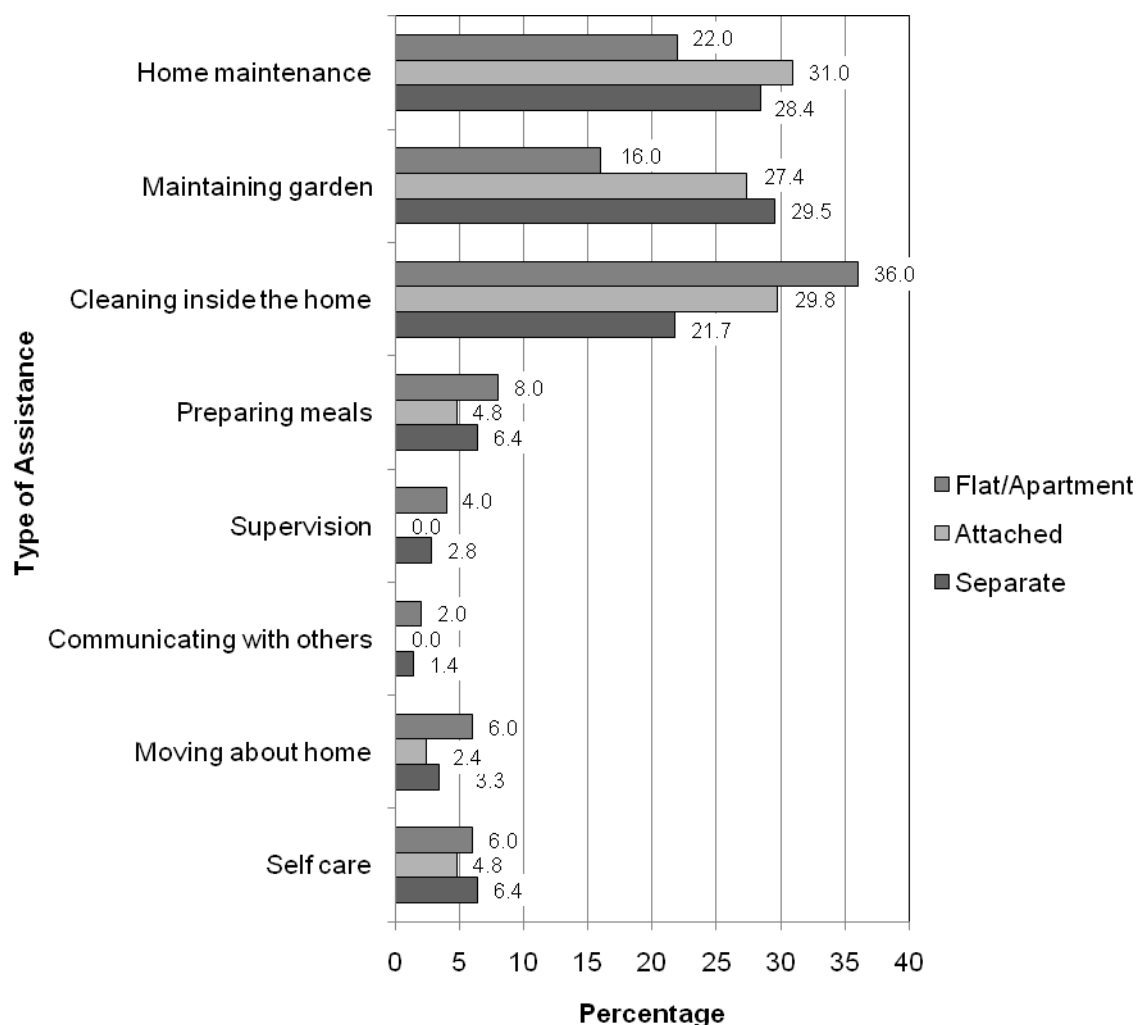


However, the type of assistance needed showed more variation between dwelling types. Figure 64 shows these differences. The three main types of assistance were home maintenance, maintaining the garden, and cleaning inside the home. Home maintenance and maintaining a garden are required more in relation to separate and attached houses and less with flat/apartments as expected. Cleaning inside the home is required more by residents of flats/apartments.

The second tier of assistance required was preparing meals and self care, accounting for between 4.8 and 8.0 per cent of households where care was required. Moving about the home, supervision and communicating with others were the least required forms of assistance. In all the second and third tier of assistance required, the difference between flat/apartments and separated houses is marginal.

Figure 64: Type of assistance required by dwelling type

(n=493, multiple response)



There were a number of people with disabilities who participated in the interviews who gave insights into the impact of their disability on their use of the home. Most were people with permanent long-term disabilities and only a few were people with temporary disabilities. A number used assistive devices such as walking sticks, walking frames, wheelchairs and scooters.

INT: Good. Now walking around the house and that, is that easy for you? Do you need to use your walker for that?

RESP: I use it in every step. Without it, I get an awful pain in the back. I just cannot keep going. But that thing seems to help me. Also I am scared of falling. (P494 — male, 80–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

Others were experiencing difficulty and were considering making modifications to the home to maintain their independence.

INT: What about inside the house, what things do you think would be helpful so that you [could stay] for a longer period?

RESP: I like handles on things, I've got a railing in my shower and I've got a railing in my toilet which I've had put in, but if they were standard, I think they're always helpful.

INT: And you use those?

RESP: I use those all the time.

INT: You need to use those?

RESP: Yep. I mean, I don't know whether I need to, but I just find them helpful so I do use them.

INT: Anything kitchen related?

RESP: Certainly the split-level stove, and the design of cupboards. You can design corner cupboards with a swivel on them, you know, a lazy Susan...What I've actually done with that one over there is I've bought plastic boxes and put my stuff in them, because I can reach in and pull the whole box out, whereas I couldn't reach stuff in the corner. (P729 — female; 70–74 years, living alone, attached house, capital city, self-funded retiree requiring assistance.)

Some had vision impairments, which caused problems for them moving around the home.

RESP: There are many, many steps, even in entering my house. Nowadays I'm going to have to, because my eyesight, vision starts to lose, I'm going to have to, particularly in one eye, one third, my left eye, two third, my right eye. So I can't see.

INT: So vision's a problem?

RESP: Due to that vision, now a couple of falls, so I don't want to go anywhere no, but the new places, unless I walk two or three times already, then I know where I'm walking and what is in my way. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

Another interviewee who had a daughter with visual impairment explained how they needed extra space in the home so that furniture could be spaced further apart.

M: Yep, like the example would be trying to reduce the space. We are very careful. She, because she cannot hop up suddenly, we cannot even move little this way or that way, we are very conscious about this movement.

INT: Given that she does need some care and assistance, mostly from people in the house, how does that affect the use of the home, the use of space in the home?

M: Yep, [an] example would be trying to reduce the space. We are very careful. [B]ecause she cannot hop up suddenly, we cannot even move [things a] little this way or that way, we are very conscious about this movement.

F: Yeah, if we decreased the space, she will definitely get hurt. So, we need to remind [ourselves] about that, and obviously even that area [the sitting area], we could have put that a little [pointing to lounge suite] this way. I mean, normally you would do it, but we need to keep that [space].

INT: So, you need wider openings and furniture spaces?

M: Exactly.

F: That's why we always prefer a house where there's more space. Like, oh, our bedrooms, comparatively having less furniture. Yes, so that she has enough space.

INT: So, she needs more space for movement around?

M: Yeah.

F: Exactly, so we need, naturally, bigger bathrooms and things like that. (P1498 — couple with adult disabled child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

Stairs, both inside, and at the entrances to the house were, however, the most common concern for people with a disability.

...Certainly [it had to be] single-level because I've had arthritis in my knees, and I couldn't have stairs. That was actually why I retired. I was working at a girls' school at a boarding house where we had stairs to go up and down all the time and I just started to find it just too difficult to be going up and down the stairs. So I would have always chosen a single storey. (P729 — female 70–74 years living alone, regional, attached house, pensioner.)

For this reason, interviewees who lived in two storey dwellings often had contemplated moving to a single level dwelling in future.

RESP: One thing that does worry me at times is the stairs. It might get harder to go up and down stairs. The only way we can really come around the place is to go up the front and come around the side... They're alright now, because I think it keeps you fit, but I think if you lose your health and can't go up and down the stairs, mobility would be terrible. Because I'm always thinking of my parents, they're in their eighties... and they can't really do stairs that well. (P663 — female, 70–74 years with partner, regional, working part-time, assistance required.)

The design of kitchens, mostly cupboards and appliances, was a problem for some people with impairments arising from conditions such as arthritis.

RESP: I mean, I would remodel stuff if I could afford it, like my kitchen. I'd love to have a split-level stove, not a free-standing stove, because I can't reach the back of my oven to clean it.

INT: [You've got] an upright stove under the cook top. And that's a bit difficult is it?

RESP: It is when I've had both knees replaced, and I find bending and the other things I find awkward in this kitchen are the corner cupboards. I have two corner cupboards which I can't get into, I've had to rearrange those, I had to have this door put in here so I could get in, otherwise it was just useless...

INT: OK, so the kitchen would need to be a bit different to enable you to stay longer in a home?

RESP: Yes. Mainly...only the bottom cupboard. You see that sort of pantry cupboard's fine, it's got shelves, and some other people have put cupboards along the top which, although I'd have a bit of trouble with that because I wouldn't be able to reach them really, so I don't know whether I'd want top cupboards anyway. (P729 — female, 70–74 years living alone, regional, attached house, pensioner.)

The design and fixtures of bathrooms also presented problems for some interviewees with impairments or disabilities.

RESP: I would move the bath...I can get in, but I can't get out. So I would remove the bath and put a second toilet in the bathroom probably...but, apart from that, I'm happy with just about everything.

INT: Now, is this a senior's development?

RESP: It's an over-55's.

INT: An over-55's development? You would have thought they might have thought about that in the design of the bathrooms, wouldn't you?

RESP: [They] don't use the baths. A lot of people here have put wooden covers over their baths. (P729 — female, 70–74 years living alone, regional, attached house, pensioner.)

So, while dwelling type was not a key factor for households where a member needed assistance, stairs and the design of kitchens and bathrooms could be a factor in housing suitability or choice.

4.3.3 Effects of cultural background on housing type, size and location

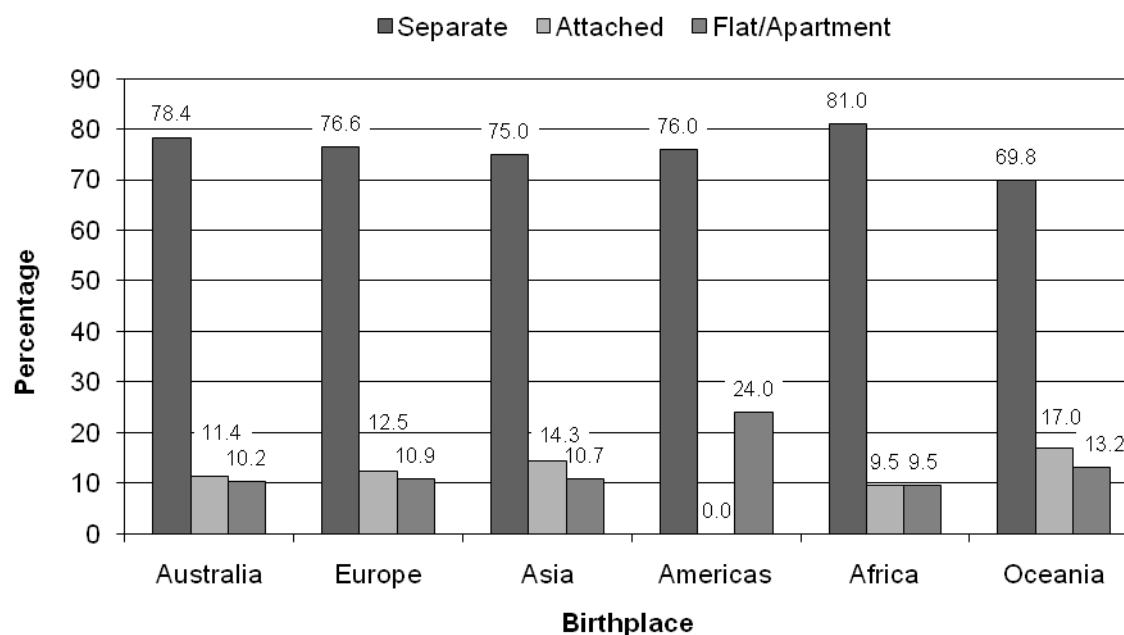
It has been noted earlier that a substantial majority (72.2%) of respondents to the national survey were Australian born.

Figure 5 indicated that of the 27.8 per cent born overseas the most common region of origin was North Western Europe accounting for 68.0 per cent of all respondents born overseas. A distant second was the Oceania region (11.6%), many of whom were New Zealanders, so culturally little different to many born in Australia. Other than those born in the Americas (5.5%), other regions were not strongly represented.

Cultural background did not appear to be a major factor in housing choice, with very similar distribution between the three housing types for both Australian and most overseas born regions (Figure 65). A factor in this is possibly the length of residency in Australia. As illustrated earlier in Figure 6, the majority (73.8%) of overseas born respondents had lived in Australia for 25 years or more, and only 11.4 per cent for less than 10 years, and thus were more likely to be part of the earlier post-war immigration waves rather than more recent arrivals. In this regard, the method used to recruit respondents (an English language senior's magazine) is a factor in not attracting more recent arrivals. For this reason, it is necessary to be cautious about drawing conclusions from these figures.

Figure 65: Region of birthplace by dwelling type

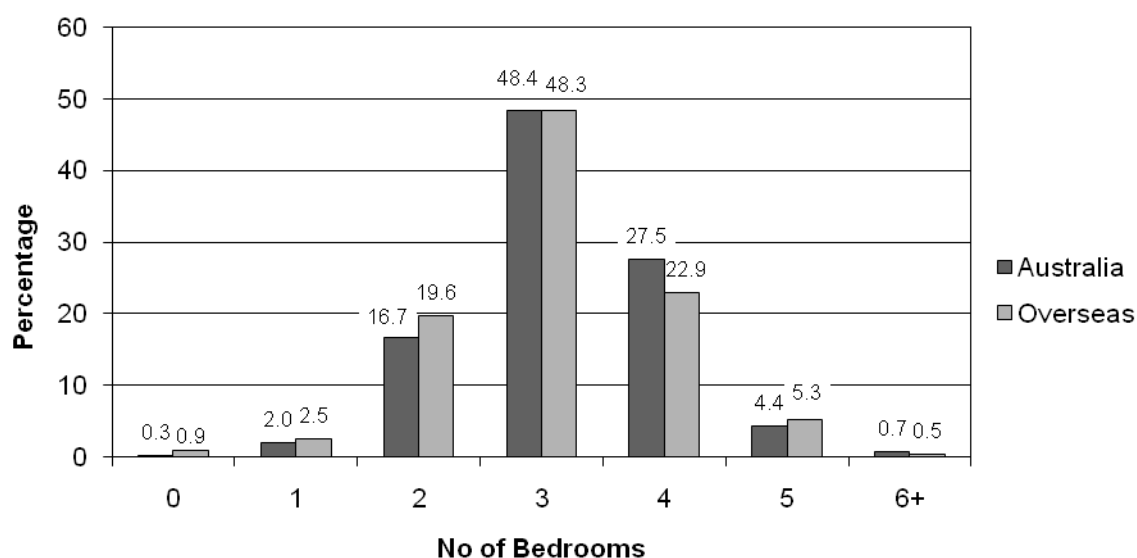
(n=456)



There were also only small differences in the number of bedrooms in the homes of Australian and overseas born respondents. Figure 66 shows that while there is an equal percentage with three-bedroom dwellings, overseas born had a few percentage points more two-bedroom dwellings and a few percentage less four-bedroom dwellings than their Australian born counterparts, possibly reflecting the marginally higher percentage living in apartments for some groups as indicated in Figure 65.

Figure 66: Number of bedrooms, Australian and overseas born

(n=433)

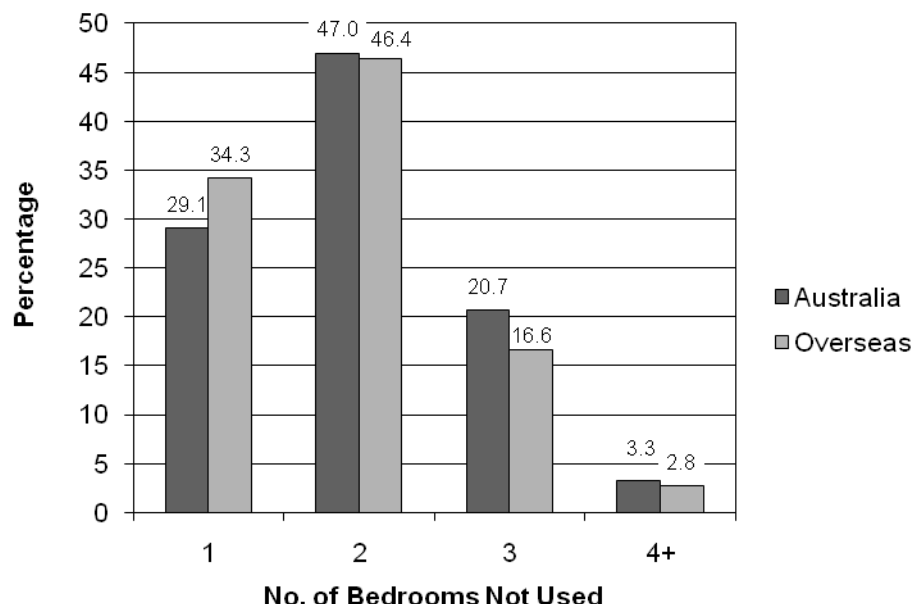


Likewise, similar small differences exist between Australian and overseas born when it comes to bedrooms not used for sleeping, with overseas born having around five

percentage points more dwellings with one 'spare' bedroom 'and a similar percentage with three or more 'spare' bedrooms.

Figure 67: Number of bedrooms not used for sleeping, Australian and overseas born

(n =362)



A number of interviewees of CALD background commented on cultural influences in housing choice and space utilisation. For a few, the freestanding house was an important choice because of its meaning in the culture of origin.

INT: Was there a particular reason why you chose a freestanding house as opposed to a townhouse or a flat?

RESP: Oh yes. We always stayed in houses in [Southern Asian Country]. We are not going to live in a [flat] — we lived in flats when we first came. Then we looked around in [Country Town]. We stayed in two flats and two houses — huge houses, beautiful lawn.... We looked for a house, a free standing house.

INT: That was important that it was free standing?

RESP: Yes, very important. (P614 — male, 70–74 years with partner, CALD, separate house, suburban, working part-time.)

A northern European couple preferred a freestanding single storey house because this had not been available to them in their home country.

We had double storey in Holland...Constant up and down the stairs....We definitely wanted a house and a freestanding house because that is what you don't have in Holland. (P1253 — male, 55–59 years with partner, CALD, suburban, separate house.)

In another case, tight space standards and the predominance of high rise housing in an Asian city of origin seems to have resulted in a strong desire initially for a separate house.

[I]n Hong Kong space...is relatively small because we [are] on top of each other. And now in Australia we do job with more space, so that bigger space better than [that]. In particular, the first choice of home when we came, we all came to afford, came to buy a house, could [be on] the ground, literally.

(P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

However, this same family had later moved to a large top floor apartment with river views and a large balcony. Again this was explained as being influenced by cultural values.

INT: Is there anything that you can think of that you do differently, or how you use the house differently because of your cultural background?

RESP: I think when we first came initially we stayed in [Suburb Name]. A lot of older homes in Australia. They tend to make them a little bit dark I think. But maybe different [for the] Chinese, the way the light is, everything [is] light. So plenty of light comes in.

INT: Now what about the [balcony], was the outdoor space important?

RESP: Because it's the only area we get fresh air...Because people like us came from [Asian City] and we tried not to use air conditioners. Australia [has] so much fresh air. Why waste it? (P2005 continued.)

Cultural factors were also important in the choice of their residential location.

So you got the water [views], in Chinese [this] means money. At least you can see the money. It's also status. Oh yeah, come to my house we have a water view. And also of course Chinese they tend to find somewhere to live so they don't travel so long and...the yardstick measures how far from Chinatown. So 18 minutes to drive to Chinatown. (P2005 continued.)

Another interviewee of Southern Asian origin had experienced great difficulty in obtaining building approval for a seven-bedroom four-bathroom dual-occupancy dwelling in order to accommodate his extended family.

I mean, I had to explain to them, to the town planners of the council, saying that, listen you have the problem of nuclear family, I have the problem of extended family, so that he could see my point and I was not going such a big way that this would have any objection... Being only child...and being not in [Home Country], coming from our society...where they care [about] relationships. Here that was completely not [the] culture. I mean, here, care is taking care by social security. There, care is taking care by families. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

Since his daughter and family had moved out, the second dwelling was being rented out and he was having great difficulty trying to find a buyer for the property and was questioning the wisdom of building this kind of house.

But I can't sell it because there is no demand for these things. I was surprised that I'm old and rich and I think I was completely wrong in accepting in my own mind...That time all my friends used to say, oh that's wonderful, you've got the [extended family], but I don't think it turned out to [be the best] of the both worlds. And now no one wants this kind of thing. And now they realise that all Australian family is extended family will be, no. A couple of time some Australian ladies came and they made me an offer, but they saw subject to [their] mother seeing it, and the mother changed her mind. So [the] extended family is an outdated thing. And I stayed in this family in Australian culture... [T]he last five or six years, I tried to sell it, but there's no demand of that nature because they want to give me the price of the one home, but not the price of the two homes. (P666 continued.)

Other interviewees explained preferences for the room layout in cultural terms. In this case, a preference for distinct rooms as opposed to an open plan.

Well, if you go back and that colonial style house we bought in (Place Name) was also doors, doors everywhere. This is a new development, and I don't know whether in Germany it's like that too. But we visited our sister in (Place Name), and it's all separate house, with door, and place with entry hall. But there's a place for entry hall, and staircases up, everything's three storeys. You'd have a cellar, upper floor and downstairs, and maybe another, attic, but doors close off. I would say that Germans still haven't picked up this idea of open living. They always say, nastily, it's just to make it cheap. They don't want to spend money on the doors, this all costs money. (P1153 — male, 65–69 with partner, CALD, regional, self-funded retiree.)

In another case, sacred geometry was an important cultural consideration in choosing a dwelling.

We've got, we call it as in Chinese and Indians, 'Vastu Shastra', and that means how the house is facing, and you get what sort of feeling comes in your mind. We take those into account rather than what the real estate people tell us. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

In other cases, the design of the kitchen as a social space was seen as a European influence.

I think it is a bit of a Russian thing, we always used to sit in the kitchen and talk and carry on and that. Somehow when people come I say sit down here, I don't take them out there because I have got the stuff to prepare anyway, tea or whatever, if I want to make something...It is the way we used to do it when I was a kid. We always sat in the kitchen, sitting around the table. I don't think it is so much space. The Russian thing is very much a hospitable one, you know, where you like to entertain. People come in and sit down and have a cup of tea, have something to eat. My parents were sort of into that and I guess I like to do that with anybody that comes. The first thing I do is offer them something. That may be part of it, but it is probably as much an Australian thing in the end. Although having said that, before I was married to my Australian wife I would come round to visit her and her father was always sitting in the lounge glued to the TV and the mother was out in the kitchen, and that's the way it was. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

A southern Asian couple explained their cultural preferences with regard to the design and use of the kitchen.

F: Yeah, we always prefer...

M: Big kitchen.

F: Not an open plan kitchen. We'd prefer a closed type of kitchen, and bigger kitchen, yeah. Wouldn't just like a little kitchen.

M: Yeah, yeah.

F: Not possible....We had a lot of entertaining and of course a lot of cooking. So yeah, those are things that [are different]. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

The interviews also revealed some cultural attitudes to the use of outdoor space. One European couple explained this.

We don't do entertaining outside on barbecues; we do not have a barbecue. If we have dinner we have dinner here. So that's the European way more than the Australian way. We don't stand outside. (P1253 — male, 55-59 yrs with partner, CALD, suburban, separate house.)

The southern Asian couple explained their cultural preference for covered space in the back yard rather than a large garden area.

M: Typically, we like to have more covered area than open area. Main thing is we are not fond of gardening, and we are still scared about these insects and spiders. Like, we don't want put our hands there.

F: Yeah, we're wary of gardening and everything.

M: So...the covered area. [I]f there had been one more room for me, the same size, I would have [had] it rather than one room less and [a] beautiful garden area. Like, others may love it. We do not. It's because we come from a totally busy city...

F: Urban. We've always lived in [Large Southern Asian City]. So, completely different. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

The same couple explained how coming from a large Southern Asian city influenced their preference for living on a busy, noisy road.

M: We like to be really close to busy roads rather than...

INT: Oh, you'd like to be near a busy road?

M: Yeah.

INT: Why's that?

F: It gives us more sense of security.

M: Security I think.

F: You like to be closer to everything rather than far away from them. We would like to be more approachable to bus stop, station, you know, things like that. Of course, we've got her [visually impaired daughter] in mind too, obviously.

M: And also this, ...you're very close to your very big road, you know? That feeling is good for us, rather than staying in a lonely place for absolutely no noise. We get a little jittery. The noise is not a problem at all. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

Others were more concerned about the loss of traditional extended family care and not being able to share accommodation with their children.

I find mostly that it's very much also the Asian culture. So, we generally, we take it as a part of our Karma. We don't take it as a burden or load. Yes, and especially our own child and third child needs, we don't sort of, you know, knock on the other door for help. We try to do also as much as we can, yeah. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

These examples from the in-depth interviews demonstrate that for older home owners of CALD background, cultural factors can be important to a number of aspects of housing choice and design including location, dwelling type, orientation, room design and layout, the use of outdoor space associated with the home, and the preference for extended family accommodation.

4.4 Conclusions

This chapter has shown that the dwellings occupied by the older home owners surveyed are predominantly separate houses, most of which are single storey with three to four bedrooms, a floor area of between 100 and 199 m², and occupying a site of 500m² or more in area. The vast majority are also located in the general community as opposed to retirement villages or specialised seniors developments. This is definitive of the typical Australian suburban house. In other words, the aspirations and achievements of older home owners are very little different from the majority of other (i.e. younger) Australians. Despite this, many interviewees were dissatisfied with the size of some rooms in their home, and most commonly bedrooms for a number of reasons — including space to accommodate their furniture, for manoeuvring around beds, for storage, and to accommodate a wider range of uses in bedrooms such as study/office or craft activities. Bathrooms were also sometimes regarded as too small or poorly laid out. With a growing number of older homeowners, this supports the case for the introduction of standards for accessibility for new homes whether via adoption of Visitable, Adaptable or Universal Design principles.

In examining the use of bedrooms, it is clear that while the dwellings of older home owners appear to be grossly underutilised according to the Canadian National Occupancy Standard (CNOS) that has been widely adopted in Australia, a more detailed analysis of the alternative uses of bedrooms paints a different picture. Alternative and multiple uses of rooms designated as 'bedrooms' are very common, most often for office/study and guest bedroom use, but also for a number of other activities, including hobbies, storage, arts and crafts, reading and exercise, many of which contribute to healthy and active ageing. While occupancy of 'guest' or 'spare' bedrooms might be occasional in many cases, they are very important because they facilitate maintaining important social connections with family and friends. This suggests that a reappraisal is necessary of how housing utilisation is conceptualised and calculated to better represent the lived experience of older home owners.

Living rooms are also extensively used by older home owners for a wide range of activities and undoubtedly for longer periods of time following retirement as compared to their younger working counterparts. Second bathrooms were often the least used spaces in the dwelling, but were useful when family or friends came to stay. While car ownership is high, garages are also often used for alternative purposes such as storage, workshop or hobby activities.

Contrary to the popular view that older people do not need large outdoor space associated with the dwelling, utilisation of outdoor space was extensive and highly valued among the interviewees for a wide range of activities, including outdoor eating, gardening, entertaining grandchildren and just enjoying being outdoors. Decks, verandas and patios were regarded as being particularly important in facilitating outdoor activity and entertaining. Only a few in the older age groups or widowed women found maintaining a large property a burden. Likewise, attached housing and flat/apartment dwellers valued and utilised their smaller outdoor courtyards or balconies.

The age group of older home owners appears to have little effect on dwelling type, but does have some impact on height in storeys (which decreases with age for separate

and attached houses), size of dwelling (which decreases slightly with age), and the prevalence of lock up garage facilities (increases with age). However, the interviews suggest that for those who had moved recently, housing type and design were important issues, with a strong preference for single level, multi-unit community or apartment living, eliminating or reducing maintenance, but retaining some outdoor living area. Security, support for disabilities, and ability to have pets were other factors considered in moving to another dwelling.

Level of ability also appears to have little impact on housing type of older home owners, but as might be expected, the type of assistance required did vary somewhat between housing types with garden and home maintenance more prominent for separate and attached houses and cleaning inside the home more prominent for attached and flat/apartment dwellers. Once again stairs were the most common concern for people requiring or anticipating the need for assistance and the greatest motivation for a likely move to another dwelling. The design of kitchens and bathrooms could also be a problem and precipitate the need for modifications.

Again this supports the case for implementation of VISIBLE, ADAPTABLE or UNIVERSAL Design for all new dwellings to accommodate the needs of an ageing population.

While evidence from the survey suggests that country of birth only has a marginal influence on housing type and the number and utilisation of bedrooms, the interviews revealed that it can be a significant factor in choice of location, dwelling type, orientation, room design and layout, the use of outdoor space, and the propensity to obtain housing designed to support multi-generational living.

5 HOUSEHOLD COMPOSITION AND HOUSING UTILISATION

Of central interest when considering the efficient use of housing by older home owners is the composition of the households of older people, how these change over time as people age, and the impact of these changes on use of space within the house. This section outlines survey and interview findings responding to the following research question and its sub-questions.

Research Question 2: How efficiently do older Australian home owners utilise the housing stock they occupy?

1. What are the sizes and compositions of older home owners' households, considering usual and temporary residents?
2. What is the frequency of change in household size and composition among older home owners, and how do they respond to these changes in their use of their land and dwelling?
3. What is the effect of lifestyle and care requirements of older home owners on their utilisation of their land and dwelling?

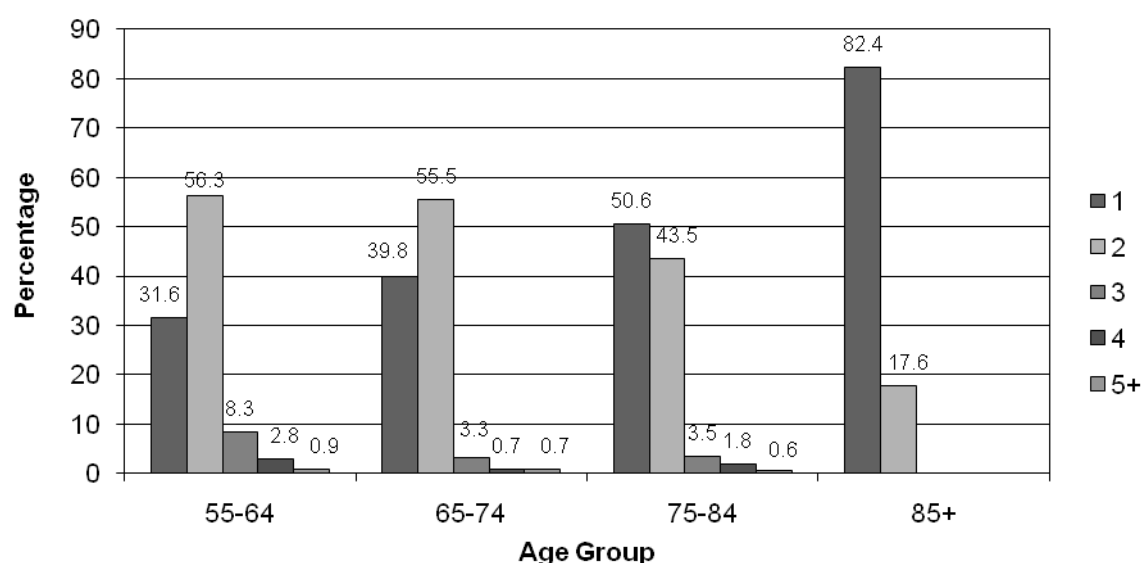
5.1 Household size and composition

5.1.1 Household size

Just over half (53.9%) of the survey respondents lived in households with two permanent residents, and just over a third (37.5%) in single person households. The remaining 8.7 per cent were in households of three or more, however, three person households account for the majority of these (5.7%) with very few four or more person households. When cross-tabulated with age group (Figure 68), a steady decline in two person households and a corresponding increase in one person households is evident as the age of the reference person increases. This is even more dramatic in the oldest age group where there were no households of more than two represented.

Figure 68: Number of permanent residents by age

(n=1283)



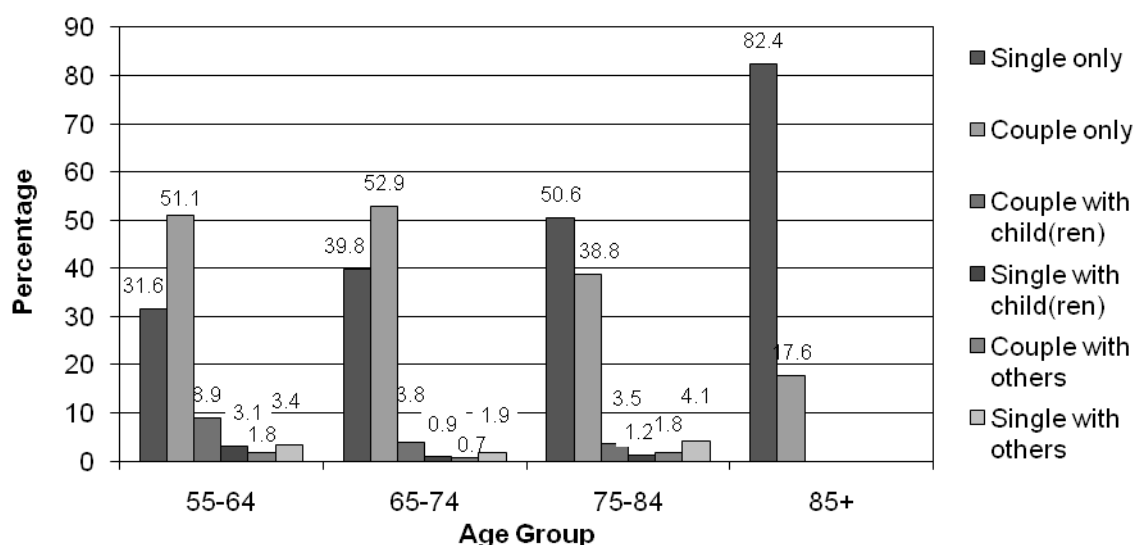
Note: Figures for 85+ age group to be used with caution due to small number of responses (N=14)

5.1.2 Household composition

As indicated previously in Figure 7, nearly half (48.2%) of respondents were in couple households and 35.2 per cent were living alone. A small percentage were either couples or single people living with children (7.8 and 2.7 per cent respectively). Figure 69 shows how household composition varies over the four age groups. It can be seen that the percentage living alone increases progressively to approximately half of all households in the 75–84 age group and then to over 80 per cent in the 85+ age group.

Figure 69: Household type by age of respondent

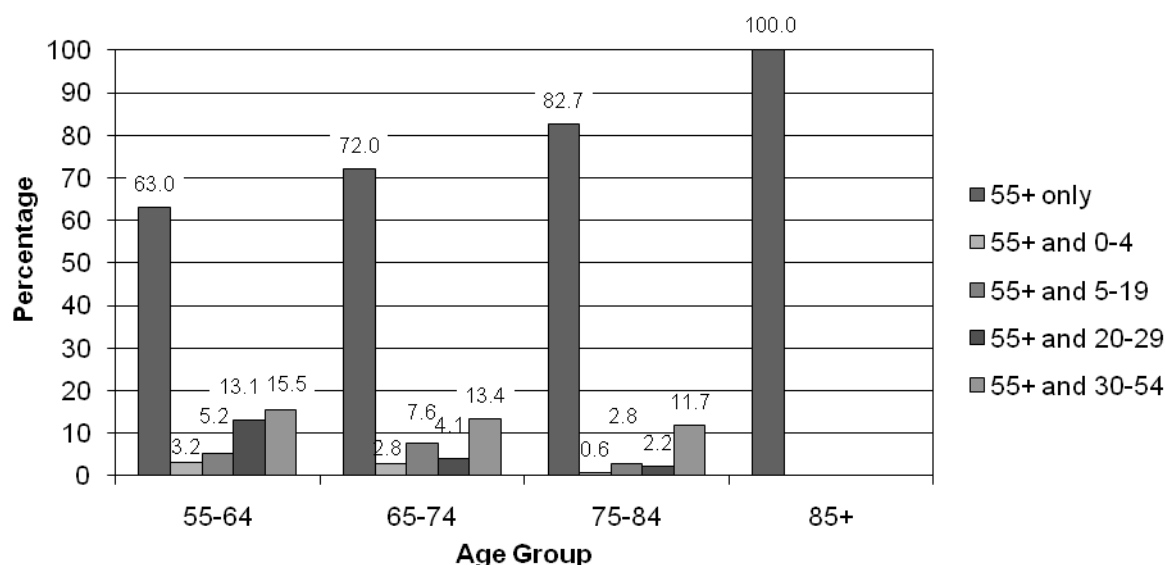
(n=1283)



The following graph (Figure 70) analyses the ages of people in the household. It shows that the vast majority live in households where all members of the household are 55 or over and that this increases throughout the four age groups. Other people in the household in all age categories are predominantly in the 30–54 age group, most likely comprising the children of the respondent or their partner. Young children and school age children only represent a very small percentage of permanent residents.

Figure 70: Age composition of the household by age of respondent

(n=1406)



5.2 Temporary residents

5.2.1 Survey findings

As the results of the 1999 Australian Housing Survey indicate, housing accommodates more than permanent residents. It often also accommodates temporary residents and visitors. Temporary residents are therefore people who can still have a strong attachment to a home and can have a significant impact on the utilisation of space in the dwelling. The percentage distribution of temporary residents present in the household is shown in Figure 71 below. It indicates that close to one quarter (23.4%) had at least one temporary resident and more than half of these (12.2%) had two or more permanent residents. This is double the 12.0 per cent of older Australian households with temporary residents recorded in the 1999 Australian Housing Survey (see section 3.7.3), which includes people in rental accommodation.

Figure 71: Number of temporary residents in the household

(n=300)

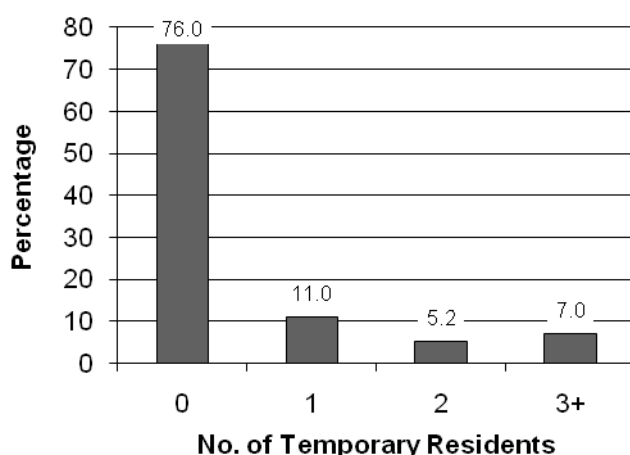
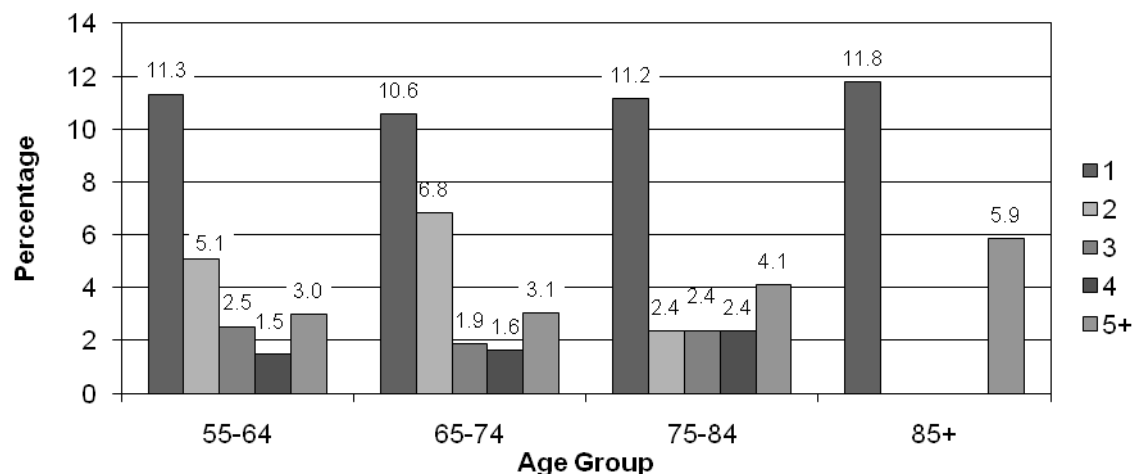


Figure 72 shows the distribution for the number of temporary residents in households where they exist. The presence of temporary residents varies little with age except for

a greater percentage with two temporary residents in the younger two age groups, suggesting that the two younger cohorts are more likely to have temporary residents.

Figure 72: Number of temporary residents x age of reference person

(n=1283)

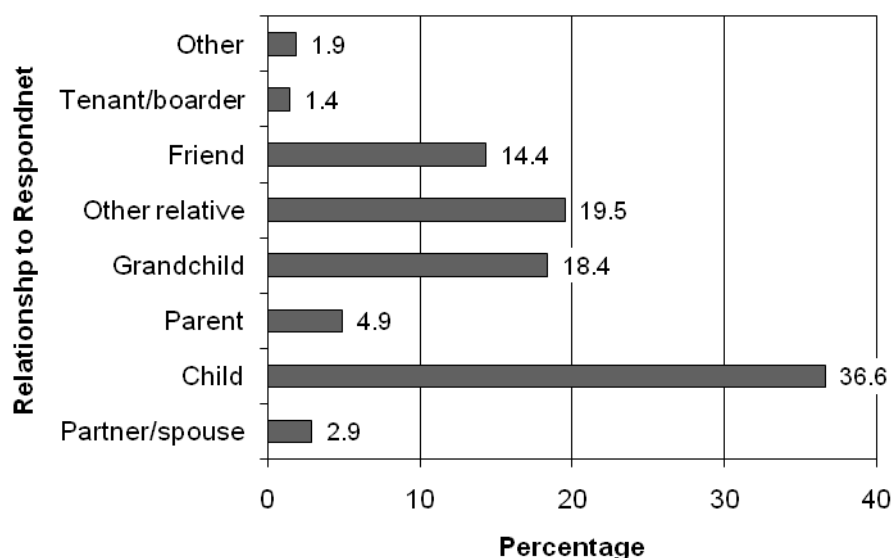


Note: 85+ figures to be used with caution due to small number of respondents (n=17)

As indicated in Figure 73, temporary residents were most commonly children of either the respondent or their partner, but other relatives and grandchildren are also often temporary residents. Only a few were parents, tenants or boarders. Where partners, it would seem that these are couple relationships where people do not live permanently in the same home.

Figure 73: Relationship of temporary residents to respondent

(n=695, multiple response)



The presence of temporary residents has implications for utilisation measures that are currently based only on relating the number of permanent residents to the number of bedrooms in the dwelling and, as previously noted, indicate substantial under-utilisation by older homeowners (Figure 30) with 84 per cent of older Australian home

owners regarded as having one or more 'spare' bedrooms. It also partly explains why the second most common alternative uses for 'surplus' bedrooms is a 'guest' bedroom (see Figure 46).

5.2.2 *Interview findings*

The interviews provided considerable insight into the circumstances and motivations behind having temporary residents. Very commonly, the temporary residents were children or step-children. In some cases, their reasons for staying regularly was for convenience reasons related to work or education.

I have my son-in-law staying every Thursday evening. That's because he owns a shop at [nearby coastal town]...and lives at [city suburb]. At the moment he commutes every other night, so that night I stay in [city suburb] looking after his children and he comes and stays here, because then he's ready for work first thing Friday morning and Friday is the worst time for the [freeway]. (P1114 — female 55–59 years, living alone, coastal regional, attached dwelling, self-funded retiree.)

In some instances people accommodated their children to help them out in an emergency such as a financial crisis or relationship breakdown.

My son left his marriage of over twenty years and came to live with me for six weeks before he sort of got himself a flat. (P729 — female 70–74 years living alone, regional, attached house, pensioner.)

In a number of other cases, temporary residents were children who moved back home for a period while in transition between relationships or places of residence.

Well actually, we're not sure how many [temporary residents], number three son has moved back home. Only on a temporary basis, that's all. But we don't know for how long temporary means. Yes, because [he] only moved out, I would say, close on ten months ago, eleven months ago to move out with his girlfriend at the time. And to cut a long story short, it didn't quite work out. So he moved back home...a month and a half, two months ago... Yeah, he's got his room [and] he's a fitness fanatic, so he's got his weights and set-up. (P836 — female, 55–59 years living with child, regional, separate house, working part-time.)

Sometimes, however, other relatives such as parents, siblings or nephews were also temporary residents.

I think I had him [nephew] about 18 months. We shared. My brother and I shared, because the younger brother was the father and he came when he was 16, and we had him until he was just over 18. They were interesting years. Very interesting. Because I'd had three of my own. I decided I really didn't need to have another one, but there you are. We survived. He survived. (P531 — female, 60–64, living alone, flat/apartment, capital city, self-funded retiree.)

In a few cases, grandchildren stayed enough nights to qualify as temporary residents.

[Referring to a grandchild] Yes, he's got a bedroom, and he's got clothes in there,...his toys... He usually stays for a week or so during school holidays, and say every third weekend. (P1608 — male, 65–69 years living alone, capital city, attached house, working full-time.)

In other cases, friends came to stay either for extended holidays or while in transition between housing.

I enjoy having visitors. In recent years 'grey nomad' friends visit for a few days or several weeks. I am able to share my home with long standing friends for several months at a time. (P1254 — male, 55–64 years with partner, separate house.)

A few respondents had boarders or students staying for extended periods of time.

From time to time, I might have people that come and stay, but not on a permanent basis. I did have some [visiting] scholar living with me part of last year, but as a general rule, it's just a single person. She was here for about three or four months, yes. And I've had exchange students through [business club] too, the same thing, for about four months. (1274 — female, 60–64 years with partner, suburban, separate house, self-funded retiree.)

Reasons for having temporary residents were many and varied. In this case, the motivations for having a boarder were a mixture of financial need, the desire to help others in need, and to provide company for an otherwise lone home owner.

I took in overseas university students to increase my income, make sure I ate properly and to provide company. Later I was asked to provide a home for a post-doc student who paid nominal rent and stayed for two year[s]. There have been a number of occasions when people have asked if they could stay with me for a period of time, for a variety of reasons. I see this as balance for owning a home, when so many do not. My 'tenant' was homeless and has large debts. He pays a contribution to housekeeping when he can. He works off the rest by painting the house for me. He is always in arrears, but he is getting back on his feet and my home and friendship have been instrumental in that — probably pivotal. The other member of the household is (an Asian) student doing her masters. I support her — my small contribution to [Asian country] — one of the poorest countries in the world. We grow our own vegetables and some fruit, live economically. We manage well. Add one large dog rescued from neglect and that is our household...I take at least one female foreign English language home-stay student a year, for a period of anywhere between 1-12 months, but the average stay is between 3-5 months. I do this to help them with their English, for the company and also to supplement my income. (P1080 — female living with friend, age not specified, separate house, suburban, self funded retiree.)

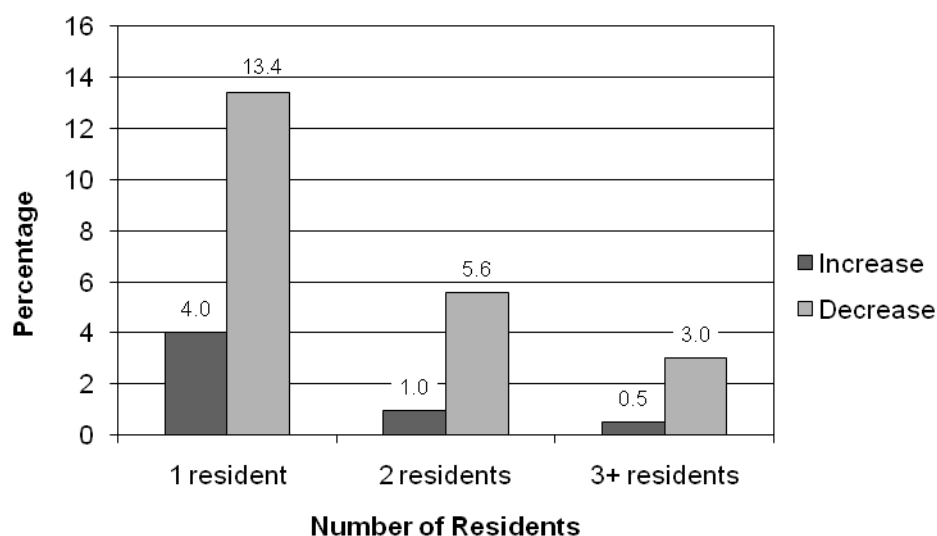
These examples give insight into the great diversity of situations where older home owners are prepared to accommodate temporary residents. Many parents are keen to help out their children or other family members when necessary or to accommodate students or overseas visitors for extended periods. Other motivations can be the desire to help out family or friends, to supplement income or for company for a single person.

5.3 Change in household size and composition

Of the 1,602 respondents to the question about changes in household size over the last five years, 457 or 32.5 per cent of households surveyed had either increased or decreased. As would be expected, decreases (22.0%) were almost four times as common as increases (5.5%) in household size. Figure 74 shows the distribution of the number of residents increased and decreased.

Figure 74: Increase/decrease in household size

(n=1564)

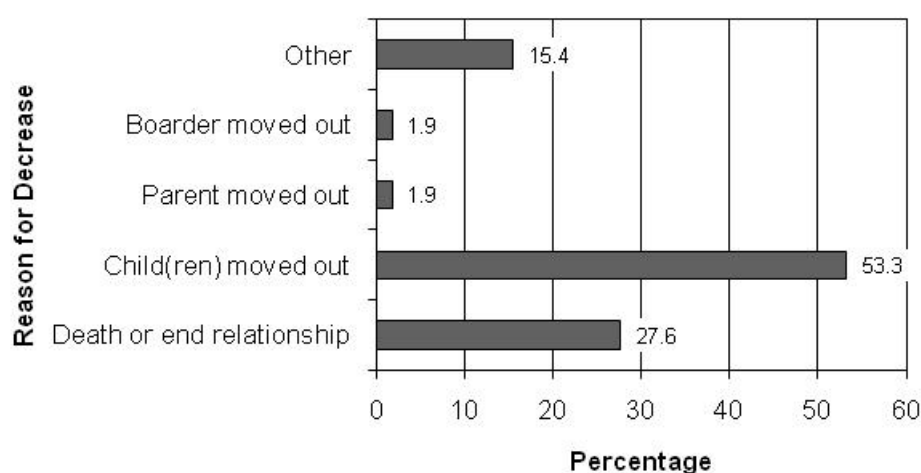


5.3.1 Reasons for decreases in household size

Figure 75 below shows the main reasons given for decreases in household size. Children moving out were the most common, followed by death of a partner or end of a relationship.

Figure 75: Reasons for decreases in household size

(N=214)



A few interviewees expanded on the dynamics behind reductions in household size and their impact on the use of space in the dwelling. In the following two cases, it was adult children moving out.

At the moment my family has diminished quite a lot. At the moment there are only three of us. I have a four-bedroom home, or really a five-bedroom home, but only because recently one of my sons has just left, he got married. Prior to that I had my daughter living with us as well, she got married 12 months ago. So she left as well, so I have two spare rooms. I have another son who was

married, but after my daughter left, he and his wife moved in with us, so I've always had a full house until the last month or so. Now there's just myself and my wife basically because we never see [our son] all that much. So we have a large house. (P2003 — male, 55–59 with partner, working full-time.)

For others, reduction in household size resulted from the death of a partner.

I lost my wife at that stage. So the big home that we had, I was not in that anymore. I was out on my own. I went down to the home that I was born and bred in. I thought I could help and be of assistance down there and my father. But that didn't work out. So I then came down, bought a house in Narellan or a villa it was, a little place. (P494 — female, 80–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

One woman had lived with her disabled mother who had passed away five years ago. She reflected on these changes and their impact on her use of the home.

RESP: Because that has changed. When Mum lived here with me, of course they got used extensively too, but she died in 2001. So now they are just there.

INT: She lived with you for how long?

RESP: Two and a half years.

INT: So she had one of the rooms?

RESP: Yes. She was in a wheelchair and we had to have lifters and things for her. I had to alter that bathroom so it was wheelchair accessible.

INT: Yes. (P494 — male, 80–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

In this case, relationship breakdown had precipitated moving to another home.

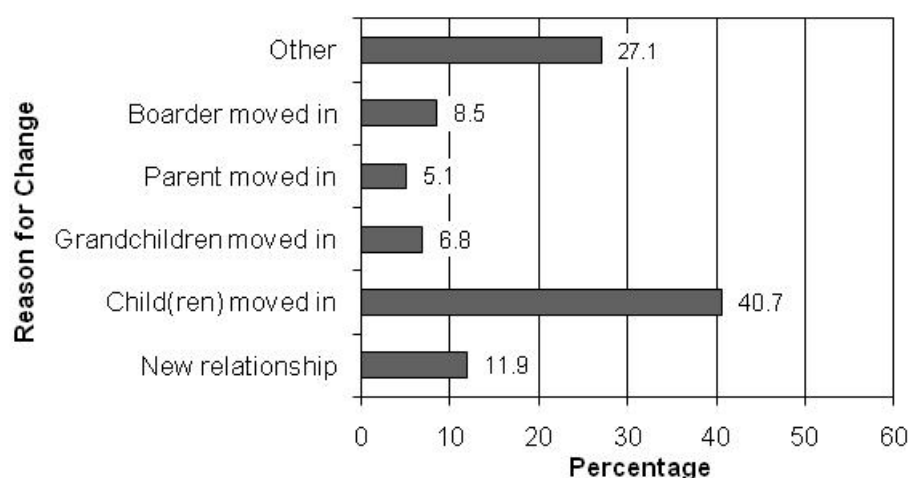
My partner and I split up and we lived in a place just a few, five minutes away, but we owned this place. So when we split up, I finished up coming here. (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

5.3.2 Reasons for increases in household size

Even though the number of survey respondents that had experienced an increase in household size was relatively small, the main reason was adult children moving back into the home, with some increases due to a new partner, boarders, grandchildren or parents moving in (Figure 76).

Figure 76: Reasons for increases in household size

(N=59)



A number of interviewees spoke about the circumstances around their children returning home. In two cases, although regarded as a temporary arrangement, the sons returning to live at home actually meet the ABS six-month criteria for a 'usual resident'.

[A]t the present moment I've got another temporary resident. That's my son. My eldest boy. He's forty-nine; he just turned forty-nine. He's just split with his wife, so...it's temporary, but how temporary, well it's been more than twenty nights, put it that way. Well it'd probably be six months now. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

The following case indicates how complex and uncertain the flow of children, other relatives and boarders in and out of the household can be.

M: One of those permanents will probably be moving out before too much longer, too. My wife's younger brother.

F: And then two coming back in December for three months.

M: Yeah, [our household has] changed.

F: It's changed a lot because two children have moved out in the last five years....

M: When I filled that survey, ...the second bedroom downstairs, which is the biggest bedroom down there, was being used by our son and his girlfriend, and fiancé ...until they broke up, but they moved out into a flat. They were living together in a flat and the engagement broke up and so he came back here for a little while and then went, he's sharing a house now with somebody. So, you know, that's the reason for that change of use.

M: Next year it looks like our boarder may be moving out at the beginning of the year. Our daughter and son-in-law, the reason they're coming here for a little while is that they're going to be volunteering in [overseas country] for a few months next year...

F: [T]hey do [overseas work] for three months and then they tour for three months, so they'll be gone for a year.

M: So they're moving out of their flat at the end of the year when the lease runs out and staying here for three months until they go overseas. When they come back they'll probably, I'm not sure what they're going to do then. They're not even sure yet.

F: Stay [here] until they find somewhere. (P1216 — couple, 55–59 years, regional, separate house, working full-time, assistance required.)

In another case, an interviewee had re-partnered.

We got married — we've only been married five and a half years. (P494 — male, 80–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

5.3.3 Effects of these changes on housing

Information on the effects of changes in household size on housing was also sought in the survey. Table 5 below shows the number and percentage who reported an increase or decrease in their household size, and changes made to their housing. Those whose households had increased were more likely to make no changes to their dwelling and less than one third (31.4%) had moved. On the other hand, households that had decreased were equally split between moving and making no changes. In both groups alterations were few, but somewhat higher among households that had increased (9.8%) than those who had decreased (3.3%).

Table 5: Effects of change in household on the dwelling

(n=260)

<i>Effects of changes</i>	<i>Increase</i>		<i>Decrease</i>		<i>Total</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Moved to another dwelling	25	37.9	133	48.7	117	46.6
Alterations to dwelling	7	10.6	10	3.7	12	5.0
No change to dwelling	34	51.5	130	47.6	131	48.4
Total	66	100.0	273	100.0	260	100.0

As indicated in the previous section, the interviewees elaborated further on the impacts of their space usage in the home. They illustrate that the major impacts of reductions in household size are unused bedrooms (sometimes reserved in case adult children need to return), alternative uses of rooms for hobby or office activities or occasionally letting out a room to a boarder to provide additional income or some company in the home. Whatever the case, maintaining some flexibility to accommodate unpredictable temporary or semi-permanent returns of adult children was important to many interviewees.

5.4 Work and lifestyle factors

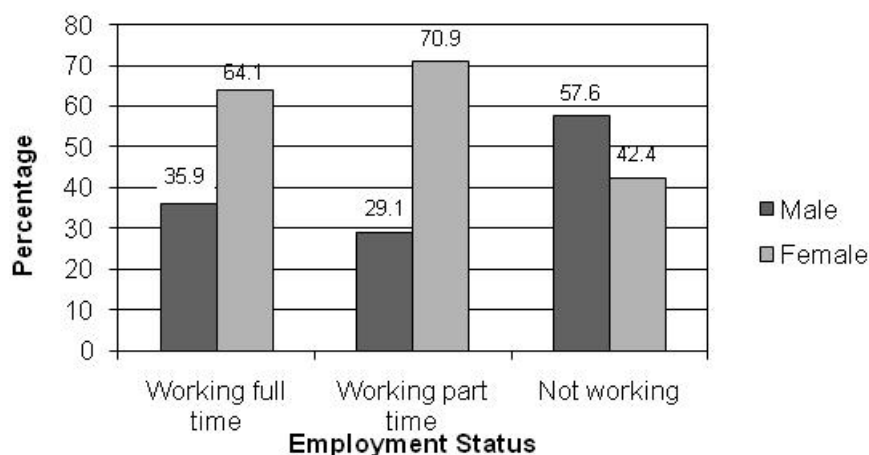
5.4.1 Work and retirement

The employment status of the survey respondents was shown earlier in Figure 8. The majority (60.5%) were retired either as self-funded retirees (33.0%) or pensioners (27.5%). An almost equal percentage of respondents were either working full-time (17.0%) or part-time (18.6%). When employment status is examined according to gender (Figure 77), it can be seen that women outnumber men almost two to one in working full-time and part-time and men were more likely to be not working than women. This possibly reflects the financial disadvantage of older women relative to

men in later life because of inadequate superannuation and/or financial disadvantage arising from the loss of a partner through divorce or death as outlined in the Positioning Paper (Quinn et al., 2009:52).

Figure 77: Employment status of people over 55 by gender

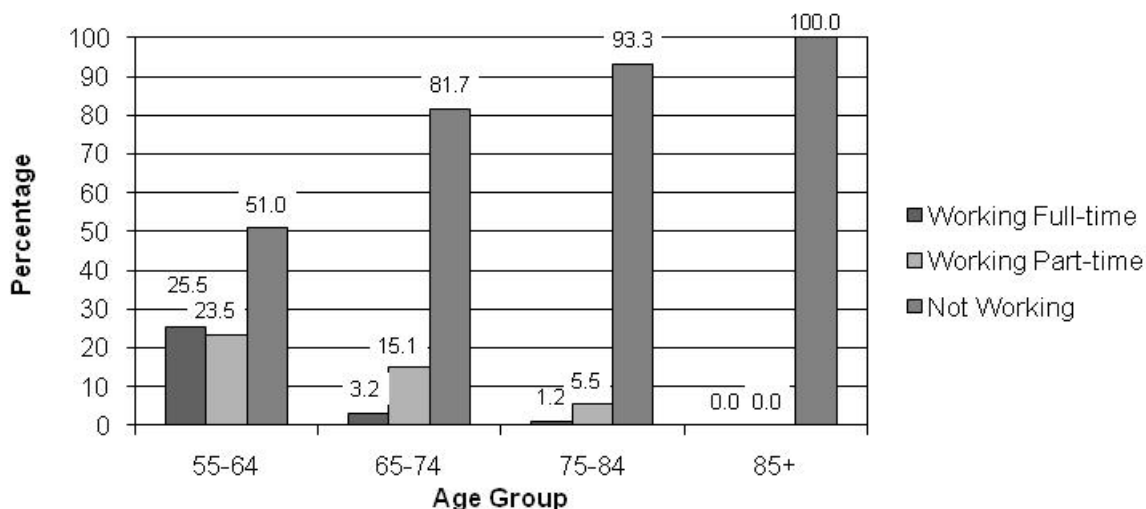
(n=1234)



When examined by age group (Figure 78), it can be seen that in the youngest age group the percentage of people working part-time and full-time is close to equal, and combined are almost equal to the number not working. The percentage not working then increases dramatically for 65–74 year olds and continues to increase over the last two age groups.

Figure 78: Employment status by age group

(n=1235)



The household income of respondents was also shown earlier in Figure 9 and revealed that a quarter (24.7%) of respondents had incomes of \$25,000 or less, a little over a third (36.8%) had incomes between \$25,000 and \$49,000, 18.8 per cent had incomes of \$75,000–99,000 and the remaining 19.7 per cent had incomes of \$100,000 or more. Based on pension rates at the time, both single and couple pensioners on a full pension would fall within the under \$25,000 income category.

Employment status did not appear to have any impact on the type of dwelling occupied, or on whether respondents had a separate office or study or used a bedroom or other room in the dwelling as an office space. However, the interviews reveal that both work and retirement did have an impact on the need for and use of space in the home. Obviously those who were working full-time or part-time outside the home spent less time at home, and conversely those who had retired or semi-retired spent much more time in the home. This may seem a trite observation, but it is important to consider the temporal dimension in relation to space utilisation in the home.

An example of the effect of full or part-time work on time spent in the home is as follows:

...I was doing part-time casual work during that period and now I'm back to 0.8. So I spent more time in my unit in the last five years than I have in the last two years. I think I would use the home less now, working four days a week, than when I was working casually. But there's more structure and organisation. Now that you know you're working four days, you know what four days you're working, and I mean I don't spend much time here at all on my Friday off, I spend it with my daughter and granddaughter and out at the gym and do all sorts of things like that. So I don't use the home on my day off. Whereas, at the previous house, because I was living on my own, my daughter and granddaughter would gravitate there, and we would spend more time in the home. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

However, full or part-time work could also place demands on space and facilities in the home.

I use my laptop when I'm on the computer and so I do most of that up here. When I'm teaching a class full time, which I'm not this year, I've got other duties at the school this year, but when I've been in a classroom I often bring work home and I'd have to sit at the table here and mark or do reports and things because it's the best area for it. This year and other years I've also been involved in the marking of [educational] tests, ...so they're writing tests and that's done on computer. So for that I'd usually go down into one of the other bedrooms where there's a desk and do it down there where it's quiet, you know, I'm not interrupted so much. (P1216 — male, 55–59 years with partner, regional, separate house, working full-time, assistance required.)

For those who had retired or semi-retired from full-time work, the amount of time spent in the home and property was noticeably greater.

F: Well, I felt like a temporary resident at some stage because I used to get up at 5.30am in the morning and I didn't get in till 7.00pm at night. I only got to enjoy the home on the weekends really. That's changed dramatically; I now get to enjoy it all day if I want to.

M: I'm probably spending more time at home now. I'm working part-time but it's sort of ad hoc, there's no set times. I'm working three or four days maximum a week. (P784 — couple, age not specified, suburban, separate house, self-funded retirees.)

We use [the home] more because he's there more. So the garden is more attractive so that we can eat outside when it's sunny et cetera. Being a handyman, anything that's needed to be mended or made up to date, he's always — the two of us together work on that, we've kept it up to date. (P334

— female, 80–84 years with partner, regional, separate house, pensioner, assistance required.)

One woman explained how retirement was a transition to a very different lifestyle, one aspect of which was using the house a lot more, and the need for a better quality living environment.

It's about my day now, because normally during the day we would have both been at work. But now we're — this is our work and home so I like to — you need to have a bit better space. Indeed, we had a different house then yes. Because we were both working, the use of the house was different, we were only there at night and weekends and it was a totally different lifestyle, it's a big transition to retirement. It more or less coincides with us coming here that our days have been spent differently. We're using it [the house] a lot more. You're there a lot more, you use all areas of the house really, except that room. And of course issues like cleaning, for example, like I used to have a cleaner and I don't now. (P424 — female, 60–64 years with partner, suburban, separate house, self-funded retiree, assistance required.)

Others discussed how the use of certain rooms had changed as a result of retirement.

My husband only retired about three years ago so the study, office, has been used more since retirement. (P422 — female 70–74 years with partner, capital city, flat/apartment, pensioner.)

Oh, I'll tell you what did change. My husband started cooking! Because you see, he retired long before I did. And so when he retired, I said, right, you're in charge, you can do the cooking now. And now he does, so that changed. The use of the kitchen changed because he started doing the cooking. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

There were some, however, whose use of the home had not changed much following retirement.

Probably not [changed much]. As far as the house is concerned, my time spent in the house is probably as little or as much as before. Because I really spend time on the farm, in the shed or outdoors somewhere, helping friends on the farm, repairing things. Now the use hasn't changed at all, yeah. We might have more time for visitors come in the evening now, because I was pretty tired when I came from work, because it was a sixty, seventy hour week when I was working there. (P1153 — male, 65–69 with partner, CALD, regional, self-funded retiree.)

In the following case, the transition into retirement was a gradual process from full-time work with other home based business interests; the use of an upstairs 'office' reflects this transition. Rather than becoming redundant, the use of the office space continued for other less formal business activities, but became less important.

When I first bought [the house] it was important to me to have the separate large office space upstairs because I had my own... company but I was doing something different and I needed that office space, so it was a separate work area. I no longer do so much of that so I don't really need it as large as it is now, but that's the only thing really. I didn't spend as much time upstairs in the office as I did before, because that was very much a business environment type of thing and to me it was a matter of going up there in the morning and doing whatever needed to be doing to be done there and then coming down. So I don't use it for that purpose as much, but it is still an office and I use it for

other things. The usage of that room has changed. Not as much now. I mean I could [do] it in the other bedroom; in fact that other bedroom is quite a large area that was built on to this room by the guy who sold me the house... I don't need that much space up there now. Given my druthers...when I sell this joint I will probably buy a single storey place... (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

For another, a return to part-time work after retirement resulted from boredom.

When I fully retired I was at home every day, doing volunteer work, so I was in and out, and in and out. But then I just got a bit bored, so I got two part-time jobs. But I'm still at home more than when I was working full-time. For both the jobs, my choices are very flexible. I go in when I go in, or I don't go in and go in another day. Far more flexibility. (P1349 — female, 60–64 years with partner, attached house.)

Following retirement, some couples needed their own individual space to get away from each other.

Also, once we retired, I thought it was necessary and, looking ahead, that we needed space, enough space to be able to get away from each other occasionally so that we're not underfoot. ...Yes, and part of it is that you have that work, you either have an office or a lot of us don't share office space, so we have a wall around us and if you're then in your home community where there's two of you, it can be busy just talking and being sociable... [T]he garden, obviously, is a place you can escape to also but you mightn't feel like doing that. You might just feel like sitting and doing something on your own without [your partner] — and I think that's an important thing in retirement. (P1019 — female, 65–69 years with partner, separate house, regional, self-funded retiree.)

It is important to recognise the varied and dynamic nature of work/retirement and lifestyle arrangements for some older people where employment can increase or decrease in time and may be undertaken away from the home, in the home, or a mixture of both. The other important message from the interviews is that time spent in the home can be a most significant change itself, can impact on the use of space, and therefore needs to be considered in any discussion of housing utilisation and efficiency.

5.4.2 Hobbies and other lifestyle activities

While no questions were included in the survey on hobbies and lifestyle activities that may impact on housing utilisation, the interviews did provide the opportunity for this. Many of the respondents had hobbies or lifestyle activities that were very important to them and these varied enormously, both by type and their demands on space in the home. Some, such as reading, knitting, playing cards, crosswords, games (such as cards, Sudoku, etc) did not require any special allocation of space in the home — other than perhaps for storage (e.g. bookshelves).

Most project homes have almost no wall space for bookshelves. So if you like books and reading you just need spaces to put books, I mean that's not enough for me. I mean, there's [some] there, and they're [also] up in the study and everything. (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

Others did require considerable space within existing rooms, or furniture (e.g. tables, benches) capable of accommodating the activity.

RESP: (through interpreter and showing an example of his craft work): Paper cutting. I did it myself. I did it myself. I have another one, I have given it to one of the community organisations and they have used mirror frame to frame it up.

INT: (through interpreter): Where does he do it?

RESP: (through interpreter) On the table, on the desk. There is a desk here, a study desk. A big study desk here in the living room. (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

Other hobbies, however, did place major demands on existing rooms, or even require rooms to be set aside entirely for their use.

This house has its own wine-making facilities. Seventy thousand dollars worth of wine making. I suppose you could build a games room, he's built a wine making place with all of the equipment and there's a two-and-a-half-thousand, three-thousand bottle cellar under the house as well. (P1405 — female, 55–59 years with partner, capital city, flat/apartment, working part-time.)

Sometimes a hobby could occupy a number of rooms. In this case, virtually all the space in a family room in the house and in the garage for storage and a workshop associated with a hobby taken up after retirement.

RESP: Yes. Porcelain dolls. I also collect some, particularly ethnic dolls. I have got my souvenir dolls from my travels. But I also make porcelain dolls and cloth dolls and dolls houses. I furnish the dolls houses.

INT: When you say you make porcelain dolls, do you get the parts and put them together or do you actually make the porcelain?

RESP: I actually make the mould. Sometimes. Not always. I do have originals...I used to have a kiln. Then it blew up and I decided not to replace it.

INT: So you have got to master pottery.

RESP: Sculpturing and fine sewing. You have got to do the research too. So, if you are making a reproduction French doll from the 1870s then you have got to research to make sure the clothing is correct.

INT: How do you do your research?

RESP: The internet, books, going to various displays.

INT: In terms of how your hobby affects your use of the house, it obviously takes up quite a bit of the place in the house.

RESP: Yes. It takes up most of that room [rumpus room].

INT: So, how regularly do you work on your dolls?

RESP: Four or five times a week. When I have got spare time I just go out there.

INT: You are either in that room or out in the shed?

RESP: Yes. If it is dolls and dolls houses, yes. It depends just where I am up to. With a lot of it with making it is little steps at a time. So you do a little bit then you might have to leave it for a week or something then do a bit more. It just depends what stage you are up to.

INT: Well, you obviously love doing it because it is a lot of time, isn't it?

RESP: A lot of time. It keeps me mentally active and it is a new skill that I have learned since I retired. (P516 — female, 60–64 years, living alone, separate house, regional.)

In a number of cases, garages and sheds were used for hobbies such as model trains, car restorations and handyman activities.

Yeah, so he just does a little bit of welding for people you know, he just, fixes things. He's 'Mr. Fixit'. Yes, you just have to give him a job and he just goes to his shed and fixes, does it. Just give him some ideas and [unclear]. They say sometimes, oh, this is coming up and I'd like something made out of this and then you give him a couple of hours and he's got a drawing and he comes up with something. I like entertaining, but he doesn't so...he's got a space and I...love to entertain. I'd like to have people in my place every day if I could. (P152 — male, 60–64 with partner, CALD, separate house, regional, self-funded retiree.)

For some, various sporting and recreational pursuits were important lifestyle activities, some of which created a direct demand for space in the home.

Yes, well, cycling is my passion, so, the second bedroom is called the exercise room; there is a big sort of gym style exercise bike in it with different programs which gets used every day. Then there is also a bike rack which holds two bicycles. One is the weekend bike and the other is a shopping bicycle. (1321 — female 55–59, living with child, CALD, suburban, attached house, working full-time.)

However, even outdoor sports could have an impact on space in the home for storage.

Yes, my bathroom, the main, the larger bathroom of the two, is my water activities bathroom. So my kayaking and rowing and swimming gear are all in there. So the bathtub is just full of, chockers with, so then I can just pick it up and go off on Fridays with all the lifejackets and all [the, you] know, all the clobber that you've got to have to do these things. (P374 — female, 65–69 years, living alone, capital city, suburban, flat/apartment, working part-time, self funded retiree.)

The following example indicates how one room can have multiple uses for hobbies and other activities.

INT: And what do you use the office for, if I may ask?

F: My husband's an archer, and that's where he's got all his bows and things and everything. My computer's up there, his is down here. And the fax machine's up there, all our files are up there, still need organising, I might add. I spend a bit of time in that room. ,,And when I suggested, I'll make a section in the bedroom for me, and he can have the office upstairs, he said, no, you don't have to do that, and I gathered he was quite happy with this arrangement. ...[T]he computer's upstairs and fax machine, I like to be able to communicate with my friends. That's important to me. And no. I would like to be a bit more involved with my own personal photography, family.... But I just need someone cluey-er around to ask a few questions.

INT: And you mentioned that your husband is into archery and stuff like that. Does that have much impact on the use of the house?

F: [He] keeps most of his stuff under the stairwell, and...

INT: (addressing male partner): Yep. What do you do in the study?

M: I tend to play with my computer. I take digital photos and I spend quite a lot of time editing them and I compile calendars. People order them and choose the photos they want — it's a reasonable amount of work; very enjoyable though. (P22 — female, 60–64, with partner, attached house, capital city, pensioner, assistance required.)

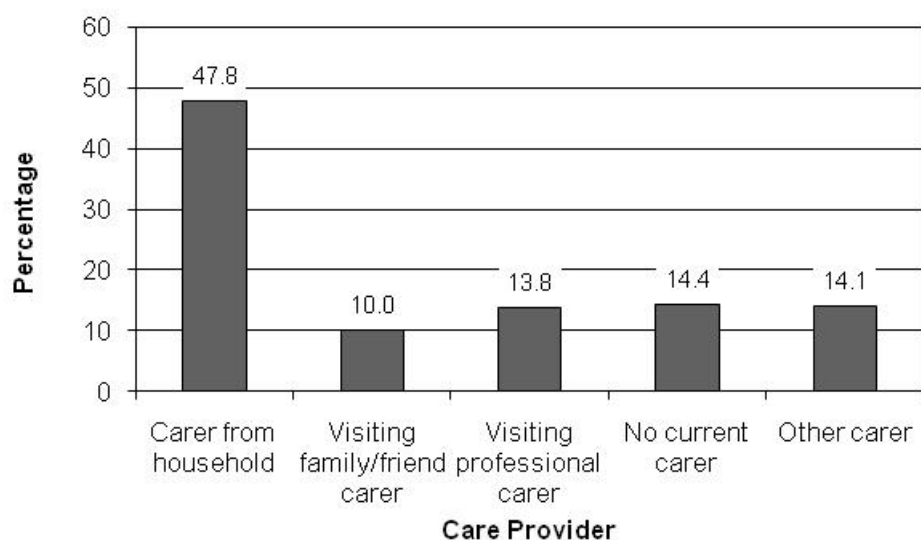
Hobbies are therefore very important activities to many older people and often do place demands on the space in the home, sometimes for part of a room and other times for a full room. Following retirement, people have greater freedom to devote more time to their hobbies and interests and this is regarded as important to health and wellbeing and can also increase space utilisation within the home. In considering housing utilisation and efficiency then, such activities should also be taken into consideration.

5.5 Care requirements and responsibilities

Another important issue, when considering housing utilisation and efficiency among older people, is the need for, and provision of, care for those requiring assistance within the household. As noted in the Positioning Paper, the proportion of people with core activity limitation increases with age, and older people are often carers themselves for a parent, partner or adult child (Quinn et al., 2009). It has been noted earlier in Figure 14 that in 2006 11.3 per cent of Australians 55 years and older are in need of assistance though this increases dramatically from 5.0 per cent in the 55–64 age group to 46.6 per cent in the 85+ age group. Only one quarter of those requiring assistance (25.9%) were in institutional care, the remaining three quarters (74.1) were in private dwellings — the vast majority of which would be home owners.

The survey for this project sought information on which members of the household required assistance, what type of assistance was required, and who provided this assistance. A total of 320 (or 16.5 per cent of respondents) had a household member who required assistance, 169 (or 57.3%) of whom was the respondent themselves, and 77 (26.1%) the partner of the respondent. Figure 79 shows who provided the care. Close to half the carers were another member of the household and an additional 10 per cent were visiting family or friends — making a total of 57.8 per cent who were cared for by family or friends. Only 13.8 per cent were cared for by a visiting professional carer and 14.1 per cent had no current carer.

Figure 79: Household members requiring assistance by care provider
(n=320)

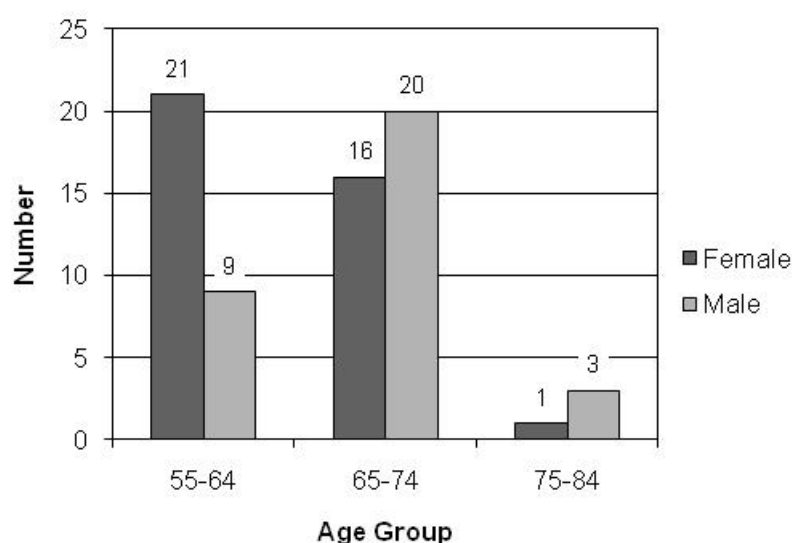


5.5.1 Caring for parents

Of the 1,604 older homeowner respondents, only 93 (5.7%) had one or more parent as a permanent resident and, of these, 70 had a parent requiring assistance. Figure 80 shows that the greatest number of respondents with a parent in the household was in the 65–74 age group (36) followed by the 55–64 age group (30). Understandably, there were few carers for parents in the 75–84 age group. The number of women respondents with parents was more than twice that of men in the 55–64 age group, whereas in the 65–74 year old age group more male respondents had parents living with them than women.

Figure 80: Respondents with a parent in the household

(n=70)



However, this does not equate to respondents as carers for parents requiring assistance. Only six respondents had parents living with them for whom they provided the care, five were females and only one was male.

Given the small number of survey respondents who were carers for parents in their home, it is not surprising that only a few of the interviewees were in this situation. However, those who were illustrate how this can be an extremely demanding and lonely role.

RESP: Well, she's incontinent...and she needs two or three switches getting around. And that's probably the major thing, and you know, you have to make sure she takes her pills and that. I mean, there's nothing wrong with her brain, she's as stubborn as a mule and she still beats me at Scrabble and stuff like that, so nothing wrong with her brain. But you know, she won't admit that she needs help to get around and to do her thing, and incontinence is pretty bad, and that's the main thing that's worrying us at the moment. And she does get dizzy, and she, when she falls, she has a fall, you have to be careful, she ends up in hospital and stuff like that.

INT: So when she's here, who provides the assistance?

RESP: Me.

INT: You? No other outside assistance at all?

RESP: No (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

The daughter of a disabled man with dementia who had moved in with her father reflects on the transition from retirement to being his carer and the adjustments that this required, including the impact on her own social life.

So I have been here [living with my father] since I was 64. So I really stopped that sort of life that I have had all my life where I was active socially to completely no social life at all, a lot younger than I thought I was going to. I didn't adjust in the very beginning because I kept thinking, you know, if it hadn't been my dad I couldn't have coped at all. But the fact that it was him and I wanted to give back to him it was easy and the fact that we've got a good relationship. But I think it is very difficult to suddenly go into retirement and I think everybody finds this. So you've got to find something to do and that's what I did. (P5001 — female, 55–59 years, regional, flat/apartment, self-funded retiree, assistance required.)

She then went on to describe in some detail what life was like in her role as a full-time carer of an elderly parent, and her concern that being a carer had contributed to him losing his independence.

For some reason he likes to stay in bed a lot now. He didn't before. He was extremely active. He was president of the golf club and he had only been president, he's only [like] been president for four years, so in that four year period he's gone from being extremely active, getting up, having the car driving, doing everything and driving his wife to Bridge and playing Bridge. Doing all those things...and to not driving, first, and then being a widower and then having to have me here because he would say to people that I was only visiting, even after a year he would still say [interviewees name] is visiting, when are you going home? (P5001 continued.)

She explained the dilemmas faced by carers in relation to Home Modifications and their own impacts on the independence of the cared for parent.

So there were psychological changes. But physically the only change that has been made to the house is the bathrooms. Both bathrooms have had handrails put in, change of shower rose and things like that and strangely enough we had chairs brought in for him, but I've removed them. The carer asked me the other day (because I get two days, two hours both days, four or five hours and I think I get three one day, she comes in and helps) why I had moved the chairs and I said because he'll stand when he is having a shower because when he sits having a shower he doesn't wash himself properly. So even though they put the facilities in for him to help him, they really were absolutely making him worse and I often think that I have taken away so much of his independence through being here and doing too much that he thinks he can do everything, but actually if I left him I'm not really sure how much he'd do.

Where as if I had pulled back a little bit in the beginning and not waited on him hand and foot, he probably would have gone in and made tea more, done the odd sandwich. I think when you are caring for somebody and you give too much you take their independence and I've done it with the two of them. ...I've noticed that I've taken away all his independence and now he relies totally [on me]. So it's really interesting because I worry that that's not a good thing to take away their independence. (P5001 continued.)

Another woman in a small regional town had previously had her mother living with her, who had since died. She gave a detailed account of the difficulties getting assistance for modifying the home in 2001. As a result of this experience, she now sits on the local Access Committee.

She [mother] was in a wheelchair and we had to have lifters and things for her. I had to alter that bathroom so it was wheelchair accessible. My mum had a stroke and could not walk and talk. We had to do major alterations to the bathroom because it had to be wheelchair accessible to the shower. We threw the bath out. There is no bath there now. We put the toilet in there that was in the back of the laundry, so it is accessible. We widened doorways in the front room and the bathroom. I have changed the door back but it was there where the cupboard was. Then I changed it back to where it was originally after Mum died. The ramp out the front I put in for Mum. We did have a ramp out the back also for Mum, but after Mum died I found in winter it would get covered with frost and I had a lot of falls, I changed it to decking now, a wooden deck. The bathroom on its own was \$8,000. The ramp was another \$2,000, the ramps we put in. The rest of it I just did myself. (P516 — female, 60–64 years, living alone, regional, separate house.)

When asked if she tried to get assistance from Home Modification agencies, she replied:

I tried. [Nearest major town] but he would not move unless there was a physiotherapist to advise and there was no physiotherapist at the hospital at the time. So I just had to do it on my own. (P516 — continued.)

She also explained how she obtained the necessary information to make the modifications.

Reading, lots of reading, visiting people. I can't remember the name of the place. There is a place down in [nearest capital city] where you can go and check things out for disabled and elderly people. So I just did all that and started. I just [did] it all myself. As I said, there was no physiotherapist. He wouldn't move with us and he said, when one is appointed — well, I waited six

months and they still had not even advertised the position. I thought go ahead and do it. It is my house. (P516 — continued.)

She reflected on the experience, and how it motivated her to join the local Access Committee.

If you have got services like that that are linked, one relying on the other, it can become a major problem. It took them 18 months to get a physiotherapist out at [nearest large town]. That would have been 18 months of me having to lift Mum through doorways and lifts on commode chairs and all that sort of thing. I wanted to encourage her independence. This [was] 2001. I also found respite care at that time was very light on the ground too. So I used to employ a friend of mine, a couple here, that were very good and they knew how to look after elderly people, to occasionally give me a break. It has changed now. There is a lot more available now. At the time I was a bit of a pioneer...I am on the access committee for the town where you look at and encourage people to change access. So I have got a bit of a first hand in there [for] getting things changed. (P516 — continued.)

Some interviewees explained how difficult it was to have a disabled parent visit because of the design of the home.

No, well, she [mother] just needs a wheelchair when she goes out or anything, so she can use [a walker] freely in the house or a walking stick, she can walk around like that. But you couldn't wheel her around in here because there just isn't any room. When she's here she fits in and everything, you know. It's the main things... like the doors are narrow so you have to watch when she goes through the doors and stuff like that. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

Although the number of cases of carers for parents among the interviewees was few, they do highlight the kinds of difficulties experienced by carers and the associated housing design problems inherent in much contemporary housing design that could be addressed through the application of Universal and Adaptable Design. It also emphasises the importance of support with Home Modifications, and the added difficulties some experienced in obtaining such services.

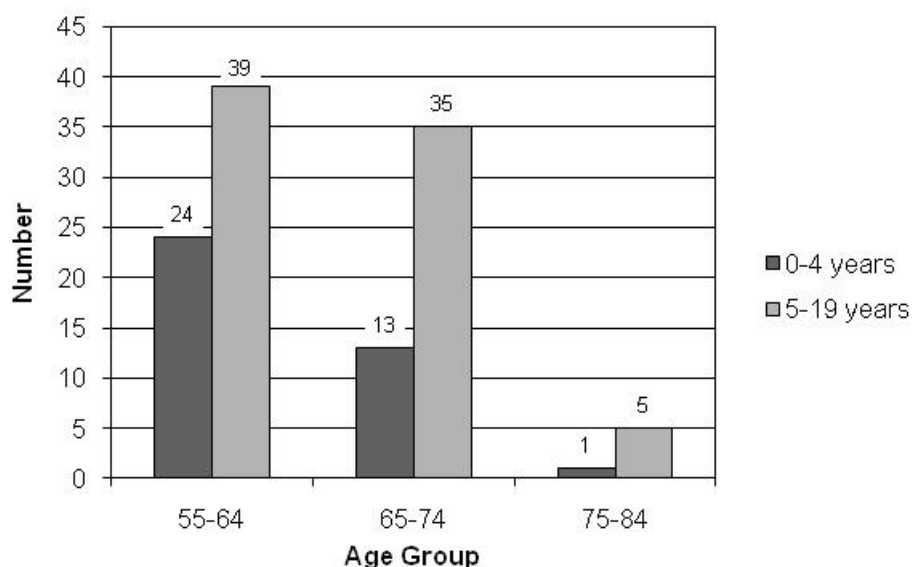
5.5.2 Caring for children

In considering caring for children, it is important to distinguish between adult children of the respondent or their partner who have a disability and younger children (e.g. grandchildren) who are permanent residents cared for within the household.

There were 117 respondents (7.2%) who had children younger than 20 years of age living with them as permanent residents within the home. Figure 81 shows the number of respondents by age and gender. It can be seen that they are mostly in the younger 55–64 and 65–74 age groups, and that school age children (5–19 years of age) outnumber pre-school children (0–4 years of age). There were none in the 85+ age group who had children living with them. Only eight of the respondents had children living with them who needed assistance with core activities.

Figure 81: Number of households with children

(n=117)



There were a number of interviewees who had children younger than 20 years of age living with them as permanent or temporary residents. For one couple working full-time who had housed an unmarried daughter and her son for an extended period of time, it was very demanding.

...[O]ur eldest daughter had a child and wasn't married and came and lived here for 18 months. So [for] 18 months we had our son and then we had our daughter who had a child living here. So, the daughter and child lived here...and we moved up here thinking that we were going to be just the two of us and that happened. Oh well, we became surrogate parents, see, and then later on our daughter went back to work and so then we virtually took over the care of the child until she decided to go back to Sydney and work full time. We had the baby in care when she went to Sydney and she'd commute. So she'd leave early in the morning — 5.00am in the morning — and then wouldn't get home until 6.00pm at night. In that time we had the baby and we'd drop the baby at child care. Both of us work... I had to take the baby to the TAFE with me and then I'd walk the baby down to the child care and then walk back to work. And then picked the baby up at night time and then my wife would wash and clean it and feed it and we'd do that in the morning before we went. It was a huge change, yeah. Eighteen months. (P538 — gender and age not specified, CALD with partner, working full-time.)

For another, two grand-children came to stay on a regular weekly basis.

A year or two ago I had one granddaughter here three days a week. So she was sleeping there. But at the moment we go to their place now on Tuesday and Wednesday and they're here Thursday. But of course she's passed the afternoon sleep stage. So we put the little grandson in what was the second bedroom. Two grandchildren...that come...stay on that night, the Thursday night, when we've got them here, my daughter then comes to tea that night. Her husband can then play golf because the family is here. So that's our main [temporary resident] isn't it?. (P1589 — couple, 65–69 years, separate house, suburban.)

Another had overseas grand-daughters stay for an extended period of time.

But I have had two of my [European Country] grand-daughters stay for six months and the other stayed for three months. So that was lovely, getting to know them. (P1336 — age/gender not specified, living alone, attached house, suburban, pensioner.)

One male respondent had an 11-year-old son who stayed overnight with him for around 60 nights per year.

He's got his own bedroom, and he just, [plays with] kids downstairs, kids next door that he plays with. We go out and that. So... it's just, cook more, that's about it. Yeah, he uses the outdoor areas, [and] we go over to the park. It's an ideal place for kids to live with that open space there. (P1608 — male, 65–69 years, living alone, capital city, attached house, working full-time.)

Another interviewee had shared the care of a nephew with her brother.

I think I had him about 18 months. We shared. My brother and I shared, because the younger brother was the father, and he came when he was 16, and we had him until he was just over 18. They were interesting years. He slept at my brother's house, but I did all his washing, cooked his meals and we tried to make him responsible enough to go and buy his own lunch materials and things like that, which wasn't terribly successful but you try. Yeah, so in those ways — so my brother was the [one who said] 'let us know when you're about to be home or you need to be picked up', and I'd go and do the driving. (P531 — female, 60–64, living alone, flat/apartment, capital city, self-funded retiree.)

A woman, who had previously lived in a small flat, discussed the impact of having her grand-daughter stay on a regular basis.

Mainly when you're relaxing and you've got a four-year-old, as she is now, wanting to watch her programs on telly, or making a noise, or you just want to read and relax on couches. You can when there's another adult there, but not when there's a child there. And there wasn't much of an area where she could go and be away from us. Whereas here, there's lots of rooms she could go in and get away from the adults and people....but in a unit, it's not good for grand-children. She's had toys and things set up in my study, but she likes to be with us, because that's what she's used to. So she pulls them all out and she's around us anyway. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

Among the interviewees, there was only one example of caring for children with special needs. In this case, a couple of South Asian origin was caring for a daughter over 20 years of age with a motor function disability and visual impairment.

INT: You said you had a child, a daughter that needs assistance?

RESP: Yes.

INT: who provides that assistance?

RESP: Mostly my wife.

INT: What sort of care needs does she have?

RESP: She needs care mainly for dressing her. And there's a little bit of makeup. Because she can't do fine motor skills. And also, sometimes we share dropping her to or back to the station, myself and [wife]...depending on

who is available. Then also... sometimes we do her shopping, because [she] can't do it individually. These types of things.

INT: Do you have anyone else to come into the home to assist with her?

RESP: No...I mean, in short, her motor skills... are not developed fully, but her perception is perfect, her memory is excellent. Only motor skills, like hooking, unbuttoning, using geometrical instruments, those type of things. Also because... her eyesight is quite big, her vision is very lessened. (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

He went on to explain his family's particular cultural perspective on their role as carers for their daughter.

I find mostly that it's very much also the Asian culture. So, we generally, we take it as a part of our karma. We don't take it as a burden or load. Yes, and especially our own child and third child needs, we don't sort of, you know, knock on the other door for help. We try to do also as much as we can, yeah. (P1498 continued.)

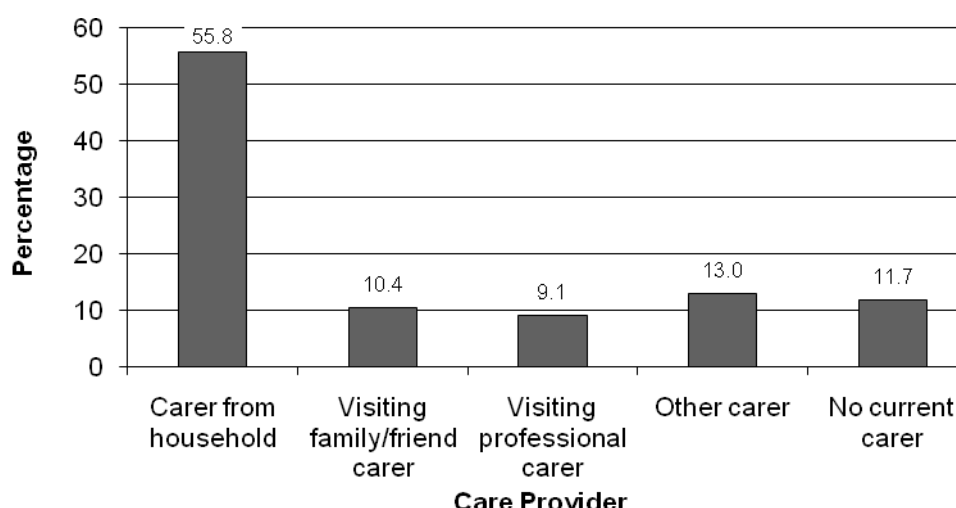
The interviews revealed, therefore, that some older people can therefore have a significant role in caring for either their own children or grand-children either on a permanent, temporary or occasional basis and this can also place demands on space utilisation in the home.

5.5.3 Caring for partners

Figure 82 below shows the carers for the 77 respondents who had a partner requiring assistance, over half (55.8%) were receiving that assistance from within the household. Again it shows that in over half of all such cases, care was provided by another member of the household, predominantly the respondent, as the majority non-single person households were couples.

Figure 82: Carers for partner of respondent

(n=77)



A number of interviewees who were carers for partners explained the impact of this on their day to day lives. A common theme was the desire to keep care within the family for as long as possible, rather than depend on outside help.

M: I'm totally dependent.

F: I'm the carer, yes.

M: You know, I need a few helps in getting dressed. That happens in the bathroom and the bedroom.

F: So we're not to that — that we've got to call someone else in...You can get help. We have several people that are getting a bit tottery and someone comes into help bath them every morning...We'll get to that stage.

F: You can get it.

M: If anything happened to [partner's name], mate — god knows. She'd have a rough time. ...She can handle me. But I couldn't be much help to her.

INT: You'd rather do that than have someone come in.

F: I can do it now. Yes. I mean if it gets difficult, I'd have to ask for help though. So far, we're okay.

INT: Good. Now walking around the house and that, is that easy for you? Do you need to use your walker for that?

M: I use it in every step. Without it, I get an awful pain in the back. I just cannot keep going. But that thing seems to help me. Also I am scared of falling...That's my security. Here, two weeks ago, [partner's name] fell twice on two days.

F: I had a bad fall...

M: It didn't do her any good.

F: I tripped on the gutter. My daughter, who's managing a resort up there, village, she said we should tell the owner that and tell him exactly where it was... I just didn't fall like that. I tripped on and I catapulted. I really did. Right near my side, you know. So there might be something there that he can just fix up a bit at that gutter.

M: I can't imagine us living with live-in assistance. But okay, we haven't reached that stage yet. It might come. I don't know how you handle it. I mean nurses come in and help for the — whatever it is. Just might be all you need. Then they send you off to a [nursing home]. (P494 — female, 80–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

The following interviewee was suffering from Motor Neurone Disease and was highly dependent on her family as well as external carers. In the time between completing the survey and participating in the interview her condition had worsened considerably.

...It's three years since I was diagnosed, and three years ago I was walking unaided and still using the hands. That doesn't happen anymore. I can walk — I used to go in and out that door, hence the rails on the door so I could get out, and my son built the step up so that I would be able to get out 'cause the step was just too high for me to step down — I felt uneasy. So he built the step up. We actually did have somebody come and talk about some Home Modifications, but the ramp that they suggested would've gone out to the end of the paving, and I thought that was invasive for the rest of the family. So we accommodated and modified it and it worked really well for quite some time until I no longer felt safe doing it. So now with the walker I can actually walk out the front door and walk right round the house if I choose to. So I can get

my exercise if I get out there...The only area I can walk is around the house. I used to walk up the drive, but in the last six months that one's gone too. Not the top drive, but the drive up to the car. Now I just don't feel safe doing it. I now have home care come in twice a day. (P161 — female, 55–59 years with partner, separate house, regional, pensioner with a disability.)

She went on to explain her complex care arrangements.

They come in the morning, they shower me and they get my breakfast. My husband usually gets me up, depending on what time they get here. And then they come in at lunch time to get me lunch and to take me to the toilet. That was sort of instigated because my husband was going into hospital and it meant that there had to be somebody here to do these things for me. Toileting was a problem for me. I have trouble with my clothes now, I can't grip, so I basically need somebody there to get me — to sort of assist me getting on and off the toilet. So they're here, as I said, five days a week. And I do have an option of another [support program] — Home Options. We're about to set that one into place so that if home care can't fill in at some time then Home Options will be able to fill in the gap. It is a different program. Meal preparation is beyond me completely, but that's been taken up by the household except for lunch time and breakfast. And my daughter comes down one night a week to relieve her sister from having to do the cooking. She comes down — or two nights a week usually, just depends. [T]hings happen in their lives so that they have to adjust — the others have to adjust around it. (P161 continued.)

In the following case, the onset of a serious health condition followed by surgery had resulted in premature retirement by both the sufferer and her partner. Once again, the desire to manage the care themselves was paramount.

M: Yeah. Six weeks ago they just took her eye out and took a tumour off the nerve from the eye to the brain.

F: But I had a trigeminal condition and that's one of the three nerves that had the tumour on it, but it didn't actually impact unfortunately on the condition, it didn't make it any better at all.

INT: So have you had that for a long time?

F: Eight years.

M: Today she's really good.

F: Yeah. You've picked a good day which is good I can actually talk today.

M: Yeah. Sometimes...it gets to the stage where this side is just so bad you can't talk or smile or anything.

INT: Yeah. Okay. So do you foresee a situation where you might need outside assistance at all, or mostly...?

F: Well unless something happens to you...

M: Yeah. We're pretty independent.

F: We're very independent between ourselves, yeah.

M: We think we will stay that way and we hope we will anyway.

F: Much prefer the family is caring.

F: If it's really bad, I could be in bed, I might not get up until lunch time. I could be in bed of a morning, which means you're between the kitchen and the

bedroom sort of looking after me. It's affected the fact that I can no longer go out and do the garden which puts it back onto you and you're not a gardener and I wasn't the best at it, but that was one thing I used to do. (P621 — couple, 60–64 years, regional, separate house, pensioner, assistance required.)

A non-English-speaking Asian man who had been very active in local community life, had become full-time carer for his wife. Through an interpreter, he explained his wife's need for assistance and how demanding this was for him, even with some outside assistance.

INT: Does your wife need assistance with most things around the house, with walking and...?

RESP: You have to watch her. [I am] watching her most of the time.

INT: So it's a full time job?

RESP: That's right.

RESP: Well, people from outside will help us cleaning the house, tidying up and have washing her, washing the clothes, but most of the things I have to do it myself. ...I could not sleep very well during the night because of her. ...You have to watch her, watching her most of the time. She used to use this [walker] to help her walking around, but now she uses the sticks and then otherwise use Chinese medicine and that will make a lot of improvement.

INT: Is she able to go out at all, out of the house?

RESP: She would go out Monday, Thursday and Saturday. On Saturday, she is sent to the elderly people's centre. It's a day that I can have a rest. On Monday and Thursday I go with her. We will go to [community agency] on Monday. I know [person's name] for more than 20 years. ...Walking downstairs and upstairs she is able to do it herself. We have a little [seat] in the bathroom. We also have...a rail, for her to grab. (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

While he had explored the nursing home alternative, he found that, because he was not eligible, they would be separated.

Someone have asked us to go to live in nursing homes, but my wife need a lot of special care, but I do not need any care at all. So is very difficult. So I cannot go to those nursing homes, that is just my wife; so we cannot go together. Last month I sent her to a nursing home for just one day. She will not eat, will not change clothes, everything. This is a very difficult situation. My whole family is all here. I have four children. My eldest son is more than 60 years old. Although we are Chinese, we all hold traditional values, but then is very hard for my sons to take us to live with them, like in Australia. Is very difficult for us. What we should do in the future with the both of us is very hard to solve. ...All my children will not be able to do it because we have all very different situations. We have registered in two different nursing homes, but we actually have one offer for her, but then well, but for her the situation is that I have to pass away and then she will be eligible to go. There are two quite good nursing homes in Ashfield and we are registered there. Well, it seems to me that I will not have too much time here and once I pass away my wife will be able to get there. (P2007 continued.)

For another, when assistance was required it was difficult to obtain.

I do everything, but I've always done everything, so when I applied for a carer's allowance for my husband they wouldn't give it for me. I could have gotten someone in to do the housework once a fortnight. (P1222 — female, 70–74 with partner, pensioner, assistance required.)

Caring for partners is thus a common situation in which older home owners find themselves. It can be both a demanding and sometimes frustrating role and assistance is not always easy to obtain. It can also precipitate early retirement and cause isolation from previous social networks. It can also impact on space utilisation through the need for additional manoeuvring space, the need for partners to have separate bedrooms, or for a professional carer to be accommodated.

5.6 Conclusions

This chapter has shown that while the vast majority of households were comprised of one or two persons, they can be quite dynamic in terms of changes in both permanent and temporary residents. Reductions in permanent residents can arise from adult children leaving home, the death of a partner, or the end of a relationship, and increases from adult children returning home, a new relationship, a boarder moving in, or the need to care for elderly parents or grandchildren. These changes can precipitate a move, or in some cases alterations to the dwelling. Temporary residents (who are not included in normal calculations of household size) can also have an impact on space utilisation, and can be adult children returning home, requiring assistance with accommodation due to work or educational commitments, or in housing transition or relatives on extended visits from overseas. Having space to accommodate family and friends in such circumstances was considered important by many interviewees. These findings suggest that current utilisation measures do not give an accurate picture of actual utilisation of space in the dwelling, or allow for the dynamics of change within some households.

Employment status can also have an impact on dwelling utilisation, if only because full or part-time workers have less time to spend in the home. Transition to part-time work or retirement can also place additional demands on the home and change patterns of internal and external space usage because of the need to set up a home office, sewing or craft room or more time being spent on home based hobbies, activities or entertaining family and friends — all important to active and healthy ageing. Many of these uses occupy spaces designated as bedrooms, sometimes fully, other times sharing the use of the room for other activities or as a guest bedroom. This suggests that bedrooms used for purposes other than sleeping, and other spaces in the home should be considered as a factor in housing utilisation.

There is a strong desire among older people to age in place and a desire or necessity among many family members to assist with their care. Requiring assistance with core activities can also place demands on space utilisation in the dwelling. Assistive devices such as wheelchairs or walking frames require additional door widths, hallway widths, more space in bathrooms and kitchens, no steps at the entrance, and extremely limit the accessibility of two storey houses. In some cases, illness or disability requires that partners sleep in different rooms. Likewise, assisting adult children by caring for grandchildren on a regular or occasional basis can also make demands on space in the home for play space, outdoor recreation, storage for toys and clothes, and sleeping space. The need for assistance may therefore also need to be considered in a method for calculating utilisation or housing efficiency.

In summary, households need to be seen as more complex and dynamic than they might appear at one point in time and having space in the house to accommodate a range of these needs or possibilities is important to many older home owners, and a

reason to occupy a house that might appear to be under-utilised if measured simply according to the number of permanent residents in relation to the number of bedrooms.

6 ATTITUDES TO, AND OPTIONS FOR, IMPROVING EFFICIENCY AND LIVEABILITY OF DWELLINGS AND LAND

The attitudes of older people concerning the suitability, efficiency and liveability of their current dwellings, and how they see their prospects and housing options for the future, are critical questions in considering policy options for more efficient use of dwellings, land and neighbourhoods by older people. This section is concerned with such attitudes and therefore responds to aims 2 and 3 of the research, particularly in regard to 'how efficiently the housing stock is, and could be, used by older home owners...' and to '...explore measures that might help to improve efficient use of the housing stock while improving liveability for older Australians'. It thus provides an important context for the following research questions:

Research Question 3: If there are inefficiencies, what incentives or disincentives could encourage more efficient use of dwellings and land occupied by older home owners?

1. What are the policy options for more efficient use of dwellings and land occupied by older home owners?
2. What are the incentives and disincentives for older residents making more efficient use of their land and dwelling?

Ownership and attachment to the family home has had a particular place in Australian society. The home has had almost iconic status, often being referred to as the 'Australian Dream'. Not only has the family home been the most significant family asset for the majority of Australians, but home ownership has been central to personal identity and family values. Home ownership is very high by international standards in Australia and, although housing affordability is a major constraint for younger people, home ownership remains very high and is particularly valued among older people (Olsberg & Winters, 2005). Attachment to the family home extends further than the actual dwelling to encompass a multitude of aspects of people's domain — the location in which their home is situated and its proximity therefore to the local community, friends, family and neighbours, local shops and services particularly medical services and transport, and features of the local environment, whether its aesthetic qualities or its familiarity. All these factors impact upon the efficiency and liveability of people's dwellings and land, and it might be argued are particularly meaningful for older people, many of whom have lived in the same dwelling for very long periods of their lives and are strongly emotionally attached to their domain.

This chapter comprises respondents' particular experiences and attitudes regarding the efficient use of their dwelling and their responses concerning the current liveability and possible improved efficiency and liveability of their dwellings as they contemplate getting older. It explores personal stories and experiences, which provide not only an excellent understanding of the attitudes, preferences and expectations of older people, but is most particularly of important predictive value for policy makers. It provides important indications of people's current liveability and potential for action when confronted by changes in their own personal position in the context of ageing and approaching morbidity.

Housing efficiency and liveability are multi-faceted concepts. They include aspects of space utilisation, functionality and affordability, and how such aspects are experienced by older people in terms of their quality of life or the suitability and liveability of their domain. A dwelling can be inefficient if it has space surplus to the needs of the household, or in which the household cannot function efficiently, thus

requiring additional resources (human or devices) to facilitate efficient use, or the cost of accommodation or maintenance is excessive for the needs of the household. A dwelling can be regarded as very efficient despite an apparent space surplus to the needs of the permanent residents of the household. The important factor for the individual and for their family is the suitability or liveability of their domain.

6.1 Attitudes to suitability of the current dwelling

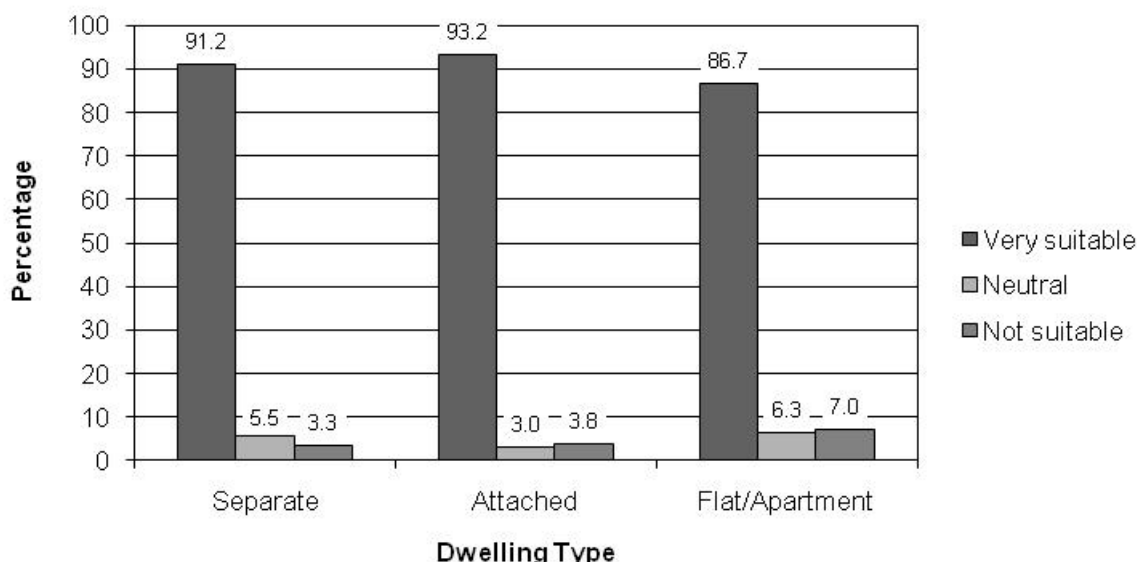
In this study, attitudes to housing efficiency were sought in a number of ways. Firstly, by asking how suitable the dwelling was for the current household size and special care needs, thereby providing a measure of the perceived liveability of their domain; secondly, by asking about recent or likely future modifications. And, finally, attitudes were sought by obtaining older people's preferences and expectations on a number of scenarios for their future needs and housing, particularly in the context of future morbidity. These issues were explored in the survey and in the in-depth interviews, and both responses are integrated here. Examination has already been given to respondents' actual usage and diversity of usage of their dwelling in section 5.

6.1.1 Suitability of the current dwelling for number of permanent and temporary residents

When asked in the survey how suitable the dwelling was for the number of permanent and temporary residents, the vast majority of respondents (90.9%) regarded their dwelling as 'suitable'. Only 3.7 per cent regarded the dwelling as unsuitable and 5.4 per cent were undecided. There was little variation between residents of the three dwelling types (Figure 83) with flats/apartments only marginally less suitable than separate and attached houses.

Figure 83: Suitability of dwelling for number of permanent and temporary residents by dwelling type

(n=1379)



Interviewees also generally regarded their use of present spaces as suitable and therefore efficient, both for their own regular use and for use by temporary residents and visitors. Many spoke in particular of regular visits by family members (particularly adult children and grandchildren) and by friends. The importance of having suitable accommodation for temporary residents is evident from their comments below — each

of whom had houses of three or more bedrooms in size. For CALD respondents, this was particularly important, and their views are separately highlighted later in Section 6.5.

We have lots of friends from Sydney and they can come up and stay comfortably without disturbing us. Our children too, [names given] they were going to be here just for a month and they've been here now for seven months so it has worked out well to have the room. We find we need the house this big now that they're all having children... you want the kids to come and visit and preferably even together so they can see each other and the grandkids will see each other (P473 — male, 65–69 years with partner, separate house with 5+ bedrooms, suburban, working part-time, assistance required.)

Of the few who did not find their dwelling suitable for their needs, some regarded the space as inadequate.

We don't have an eating area in the kitchen. We have a breakfast bar, but when our family comes and we want to just have lunch it would be good to have an informal eating area. We actually got quotes... but it was just too expensive (P1274 — couple, 60–64 years, suburban, separate house, self-funded retiree.)

6.1.2 Need for individual personal space

Interviewees also spoke at length of their need to have space for their own uses and for regular visitors. Many respondents spoke of how their need for additional space in the home increased since their retirement due to the fact that they now spent more or almost all their time at home. Interestingly, this was particularly the case for couples where the need to have individual personal space became even more important after one or both partners were retired.

Once we retired we needed space, enough space to be able to get away from each other so that we're not underfoot. You might just feel like sitting and doing something on your own. It's an important thing in retirement. (P1019 — male, 65–69 years with partner, separate house, regional, self-funded retiree.)

It's personal space I need now I'm getting old. We've been married fifty years and I would like to have my own bedroom and bathroom and he have a separate bedroom and bathroom and things would be a lot better for both of us. You need personal space. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

Having room for family was important for many respondents.

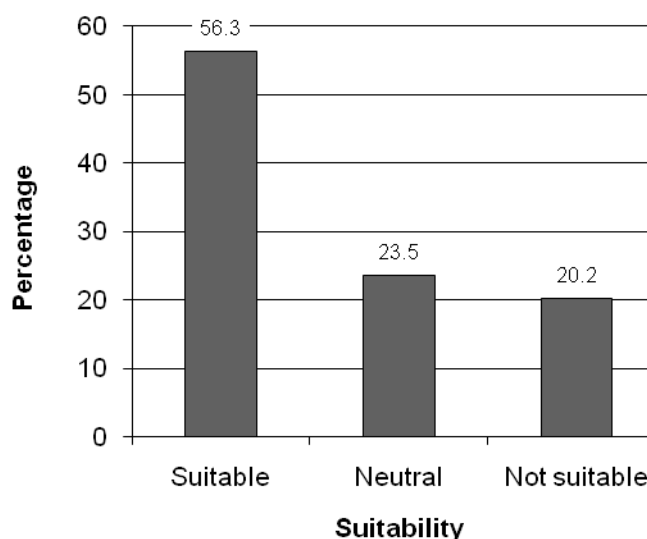
Now I'm retired I stay at home much more so I use the space more. And I need room for the grandkids. I have a whole wardrobe devoted to the toys for grandchildren. I cannot operate in a small environment. I wouldn't ever be able to. (P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

6.1.3 Suitability of the current dwelling for special care needs

For those with special care requirements in the household, the percentage regarding their dwelling as suitable (56.3%) was much lower than the 90.9 per cent of all respondents. The percentage regarding the dwelling as not suitable was over five times higher at 20.2 per cent and almost a quarter (23.5%) expressed a neutral view.

Figure 84: Suitability of dwelling for special care needs

(n=183)



Open ended responses to the survey and the interviews revealed some of the reasons why those with special care needs in the household regarded their dwellings as unsuitable. For some, having a disability required more space because of the need to sleep in separate bedrooms

M: We've known each other for forty six years. It's only the last two months we slept apart I suppose? Because I'm shit frightened of bumping her in the face to start with. Just you know, get away fly and suddenly hit her in the face because that's a week or a month just in bed. So it's good to have another bedroom for space in that respect...

F: Also I sleep upright. I sleep up at a 60 degree angle. Well, it got to the stage, I got it around about 2000. I had to give up work in 2003 and then [husband's name] retired last year. Because I was — I mean like I said this is a good day and there [were] days where I just didn't get out of bed. All sorts of things, and I wouldn't know what I'd do without [him].

M: Yeah. It probably brought retirement forward...maybe 12, 18 months. (P621 — couple, 60–64 years, regional, separate house, pensioner, assistance required.)

For others, a large house was excessive.

I'm a guardian for an elderly male friend who is becoming increasingly incapacitated. He lives in a two-storey large home and I am closing off parts of the house for him. I am making the lounge room on the ground floor into a bedroom so that he won't feel he is being downgraded into a smaller bedroom and he can put the dog kennel just outside the room. It was a matter of making it not too much of a come down for him. (P5001 — female, 55–59 years, regional, flat/apartment, self-funded retiree, assistance required.)

Houses with stairs could also result in unsuitability of the dwelling for people with disabilities.

It's got a spiral staircase. Lugging the shopping up. I try to sort of stay fit and do weights. I anticipate that I'll be lugging the shopping up for quite a while. My husband, on the other hand, has a bit of a disability. You know, he's up and

down the stairs 100 times taking only very light things, one at a time. So he talks about living downstairs ultimately. I don't think it would warrant an inclinor, because it's only one flight. So I think we'd probably move downstairs. (P2004 — female, 65–69 years with partner, CALD, suburban, separate house, working full time.)

For others, it was the detailed design of specific rooms, such as kitchens and bathrooms, that rendered the house unsuitable.

I mean, I would remodel stuff if I could afford it, like my kitchen. I'd love to have a split-level stove, not a free-standing stove, because I can't reach the back of my oven to clean it... I've had both knees replaced, and I find bending and the other things I find awkward in this kitchen are the corner cupboards. I have two corner cupboards which I can't get into, I've had to rearrange those, I had to have this door put in here so I could get in, otherwise it was just useless. I would move the bath, again for the same reason, I can't get in and out of the bath. I can get in, but I can't get out. So I would remove the bath and put a second toilet in the bathroom probably...but apart from that I'm happy with just about everything. (P729 — female, 70–74 years, living alone, attached house in an over 55s development, capital city, self-funded retiree requiring assistance.)

6.2 The desire to age in place

As indicated in Figure 83, respondents overwhelmingly expressed their satisfaction with their current dwelling, and their desire to remain living there. Some even spoke about it as 'Ageing in Place'. People spoke of their proximity to friends and family, their familiarity and delight in their home and the local environment and, in particular, their access to medical and health services, transport and other community facilities. Lifestyle was a continuing narrative in people's comments. And location, family and friends loomed as crucial determinants of liveability. Some respondents particularly spoke about the length of time they had been living in their home and how much they valued that familiarity.

We've looked at moving, at downsizing. The problem is we like where we are. It is an easy home to look after, the sun is nice, the yard is easy to look after, we're close to our church, we're close to two shopping centres and we've got no traffic problems. (P473 — male, 65–69 years with partner, separate house, suburban, working part-time, assistance required.)

You say this is my life. What is it about living somewhere that you have lived 50 years that you see as your life? What is it? Is it that you know the shops? Is it that you know the streets? It is that I know everything with my eyes closed and I feel secure here. Yes. If I go and live somewhere else, I don't know anybody. Around here I know all the faces. I know everybody. (P2001 — female, 65–69 years living with son and family, CALD, suburban, separate-house, pensioner.)

Some respondents had considered a move and had decided against it.

I've looked at a lot of options and I still come back to this, I think, is my best option. How my family will handle it if the need arises. For instance, we've discussed occasionally whether any of them would be prepared to put some money in. (P1336 — age/gender not specified, living alone, attached house, suburban, pensioner.)

We're alright at 80, it's OK. But if I'm not, if I got Dementia or something like that, I'd have to go somewhere. I don't know where, to a nursing home probably. Well, I mean when I can't drive a car, I would have to move closer. As much as possible though I'll have things delivered. Until it happens, I'm not going to worry. Until anything happens, I never worry about it I'm afraid. (P1183 — female, age not specified, living alone, CALD, suburban, flat/apartment, self-funded retiree.)

Circumstances had intervened to make it necessary for one respondent to have to move, although she regretted it very much, and expressed it so very clearly.

I want to be independent. Yes. I don't want anybody to rule me or to know everything what I am doing, or my sons to know to control the money or anything. I am good enough to do this by myself. I want to die here, like my husband did, but now I am having to sell my house. I had to borrow a lot of money on the house to help my sons. One I helped him buy a business and then that went bad and I had to pay the debts for him and the other two sons I had to help with the rest of the money from the mortgage. But now I cannot afford to pay the mortgage and I owe other money which I had to borrow too for them. So I am going to have to sell my house, which I am very sad about. But I intend to just move into a unit, whatever I can afford. I want to be independent. (P2001 — female 65–69, living with son and family, CALD, suburban, separate-house, pensioner.)

There were other similar comments from respondents who felt that there would generally be cause for them to move at some time in the future. These respondents spoke of problems, such as illness or frailty, which made it difficult to cope with aspects of the house — in particular stairs, the household chores and garden maintenance.

We've been discussing moving because my husband has not been well, and we're kind of — we're thinking, is this the place we want to be in to retire, or do we need to move. He's not been able to do some of the outside things. Having lived here you begin to realise that you can't cope with steps at a certain time and it might happen that the steps are fine and then suddenly one day they're not. So then you've got a problem of getting rid of that home and moving. (P424 — female 60–64 with disabled partner, separate house, suburban, self-funded retiree.)

Rural respondents spoke of their special difficulties in considering a move.

Choice of house is perhaps more limited for older people living in isolated farms and communities where it may involve moving far away from their home communities when disability or health issues arise. (P1144 — female 65–69 years, living alone, coastal regional, attached house, self-funded retiree.)

The prospect of the death of a spouse was also regarded as an issue in a decision to move.

We've been able to adapt our house, but I know that when one of us passes on the other will move. (P334 — female 80–84 years with partner, regional, separate house, pensioner, assistance required.)

Most younger respondents said they had not considered whether failing health or mobility would mean that they would have to move to a smaller dwelling with less maintenance responsibilities or unsuitable space that may in the future present problems. People's attitudes changed as they aged, and many respondents in older age groups said they recognised that perhaps in the future they may have to move to

more convenient premises or even into some type of care facility. They were asked what consideration they had given to their future housing. Most said they wanted to remain living in their home as discussed above.

6.3 Modifying the current home to improve liveability

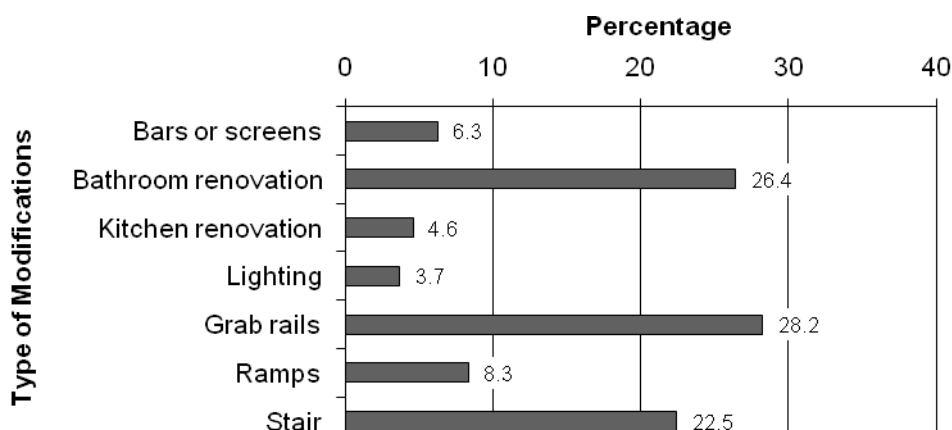
While a majority responded that they felt their dwelling was suitable, the space efficient, and their housing mostly liveable, some respondents had made modifications to their dwelling to cope with their own or anticipated future morbidity. Sometimes their comments came as a result of their responsibility for family members or visitors with special care needs.

6.3.1 Modifications made to the existing dwelling

The following section examines modifications already made or desirable for the future, in anticipation of the unsuitability of their present dwelling. Approximately one third (34.3%) of respondents had already made modification to their dwellings to make it safer or easier to use. Figure 85 below shows the types of modifications that had been made. The most common modifications were to install grab rails (28.2%) or modify bathrooms (26.4%) or stairs (22.5%). Less common modifications included ramps, security bars or screens, kitchen renovations and improving lighting. When cross tabulated with age group, bathroom and grab rail modifications increased over the first three age cohorts, whereas modification to stairs reduced progressively from 24.6 to 24.5 per cent, possibly indicating a decreasing likelihood of living in a two storey dwelling with age.

Figure 85: Modifications made to current dwelling to make it safer or easier to use

(n=432, multiple response)



Some interviewees spoke of changes they had already made and how important they had been for improved liveability in their dwelling.

You've got to have easy access and showers and bathrooms have got to be big enough that they can move around in them and they have the rails etcetera. I mean having had the rails in my bathroom at [suburb name], the first thing I had my handyman do when I came up here, I said I want the same rails in here please. He sort of looked at me and I said I've got used to having them and to me that was a big thing. I do use them. That's the worst place for an accident. Mats are another thing I don't have, I'm aware of that. I guess you know people close their eyes to it, I go around to people's houses a lot older than me and I say why have you got these mats down, you fall over them don't

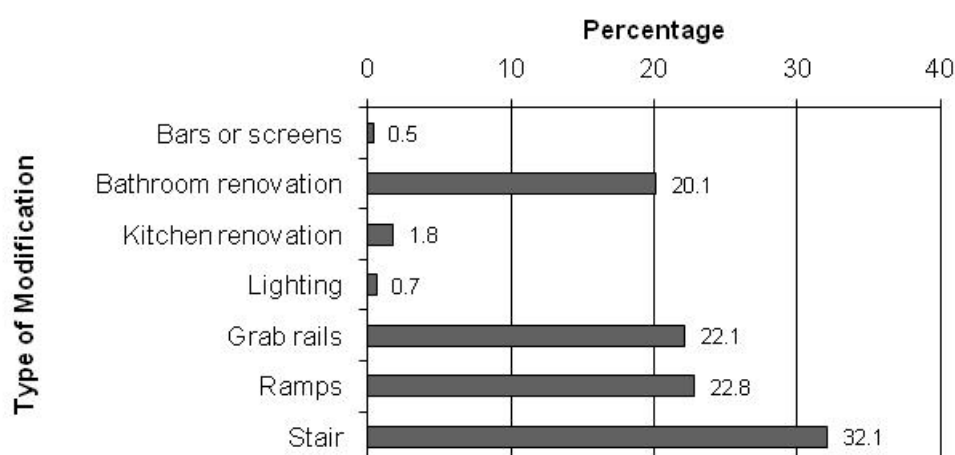
you? Yes. Then why have you got the mats? You know they don't sort of learn. Having the experience in my own family has really sharpened my knowledge; my daughter is a Special Ed teacher so I get it from her as well. (P1114 — female, 65–69 years, living alone, coastal regional, attached house, self-funded retiree.)

Confronting future morbidity: attitudes to options for improving efficiency and liveability

As discussed in the Positioning Paper for this study (Quinn et al., 2009), options for improving efficiency include a range of 'staying put' and 'moving' options. These are outlined in FaHCSIA's information for older Australians contained in the publication *Accommodation Choices for Older Australians and their Families* which was '...written for people who are thinking about where they will be living as they get older' (FaHCSIA, 2009a:1). Forty per cent of respondents said that they were likely to modify their current dwelling in the future to make it safer or easier to use. The types of likely modifications listed by respondents are shown in Figure 86 below. Again stairs, grab rails and bathroom modifications along with ramps were the most commonly anticipated.

Figure 86: Likely future modifications to make the dwelling safer and easier to use

(n=443, multiple response)



While the likelihood of installing ramps and stairs increased in the last three age cohorts (from 19.7 to 28.5 and 27.5 to 42.9 per cent respectively), the likelihood of installing grab rails decreased in the same three age cohorts (from 25.3 to 14.3%) — possibly indicating that an increasing number of respondents already had them installed.

6.3.2 Cost and affordability of modifications

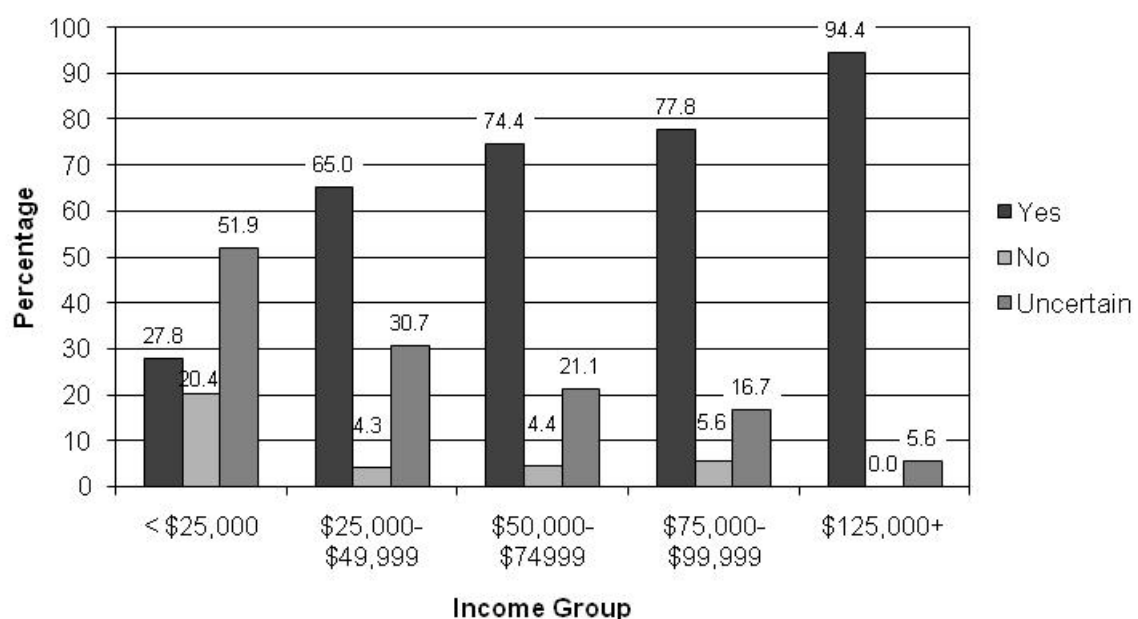
Cost and affordability were important considerations in the likelihood of making modifications to their current dwelling or any future dwelling. When asked if they were likely to be able to pay for the necessary modifications, only a little over half (54.2%) said they were, over a third (35.3%) were uncertain, and only 10.5 said that they would not be able to pay for the modifications. This indicates a fairly high level of concern and uncertainty among older home owners about their ability to afford possible future modifications and explains the strong support for housing design approaches (such as Universal Design, Adaptable and accessible design) that eliminate, minimise or reduce the need for, and cost of, future modifications in the

event of onset of a disability or increased need for assistance with age and morbidity as discussed later in Section 7 of this report.

Figure 87 below shows the ability to pay for modifications by income group. Not surprisingly, ability to pay is related to income. In the lowest age category into which single and couple age pensioners fell, ability to pay was relatively low (27.8%) with an additional 51.9 per cent uncertain of their ability to do so — a total of 79.9 per cent either unable to uncertain. As would be expected, as income increased, so did the ability to pay, with over half those earning \$25,000–\$49,999 able to afford modifications increasing to around three quarters in the \$50,000–\$74,999 and \$75,000–\$99,999 income groups and finally to over 90 per cent in the \$100,000 plus income category. Uncertainty decreased accordingly with income.

Figure 87: Ability to pay for modifications by income group

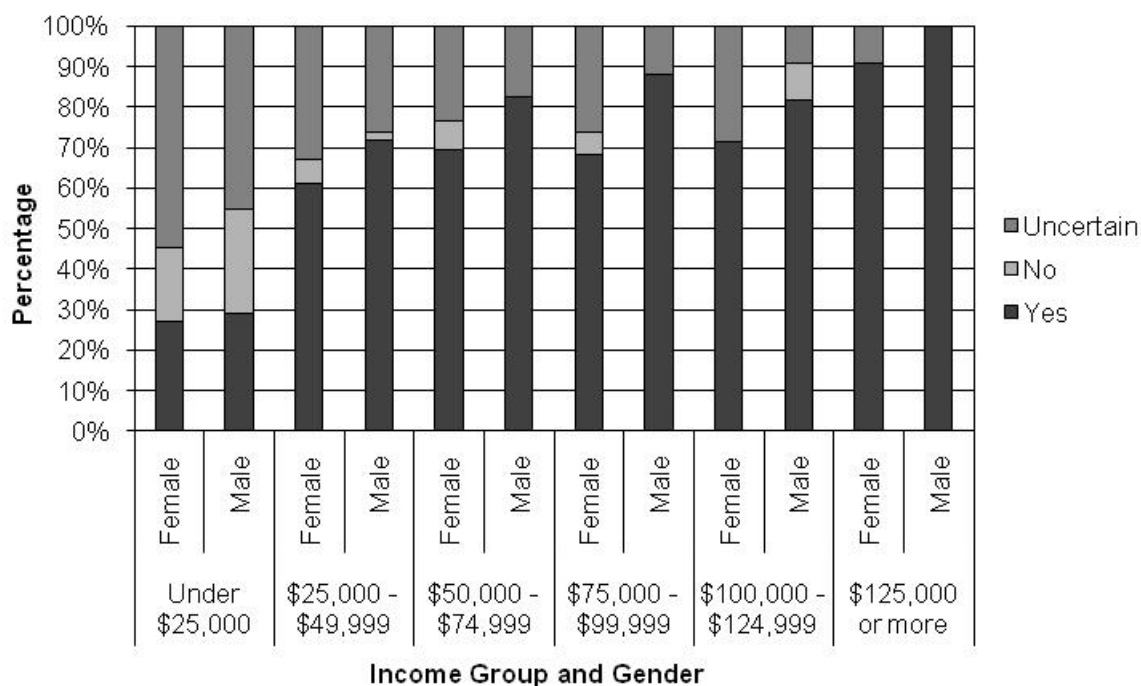
(n=433)



Overall, men (69.4%) were more able to pay than women (55.9%), and women (35.5%) had a higher degree of uncertainty than men (24.2%). Figure 88 shows the differences in ability to pay for the various income categories. In only the lowest income cohort were men and women equally able to afford the modifications, although women had a higher level of uncertainty. In all other income groups, women were less able to pay and had more uncertainty than men about their ability to do so.

Figure 88: Ability to pay for modifications by gender and income group

(n=433)



6.4 Staying put and moving options to improve liveability: confronting future ageing and possible morbidity

While some respondents said they had given no thought to moving from their current dwelling as they got older, many respondents discussed what options may be available to them or ideas they had considered which would allow them to remain in their current home as they got older and perhaps needed some assistance or care. Other respondents had given consideration to the options that would confront them if they had to move from their current dwelling.

The survey sought attitudes to the importance of a number of staying put and moving options in the event of developing a disability or increased need for assistance.

Staying put options included:

- Have adult children live in your home.
- Rent part of your home to others.
- Use professional care services in your home if you require assistance.

Moving options included:

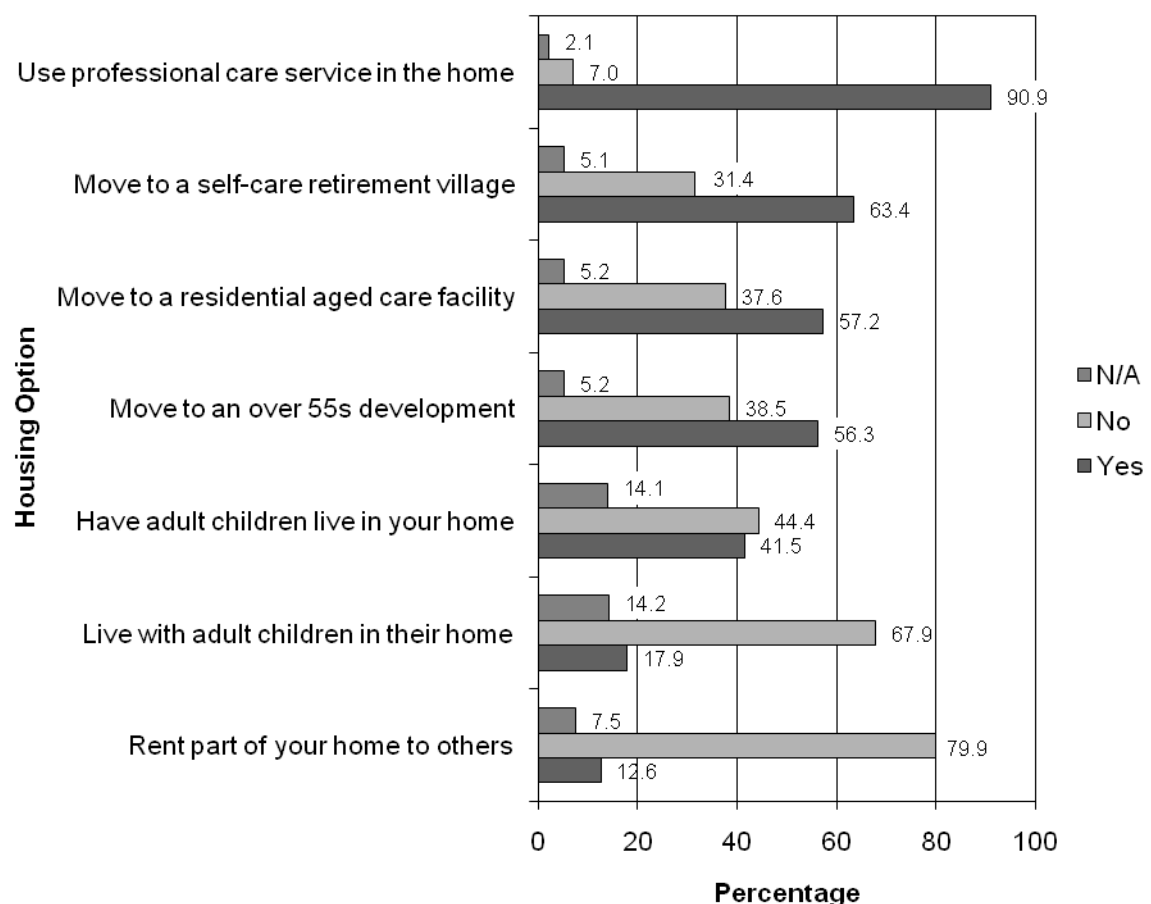
- Live with adult children in their home.
- Move to self-care or independent living unit in a managed retirement village.
- Move to a dwelling in an 'over-55s' or 'seniors living' housing development in the general community.
- Move to a residential aged care facility (hostel or nursing home).

Responses are shown in Figure 89. It is interesting to note that by far the highest importance was placed on 'use professional care service in the home' (90.9 per cent of respondents), which is the only approach not specifying any change to, or move from, the dwelling. The three moving options (retirement village, over 55s development and residential aged care) were regarded as important by over half of the respondents. Least favoured were the sharing options, particularly renting part of the home with a 'not important' response of close to 80 per cent followed by living with adult children in their home (67.9 per cent negative). Respondents were almost equally divided on having adult children living with them (41.5 per cent positive and 44.4 per cent negative).

What this suggests is that remaining in the home with support and maintaining independence is greatly preferred to all other options, and moving to a more suitable dwelling (be that to a retirement village, over-55s or nursing home) is more highly favoured than moving in with adult children or renting out part of the dwelling. However, older homeowners are less negative about considering the possibility of having adult children live with them than they are of living with them or taking in a boarder. As indicated later, this is because older people are prepared or feel a responsibility to help their children out in an emergency. The open ended response to these questions provides interesting insights into the reasons for these attitudes. Respondents spoke about options of having family living with them (reasons for and against such an option) and living with family (once again reasons for and against).

Figure 89: Consideration of future staying put and moving options

(Multiple response question)



6.4.1 *Living with children*

Living with children was a particularly contentious issue, and the research further confirms the reluctance of many older people to share their dwelling with family, either parents or adult children. A shift in the norms and values of the Australian family with changes in family structures — divorce and serial marriages create blended families, single parents families, childless couples, same sex couples and transformation within traditional CALD families — give primacy to independence and autonomy. This is not to say that the family is still not the basis for people's sense of identity and the foundation for most people's lives, but certainly residential interdependency is not favoured as a liveability option. Yet certainly, as reported above, living with family is preferred to taking in a boarder.

The possibility of family disputation was a major issue for many respondents.

My children are very definite people. We don't necessarily always agree. I don't believe in one home you can have two women being Madam. (P1252 — couple, 80–84 years, suburban, flat/apartment in seniors' development, self-funded retiree.)

I prefer my independence. I don't think it works very well for people to live with their children...I think that the generations don't mix. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

There were, however, some positive experiences of intergenerational living.

I have thought about them. Mum was in a retirement village initially and she was so distressed and upset. Because Mum was never one, for instance, to watch the TV shows during the day, you know all those soapies and things. She was more into the information programs and that type of thing. In the nursing home of course you watch what most people want to watch. So she would be sat up and she used to get extremely unhappy and she deteriorated very badly. Just then, it was about that time that I bought this house. I went down and I said, why don't you come and live with me? That made a big difference to her morale. She was this little curled up person in a wheelchair when I brought her up here, but I made her go to day care and I took her into physiotherapy and I took her into speech therapy and re-socialised here again. She was a lot more confident again. (P516 — female, 60–64 years, living alone, regional.)

However, when the option of having independent accommodation in the form of a self contained 'granny flat' was mentioned, many were more open to the option.

If it was independent. If you could just come and go when you wanted and prepare your own meals and have some private space for your own conversations and things like a granny flat in the back yard, well that would be alright. But if it was sharing a house with a bedroom even if it had an en-suite, it's still too close. (P1216 — couple, 55–59 years, regional, working full-time, assistance required.)

INT: Would it make any difference if they had separate accommodation, like a granny flat type of thing?

RESP: Yes. I think so. The ideal situation would be if, well ideal in that sense would be that if...you could live your life in a granny flat, they lived their life, and when your lives coincided you got them together, that would be best.

INT: So that would work?

RESP: That would work, but effectively you are still living your life, but you are not completely isolated....(For instance, you are not well and you are living independently, but not separately, then if the need arose they could pop in just to see how you are, that would probably provide the ideal circumstance, but effectively you would, I think, try to achieve separate living. (P1252 — male, 80–84 years with partner, suburban, flat/apartment, self-funded retiree.)

A few interviewees were uncertain about the option of living in independent accommodation with their children.

That would be acceptable to me. I don't know if it would be acceptable to my children. They are very independent. (P746 — female 60–64 years, living alone, flat/apartment, working full-time.)

RESP: My daughter has offered to build an annex for us.

INT: She has suggested that has she?

RESP: Yes, some time ago.

INT: That does not appeal to you?

RESP: No. [inaudible] I am independent.

INT: So if you had to choose between living in a retirement village or living with your daughter what would be better?

RESP: With her would be better.

INT: She is willing to do that?

RESP: Yes, that is what she said, but I don't know. (P614 — male, 70–74 years with partner, CALD, separate house, suburban, working part-time.)

Others were adamant that this option was not for them.

No, no. I'd rather go into something like an old people's home or whatever. Because, that is a burden on them, she's got to check on me. Is he still kicking? Oh, the light out, so he's going to bed. Forget it. (P1153 — male, 65–69 with partner, CALD, regional, self-funded retiree.)

The positive response of many interviewees to the option of living in independent accommodation with their children suggests that this is one area for further policy development that would encourage more efficient use of housing by some older people. This will be pursued further in the concluding chapter of this report.

6.4.2 Moving into a retirement village, over 50s or aged care

While a majority of respondents recognised that there may be a need in the future for them to move to some type of retirement village (63.4%), over 50s development (56.3%) or residential aged care (57.2%), there was some antipathy, particularly among younger interviewees, to the possibility of moving to a retirement village or some type of supported living environment. Many respondents also spoke of members of their own family, parents or relatives who had had bad experiences in retirement villages and nursing homes or other institutionalised care.

There was widespread concern about the cost of moving into a retirement village or Over 50s 'seniors living' housing development.

The thing that would push us out from here would be security issues. If there were any security issues I would be saying, stick this we're out of here, we're off to a retirement village where they lock the gate at night. But that would be because you know we looked at the places and they are quite big, some of

them, hellishly expensive, far more expensive than I paid for this. So, but I can see some advantages in living in a retirement village. But they'd have to bring some of the costs down. You know it's really expensive. (P784 — couple, age not specified, suburban, separate house, self-funded retiree.)

The issue of expense was particularly an issue for aged pensioners.

As a pensioner it's becoming harder for us to find accommodation within our price range, you know. And like me, personally, there's no way I could ever move to a retirement village for instance. Every retirement village that I've ever looked at is way beyond my price range. As a pensioner, if I could afford to buy into it as a pensioner, I can't afford the corporate fees because the corporate fees in some of those places are huge. (P729 — female, 70–74 years, living alone, attached house, capital city, self-funded retiree requiring assistance.)

Lifestyle factors, such as the availability of activities, the similarity of residents in such developments and the cramped living quarters were issues that many interviewees stated would affect their liveability in retirement villages or Over 50s developments.

People in nursing homes or retirement villages, they're all the same age so they age just being in there. They probably get some visitors now and again with young ones with their families, but if you're in a neighbourhood you've got all different ages all the time. (P152 — male, 60–64, living alone, CALD, separate house, regional, self-funded retiree.)

Well, there was never enough activity for the elderly. They just sat. If you can't go out, you just sat. And so that wasn't very good. (P79 — female, 65–69 years, living with two sons, CALD, flat/apartment, suburban, pensioner.)

I think a retirement village partitions people off and there may be some people who would like to live in a community with all older people. I mean personally that's not me, no. The other thing about those particular communities is that many of them at present anyway don't encourage pets and I think pets are important particularly for older people, as long as I don't trip over them, but they are important particularly if a person is alone. (P1581 — female, 65–69 years, living alone, attached house, pensioner, assistance required.)

Well, that's one of the big weaknesses of the retirement village is that when I go there, look around, and I see where I will be...putting myself, but due to my old age, hard to compromise. No guest, nothing else, just me and my wife squeezed into two small bedrooms. That's the retirement village,...no choice except other outside facilities [that] are [with]in my own walking. How to balance...your personal life and community life. That's the issue. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

Some interviewees had experiences of their own, or with parents, relatives or friends, which made them very resistant to moving to a retirement village or residential care facility.

Yes, they get a little unit each inside the big main building with the rec rooms and things. And just the feeling I got being in there and looking at the decrepit old people and thinking, oh no, I couldn't, I couldn't do this. I just really couldn't and I've had respite in nursing homes on and off and on and off I've tried it out and believe me [it's] dreadful...The food's appalling, you get malnutrition. I was expected to go to the dining room to eat to show I'm being sociable and you've got people next to you wetting themselves and people drooling into their food.

You know they're nearly all completely senile and it's revolting. I'm terribly dependent, but I still have my mind even though it's affected by the concentration and things are affected and the ability to read is affected to a degree, but I still can't hack that. So we haven't seen anything yet. The problem is how do you accommodate people at different stages of debilitation — younger people who are disabled, but don't want to go into a nursing home with senile people, and they all wet and you can smell it up and down the corridors. (P598 — female, 60–64 years with partner, regional, separate house, assistance required.)

Going into a retirement home would be the last option for me. My sister was in charge of a nursing home for about 10 years and she says she is never going into one. She says they can roll her out to sea and toss her overboard and I agree. (P392 — female, 70–74 years, living alone, CALD, suburban, separate house, working part-time.)

Other interviewees were positive about the future possibility of moving to a retirement village.

What I would consider as a perfect living situation for someone like me is a small group, say three or four villas, consisting of two bedrooms, bathroom and toilet with appropriate showers, rails, etc., and a small combined living, cooking area. However, there would be a central 'communal room and kitchen' where you could cook together if you wished, or just bring your meals and eat together, play games, watch TV etc. Each villa could have a buzzer system to all the others in case of an emergency, as well as to an outside security organisation. I envisage that each complex would be occupied by three or four friends, who have known each other for some time. This could provide security and peace of mind that there are friends nearby who can watch out for you and your belongings, especially if you are away on a visit or holiday. (PS1360 — female 60-64 yrs with boarder, regional, separate house, working part-time.)

6.4.3 Move to a residential aged care facility (hostel or nursing home)

Despite residential aged care being considered an option by 57.2 per cent of survey respondents, the interviewees had conflicting views about moving to a residential care facility such as a hostel or nursing home. For many, this was seen as an option only when it became a necessity when staying in the home was not possible.

While we're alright at 80, it's okay [to stay at home], but if I'm not, or if I got dementia or something like that, I'd have to go somewhere. I don't know where, to a nursing home probably. (P1183 — female, 80–84 years, CALD, living alone, flat/apartment, coastal suburban, self-funded retiree.)

I could consider that when I got more older or more infirm, think in terms of late 80s, 90s, there might be a need to go somewhere else. I would still hope to have my own apartment in an old people's complex or a hostel, where perhaps you were able to get meals if you couldn't cook for yourself, or you had a buzzer system so if you had a fall you could get people. If I was on my own I could see myself doing something like that. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

Perceptions of residential aged care were often quite negative based on the experiences of family or friends.

My mother is in a nursing home and we hate the idea of it. I have another good friend who is a nurse in a nursing home and every time I have gone to see her,

you know, it's I don't want to finish up like this. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, working part-time.)

In one case, a man with a disability had spent some time in a nursing home for respite care.

M: So I went to this nursing home [for respite] and they're beautiful inside, but dear me, you never want to go to one.

F: Well the staff were very nice, nothing against the staff.

M: You never see a soul. I was on holiday and I had nobody to talk to. The place was lovely, every room was beautiful, but you never see a soul, do not see a soul. It's dreadful.

F: They retired to their own rooms didn't they, after a meal and that was the end of it.

M: Food was nice, everything was lovely.

F: You had nice views.

M: And then they have a get together that didn't suit me. Now and again they have some kind of an entertainer that comes along. Well it's not a thing...

F: Very infantile.

M: Well F: Nothing else to do.

M: Because they've got nothing to do I suppose and they come out of their room and they can see an entertainer now and again. They try and do the best for you, but...

Interviewee 'F': That is true, yes I'm sure it is true. But you were well looked after weren't you?

Interviewee 'M': Yes.

M: Well you've got to remember this, I tell you I was on holiday, but when people came to their meals down there you couldn't speak to anybody really because they're all dying, they've not got a lot to talk about, they don't want to talk about, they have a few visitors but that's the point, they're all dying in there...It's the last place you want to go to. (P322 — couple, 85+ years, regional, separate house, pensioner, assistance required.)

For couples with differing needs, residential aged care could mean not being able to live together.

Someone have asked us to go to live in nursing homes but my wife need a lot of special care, but I do not need any care at all. So is very difficult. So I cannot go to those nursing homes, that is just my wife; so we cannot go together. Last month I sent her to a nursing home for just one day. She will not eat. Will not change clothes. Everything. (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

However, there were some who considered residential aged care as an option because they did not want to be a burden on their family.

Being over 50 and having cared for my wife 24 hrs/day. I just want to move from my home into care to save my family from [the] same trauma. (PS705 — male, 75–84 years, living alone, regional, separate house, pensioner.)

6.5 Diverging attitudes? Cultural and linguistically diverse (CALD) responses

Accepting divergent attitudes towards housing liveability is important in Australia's multicultural society. There is some recognition, particularly as people age, that different backgrounds and life passages impact upon people's attitudes and preferences. Interestingly, such differences were not significantly marked among CALD interviewees with regard to housing suitability and liveability, except on issues of having space for temporary residents and for the likelihood of sharing a dwelling with children. Even so, these differences were minimal in the quantitative data. However, the in-depth interviews give important indications of the existence of divergent attitudes among CALD older men and women and their families. Interviewees from CALD backgrounds spoke particularly about the need to have accommodation available for family members visiting from overseas. There were differences among some interviewees from CALD backgrounds where traditional cultural family relationships were still strong. This was not always the case. For many CALD respondents, their antipathy towards living with their children, or young people living with parents, was still clearly expressed.

I live with my children occasionally, but not permanently. Because when you do the washing, Chinese people say wash the dishes, sometimes they will click together. So human beings are like that. Especially if you have to argue, it's not good. So, from the beginning, we don't live together. But occasionally we see each other and then it's good. (P2006 — female, age not specified, CALD, suburban, flat/apartment, working part-time.)

Although it is accepted in a Greek family that a widowed mother may have to live with her children, I am not happy. I just have a bed there. I am not happy. It is nice. But I am not happy. I want to be in my own home. I am dreaming of my own home. I want to go back to live in my home, live in my house where I was. I was powerful and it was me. Now I don't know who I am. I am nothing. They eat. You know. I don't want to be there full stop. I just want to be by myself in my little corner wherever. Yes. (P2001 — female, 65–69 years, living with son and family, CALD, suburban, separate-house, pensioner.)

Having space for overseas family visiting was very important for many CALD interviewees. Many stated that family came to stay for long periods of time and the expense of travelling large distances was very difficult. For example:

When my family come from Europe, they always stay six or eight weeks and they need to be able to stay with us otherwise the cost is prohibitive. They have already had to pay the costs of coming here etc. (P152 — male, 60–64 years, living alone, regional, separate house, self-funded retiree.)

Decisions about caring for spouses or for elderly parents was particularly stressful for many respondents from CALD backgrounds.

It is the tradition in China that the family looks after people as they get older, but all my children will not be able to do it because we have all very different situation. We have registered in two different nursing homes, but we actually have one offer for her, but then well, but for her the situation is that I have to pass away and then she will be eligible to go. There are two quite good nursing homes in [suburb name] for Chinese and we are registered there. Well, it seems to me that I will not have too much time here and once I pass away my wife will be able to get there. (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

6.6 Conclusions

This section comprised respondents' particular experiences and attitudes regarding the efficient use of their dwelling and their responses concerning the current and future suitability and liveability of their dwellings as they contemplate getting older and possible morbidity. Personal stories and experiences provide not only an excellent understanding of the attitudes, preferences and expectations of older people, but predictably such narratives provide important indications for policy makers of people's current perceived liveability and potential for action when confronted by changes in their own personal position in the context of ageing and approaching morbidity.

Respondents overwhelmingly expressed the suitability, efficiency and liveability of their current dwelling, and their desire to stay put, to remain living in their current home, some even spoke about it as 'Ageing in Place'. Liveability of the family home extended further than the actual dwelling to encompass a multitude of aspects of people's domain — the location in which their home was situated and its proximity therefore to the local community, friends, family and neighbours, local shops and services, particularly medical services and transport and other community facilities, and features of the local environment — whether its aesthetic qualities or its familiarity. Lifestyle was a continuing narrative in people's comments, and location, family and friends loomed as crucial determinants of liveability. All these factors impacted upon the efficiency and liveability of people's dwellings and land, and it might be argued are particularly meaningful for older people — many of whom have lived in the same dwelling for very long periods of their lives and are strongly emotionally attached to their domain.

Respondents generally regarded their use of present spaces as suitable and therefore efficient, both for their own regular use and for use by temporary visitors. Many spoke in particular of regular visits by family members (particularly adult children and grandchildren) and by friends. The importance of having suitable accommodation for temporary residents was evident from their comments. For CALD respondents this was particularly important. Respondents spoke at length of their need to have space for their own uses and for regular visitors. Many respondents spoke of how their need for additional use of rooms had increased since their retirement and the fact that they now spent more or almost all their time at home. Problems that would or had caused them to move were generally illness or frailty which made it difficult to cope with aspects of the house, such as stairs, household and garden maintenance.

For those without special care requirements in the household, suitability of the dwelling was very high (89.4%) compared to only half (49.6%) of those with special care requirements within the household. The percentage of those with special care requirements regarding the dwelling as not suitable was nearly 10 times (38.7 per cent as opposed to 4.0%) and a much higher percentage also expressed a neutral view (21.7 compared to 5.4%). It was among those respondents who already had needs for care (n=70 for parent care and n=117 for self-care; total n=187) that the efficiency of housing was a problem.

Some respondents had made modifications to their dwelling to make it safer or easier to use, or to cope with current or anticipated future morbidity. Sometimes their comments came as a result of their responsibility for family members or visitors with special care needs. Most younger respondents said they had not considered whether failing health or mobility would mean that they would have to move to a smaller dwelling with less maintenance responsibilities or unsuitable space which may in the future present problems. People's attitudes changed as they aged, and many respondents in older age groups said they recognised that perhaps in the future they

may have to move to more convenient premises or even into some type of care facility. Respondents spoke of problems that would or had caused them to move or illness or frailty which made it difficult to cope with aspects of the house, such as stairs, household and garden maintenance. Some respondents stated they had not considered any future plans, and some seemed myopic about the possibilities of any need for support as they aged.

Approximately one third (34.3%) of respondents had already made modification to their dwellings to make it safer or easier to use. The most common modifications were to install grab rails (28.2%) or modify bathrooms (26.4%) or stairs (22.5%). Less common modifications included ramps, security bars or screens, kitchen renovations and improving lighting. Forty per cent of respondents said that they were likely to modify their current dwelling in the future to make it safer or easier to use. Stairs, grab rails and bathroom modifications along with ramps were the most commonly anticipated.

There was a high degree of concern and uncertainty about the costs of moving house and the costs of home modification among older home owners and also the availability of sufficient income to pay for such moves or modifications. These responses indicate a high level of anxiety among older home owners about the need for, and cost of, modifications in the future, as well as a strong support for housing design approaches (such as Universal Design, Adaptable and Accessible Design) that eliminate, minimise or reduce the need for, and cost of, future modifications in response to the onset of a disability or increased need for assistance with age.

Considering preferences for the future, particularly in the context of possible morbidity, respondents stated that remaining in the home with support and maintaining independence was greatly preferred to all other options. Moving to a more suitable dwelling (be that to a retirement village, over-55s or nursing home) was more highly favoured than moving in with adult children or renting out part of the dwelling. But moving into retirement villages, over 50s units or residential care was contentious. Many respondents were critical of privately operated developments and generally distrustful of their management.

Living with children was a particularly contentious issue, and the research further confirmed the reluctance of many older people to share their dwelling with family, either parents or adult children. Even though older homeowners were less negative about considering the possibility of having adult children live with them than they were of living with them or taking in a boarder. However, the option of independent accommodation in an accessory dwelling unit (popularly known as a granny flat) with their children was an attractive option to many.

The possibility of family disputation was a major issue for many respondents that respondents felt would mitigate against their living with their children or their children sharing with them. There were, however, some positive experiences of intergenerational living. Most notably, when the option of having independent accommodation in the form of a self-contained 'granny flat' was mentioned, many were more open to the option. This is an area for further policy development that would encourage more efficient use of housing by some older people. This will be pursued further in the concluding chapter of this report.

Over half the respondents recognised that there may be a need in the future for them to move to some type of retirement village or hostel, over 50s development or residential aged care. There was antipathy particularly among younger respondents to the possibility of moving to a retirement village or some type of supported living environment. Lifestyle issues, such as general activities, the community resident in

such developments, and the cramped living quarters, were issues that many interviewees stated would affect their liveability in retirement villages or Over 50s developments. Many respondents spoke of members of their own family, parents or relatives who had had bad experiences in retirement villages and nursing homes or other institutionalised care. In particular, there was widespread concern about the cost of moving into a retirement village or Over 50s 'seniors living' housing development. The issue of expense was particularly an issue for aged pensioners.

Other interviewees, some of whom had already moved into a Retirement Village or Over 50s development, were positive about the experience or the future possibility of making the move. This was in contrast to interviewees' views about a future need to move to a residential care facility such as a hostel or nursing home, where comments were largely negative, there was even mention of 'God's waiting room'.

A shift in the norms and values of the Australian family with changes in family structures — divorce and serial marriages create blended families, single parents families, childless couples, same sex couples and transformation within traditional CALD families — seemed to lead respondents to give primacy to independence and autonomy. This was not to say that the family was still not the basis for people's sense of identity and the foundation for most people's lives, but certainly residential interdependency was not favoured as a liveability option. There were some differences among some respondents from CALD backgrounds where traditional cultural families regarded family relationships as still strong, but this was not always the case.

Understanding the attitudes and values of older home owners on these issues is critical to consideration of policy options aimed at improving efficiency of use and liveability of housing among older Australians. While generally older home owners appear to be satisfied with their existing homes, overwhelmingly in favour of ageing in place and resistant to improving efficient use of housing by downsizing or sharing accommodation, there does appear to be scope for further policy development to support shared living via the mechanism of accessory dwelling units, or 'granny flats'.

7 THE COSTS, BENEFITS AND CONSUMER ACCEPTANCE OF HOUSING DESIGN APPROACHES

The Positioning Paper identified a number of design options for improving the liveability of housing for older Australians and discussed their advantages and disadvantages. These include Adaptable, Universal and VISIBLE Design approaches. However, there is still much debate about their relative merits, market acceptance, costs and benefits and methods of implementation (Quinn et al., 2009). This chapter looks at two of these important questions — market acceptance and the costs and benefits of each of these three approaches compared to modification of conventional housing. In so doing, it addresses the two following research questions:

Research Question 4: What are the costs and benefits of Adaptable and Universal Design of housing compared to conventional design and retrofitting?

Research Question 5: What is the level of demand and consumer support among older home owners for Adaptable and Universal Housing?

7.1 A cost benefit analysis of three design approaches

There is a range of design approaches intended to make housing more accessible for people with reduced physical, sensory and mental abilities. In addition to the two approaches: Adaptable and Universal Design, which were the original focus of this project; VISIBLE Design was separately examined due to its specification of the minimum critical features for wheelchair access, increasing regulation of VISIBLE Housing features internationally, and its different building requirements for these features when compared to similar features for Adaptable Housing in AS4299. A full overview of each of these design approaches: the population and housing for which it is intended, the benefits, costs and problems, was provided in the Positioning Paper (Quinn, Judd et al., 2009:81–112).

7.1.1 Design analysis

Visible Design

Visible Design has two key functions:

1. Providing critical access features in all housing so that wheelchair users can visit the homes of their friends and family.
2. Providing critical access features in all housing so that if a resident requires a wheelchair, these features which are considered the most expensive to implement post-construction, are in place.

Though there are numerous regulations and guidelines that are concerned with VISIBLE Design, the three core features: a step free entry, wide doors and toilet accessible for a wheelchair user, are common to most (Maisel, Smith & Steinfeld, 2008). However, the building requirement of these features, e.g. the required width of doors and circulation space to and around the toilet, varies considerably between them.

For this cost-benefit analysis, the Visability criteria from the Australian Standard AS 4299-1995 Adaptable Housing [AS 4299] were used:

Visible Housing unit — housing unit which has at least one wheelchair accessible entry with an accessible path of travel to the living area and to a toilet that is either accessible or Visible. (Standards Australia, 1995:8)

AS 4299 defines a Visitable Toilet as 'a toilet which has a space of minimum 1250 mm in front of the toilet x 900 mm wide clear of door swings and fixtures' and accessible as 'complying with the floor space requirements described in AS 1428.1 and able to be approached, entered and used by people with a disability, including those who rely upon a wheelchair'. ((Standards Australia, 1995:8).

For the Adaptable Design analysis, the increased space requirements for an accessible toilet were not available in any of the existing designs, so the more compact Visitable toilet was also the objective for initial construction in this design approach.⁵

In practical terms, the requirements for Visitability were:

- An entrance into the dwelling without steps.
- An entrance door with at least 800mm clear width.
- Circulation space to AS 1428.1 around the entrance door (for the apartment this included the entrance door to the building), lounge door and Visitable toilet door.
- Corridors between the entrance and the lounge and Visitable toilet to have 1000mm minimum width.
- Toilet with 900mm x 1250mm clearance in front of the bowl rim, clear of door swing.

The inclusion of the circulation space around the doors added further complexity to the design, compared to most Visitability requirements that only consider clearance in the doorway. Circulation space was included due to the reference to AS1428.1 and there is little advantage to having a sufficiently wide door if a wheelchair user cannot get to it. This complexity could be considerably reduced however, if the specification for circulation space could be provided without the current necessity of consulting AS1428.1 (to which few people have ready access) and its myriad of calculations for different door types, door sizes and directions of approach.

Adaptable Design

The Adaptable Design Analysis was based on AS4299-1995 Adaptable Housing Category C [AS 4299 C] requirements. In aiming to minimise the complexity and cost of the future adaptations, the analysis focused on avoiding changes to wall location, doorway sizes and locations, and plumbing. Hence, the majority of features were put in place at the time of construction. This differs from the higher level of changes provided for in AS 4299 C, including extensive bathroom alteration and construction, and removal of walls. The cost of design changes, both at the time of construction and at adaptation, was calculated.

During the analysis there were some apparent ambiguities in this Standard and a number of assumptions were made in response:

- In a two-storey dwelling, the post-adaptation access could be provided on the entry level only, or also on the upper level if appropriate vertical circulation was provided. Both scenarios were considered for the analysis.
- The requirement in 4.4.1 that 'All sanitary facilities and components shall be Adaptable...' was assumed to be referring to all facilities and components in a single bathroom, rather than to every bathroom in a multi-bathroom dwelling.

⁵ It was noted that the space requirements for the Accessible and Visitable toilets did not correlate, as AS1428.1 requires the accessible toilet to have 1200mm clear in front of the toilet pan, rather than 1250mm.

- The requirement in 4.3.3 that 'Doors throughout shall have a minimum clear opening of 820mm...' was assumed to be referring to all doors in the dwelling (e.g. every bedroom), not just the accessible bedroom, bathroom, kitchen and living area. Following clarification with the ME/64 Committee, the door requirement would only apply to the upper level of a two-storey dwelling if appropriate vertical access was being provided; otherwise it would be restricted to the entry level.
- The required bathroom circulation spaces in AS1428.1 as referred to in 4.4.1 were taken as the requirement for the dwelling after adaptation, rather than Figure D1, which appears to have a reduced requirement for shower circulation to achieve the room size of 2400mm x 1900mm.
- The work surface requirement in 4.5.5e that '[a] refrigerator shall be located next to a work surface' was interpreted as workspace adjacent to the refrigerator needing to comply with the previous clauses a-c.
- Following Figure E2, the cook top area was considered able to be included in the 800mm work surface requirements in 4.5.
- The cook top requirement in 4.5.7 that '[c]irculation spaces and clearances shall be as for sinks' was assumed to be included in the essential features, though it is individually listed for Clause 4.5.7 in the Schedule of Features for Adaptable Housing (p34).

Resolving the perceived ambiguity in AS 4299 during the design analysis was time-consuming and required additional design work. This could be both costly⁶ and problematic when working within the constraints of the residential development process and could lead to some dwelling designers inadvertently misinterpreting the Standard's requirement (as the researcher might also have done during this project).

Redesign to meet AS 4299 C was mostly achievable in each dwelling type.

Universal Design

A 'minimum' set of Universal criteria were developed from three recent Australian sources: Top 10 Housing Features for all Stages of Life (DoHA, 2007a), Top 10 Housing Features for inclusion in a universally designed home including 'Better Practice Design Features' (ANUHD, 2008), and Universal Housing Standard (Nissim, 2008); each featuring 10 minimum criteria for Universal Design in housing. These were combined (with priority given to criteria in the DoHA brochure when there were dimensional differences between sources) and re-categorised into 10 criteria. Where required, performance requirements from research by Quinn were supplied, so that compliance with the criteria could be measured, and to avoid prescriptive design requirements (see Appendix 7).

As the Universal Design requirements were generally more concise than those for Adaptable Housing, compliance, particularly for circulation space, was more straightforward. Also, the reduced space requirement for shower and toilet circulation, as well as the option for a 900 x 1500mm shower, reduced the size of the bathroom. In contrast to AS 4299, the Universal Housing approach was applied to all a bathroom on each floor, rather than just one.

Home Modifications

The modification of the (original) conventional housing design to provide the same requirements as AS 4299 C presented the greatest challenge and some of the features could not be achieved. Rather than consider the modifications taking place

⁶ Architects fees are estimated at \$160/hr excluding margin and GST (Cordell Housing Building Cost Guide, 2008)

after 15 or 30 years, as has been the case in previous analyses, this analysis considered modification in the shorter term. It aimed to minimise the cost of the modification (assuming that it would be subject to HACC funding) and maintain the premium finish of these new dwellings, and ultimately, their resale marketability and value. To achieve a cohesive design, mismatched finishes and institutional devices were avoided, increasing design complexity and cost.

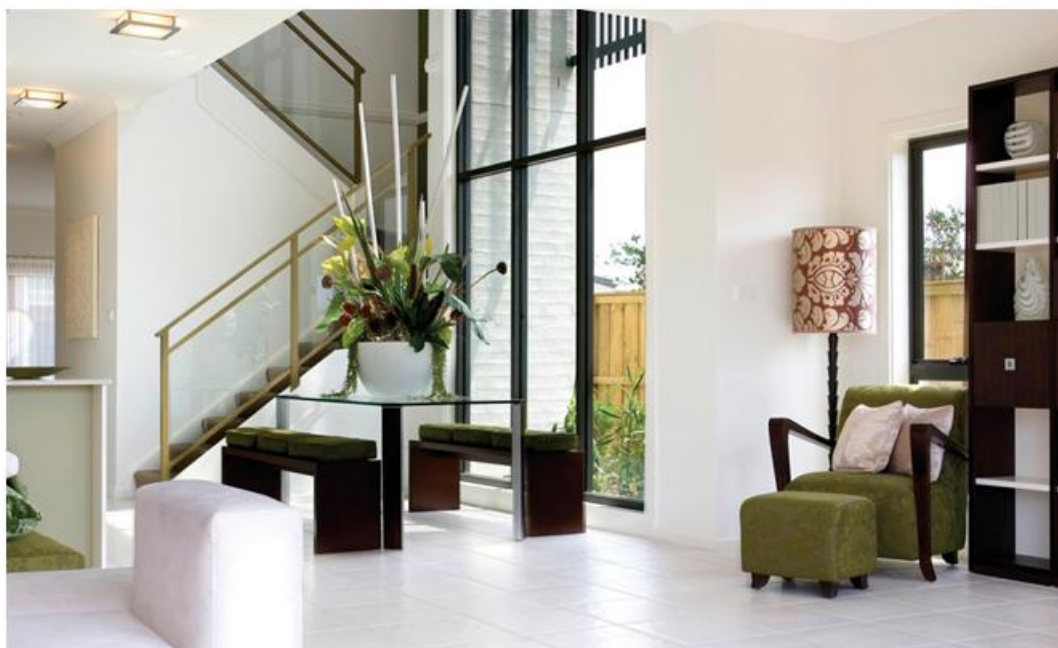
In the two-storey houses, the modification was only considered for ground floor access. Though the main bathroom and bedroom on the first floor of these dwellings were sufficiently large to provide circulation space, the width of corridors and doorways was such that many walls would require replacement, and combined with the resulting effect on fixtures, ceiling surfaces and floor coverings, these changes would be financially unfeasible and not likely to be undertaken.

7.1.2 Separate house

The separate house was a two-storey, four-bedroom dwelling; with bathroom, en-suite and separate entry-level toilet. The dwelling design was 8.1m wide and 17m long, with an overall area of 194m². The four-bedroom version of the house was a variation of the standard three-bedroom house, designed by a highly-regarded Australian architecture firm. Parking space for a single vehicle was provided in an attached garage, with direct access to the rear private outdoor area and the dwelling. The ground floor featured a lounge at the front, open plan kitchen-living dining room at the rear, a separate toilet, and laundry with direct access outside. The first floor consisted of two bedrooms and main bathroom with bath and shower to the front, a third bedroom towards the middle, and the main bedroom with en-suite at the rear. The four-bedroom floor plan used in the analysis is shown in Figure 91.

The front door and rear garage door were restricted in width due to their location in a recessed area of the dwelling. Both the laundry door and rear garage door had a minimal path of travel to the exterior if located on the minimum width site.

Figure 90: Separate house — family room with atrium



Source: image supplied by builder – separate house

Figure 91: Separate house — original floor plans



Separate house — Visitable

The design of the house entry, with a covered porch just over 1m wide limited the provision of a Visitable entrance at the front door. Even if a larger door could be fitted to provide 800mm clear width, an additional 470mm would be required on the latch side of the door to meet AS1428.1. With the adjacent living room less than 3.2m wide, and garage just under 3.1m wide, ‘taking’ the space from these areas would be problematic. Instead, the front living room doors were selected for the Visitable entrance, providing 1350mm clear space. The hard-standing entrance path was extended to these doors.

The ground floor toilet required only an outward door swing and small extension in room length to accommodate the 900 x 1250 mm circulation area. However, the circulation space required for the standard 870mm leaf door to provide the 800mm clear door width had a much greater impact and required consolidation of the toilet and laundry, removal of the corridor cupboard, relocation of the waste stack, and relocation of the external laundry door (which had minimal effect on the building exterior) and laundry appliances. These changes reduced the size of the foyer and width in the mid-section of the garage. To maximise foyer space, the cabinet was not replaced, but there were two potential locations, in the living area and corridor, for free-standing furniture if space permitted.

Although the front living space was already Visitable, it was isolated from the main living area adjacent to the kitchen. The required increase in width of the corridor to make it Visitable was minimal, with a negligible effect on cost. The Visitable floor plan is shown in Figure 92.

Figure 92: Separate house — Visitable floor plan



Separate house — Adaptable

There were two scenarios provided for the two-storey separate house: having access to the ground floor only, or providing a means of vertical travel to the first floor at the time of adaptation and having the accessible bedroom and bathroom on the first floor, along with other accessible circulation spaces.

Ground floor access

For the accessible path of travel to the dwelling, the same method was used as in the Visitable scenario: a path to and through the existing double doorway in the front living room. However, the AS4299 C criteria for doorway clearance being provided through the operation of a single door could not be achieved. Bi-fold doors in the same doorway would meet the criteria, but were a more expensive door option. Due to the inclusion of a framed pergola above this door in the original design, a cover (clear polycarbonate sheet was used in this design) could be easily and inexpensively attached to provide shelter at the front door (not included for AS4299 C).

The front living room provided the future bedroom space, requiring only that a sliding doors be installed as an adaptation. However, the full circulation space required at this

doorway was difficult to determine due to the diagonal approach, and was not achieved.

The garage was less than 3.1m at the front end, widening to 3.3m. This is well short of the 3.8m required after adaptation. However, the combined driveway and front entrance path exceeded the circulation space needed. If the ground surface for these surfaces was graded to the same level, they could be readily combined to achieve the external parking space specified in AS 4299. It is unlikely that a local council would allow future construction of a carport to shelter the parking space from the weather, so this was not included in the design.

The accessible bathroom was the most difficult aspect of the ground floor design, due to the limited space available and the need to retain the laundry. Though the toilet and shower could be fitted side by side with their respective circulation spaces, it was necessary to block off the external doorway with a fixed window after adaptation. Removal of this doorway and direct access from the laundry to outside detracted from the amenity of the dwelling.

Adequate circulation space for AS 4299 had already been provided in the kitchen, with opposing benches more than 1700mm apart: so the main change was the relocation of the under-bench oven to a wall cabinet adjacent to the fridge. Other work areas remained in their original locations, though the loss of the pantry reduced storage space considerably. The height adjustability in the work tops was provided through height adjustable and replaceable.

First floor access

The void in the centre of the dwelling provided a useful location for a future vertical lift. In the design analysis, a glass-sided open style of lift was sourced, which avoided the need for construction of a lift shaft. This would maintain the light and air circulation that are integral to the design of the house, and enable the lift to enhance, rather than detract from, the house appearance and value. Despite avoiding costly construction to install the lift, the supply and installation cost was more than \$60,000, possibly beyond the means of many older home owners.

Circulation space at the lift entrance, the main bedroom and bedroom four could not be achieved in the original layout. The simplest solution would be to eliminate bedroom four, but this would reduce both the amenity and the value of the dwelling. Instead, bedroom four was constructed with a removable partition wall, still framed and lined with plasterboard, but easily removed (along with the door and frame) with basic tools. Two large sliding panel doors would be installed at the time of adaptation, which could then be opened to provide circulation space at doorways when required.

The provision of the accessible bedroom and bathroom on the first floor was far simpler and less costly than ground floor installation, due to their generous original size and layout. Other than the doorway, the bedroom required no changes. In the ensuite, part of a wall and the doorway were removed (reducing construction cost), the window position was moved slightly, and the size of the shower and location of toilet were changed. The basins were retained in their current location, but the full vanity was changed to provide seated access. All changes were easily achieved at construction. At adaptation, only the shower screen would need to be removed to achieve the full-size open-plan shower, as the correct floor grading and slip-resistant tiling would be in place. Though the screen removal is a simple operation, residents could be reluctant to discard such an expensive bathroom fitting.

With a new main bathroom configuration and adjustment of bedroom and bathroom walls at construction, the larger doorways and circulation spaces at doorways could also be achieved. The floor plans for the Adaptable first floor are shown in Figure 93.

Figure 93: Separate house — Adaptable floor plan (accessible first floor)



First floor at construction

First floor after adaptation

Separate house — Universal

The Universal house design could not make use of the same alternative front entrance through the living room, as the criteria required access through the main entrance (Figure 94). A 970mm door leaf was required for the 920mm clearance, and a 1200mm path to the front door. As the living room needed to retain its size to enable use as a bedroom, it necessitated the garage be narrowed to approximately 2900mm. This would limit use of the garage for wheelchair access and for larger vehicles, and require use of the combined front path and driveway for an outdoor parking area.

The ground floor living room achieved the privacy required for bedroom use, with folding doors. The combined bathroom-laundry made use of a sliding door to maximise circulation space, though current sliding door systems generally do not have sufficient acoustic sealing for a centrally located bathroom. The bathroom-laundry achieved the additional circulation space behind the toilet by recessing the adjacent shower under the stairs.

A wider rear garage doorway could not be achieved in the current dwelling design and width; but the door would be retained as a service door to the hot water system. If this project home was built on a wider block of land, a side door could be used, but this has been avoided in the study, to minimise the land width required. The internal garage door and circulation was provided at the front end of the garage by changing to a double door set. As for the bathroom, the sliding door sets on the market need improved sealing for use on internal garage doorways, to prevent ingress of vehicle fumes. An appropriate multi-door set would also provide potential for the full side of the garage to open up to the dwelling with sliding doors.

In this housing design, the room and atrium configuration prevented a single flight staircase being used, though a small increase in dwelling floor space would enable a wider staircase and removal of all three winder steps on the landing. The ground floor of the Universal house is shown in Figure 94.

Figure 94: Separate house — Universal floor plan



The first floor required little change to the main bedroom and ensuite. Wall basins and cabinets replaced the vanity, and frameless glazed shower screens could be rotated to provide circulation space for the shower and toilet. Circulation space was provided in the main bathroom by eliminating the separate shower (a second shower was provided on the ground floor), and providing shower facilities over the bathtub.

A wall of sliding doors for bedroom 4 provided the flexibility for private space, with additional circulation space when required. When the circulation space was not required, free-standing storage units could be placed in bedroom 4 and opposite, outside the bathroom. The first floor of the Universal house is shown in Figure 94.

Modification

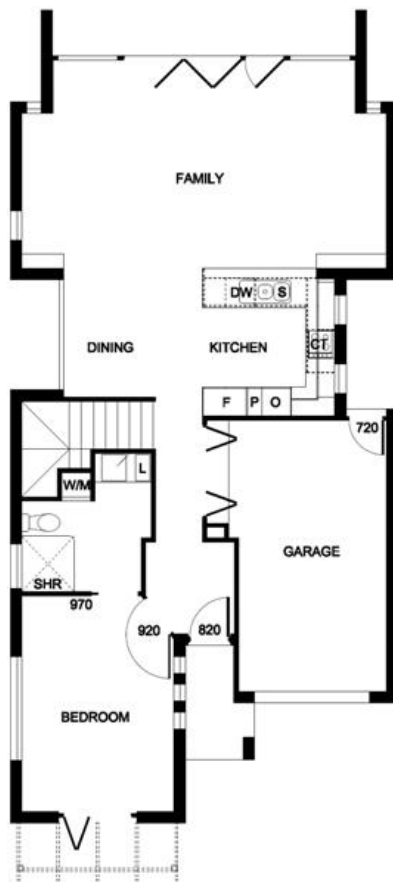
The modified house had the disadvantage of having to change ground and floor levels after construction, which added considerable cost. However, by making use of the living room entrance door, major building work on the main entrance was avoided, and the external parking space avoided reconstruction of the garage.

The new ground floor laundry-bathroom followed a strip out of this section of the dwelling, though the new room largely remained within the footprint of the original laundry and toilet to minimise cost. The main compromises were the new open plan shower position unavoidably blocking access to the external door and requiring replacement with a fixed window, and the reduced size of laundry facilities.

The kitchen design was quite straightforward due to the circulation space in the original design. It was similar in style to the Adaptable and Universal kitchens, with a new wall oven adjacent to the fridge. Though the sink did not meet the required 150mm depth, this was the shallowest sink on the market so it was retained. However, the majority of the base cabinets had to be stripped out and disposed of, and the dishwasher needed to be replaced with a drawer-style dishwasher to fit under the lowered bench.

As this is a project house, the selection of floor tiling would be the responsibility of the home owner. The builder's standard tiling allowance was below the price of R10 slip-resistant vitrified tiles, so the kitchen floor was replaced. As the kitchen is part of a large open plan area, residents could be reluctant to modify this part of the floor and replace it with a mismatched floor tile.

Figure 95: Separate house — Modified floor plan



Separate house — design issues

The top floor of this dwelling was not included in the modification. The changes to doorways and the walls due to door circulation space requirements would require most of the internal walls to be demolished and replaced, along with floor coverings, bathroom tiling and waterproofing and ceiling finishes. These changes would not be feasible. The floor plan for the modified ground floor is shown in Figure 95

This house design is marketed as a compact dwelling and is suited to narrow land lots, which are becoming more commonplace. This narrow width restricts the garage to a relatively narrow parking area accommodating a single vehicle (a double garage option is available for wider blocks of land, and could then accommodate the AS 4299 C parking space). Likewise, the rear garage access door could have met door clearance requirements, either with the wider door at the rear or relocation of the doorway to a side wall. However, despite these constraints, the required parking space could be provided at the front of the dwelling by using the adjacent pathway, and the alternative double door entrance through the living room, when combined with an accessible pathway, could meet circulation space requirements for an entry and also an accessible bedroom. This demonstrates that with considerate design, a narrow dwelling does not preclude accessibility. This alternate front entrance could also be marketable as self-contained accommodation for guests, or a home-based office.

Despite the availability of external parking providing required circulation, there is a considerable loss of amenity if the garage cannot be used. It is unlikely that construction of a carport to provide shelter would be allowable under local area development controls. A sliding wall between the garage and foyer could potentially provide the flexibility to 'borrow' parking space for the garage when required; however, the lack of well-sealing sliding door systems suited to the domestic market currently limits this option. Such flexibility in the garage-interior space would also expand the interior space into the garage for other functions as required, including entertaining, hobbies, and children's play in inclement weather.

Combining the laundry and toilet (or bathroom when applicable) on the entry level had a double advantage: a reduction in construction cost of doorways and partitioning walls, and increased circulation space (or potentially storage or utility space) for both areas. However, the marketability of the combined space would need to be determined.

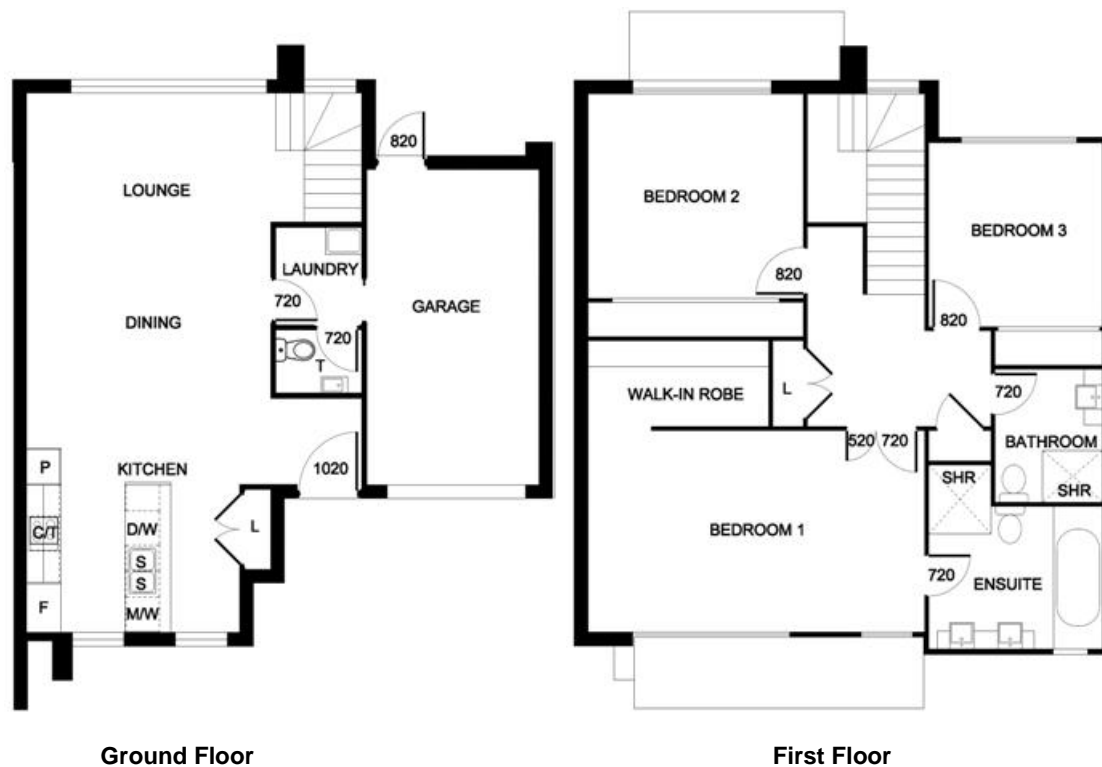
The glass-walled atrium is a distinctive visual and environmental feature of this dwelling. It also facilitated a very simple future installation and integration of a vertical platform lift, without affecting the amenity and visual appeal of the open-plan kitchen-living-dining area. Achieving additional circulation space on the first floor would have been far simpler if the upper atrium was converted to bedroom and corridor space, but then the considerable visual and environmental advantage of the atrium would be lost. It provides a good example of the balance required in providing accessibility while maintaining dwelling marketability and amenity for consumers.

7.1.3 Attached house

The attached house was a two-storey, three-bedroom dwelling, with bathroom, ensuite and laundry with toilet. It was the middle dwelling in a three-dwelling block. Access from the street was via a common driveway and a pathway to the front door. Parking space for a single vehicle was provided in an attached garage with internal access to the dwelling and rear private outdoor space.

The ground floor featured an open plan kitchen-dining-lounge room and a laundry with separate toilet and sliding door access through to the garage. The first floor contained three bedrooms, the main with en-suite; and a bathroom. The floor plan is shown in Figure 96. As this dwelling was under construction during this project, the following images in Figure 98 are modified from a similar mirror-image dwelling design on the same site.

Figure 96: Attached house — original floor plans



There were changes in level in several areas of the dwelling. The garage was set down more than 75mm below the main floor, resulting in a step at the internal entrance to the dwelling. There was a step at the front and the back door, each with an additional raised threshold for the door frame. Each of the balconies likewise had a raised threshold for the sliding door frame and step down to the balcony.

Visitable

For Visitability, the attached house required:

- Regrading of front path and entrance with door frame inset to provide level entry.
- Increase of foyer length for circulation space at front door.
- Relocation and widening of laundry doorway with conversion to sliding pocket door, to provide 800mm doorway clearance and circulation.
- Removal of partition wall and swing door to Visitable toilet.
- Relocation of toilet and basin to provide 900 x 1250mm clearance.

Generally the design alterations were minor and easily achieved, with the exception of the circulation space at the front door, which required that the laundry/toilet wall be moved approx 270mm.

The Visitable floor plan is shown in Figure 97.

Figure 97: Attached house — Visitable ground floor plan

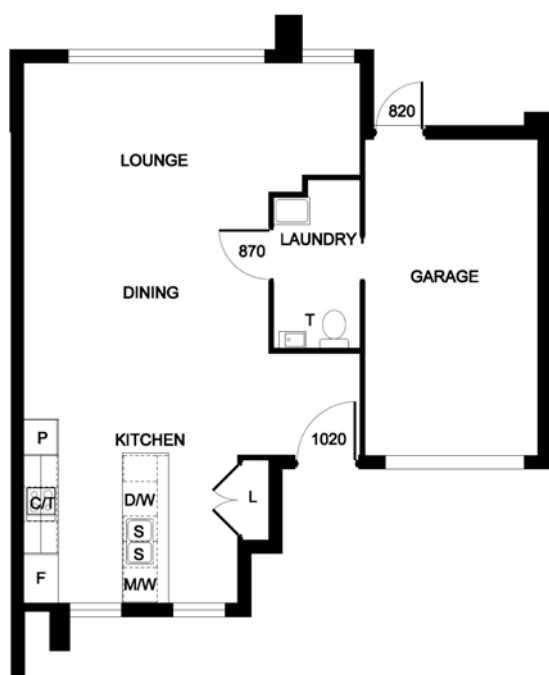
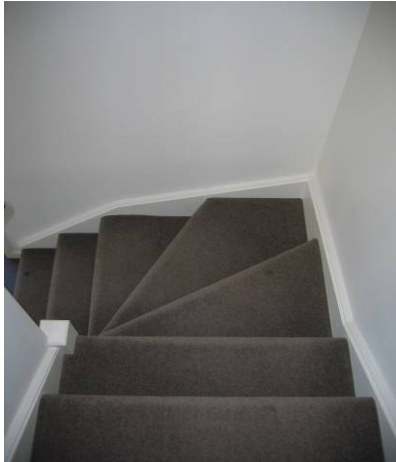


Figure 98: Attached house — details



Stairs



Kitchen island



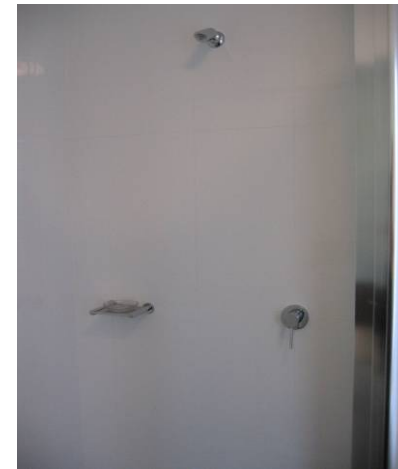
En-suite basin



En-Suite bath



En-suite shower



Shower outlet

Attached house — Adaptable

Two variations were provided for the Adaptable attached house. First was provision of the accessible features on the entrance level only; and second was accessibility on both levels, with a stair lift (there was insufficient space available for a vertical lift) provided during the adaptation.

Ground floor access

The ground floor living space was very compact, and the primary consideration was fitting the bedroom space. Due to the stair layout, it was most feasible to locate the bedroom to the front of the dwelling in place of the kitchen. Provision of blade walls on either side of the space allowed for future installation of doors to close off this room, while maximising natural light and cross-ventilation. The kitchen was moved to run the length of the side wall, with kitchen functions maintained in a similar location to their original configuration (Figure 99).

Like the separate house design, the ground floor toilet and laundry were converted to a combined accessible bathroom-laundry. A Visitable toilet and the shower space and plumbing were provided at construction, so only relocation of a wash basin and change in laundry fixtures were required for an Accessible bathroom at adaptation. The rear garage door was replaced with a double glazed door set, both to provide the required doorway width and allow for future use of the garage as living space if a person with a mobility disability was required to live on the ground floor for an extended period. This garage space could not meet the parking circulation space requirements of AS 4299, being only 3m wide; however, the outdoor parking area was sufficiently wide and was partly protected from the weather by the overhanging first floor balcony above.

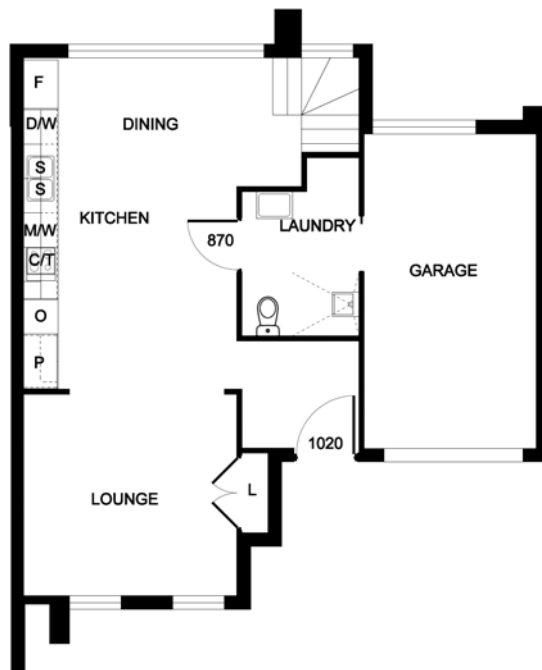
First floor access

The accessible bathroom and bedroom were more easily provided on the first floor than the ground floor. The bedroom was already large with a wide doorway. The bathroom also had space available for circulation with minimal changes: increase of the shower alcove, relocation of the toilet, and reduction in size of the bathtub. This bathtub had to be installed on top of the finished wall and floor tiling using a self-supporting rimmed steel bathtub in a frame, rather than an acrylic bathtub mounted in a mortar bed. At the time of adaptation, this bath tub and the shower screen would need to be removed, and the bathroom door swing reversed. The original toilet could be replaced with an elongated pan toilet suite to meet AS1428.1 using existing plumbing, if required.

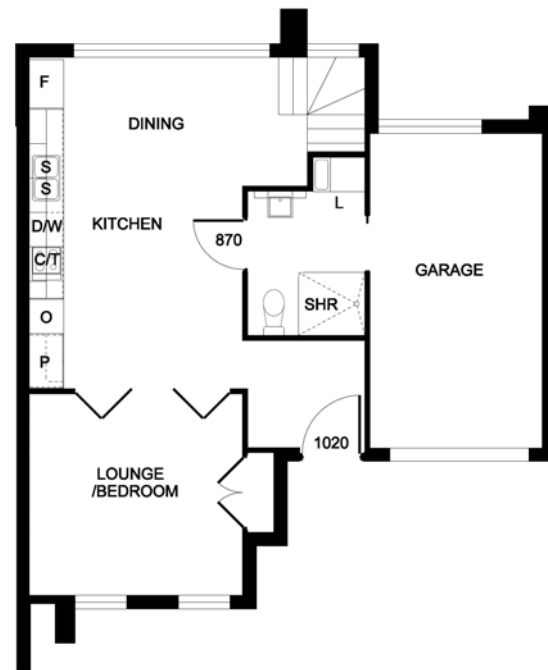
Achieving the required doorway clearances and circulation spaces in all of the other bedrooms and bathroom appears to involve only minor changes to wall and door locations. However, the design time to meet the spatial requirement at each doorway, while minimising room changes was considerable, involving numerous calculations and design adjustments.

Provision of the bathroom and bedroom on the first floor minimised the ground floor changes for access. Only a Visitable toilet was required on the ground floor so there was only a small change to this room to increase the circulation space and the dwelling entrance. As the kitchen did not meet the 1550mm clear distance between opposing cabinets specified in AS 4299, it was reconfigured, but remained in the same location at the front of the house. The functional areas of the kitchen generally remained in a similar position, with the island servery bench retained and swung perpendicular to the wall unit. A wall oven and adjacent pantry with work surface were installed in the original pantry location.

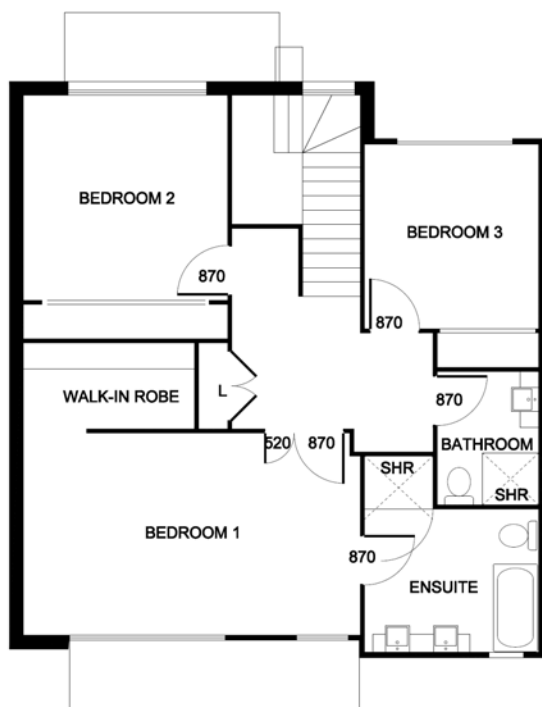
Figure 99: Attached house — Adaptable floor plan



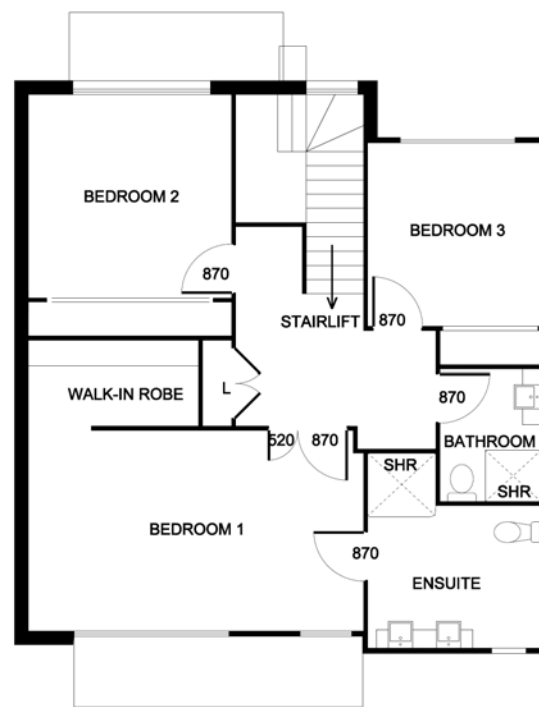
Adaptable ground floor: at construction



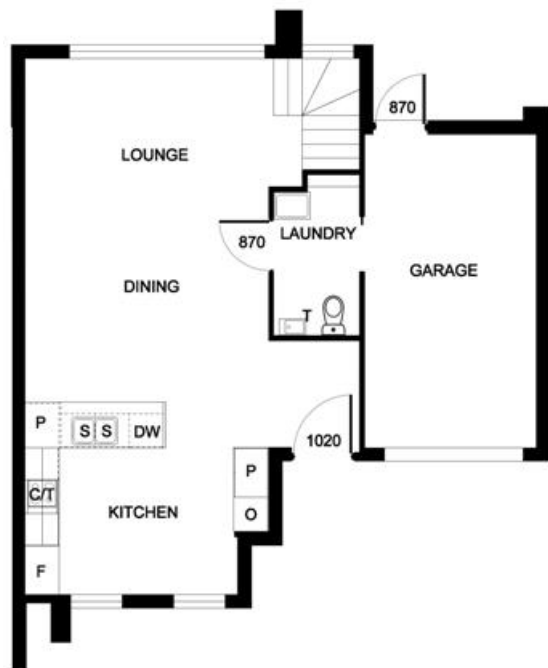
Adaptable ground floor: after adaptation



Adaptable first floor: at construction



Adaptable first floor: after adaptation



Ground floor of Adaptable first floor

Figure 100: Attached house — Universal floor plan

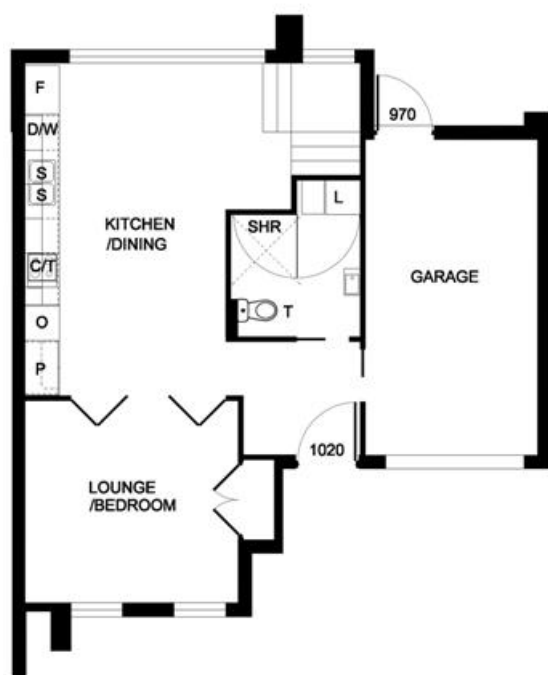


Figure 101: Attached house — Modified floor plan

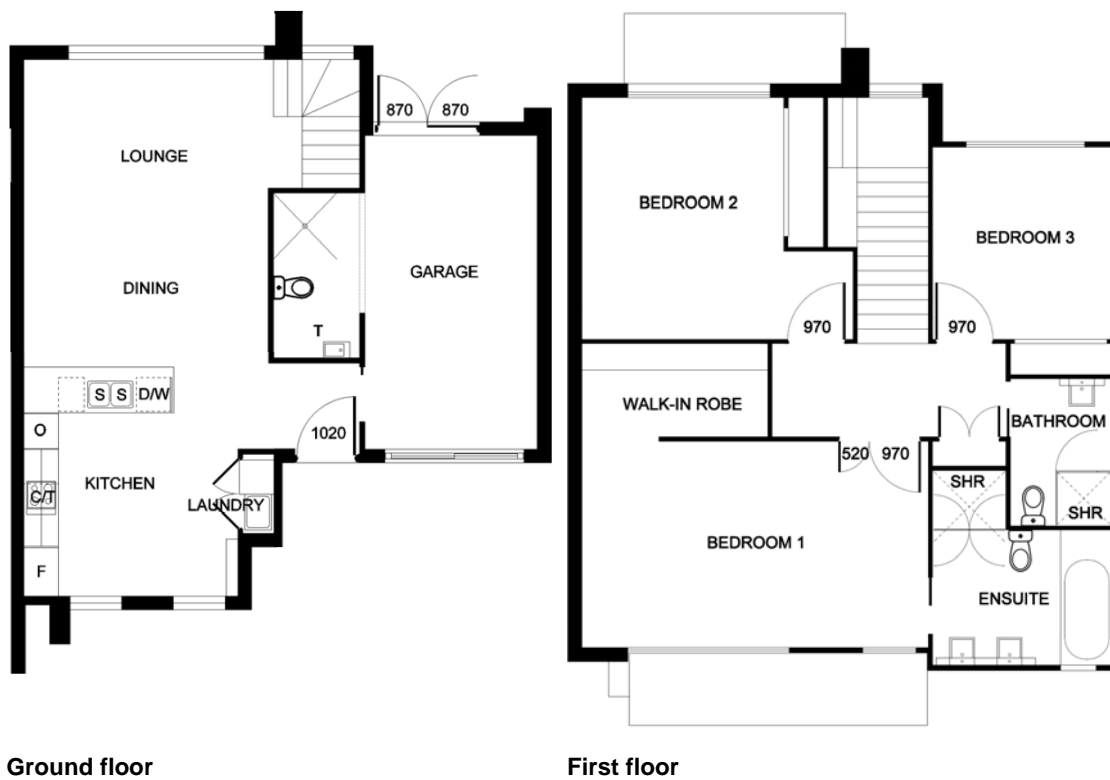


Figure 101: Attached house — Modified floor plan



Attached house — Universal

On the ground floor, the Universal Design solution was very similar to the Adaptable ground floor, with a bedroom space at the front and a long kitchen running down the wall (Figure 100). The main differences in these designs reflect the different intent of these approaches. The Universal bedroom also had blade walls on either side of the

room, but the door set was provided at the time of construction. The room could be converted instantly between an open-plan lounge and a bedroom as required, without any adaptation being required. Similarly, in the Universal bathroom the shower was placed in permanent use at construction. The different bathroom configuration and door placement would not be viable in the Adaptable Design, due to the door circulation spaces specified in AS 4299.

For first floor access there was sufficient space available to widen the staircase and eliminate the winder steps. Bedroom 2 and the first floor landing were reconfigured (though one built-in cabinet had to be removed) to provide circulation space. Sliding doors, and wall basins and cabinets, provided additional space for circulation in the ensuite and bathroom. The required toilet and shower circulation space were provided in the ensuite only, and achieved with frameless glass shower screens that could be rotated when space was needed. The first floor plan of the Universal house is shown in Figure 100.

Attached house — Modification

The modification of the attached dwelling was by far the most challenging design, due to the limited floor space on the ground floor and the focus on minimising costs while working with a constructed dwelling. The modified floor plan is shown in Figure 101.

The most influential decision in the design was the conversion of the garage to a bedroom. Though this would probably not be an acceptable solution if planned for an Adaptable Design, it appeared to be the most cost effective and space efficient approach in this dwelling, considering that an accessible parking space could not be achieved in the garage, but was readily available and semi-sheltered on the driveway.

To convert the garage, the garage floor needed to be raised to the dwelling floor level. Though there were many possible methods, a carpet lined floor, raised on battens was the solution chosen for simplicity and cost. However, unlike more robust flooring systems that could provide the flexibility of intermittent use for parking, this floor would have to be removed before a vehicle could park on it. The garage roller door was removed and glazed aluminium sliding doors were installed in the front door cavity, with a low-ramped threshold. To provide natural light, cross-ventilation and a more private outlook (as well the required doorway clearance), the rear wall of the garage was opened up and glazed double swing doors installed in place of the single door.

The internal wall framing of the original laundry-toilet was retained on the living-dining room side, but opened up on the garage side and stripped out for an en-suite. Due to space constraints, the circulation spaces for the toilet and shower had to extend into the bedroom. This resulted in less than optimum placement of sanitary fittings for privacy, aesthetics, and installation of grab rails, but was the most feasible method of achieving the required circulation space. Still, if the extended toilet pan was required, circulation space at the sink would be affected. There was insufficient space for a sliding door system or the circulation space around it, so the doorway was left open for installation of a curtain, panel screen or similar room divider. This solution might not be acceptable to some residents.

The laundry was relocated to the former pantry space in the kitchen; an expensive modification due to installation of plumbing pipe work, but there were few alternatives. The new kitchen design retained the fridge, wall cabinets and cook top, and replaced the pantry cupboard with wall oven cabinet of the same size. Other kitchen components could also be re-used; in particular, the expensive engineered quartz stone work top and servery island top.

The driveway also needed to be regraded to the new accessible bedroom floor, and new accessible entrance through the sliding doors. This grading could have been achieved at negligible cost if considered prior to construction.

Attached house — design issues

The front of the attached house was similarly configured to the separate house: a living area (kitchen) to one side, the main entrance in the middle and garage on the other side. Despite the separate house having a smaller ground floor area, at 9.4m wide, it was well over a metre wider than the separate house. This additional space provided a 1020mm wide entry door, which exceeded the clear door width requirement of every design approach. As the entrance doorway was aligned with the garage, there was ample circulation area.

Also similar to the separate house, the relatively narrow garage did not meet the AS 4299 C specification, but the combined width of the entrance path and driveway allowed parking outside. The first floor overhang also provided shelter for the front part of the vehicle.

Provision of a Visitable toilet in the toilet-laundry space was simple to achieve. The open-plan layout reduced construction cost of doorways and the partition wall, but the marketability of the toilet adjacent to the living-dining area would need to be examined. Fitting an accessible full bathroom on the ground floor was far more problematic due to the space constraints on the ground floor; to maintain the level of natural light and cross-ventilation the bathroom could not substantially encroach onto the middle of the dwelling.

The substantial size of the main bedroom and en-suite on the first floor limited the changes for circulation space. For a relatively small dwelling, having the accessible bedroom and bathroom on the first floor was a much more efficient use of space. However, the problem was achieving vertical access to the first floor. There was insufficient space for an accessible vertical platform lift in the interior without either removing the staircase, or blocking a large area of the ground floor and deleting the main walk-in-robe for a central lift. There was also no suitable location for an external lift to attach, without losing one of the bedrooms. An inclined chair lift could be accommodated (even though the staircase landing featured three spiral treads), but a platform inclined lift could not.

7.1.4 Apartment

The apartment development was in a Local Government Area that had Access and Adaptability provisions for apartments in their Development Control Plan.⁷ This included the requirement that all common facilities (including any toilet) on common property must be accessible (:22). In addition, '[a]ll units in a building two storeys and above are to be served by a lift, which must be accessible to the front door of each unit', and those units with 'a lowest floor level within 1.5 metres of the natural ground must be accessible to the front door of each unit'.(:21). A minimum of 5 per cent of units in blocks of 20 or more (or one unit in smaller blocks) had to comply with either AS 1428.2 or AS 4299 Class B (:22). Two-bedroom units required minimum floor space (exclusive of parking and balcony) of 110m² (:13) and two parking spaces (:20). In all units, adaptability was to be encouraged by the use of lightweight internal walls and design of bathrooms and kitchens for future low-cost modification (:22).

⁷ The *Baulkham Hills Shire Council Development Control Plan Apartment Building Part C Section 7* (September 2007) post-dates this development; however, the Duty Town Planner advised that these measures have been in force for several years.

The apartment used in the analysis was one of the standard apartments (not complying with AS 4299 or AS 1428.2). The apartment consisted of two bedrooms, the main bedroom with en-suite; a bathroom with laundry; open-plan kitchen-dining-living room; and a balcony. The apartment was located on level four of the building, with lift access from the street and the basement parking space. The lift enhanced accessibility, eliminating steps between the entrance, parking space and apartment entrance door. Similarly, within the apartment, there were no level changes at any of the door thresholds, including the bathroom. However, the door to the main balcony featured a threshold, and the balcony floor level was set down from the interior level. Another 'Juliet' balcony off the main bedroom had the same threshold and step down, but its size (approx 820 x 450 mm clear of open doors) limited its outdoor use.

The floor plan and images are shown in Figure 102 and Figure 103.

Figure 102: Apartment sales plan

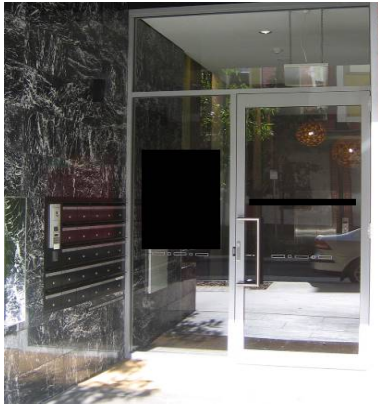


Source: brochure image supplied by developer – apartment

Figure 103: Apartment floor plan



Figure 104: Apartment — details



Main entrance



Lift entrance



Entrance door



Walk-in wardrobe



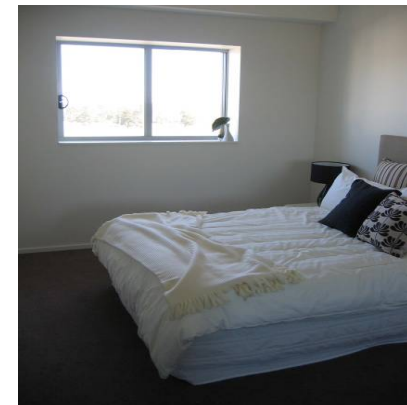
Bathroom door



En-suite



Walk-in robe



Bedroom 2

Apartment — Visitable

As previously discussed, the apartment building had a step-free path of travel from the main entry doors and parking space to the apartment entry. However, the entry door to the selected apartment was located close to the perpendicular front wall of the adjacent apartment. To achieve a front door clearance and circulation space to AS1428.1, the adjacent apartment would require the front wall to be inset by approximately 270mm, reducing the interior floor space. The cost of this change to the adjacent apartment has not been included in the analysis.

For a Visitable Design, the selected apartment required:

- An increased front door clearance width (increase 870mm front door leaf to next standard size: 920mm wide).
- An enlarged bathroom (moving bathroom-kitchen wall) to provide a Visitable toilet and circulation space at doorway.
- An increased bathroom door clearance width (increase 820mm door leaf to next standard size: 870mm wide).

The Visitable floor plan is shown in Figure 105.

Figure 105: Apartment floor plan — Visitable



Apartment — Adaptable

As the apartment had already addressed the critical Visitability requirement for an accessible approach to the dwelling, with the lift and no-step path from the street and parking entrance to the dwelling entrance door, the potentially most costly and complex changes were avoided. The main apartment changes to meet AS 4299 C were concerned with the provision of an accessible bathroom and kitchen. Due to the open-plan living-dining area, wide corridor and large main bedroom, the path of travel was generally sufficient, yet the circulation space needed at each door necessitated all doorways be moved and the corridor widened. All doorways were widened by 50mm.

The en-suite was selected to provide an Adaptable bathroom, as it was located next to the largest bedroom; it was assumed that a person with a disability living in a two-bedroom apartment would most likely be occupying the main bedroom and it already contained the shower. For construction the en-suite was widened by moving the wall and service shaft towards the main bathroom. The toilet and shower could then fit side by side on the back wall. A wall basin and cabinet could be installed adjacent to the new doorway, leaving the circulation space needed for a Visitable toilet. At Adaptation, the door would be turned to swing outward to provide doorway circulation.

The main bathroom would have insufficient space for the laundry circulation after Adaptation⁸. The laundry was to be relocated to the storage cupboard at Adaptation, with the floor tiled and pipe work available in the wall at the time of construction. The wall plumbing necessitated the meter box be relocated into the kitchen cabinet at construction. This solution was a compromise, as the corridor cupboard was just over 900mm wide; a narrow laundry tub and washing machine would be needed

The original kitchen was an L-shape, island bench. The island bench was primarily storage and bench space and designed to be removable, but removing it to eliminate the too-narrow space between opposing cabinets would lose storage space..

Another difficulty faced with AS4299 C compliance in the kitchen was the provision of work surfaces. The refrigerator was adjacent to the pantry rather than an 800mm long work surface, the cook top had less than 600mm work surface either side, and the oven was located under the bench, and hence without the adjacent work surface.

In the new Adaptable kitchen, the extension and relocation of the island bench close to the wall to accommodate sink and dishwasher plumbing changed the configuration to a U-shape. The refrigerator was relocated closest to the corridor and a wall oven moved to the internal corner of the kitchen for safety. The original pantry provided a substantial storage area with height-adjustable shelving, but the door was 600mm wide, giving a wheelchair user limited access (pantry storage is not considered in AS4299 C); it was replaced with shallow storage on the side wall. The new kitchen design, along with the increased en-suite-bathroom space, moved the kitchen much further into the dining area; the effect of this on marketability would need to be investigated.

The Adaptable floor plan at construction is shown in Figure 106, and the floor plan after adaptation is shown in Figure 107.

⁸ Though not designated as the accessible bathroom, the laundry within needed to be accessible.

Figure 106: Apartment floor plan — Adaptable at construction



Figure 107: Apartment floor plan — Adaptable after adaptation



Apartment — Universal

In the Universal Design, the 920mm door clearances and 1200mm corridor had a considerable impact on the design. Using standard door sizes, the front door required a 1020mm door leaf to achieve the 920mm clear door width due to the thickness of the fire door and the frame dimensions. The resulting circulation space would require

the front wall of the adjacent apartment to be moved; reducing its internal floor area (this has not been costed).

The bathroom and en-suite retained their existing overall space and the location of the service stack. However, the dividing wall was relocated to provide space for the toilet and sink approach in the en-suite. This required the laundry to be relocated into the adjacent corridor. The bathroom toilet and basin were then rotated 180° to the dividing wall, giving the bathtub access along its full length. To maintain circulation space inside the bathroom, the doors needed to be both outward swinging. Market acceptance of this door style would need to be assessed.

The circulation spaces were achieved in both the bathroom and en-suite, through the use of wall basins (in the same style as the original design), shallow wall cabinets rather than a vanity and a 900 x 1500mm shower with frameless full-width doors. A frameless rotating screen on the shower-bath provided circulation space and access to water controls from outside the bathtub. The requirement for frameless glass screens to avoid a small stepped frame on the floor meant a substantial increase in cost.

The Universal floor plan is shown in Figure 108.

Figure 108: Apartment floor plan — Universal



Apartment — Modifications

The constraints of the current apartment design, considering structural columns, service stack and utilities, were apparent in the modification of the original design. To avoid major modifications to walls, the original intention was to address the too-narrow clearance of the door leaves with offset hinges. However, the clear width would be unachievable using existing door frames. The current metal entrance and interior door frames would require removal and potentially the wall stud moved, then a new 50mm wider door and frame provided. The carpet at each doorway would require replacement at the threshold.

With the existing kitchen style and premium level of finish, including manufactured quartz stone work surfaces, residents might be unwilling to downgrade the kitchen for their modification, so the aim was to retain as much of the original fittings as practical. The difficulty of enlarging the pantry to fit the required access (and lack of alternative pantry storage) led to it being removed. To preserve the kitchen bench, the positions of the sink and worktop were retained, and the oven relocated to a new full height cabinet in place of the previous pantry. A new shallow pantry for small items and glassware was supplied and installed in the required 1550mm space between the oven and relocated refrigerator. Cabinets under the sink and cook top were removed to provide under-bench access. As there was no currently-available sink in the market that had a bowl <150 mm deep, it was assumed that this situation would change before the time of modification.

The cabinets featured a relatively short (100mm) plinth, meaning the potential for lowering the remaining cabinets was limited to about 50mm. The dishwasher had limited adjustability. To allow for a 150mm reduction to achieve a 750mm high bench, an allowance was made for replacing the dishwasher with a drawer style model, and replacing the remaining cabinet with a shorter unit. The kitchen island was moved to provide the required 1550mm clear space, but retained at its existing height. By installing a pull-out table in place of one of the island drawers, lower level island workspace could be provided.

The services stack restricted the provision of the required clear space in the bathroom or en-suite. Though accessible facilities in the en-suite would probably be most desirable in practice due to the proximity of the main bedroom; the lack of space and preference to avoid wall construction, re-waterproofing and re-tiling in two sanitary areas, led to the larger, main bathroom being modified. Still, the full shower clearance could not be achieved, with the new basin protruding into the circulation space. The bathtub and tiles needed to be removed and the floor regraded, waterproofed and tiled. However, bathtub plumbing was retained for ease of conversion to the original format, with a free-standing tub in future. Plumbing changes for the basin, tub removal, wall reinforcement and fixture relocation required that all walls be re-waterproofed and tiled.

The modified floor plan is shown in Figure 109.

Figure 109: Apartment floor plan — Modification



Apartment design issues

Logically, the apartment design would present the biggest challenge for circulation space to its smaller floor area and the need to consider approach to the dwelling through the common areas of the building as well as the dwelling itself. However, the apartment building in this case study had a number of advantages in its initial design. Firstly, due to the local council requirements, the building had been constructed with sufficient circulation space in public areas, a lift, and without steps on the path of travel; eliminating the need for considerable design changes and costs to comply with every design approach. Secondly, the council's requirement for two parking spaces for a two-bedroom unit provided more than sufficient space for AS 4299 C circulation around a single car. For those apartments only allocated a single space, accessible parking could still be relatively easily achieved due to the general provision of three parking spaces between structural columns. A resident requiring an additional parking space for a temporary or permanent disability had the option of negotiating use of two adjacent spaces with their neighbours, subject to compensation and strata agreement. Thirdly, the council's requirement made the additional circulation space requirements in the bedrooms, kitchen and bathroom more feasible.

Internally, circulation requirements did have the largest impact for each approach. Had consumer preference and market trends in apartment design not been a consideration, circulation could have been more easily addressed. For example, replacing the walk-in wardrobe with a standard wardrobe could have provided useful space for a large built-in laundry, or alternatively, the laundry could have been relocated to the kitchen. The constraints of maintaining design amenity added a degree of difficulty, as well considerable time to the design process. Compared to other dwelling types, the apartment design was also limited by the structural columns (which could not be resized or relocated) and the service shaft. It was necessary to relocate the shaft to provide a feasible Universal and Adaptable Design, but in other apartment buildings this might not have been possible.

7.1.5 Discussion

In the design analysis, the vast majority of the design criteria from each approach could be met in each of the dwellings, within the existing dwelling floor space. For those criteria that could not be met, only very minor increases in space would be required. There was a focus on minimising design changes to the dwellings, keeping the main functional areas in their original locations (which presumably the designers had based on market preferences), and maintaining the premium finishes. This was to avoid any reduction in amenity and marketability in the pursuit of accessibility. However, there were some compromises in design that were required to meet the criteria and it is important that the views of designers, builders and developers are sought regarding the acceptability of these.

The development of the new designs to meet the criteria for each of the design approaches varied in the complexity and design time involved. Visitability was the most easily implemented, in part due to the few criteria involved, but also due to the ground floor toilet in the houses, and minimal changes required to meet the accessible 'no-step' path of travel to the entrance. The local regulatory requirement for the no-step path in the apartment building eliminated what could have been the most complex and expensive (and probably unfeasible) change in the study, and highlights the importance of this critical accessible feature in high-density dwellings.

The most complex criteria to incorporate into the designs were the AS 4299 C features (used in both the Adaptable and modified design). These features could be well-suited to incorporation into institutional, specialised seniors or accessible housing

developments, and perhaps this is their purpose. However, for broader application into general housing developments, the complexity, ambiguity and need to continually consult other standards (particularly AS1428) requires a quantity of design time and familiarity with the intent of clauses, that could be unfeasible in the commercial housing design process. With two designs: construction and adaptation, and resulting increase in design documentation, the cost of design time, which is not generally factored into cost-benefit analyses, would increase considerably.

The very large circulation space requirements of AS4299 for doorways and for the shower and toilet have been directly adopted from AS1428.1, a standard intended for public buildings. The needs for space in a private dwelling could be very different from public buildings, as residents would wear different clothing, use different assistive devices, and be undertaking different activities at home. For more widespread implementation of accessible doorways and bathrooms in the general housing market, the spatial requirements of the home need to be identified and specified, rather than applying criteria from other environments.

The usual approach for AS 4299 in two-storey housing is to provide for access on the ground floor only. Certainly, this was shown to eliminate the perhaps prohibitive cost of a lift, and also avoids having to meet circulation space requirements on the first floor, where space for doorways and corridors competes with bedroom and bathroom size. However, in compact two-storey dwellings, such as the ones in the study, the additional ground floor bathroom and bedroom had a considerable effect on available space for kitchen and living areas and could be excessive in its ratio of bedrooms to bathrooms. Also, it would restrict residents who could not use the stairs to quite a small area of the dwelling; be isolated from other bedrooms, increasing the difficulty of overnight provision or receipt of care; and prevent the use of the generously-sized main bedroom and en-suite by a resident who could need or desire to use them. Increasing the market demand, and consequently the competition for residential lifts should lower costs, but currently the inclusion of a vertical lift would not be feasible in project housing at construction or as a modification.

Applying each of the design criteria to different dwelling types provided a valuable comparison of the implications of the same criteria in apartments and in lower density housing. The criteria for entry to dwellings differed between the design approaches, and even though the differences were minor, they had a considerable impact on the resulting designs. The criteria used for the Universal approach required that access be provided to the main entrance; for the other approaches, it was to any entrance. In the separate house design, the main entry requirement prevented use of the alternate double-door entry through the living room, and required considerable changes to the main front door, porch, foyer and adjoining garage and living space. In a house, entry through an alternative door to the main could be acceptable to people with mobility restrictions. However, in an apartment, it would be far less acceptable for a person with a mobility restriction to enter through an alternative door, such as a parking or service entrance. This highlights the importance of considering the acceptability of design criteria to all dwelling types.

The requirement for non-slip flooring in the dwellings, whether in 'wet rooms' only or throughout, presented a challenge. An R10 rating of slip-resistance was adopted in the absence of any clear requirement for slip-resistance in Australian Standards (HB197). Generally only commercial tiles are tested for slip-resistance, so many project home purchasers who select their own tiles would not be aware of their availability. There is a greater opportunity for non-slip tiling to be implemented in apartment developments, when the architect specifies the floor finishes.

Finally, the availability of products had a direct bearing on the implementation of criteria in the design approaches. For example:

- A sink that met the maximum 150mm bowl depth in the AS 4299 criteria could not be sourced from sink suppliers in the Australian market.
- A cost-effective sliding door system with an acoustic seal (a basic requirement for use in a bathroom) or a seal for preventing fume ingress from the garage to the house could not be sourced.
- To fit a dishwasher under a lowered kitchen bench, the only dishwasher option was one brand of drawer-style washer (other than a miniature bench top model).
- There were few bathroom rail products and other accessories that would provide support for a frail person in the bathroom. These were generally institutional in appearance and were not visually compatible with many ranges of bathroom accessories.

This suggests that product availability needs to be considered in the development and the updating of design criteria, and highlights many opportunities for new products in the Australian market.

7.2 Economic analysis of design approaches

Cost benefit analysis (CBA) was undertaken for the different policy options. CBA is an economic analysis tool to assist decision makers choose between policy options. The main advantages of CBA is that costs and benefits are all, where possible, expressed in monetary values; and are therefore directly comparable. CBA takes a society-wide perspective, rather than assessing costs and benefits accruing to a particular group or individual.

It is important to define the geographic scope of 'society' as it applies in the analysis. For the purposes of this study, 'society' was defined as Australia. The analysis was undertaken over a twenty-year timeframe, with a start year of 2010.

7.2.1 Policy scenarios tested

In order to assess the impact of a policy scenario, it is essential to define the 'basecase', or what would happen if the policy was not implemented. Costs and benefits associated with a policy can therefore be measured as 'marginal' to the basecase.

1. Basecase — Home Modifications

Under the basecase, home modification would be undertaken. It was assumed that home modification would be done in response to needs, and the rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.

For this policy, the Home Modifications were considered to be government-funded with housing access equivalent to what would be provided post-adaptation in AS4299 Category C.

In this analysis, the following alternative policy scenarios were tested against the basecase:

2. Visitable Design

For the 'Visitable' home policy scenario, the critical Visitability features defined in AS4299 would be incorporated into the initial construction of dwellings.

3. Adaptable Design

There are two variations of the Adaptable home policy scenarios, based on the design options for two-storey dwellings: applying AS4299 to the entry level of the dwellings only; or providing an appropriate method of vertical circulation to the upper storey and applying AS4299 to the entire dwelling. The AS4299 Category C features require variation in design and cost at the time of dwelling construction, then the planned adaptation and resulting cost in the future.

4. Universal Design

There is a single version of the Universal scenario, applied to both storeys of two-storey dwellings.

7.2.2 Costs

The costs associated with each policy scenario are set out below in Table 6. These costs are in 2009 Australian Dollars.

Table 1: Construction and modification costs

	<i>Modification</i>	<i>Visitable</i>	<i>Adaptable</i>		<i>Universal</i>
			construction	adaptation	
separate house					
ground floor only	37,235	-997	3,469	8,014	
ground and first floor			1,772	9,016	11,394
+ lift (l)/ stairlift (S/L)				(L) 65,000	
attached house					
ground floor only	40,378	-279	2,753	10,058	
ground and first floor			1,241	6,340	8,341
+ lift (l)/ stairlift (S/L)				(S/L) 16,000	
apartment	37,941	374	1,088	8,684	3,442

7.2.3 Benefits

Modification savings

The major benefit arising from Policy Alternatives 2–4 is that they avoid home modification costs.

Selection of non-construction cost savings method

Due to time and resource constraints, it was not possible to complete detailed independent calculation of non-construction cost savings for this study. Therefore, a benefit transfer approach was adopted. The benefit transfer method is used to estimate economic values by transferring available information from studies already completed in another location or context.

As set out in the Methodology Chapter, two sources were explored for calculating non-construction cost savings. The Hill PDA study was selected as the most appropriate source.

Hill PDA (1998, p.17) identify the non-construction cost economic savings associated with introducing Adaptable Housing as:

- Reduced need to move into residential care.
- Reduced cost of rehousing.
- Reduced government administration costs.
- Savings in home care costs for elderly.
- Savings in health care costs.
- Savings in reduced falls at home.

The annual value of these savings was quantified, and is shown in Table 7.

Table 7: Non-construction cost savings, Hill PDA (1998)

	<i>Potential annual saving</i>	<i>Present value over 30 years</i>
Savings in delaying the need to move into hostel care	\$ 112,800,000	\$ 437,000,000
Savings in delaying people with disability under 65 years into group home or institutional care	\$ 59,000,000	\$ 229,000,000
Savings in reducing HACC	\$ 75,200,000	\$ 291,000,000
Savings in reduced accidents	\$ 8,000,000	\$ 31,000,000
	Total	\$ 1,471,000,000

Source: Hill PDA (1998), Australian Dollars, Present Value calculated at 4% Discount Rate.

For the purpose of this analysis, the following steps were taken to convert these monetary values into a reasonable estimate of savings associated with the policy scenarios tested.

Firstly, the 1998 values were converted to 2009 values using the ABS 6401.0 Consumer Price Index, Australia. The values were then adjusted to take into account the quality of each of the benefits delivered by each policy option relative to Adaptable Housing (which the Hill PDA figures was based on). The comparison of benefits is shown in Table 8.

Table 8: Benefit comparison

	<i>Adaptable</i>	<i>Visitable</i>	<i>Universal</i>	<i>Modification</i>
Savings in delaying the need to move into hostel care				
Assume each approach provides same benefits after adaptation, except for Visitable Design, which provides the path of travel, but no bathroom facilities for wheelchairs or carers, or other features such as suitable kitchen, lighting, bedroom space etc.	100%	50%	100%	100%
Savings in reducing HACC				
Assume each approach provides same benefits.	100%	100%	100%	100%
Savings in reduced accidents				
Assume each approach would provide the same benefits for a no-step path of travel to essential features.				
Visitable Design provides the path of travel without slip resistant floor surfaces, no bathroom facilities for wheelchairs or carers, or other features such as suitable kitchen, lighting, bedroom space etc. that could reduce the risk of falls and other accidents, so is assumed to have half of the benefit.	100%	50%	120%	100%
Universal Design has an accessible bathroom and bedroom from the start, as well as lighting, and non-slip flooring in all areas, so it is assumed to have a higher benefit.				

The results of this adjustment are shown in Table 9.

Table 9: Non-construction cost savings, Hill PDA method, 100% application

<i>100% Application</i>									
<i>Base</i>		<i>Home Modification</i>		<i>Visitable Design</i>		<i>Adaptable Design</i>		<i>Universal Design</i>	
<i>Annual saving \$</i>		<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>
Savings in delaying the need to move into hostel care	\$ 155,838,404	100%	\$ 155,838,404	50%	\$ 77,919,202	100%	\$ 155,838,404	100%	\$ 155,838,404
Savings in reducing HACC	\$ 103,892,269	100%	\$ 103,892,269	100%	\$ 103,892,269	100%	\$ 103,892,269	100%	\$ 103,892,269
Savings in reduced accidents	\$ 11,052,369	100%	\$ 11,052,369	50%	\$ 5,526,185	100%	\$ 11,052,369	120%	\$ 13,262,843

Finally, these figures were adjusted again for use in the 20 per cent Policy Application scenario. The adjustment per cent applied above was multiplied by 0.20 to give a reduced value of savings. The adjusted values are shown in Table 10.

Table 10: Non-construction cost savings, Hill PDA method, 20% application

<i>20% application</i>									
<i>Base</i>		<i>Home Modification</i>		<i>Visitable Design</i>		<i>Adaptable Design</i>		<i>Universal Design</i>	
<i>Annual saving \$</i>		<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>	<i>%</i>	<i>\$</i>
Savings in delaying the need to move into hostel care	\$ 155,838,404	20%	\$ 31,167,681	10%	\$ 15,583,840	20%	\$ 31,167,681	20%	\$ 31,167,681
Savings in reducing HACC	\$ 103,892,269	20%	\$ 20,778,454	20%	\$ 20,778,454	20%	\$ 20,778,454	20%	\$ 20,778,454
Savings in reduced accidents	\$ 11,052,369	20%	\$ 2,210,474	10%	\$ 1,105,237	20%	\$ 2,210,474	24%	\$ 2,652,569

These savings are applied on a per annum basis in the modelling.

7.2.4 Dwelling projections

In order to assess the impact of the policy scenarios over the timeframe (2010 to 2030), it was necessary to estimate the number and type of new dwellings that would be built, or existing dwellings that would be modified, each year. The following methodology was used to derive this estimate.

The methodology is based on the rationale that dwelling types are selected based on household types. A linear forecast of household types based on the 1996, 2001 and 2006 Australian Bureau of Statistics Census data was undertaken for the period 2011 to 2026.

The dwelling type occupied by the different household types between 1996 and 2006 was then calculated, and the trend of household types over this period derived, and then projected to 2026. The 1996 to 2006 trend in household types was extrapolated to 2016, and held constant thereafter. This enabled dwelling type projections to be derived for 2011 to 2026.

The change in dwelling numbers in each five-year time period was used to calculate the number of new dwellings by type per annum, between 2010 and 2026. The number of new dwellings per annum was then assumed to be constant between 2026 and 2030.

7.2.5 Rate of policy application

It was necessary to make an assumption about the rate of demand for dwellings built or modified under the policy scenarios. Previous studies of Adaptable Housing have estimated that between 8 per cent⁹ and 20 per cent¹⁰ of new dwellings would need

⁹ Source: Hill PDA. 1998, *Adaptable Housing Study*, p.20.

¹⁰ Source: C. Cobbold, 1997, *A Cost Benefit Analysis of Lifetime Homes*, Joseph Rowntree Foundation: York.

to be built as Adaptable. The 8 per cent figure was based on the number of new dwellings that would need to be adapted immediately upon completion to meet the requirements of the purchaser. The 20 per cent figure was based on the number of dwellings that would need to be adapted to meet the needs of their owners over a longer (30-year) period. In the CBA, the following rates of policy application were assumed:

100 per cent policy application scenario

1. Home Modification — rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.
2. Visitable Design — 100 per cent of new dwellings per annum built to policy standard.
3. Adaptable Design — 100 per cent of new dwellings per annum built to policy standard, 20 per cent of existing dwellings modified every 15 years, which equates to 1.33 per cent of existing dwellings modified per year.
4. Universal Design — 100 per cent of new dwellings per annum built to policy standard.

Table 11 below shows the number of new dwellings built to policy standard per annum and existing homes modified, under the 100 per cent policy application scenario.

Table 11: Average homes built/modified to policy standard, 100% application

<i>100% application</i>	<i>Average 2010–2030</i>	
	Number of new dwellings built to policy standard per annum	Number of existing dwellings modified per annum
Separate house	64,928	83,946
Semi-detached, row or terrace house, townhouse	12,370	11,340
Flat, unit or apartment	14,579	15,155
<i>Total</i>	<i>91,877</i>	<i>110,441</i>

20 per cent policy application scenario

1. Home Modification — rate of home modification per annum over the timeframe of the project would be equal to the rate of new home construction under the other policy scenarios.
2. Visitable Design — 20 per cent of new dwellings per annum built to policy standard.
3. Adaptable Design — 20 per cent of new dwellings per annum built to policy standard, 20 per cent of existing dwellings modified every 15 years, which equates to 1.33 per cent of existing dwellings modified per year.
4. Universal Design — 20 per cent of new dwellings per annum built to policy standard.

Table 12 below shows the number of new dwellings built to policy standard per annum and existing homes modified, under the 20 per cent policy application scenario.

Table 12: Average homes built/modified to policy standard, 20% application

<i>20% application</i>	<i>Average 2010–2030</i>	
	Number of new dwellings built to policy standard per annum	Number of existing dwellings modified per annum
Separate house	12,986	83,946
Semi-detached, row or terrace house, townhouse	2,474	11,340
Flat, unit or apartment	2,916	15,155
<i>Total</i>	<i>18,375</i>	<i>110,441</i>

Discounted cash flow analysis

In order to model the costs and benefits arising from each option over time, discounted cashflow analysis (DCF) was undertaken. DCF is a method for valuing a project or investment using the concept of the time value of money. All future costs and benefits are estimated, and then discounted to give their present value.

The discount rate is a key input into the DCF. The discount rate is used to discount future cash flows to their present values, reflecting the time value of money. This is based on the economic assumption that investors (or, in a policy context, governments) would prefer to receive money today, than money at a point in the future. Therefore, costs and benefits that occur in the future must be 'discounted' to reflect their value today.

A higher discount rate gives a lower value to costs and benefits that occur in the future. Currently, the New South Wales Treasury directs use of a 7 per cent discount rate in cost benefit analysis, while the Victorian Government directs use of a 6 per cent rate. For the purposes of this analysis, a 6 per cent discount rate was selected.

In DCF, results are expressed in terms of a project or proposal's 'net present value'. This is the discounted value of the benefits, minus the discounted value of the costs. Another key measure is the 'benefit to cost ratio' or BCR. The BCR is a ratio of the present value of the benefits versus the present value of the costs. For decision making, the general rule is that policies with a positive net present value and a benefit to cost ratio greater than 1.00 are worthy of consideration for investment.

The key assumptions of the DCF were:

- 20 year timeframe, 2010 to 2030
- 6 per cent discount rate
- 0 per cent real cost inflation in construction costs

Scenarios tested

The Basecase (Home Modification) and three policy alternatives (Visitable Design, Adaptable Design and Universal Design) were tested under two scenarios. The first scenario compared costs and benefits for single level dwellings, assuming 100 per cent of dwellings were single storey. The second scenario compared costs and benefits for multi-level dwellings, assuming 100 per cent of dwellings were multi-level. Note that this includes two-storey houses, and is not a reference to apartment buildings. This highlights the additional costs of lifts (stair lifts or elevators) in multiple level dwellings.

It should also be noted that for the Adaptable Design policy, the benefits were counted when the dwelling was modified, not at dwelling construction.

7.2.6 Results

The results of the CBA included the following indicators for each policy scenario tested:

- present value of costs
- present value of benefits
- net present value
- benefit to cost ratio

The results are shown for all options, including the basecase. The marginal results are then shown. This is the relative costs and benefits for the three policy alternatives, compared to the basecase of Home Modification.

Single level dwellings

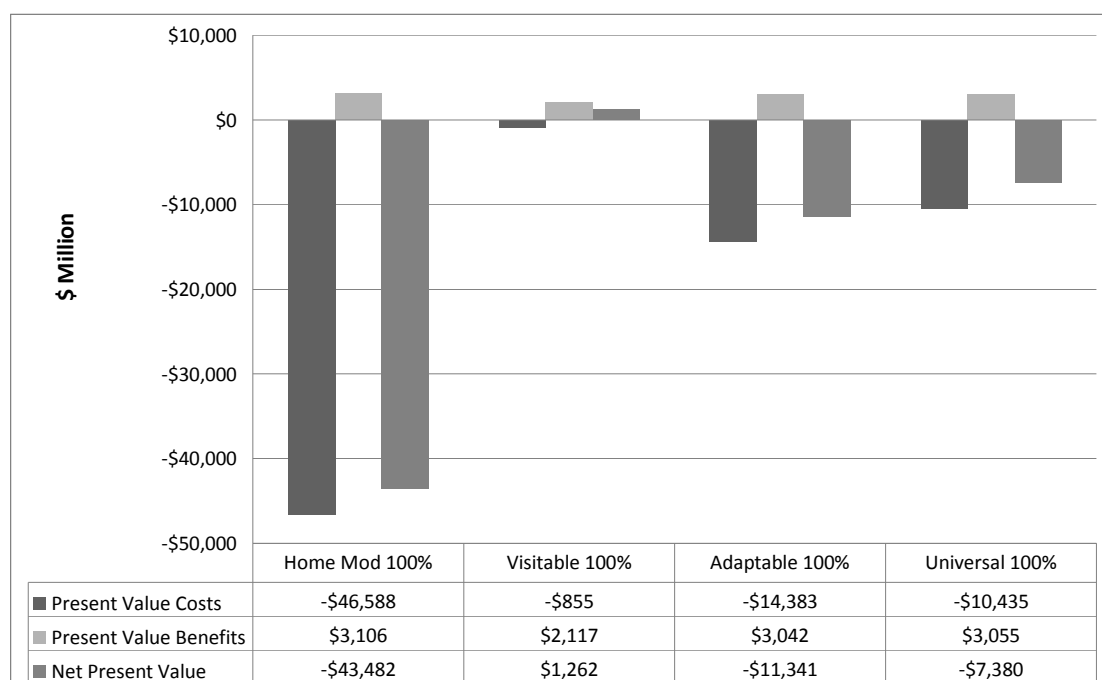
The overall CBA results — under the single level scenario — are set out in Table 13. The 100 per cent and 20 per cent policy application variations are shown in Figure 110 and Figure 113.

Table 13: CBA results — single level*

	\$			
\$ M 2009 Dollars	1,000,000			
<i>Policy scenario*</i>	<i>Present value costs</i>	<i>Present value benefits</i>	<i>Net present value</i>	<i>Benefit cost ratio</i>
Home Modifications				
100%	-\$46,588	\$3,106	-\$43,482	0.07
20%	-\$46,588	\$621	-\$45,967	0.01
Visitable Design				
100%	-\$855	\$2,117	\$1,262	2.48
20%	-\$171	\$423	\$252	2.48
Adaptable Design				
100%	-\$14,383	\$3,042	-\$11,341	0.21
20%	-\$11,106	\$608	-\$10,498	0.05
Universal Design				
100%	-\$10,435	\$3,055	-\$7,380	0.29
20%	-\$2,087	\$611	-\$1,476	0.29

*Uses ground level costs where available, excludes lifts

Figure 110: CBA results — single level — 100% policy application

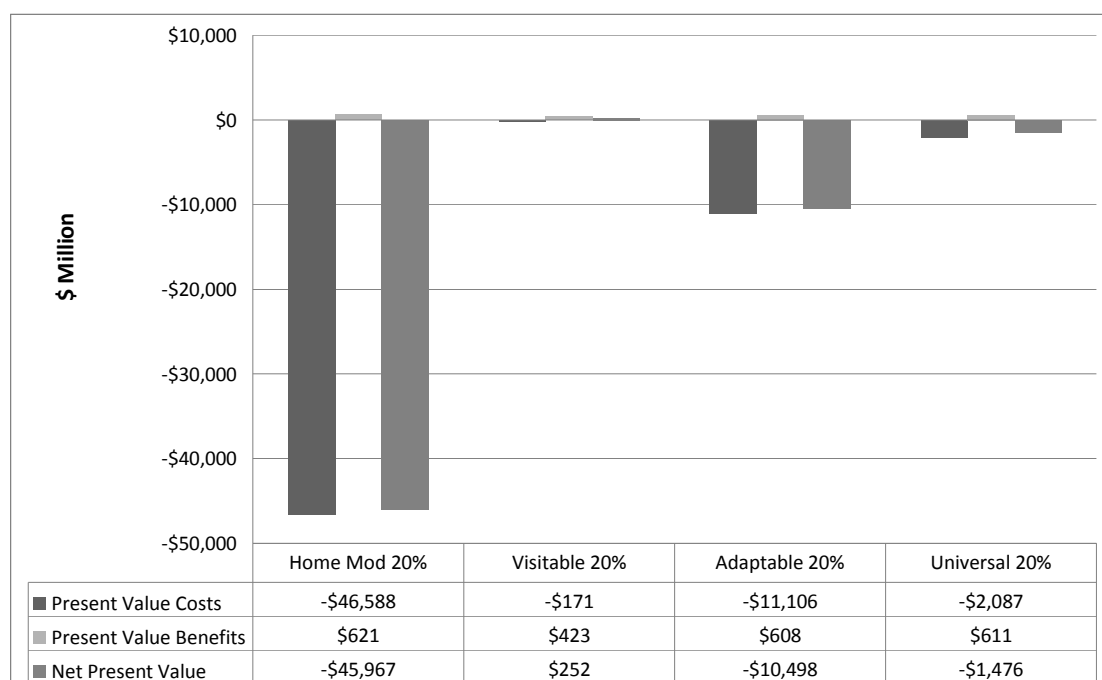


At 100 per cent policy application, Home Modification had the highest present value costs, at around \$47 billion. This was followed by Adaptable Design, at \$14 billion, and Universal Design, at \$10 billion. Visitable Design had the lowest present value costs, at \$855 million.

Home Modification, Adaptable Design and Universal Design delivered a similar level of benefits, with a present value of around \$3 billion each. Visitable Design delivered a lower level of benefits, at around \$2.1 billion.

The Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had an NPV of \$1.2 billion. Universal Design had the second highest NPV, at -\$7.4 billion, followed by Adaptable Design at -\$11.3 billion. Home Modification had the lowest NPV, of -\$43 billion.

Figure 111: CBA results — single level — 20% policy application



At 20 per cent policy application, Home Modification had the highest present value costs, at around \$46 billion. These were the same as the cost in the 100 per cent policy application variation, as Home Modification was assumed to take place at the same rate. This was followed by Adaptable Design, at \$11 billion, and Universal Design, at \$2 billion. Visitable Design had the lowest present value costs, at \$171 million.

Home Modification, Adaptable Design and Universal Design delivered a similar level of benefits, with a present value of around \$600 million each. Visitable Design delivered a lower level of benefits, at around \$4.2 million.

The Net Present Value (NPV) – or present value of the cost minus the present value of the benefits – was the highest for Visitable Design, which had an NPV of \$252 million. Universal Design had the second highest NPV, at - \$1.5 billion, followed by Adaptable Design at -\$10.5 billion. Home Modification had the lowest NPV, of -\$46 billion.

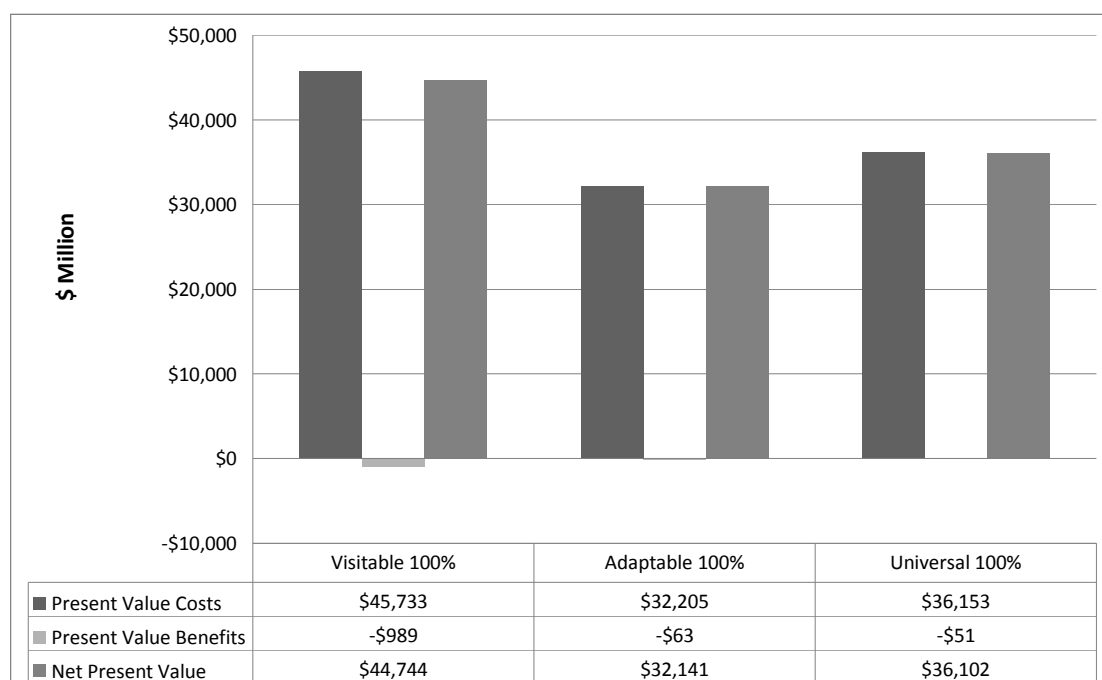
The Marginal CBA results — under the single level scenario — are set out in Table 14. This is the marginal values of the three policy alternatives relative to the basecase of Home Modification. The 100 per cent and 20 per cent policy application variations are shown in Figure 112 and Figure 113.

Table 14: Marginal CBA results — single level*

\$ M 2009 Dollars	\$			
	1,000,000			
<i>Policy scenario*</i>	<i>Present value costs</i>	<i>Present value benefits</i>	<i>Net present value</i>	<i>Benefit cost ratio</i>
Home Modifications				
100%	\$0	\$0	\$0	0.00
20%	\$0	\$0	\$0	0.00
Visitable Design				
100%	\$45,733	-\$989	\$44,744	2.41
20%	\$46,417	-\$198	\$46,219	2.46
Adaptable Design				
100%	\$32,205	-\$63	\$32,141	0.14
20%	\$35,482	-\$13	\$35,469	0.04
Universal Design				
100%	\$36,153	-\$51	\$36,102	0.23
20%	\$44,501	-\$10	\$44,491	0.28

*Uses ground level costs where available, excludes lifts

Figure 112: Marginal CBA results — single level — 100% policy application

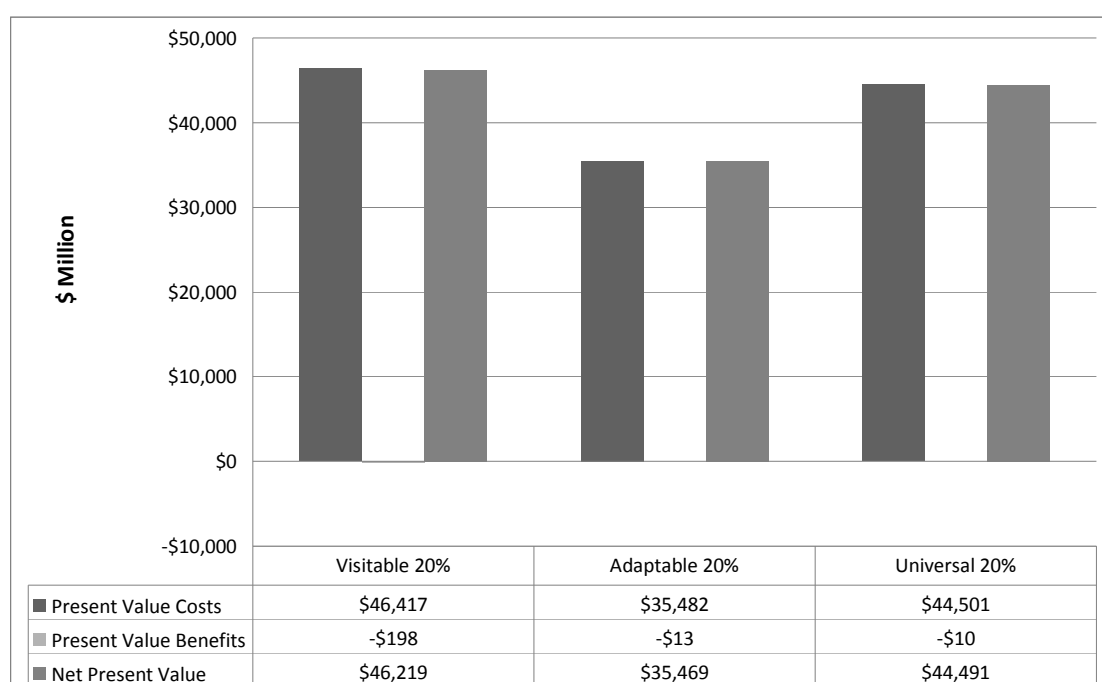


At 100 per cent policy application, Adaptable Design had the highest marginal present value costs, at +\$32 billion. This indicates that Adaptable Design is \$32 billion less costly than the basecase (Home Modification). Universal Design had marginal present value costs of +\$36 billion, while Visitable Design had the lowest marginal present value costs, at +\$45 billion, indicating that they are \$36 billion and \$45 billion cheaper than the basecase.

Adaptable Design and Universal Design delivered a similar level of benefits compared to the basecase. Visitable Design delivered a lower marginal level of benefits, at around \$1 billion less than the basecase.

The marginal Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had a marginal NPV of \$45 billion relative to the basecase. Universal Design had the second highest marginal NPV, at \$36 billion, followed by Adaptable Design at \$32 billion.

Figure 113: Marginal CBA results — single level — 20% policy application



At 20 per cent policy application, Adaptable Design had the highest marginal present value costs, at +\$35 billion. This indicates that Adaptable Design is \$35 billion less costly than the basecase (Home Modification). Universal Design had marginal present value costs of +\$44 billion, while Visitable Design had the lowest marginal present value costs, at +\$46 billion, indicating that they are \$44billion and \$46 billion cheaper than the basecase.

Adaptable Design and Universal Design delivered a similar level of benefits compared to the basecase. Visitable Design delivered a lower marginal level of benefits, at around \$200 million less than the basecase.

The marginal Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had a marginal NPV of \$46 billion relative to the basecase. Universal Design had the second highest marginal NPV, at \$44 billion, followed by Adaptable Design at \$35 billion.

Multiple level dwellings

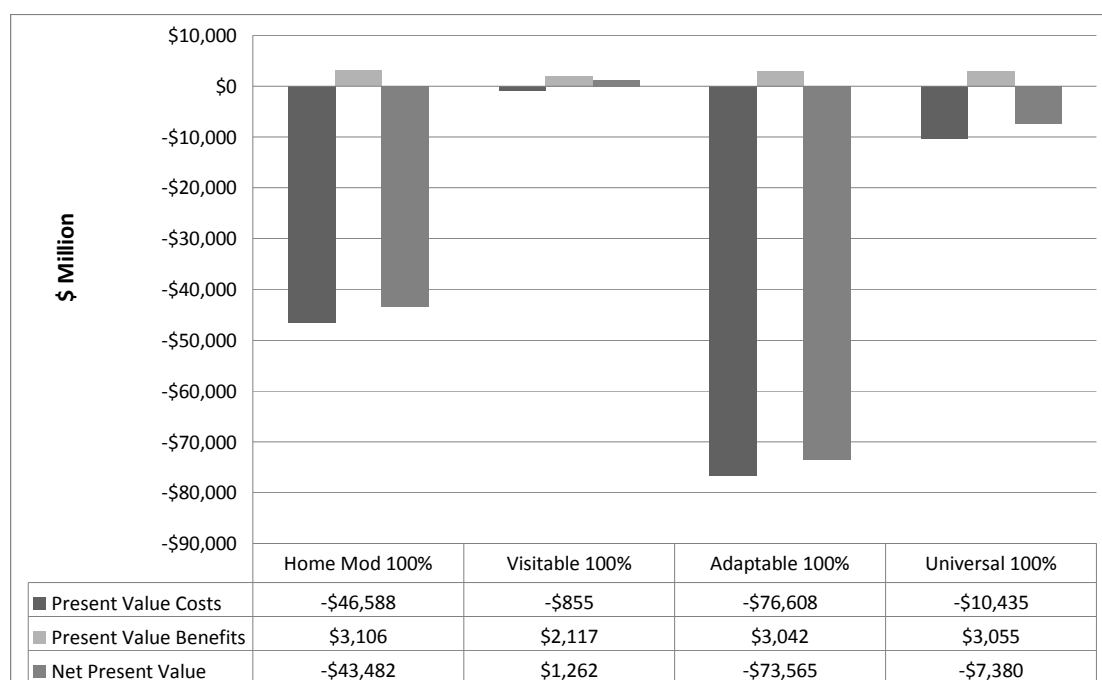
The overall CBA results — under the multi level scenario — are set out in Table 15. The 100 per cent and 20 per cent policy application variations are shown in Figure 114 and Figure 115.

Table 15: CBA results — multi storey

	\$			
\$ M 2009 Dollars	1,000,000			
<i>Policy scenario*</i>	<i>Present value costs</i>	<i>Present value benefits</i>	<i>Net present value</i>	<i>Benefit cost ratio</i>
Home Modifications				
100%	-\$46,588	\$3,106	-\$43,482	0.07
20%	-\$46,588	\$621	-\$45,967	0.01
Visitable Design				
100%	-\$855	\$2,117	\$1,262	2.48
20%	-\$171	\$423	\$252	2.48
Adaptable Design				
100%	-\$76,608	\$3,042	-\$73,565	0.04
20%	-\$74,536	\$608	-\$73,927	0.01
Universal Design				
100%	-\$10,435	\$3,055	-\$7,380	0.29
20%	-\$2,087	\$611	-\$1,476	0.29

*Uses ground and upper level costs where available, INCLUDES lifts

Figure 114: CBA results — multi level — 100% policy application

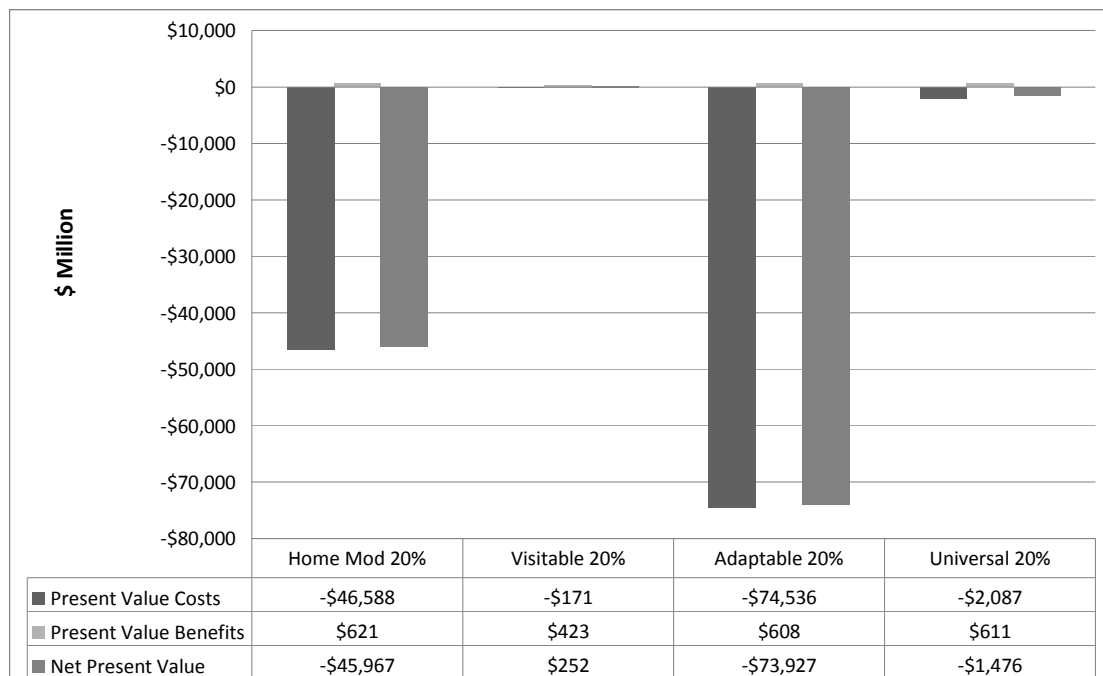


At 100 per cent policy application, Adaptable Design had the highest present value costs, at around \$77 billion. This was followed by Home Modification, at \$47 billion, and Universal Design, at \$10 billion. Visitable Design had the lowest present value costs, at \$855 million.

Home Modification, Adaptable Design and Universal Design delivered a similar level of benefits, with a present value of around \$3 billion each. Visitable Design delivered a lower level of benefits, at around \$2.1 billion.

The Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had an NPV of \$1.2 billion. Universal Design had the second highest NPV, at -\$7.3 billion, followed by Home Modification at -\$43 billion. Adaptable Design had the lowest NPV, of -\$74 billion.

Figure 115: CBA results — multi level — 20% policy application



At 20 per cent policy application, Adaptable Design had the highest present value costs, at around \$75 billion. This was followed by Home Modification, at \$47 billion. This was the same as the cost in the 100 per cent policy application variation, as Home Modification was assumed to take place at the same rate. Universal Design had the third highest costs, at \$2 billion. Visitable Design had the lowest present value costs, at \$171 million.

Home Modification, Adaptable Design and Universal Design delivered a similar level of benefits, with a present value of around \$600 million each. Visitable Design delivered a lower level of benefits, at around \$4.2 million.

The Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had an NPV of \$252 million. Universal Design had the second highest NPV, at -\$1.5 billion, followed by Home Modification at -\$46 billion. Adaptable Design had the lowest NPV, of -\$74 billion.

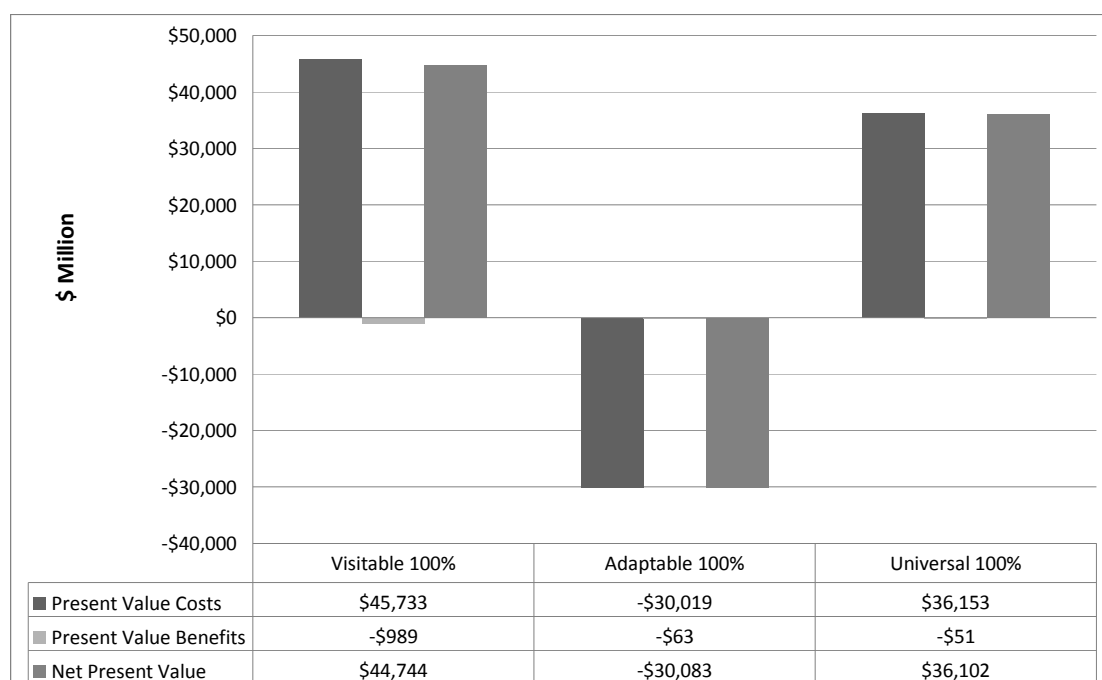
The Marginal CBA results — under the multi level scenario — are set out in Table 16. This is the marginal values of the three policy alternatives relative to the basecase of Home Modification. The 100 per cent and 20 per cent policy application variations are shown in Table 16 and Figure 117.

Table 16: Marginal CBA results — multi level*

	\$			
\$ M 2009 Dollars	1,000,000			
<i>Policy scenario*</i>	<i>Present value costs</i>	<i>Present value benefits</i>	<i>Net present value</i>	<i>Benefit cost ratio</i>
Home Modifications				
100%	\$0	\$0	\$0	0.00
20%	\$0	\$0	\$0	0.00
Visitable Design				
100%	\$45,733	-\$989	\$44,744	2.41
20%	\$46,417	-\$198	\$46,219	2.46
Adaptable Design				
100%	-\$30,019	-\$63	-\$30,083	-0.03
20%	-\$27,947	-\$13	-\$27,960	-0.01
Universal Design				
100%	\$36,153	-\$51	\$36,102	0.23
20%	\$44,501	-\$10	\$44,491	0.28

*Uses ground and upper level costs where available, INCLUDES lifts

Figure 116: Marginal CBA results — multi level — 100% policy application

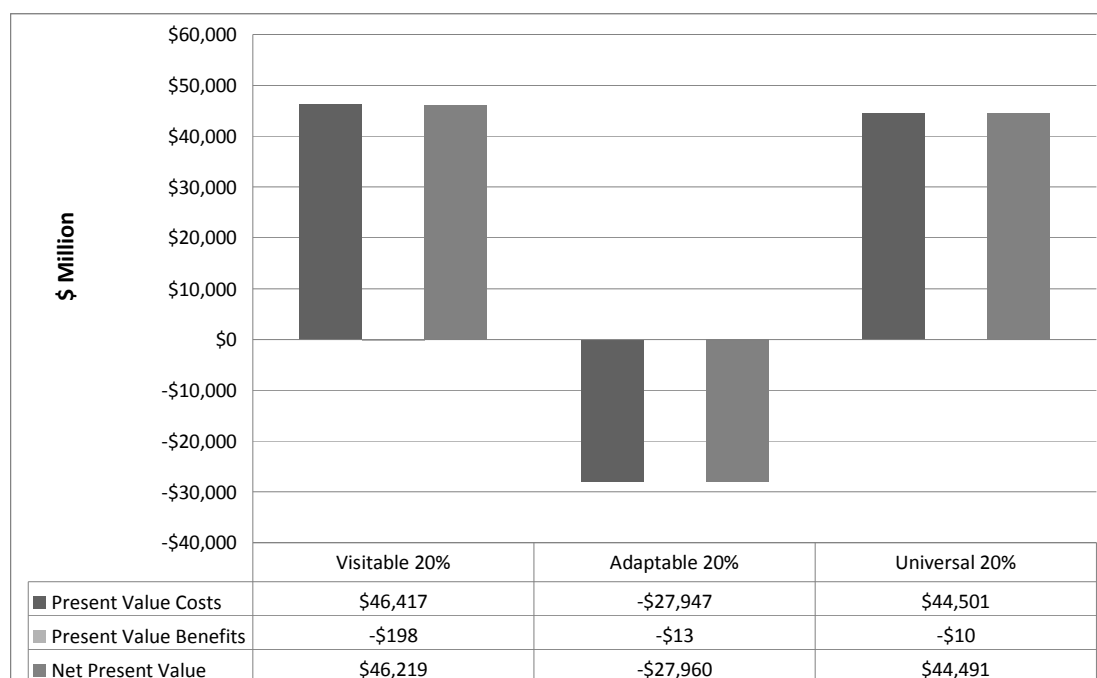


At 100 per cent policy application, Adaptable Design had the highest marginal present value costs, at \$30 billion. This indicates that Adaptable Design is \$30 billion more costly than the basecase (Home Modification). Universal Design had marginal present value costs of +\$36 billion, while Visitable Design had the lowest marginal present value costs, at +\$46 billion, indicating that they are \$36 billion and \$46 billion cheaper than the basecase.

Adaptable Design and Universal Design delivered a similar level of benefits compared to the basecase. Visitable Design delivered a lower marginal level of benefits, at around \$1 billion less than the basecase.

The marginal Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had a marginal NPV of \$45 billion relative to the basecase. Universal Design had the second highest marginal NPV, at \$36 billion. Adaptable Design had a negative marginal NPV of -\$30 billion.

Figure 117: Marginal CBA results — multi level — 20% policy application



At 20 per cent policy application, Adaptable Design had the highest marginal present value costs, at \$28 billion. This indicates that Adaptable Design is \$28 billion more costly than the basecase (Home Modification). Universal Design had marginal present value costs of +\$44 billion, while Visitable Design had the lowest marginal present value costs, at +\$46 billion, indicating that they are \$44 billion and \$46 billion cheaper than the basecase.

Adaptable Design and Universal Design delivered a similar level of benefits compared to the basecase. Visitable Design delivered a lower marginal level of benefits, at around \$200 million less than the basecase.

The marginal Net Present Value (NPV) — or present value of the cost minus the present value of the benefits — was the highest for Visitable Design, which had a marginal NPV of \$46 billion relative to the basecase. Universal Design had the second highest marginal NPV, at \$44 billion. Adaptable Design had a negative marginal NPV of -\$28 billion.

7.2.7 Benefit to cost ratio summary

Table 17 summarises the benefit to cost ratio (BCR) for all of the scenarios tested.

Table 17: BCR summary

	Single storey		Multi storey	
	Full CBA	Marginal CBA	Full CBA	Marginal CBA
Home Modifications				
100%	0.07		0.07	
20%	0.01		0.01	
Visitable Design				
100%	2.48	2.41	2.48	2.41
20%	2.48	2.46	2.48	2.46
Adaptable Design				
100%	0.21	0.14	0.04	-0.03
20%	0.05	0.04	0.01	-0.01
Universal Design				
100%	0.29	0.23	0.29	0.23
20%	0.29	0.28	0.29	0.28

This indicates that Visitable Design is the only policy option to consistently deliver a positive BCR (over 1.00). A BCR over 1.00 means the ratio of the benefits to costs is positive over the evaluation period (20 years).

In the single level scenario, Adaptable Design had the second highest BCR. Universal Design is third, while Home Modifications had the lowest BCR.

In the multi-level scenario, however, Adaptable Design performs very poorly, with the lowest BCR. Universal Design had the second highest BCR in this scenario.

7.2.8 Discussion

Visitable Design was the only policy alternative with BCR above 1.00, which indicates that the benefits exceed the costs. This relatively high BCR is influenced by two factors. Firstly, Visitable Design has the lowest costs of any of the policy alternatives, by a large margin. Secondly, the assessment of the benefits of Visitable Design compared to the other policies may have been too generous.

The number of levels in the dwellings was an important variable. In a single level scenario, Home Modification is clearly the worst performer — with very high costs relative to the policy alternatives. In a multi-level scenario, Adaptable Design performed the worst, even compared to Home Modification. This was driven by the very high cost of installing lifts in the Adaptable Design option. This assessment may be somewhat misleading, in that the Home Modification basecase did not include consideration of costs in accessing the second storey of a dwelling. Despite this qualification, the analysis clearly highlights the importance of the single level versus multi-level dwelling mix in determining the costs of the policies.

Overall, the CBA suggests that Visitable Design, Universal Design, or ground level only Adaptable Design are the most viable policy options. Home Modification performed poorly, and its high cost relative to the other options indicates it is a suboptimal policy.

Visitable Design is the least costly policy alternative, but it delivers fewer benefits than the other options. Universal Design is a more expensive option, but it delivers a higher level of benefits. Adaptable Design also delivers a higher level of benefits compared

to VISIBLE Design. However, the costs of accessing the second level of a dwelling in Adaptable Design are prohibitive.

7.2.9 Limitations of methodology

The CBA methodology has some limitations. The reliance on Hill PDA for non-construction cost benefits is a weakness of the analysis, in that this data is now over ten years old. More study is needed in Australia on the non-construction cost benefits of Adaptable, Universal and VISIBLE Design. However, the majority of the benefits come from construction costs savings, and these have been calculated to a high level of detail in the design section of this project.

While the robustness of the dwelling projections is also subject to a number of assumptions, each policy scenario used the same set of projections so the results are directly comparable.

7.3 Consumer acceptance and demand for design approaches

The following questions were included in the survey to ascertain consumer demand for three different approaches to design for greater accessibility (Universal Design, Adaptable Design and VISIBLE Design) compared with the option of moving to a more suitable home,

If you develop a disability and/or your need for assistance increases, how important would it be...?

- A. That the home you were living in...
 - i. Will meet your needs without modifications being required.
 - ii. Can be modified easily at low cost to meet your needs.
- B. That you can move to a home...
 - i. That better meets your needs.
 - ii. That is specially designed for older people.
- C. That the homes of friends and family you like to visit...
 - i. Have no steps leading to the entrance.
 - ii. Have a toilet on the entry level of two-storey housing.
 - iii. Have a kitchen and a dining room on the entry level of two-storey housing.
 - iv. Have a bedroom on the entry level of two-storey housing.

Question A (i) was to indicate consumer support for the Universal Design approach, question A (ii) for the Adaptable Design approach, and Questions C (i-iv) for the VISIBLE Design approach (although all four of these features are also embodied within the concepts of Universal and Adaptable Housing. Question B (i & ii) were to indicate support for moving from the current dwelling to something more suitable. Responses were on a five point scale from very important to not important. These have been re-coded into three categories for the purpose of this analysis — important, neutral and not important.

The following sections outline the response to these questions and compare the differences in importance attributed to them by the respondents. Since the principles of VISIBLE Design are common to all three approaches, this was also discussed in

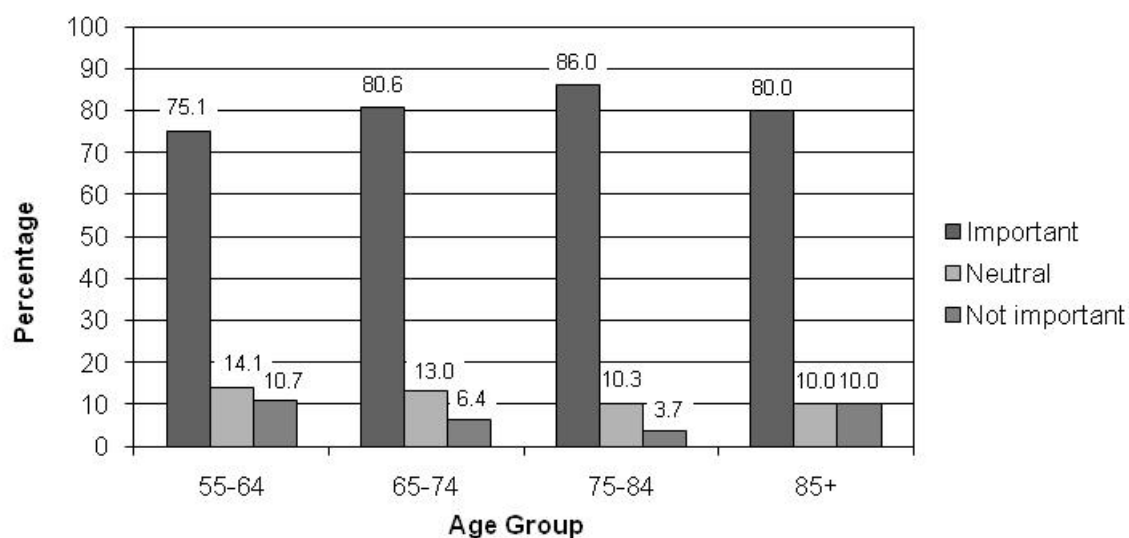
the in-depth interviews, particularly to ascertain the views of interviewees on whether it should be regulated for application to all new dwellings.

7.3.1 The Universal Design option

A total of 78.4 per cent of respondents regarded this approach as important, 13.4 per cent were neutral, and only 8.4 per cent as not important. Figure 118 shows their responses by age group, which shows increasing importance with age over the first three age cohorts by a total of 10 percentage points. This suggests strong support among older homeowners for the Universal Design approach increasing with age.

Figure 118 Importance of current home meeting needs without modification in the event of developing a disability or increased need for assistance

(n=1139)



Note: 85+ figures are unreliable due to small sample size (n=10)

7.3.2 The Adaptable Design option

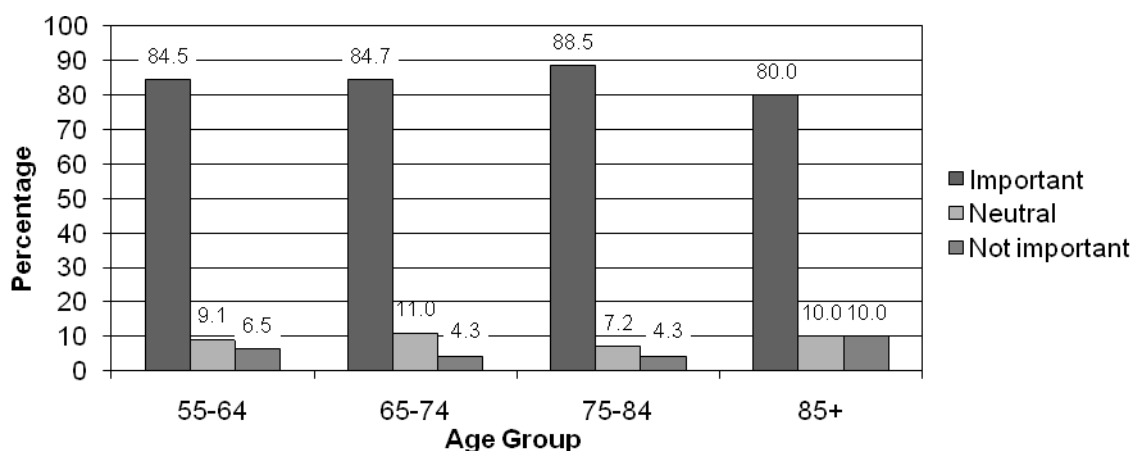
An indication of acceptance of the Adaptable Design option was sought by asking the following question: 'If you develop a disability and/or your need for assistance increases, how important would it be that the home you are living in can be modified easily and at low cost to meet your needs?'

Being able to easily modify the current home was regarded as important by 85.0 per cent of all respondents with only 5.5 per cent regarding this as not important and 9.5 per cent neutral.

Figure 119 shows the breakdown by age group and indicates similarly high importance for this option across all age groups peaking in the 75-84 age group at 88.5 per cent. This indicates an even stronger level of consumer support for Adaptable Design than Universal Design.

Figure 119: Importance of being able to modify the current home easily and at low cost in the event of developing a disability or an increased need of assistance

(n=1139)



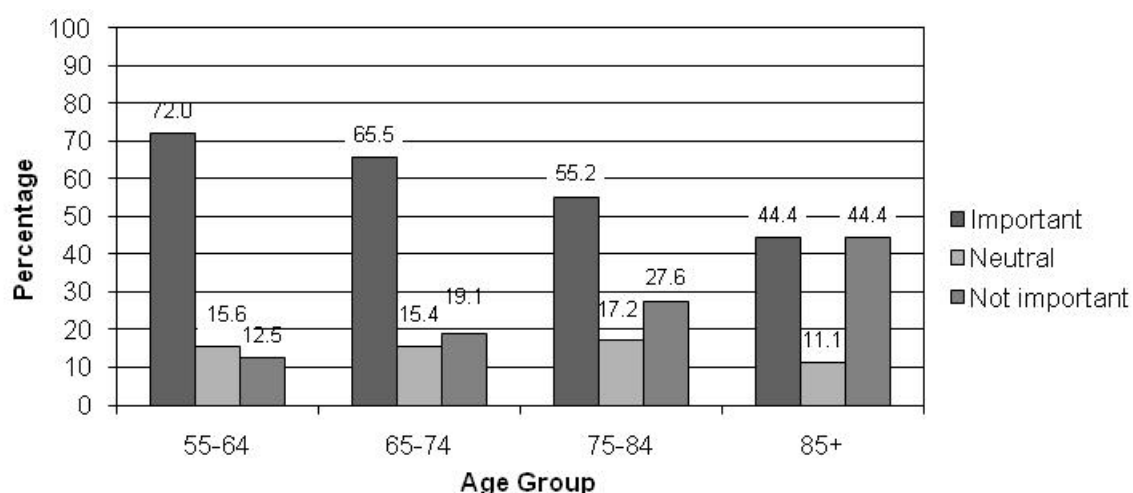
Note: 85+ figures are unreliable due to small sample size (n=10)

7.3.3 The option of moving to a more suitable home

Overall, 67.9 per cent of all respondents regarded moving to a more suitable home as an important option should they develop a disability or increased need for assistance. When cross tabulated with age (Figure 120), a decrease over the age groups is evident from 72.0 per cent among 55–64 year olds to only 55.2 among 75–84 year olds. This suggests much stronger acceptance, increasing with age, among older home owners for the Universal Design approach that permits an ageing person to remain in a home without modifications rather than moving to a better designed dwelling.

Figure 120: Importance of being able to move to a home that better suits needs in the event of developing a disability or increased need for assistance

(n=1086)



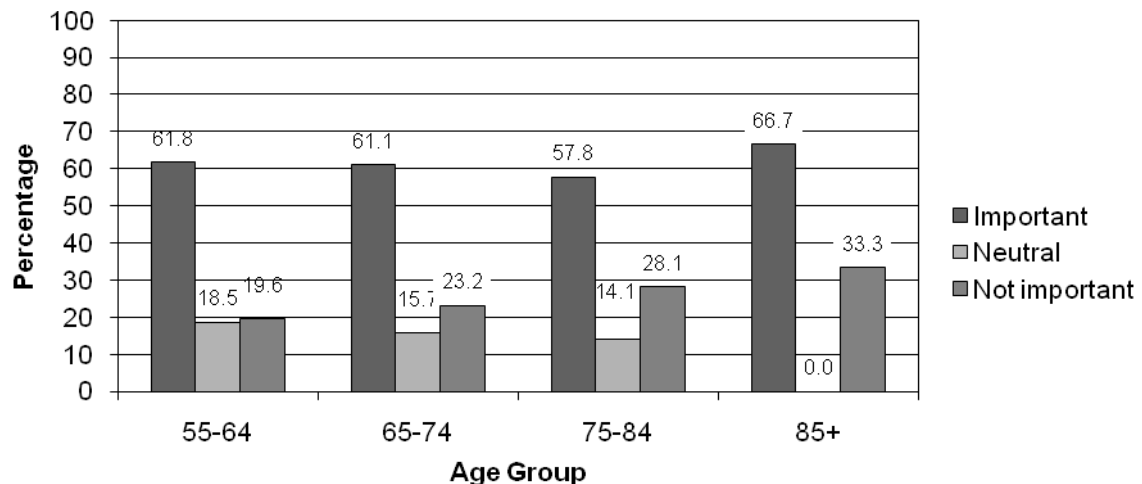
Note: 85+ figures are unreliable due to small sample size (n=9)

Figure 121 shows responses to the associated question of the importance of moving to a home or development specially designed for older people; this could be in the

form of a Seniors Housing project, or a retirement village. Overall, 61.1 per cent of respondents regarded this option as important or very important with little apparent variation with age group.

Figure 121: Importance of moving to a home specially designed for older people in the event of developing a disability or an increase need of assistance

(n=1006)



Note: 85+ figures are unreliable due to small sample size (n=9).

7.3.4 Visitable Design

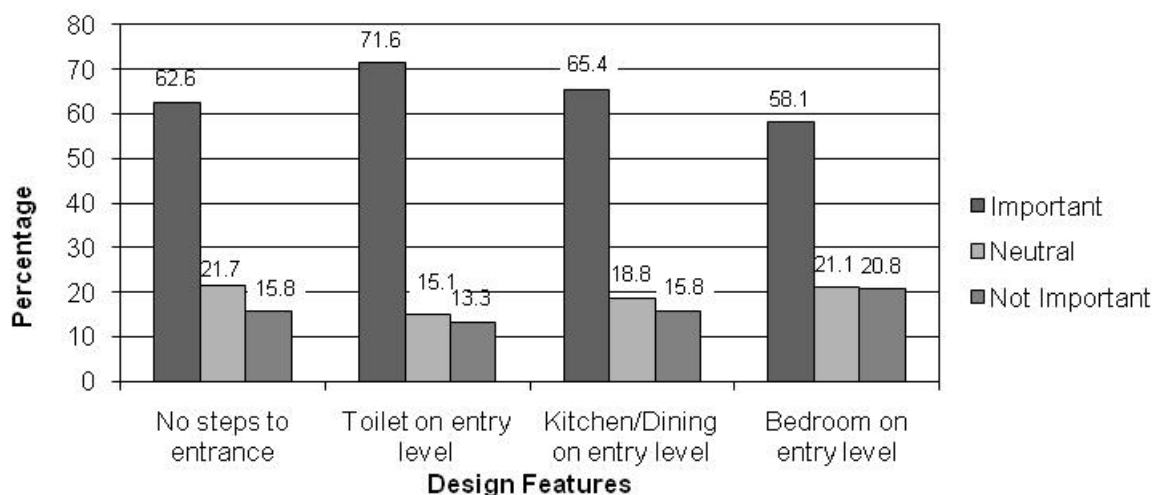
The importance of Visitable Design was examined by seeking response to four separate design features including having:

- No steps leading up to the building entrance.
- A toilet on the ground floor of a two-storey dwelling.
- Kitchen and dining room located on the ground floor of a two-storey dwelling.
- A bedroom on the ground floor of a two-storey dwelling.

Overall responses to these are compared in Figure 122 below. The highest importance was given to having a toilet on the ground floor (71.6%), with a ground floor toilet (65.4%) and no steps to the front entrance (62.5%) being of secondary importance and a ground floor bedroom given the least importance (58.1%). The mean value for importance based on these four variables was 64.5 making it the least favoured of all four design approaches.

Figure 122: Importance of Visitable Design features in friends/family homes

(n=1187,1179, 1168 and1158 respectively)



The four graphs (Figure 123 to Figure 126) show differences between the four age cohorts in terms of their attitudes concerning the importance of these Visitable Design features. There are only fairly small differences between age groups on the importance of each of these features. In each case, figures for respondents 85 and over are unreliable due to the small number of respondents in this category.

The interviews reflected the mixed views behind the lower importance placed on Visitable Design. It was outlined to interviewees that some countries have regulated Visitable features for all homes, namely: no steps leading to the entrance; wider doors for wheelchair access and having ground floor bathroom, kitchen, dining and at least one bedroom to enable people with disabilities to visit. Then they were asked what they thought about this kind of regulation. Some offered unqualified support for regulation of Visitable Design because of the increasing number of older people with disabilities:

I think it is a good idea to, if you're going to build that in Australia, because the population is going to grow older, you will have more and more people needing it, so why not build it now, and not afterwards, have to rebuild? So I would say yes... [Y]ounger people can live with the same facilities, and it is no problem to them. (P600 — female, 70–74 years, CALD, living alone, capital city, pensioner.)

Figure 123: Importance of no steps leading to the entrance

(n=1006)

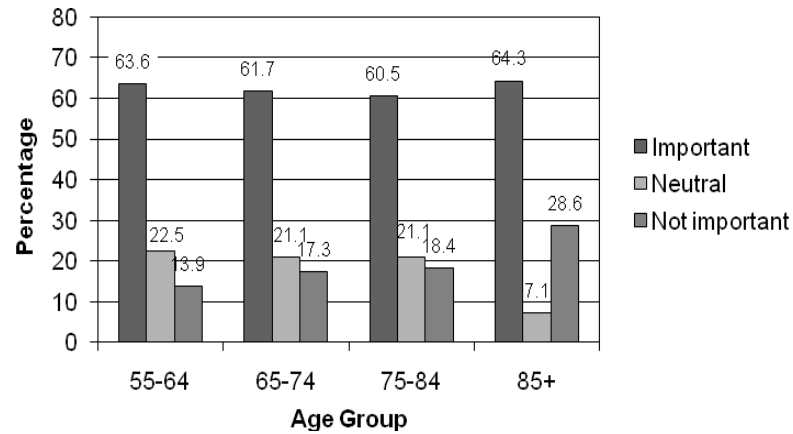


Figure 124: Importance of toilet on entry level

(n=1179)

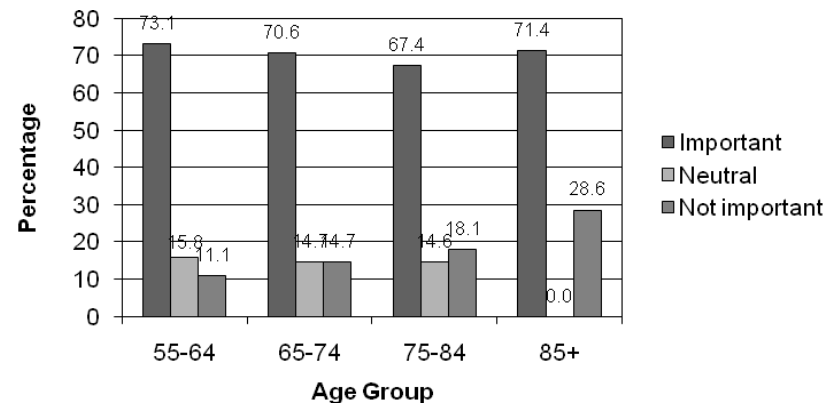


Figure 125: Importance of kitchen/dining on entry level

(n=1168)

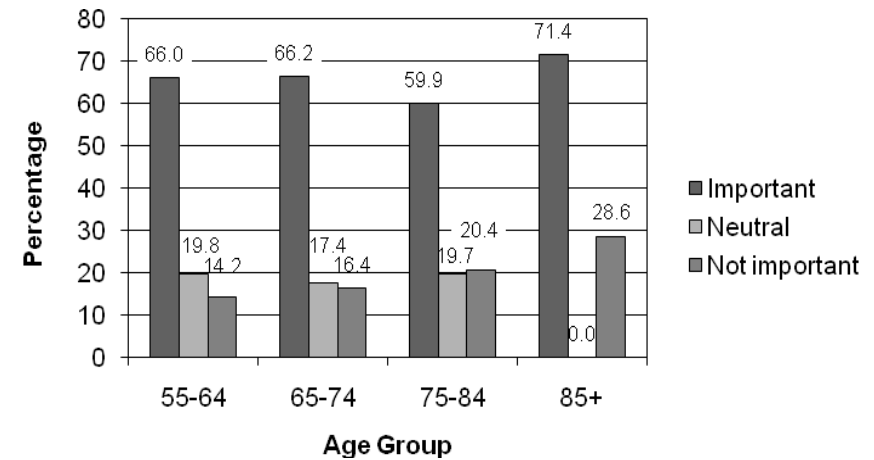
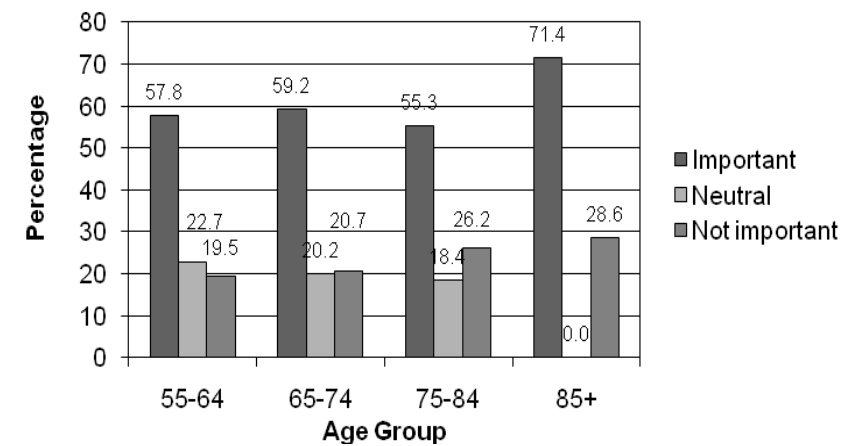


Figure 126: Importance of bedroom on entry level

(n=1158)



Many of those who supported regulation of such Visitable features were people who had personal experience with disabilities of their own, their family or friends.

I think that would be a good idea for new homes. I mean I see the difficulty, [friend's name]'s mum has problems with her knees and her feet and hands, you know, and she's only got one lung that works and so I see the struggle she has getting up and down just the few stairs we have at the front and back there. And so I think probably wheelchair access or ramp access for someone who has trouble with stairs would be a good idea. (P1216 — male, 55–59 years, regional, working full time, requiring assistance.)

Others recognised the benefits for people with temporary rather than permanent disabilities.

I think they should [regulate for Visitable Design], I think they should, yes. There are too many now. There are a lot of people that have problems... just the fact of a knee or hip replacement; you still need to be mobile. (P1114 — female, 55–59 years, living alone, coastal regional, attached dwelling, self-funded retiree.)

Some differentiated between regulating for new and existing housing:

If you're building a new house, that's fair enough, but I don't think existing houses should be required to comply...I think that's a bit naughty. I don't have a problem with new housing complying, that would be reasonable. (P1274 — male, 60–64 years with partner, suburban, separate house, self-funded retiree.)

Other supporters felt that such regulations would add little to the cost of housing.

I think you have got to have ramp access and you have got to take into account that your spaces have to be designed in such a way that you can comfortably access them in a wheelchair. I don't think it adds substantially to the cost because if you plan the thing properly in the first place it doesn't add more than about one per cent to the area, but to add it in afterwards is totally impossible, as you know. (P1252 — male, 80–84 years with partner, suburban, flat/apartment, self-funded retiree.)

There was also recognition that such design did not necessarily have to be ugly:

I would agree and the thing is that you could make all those things aesthetically pleasing. Walking up a ramp can be just as enjoyable as walking up steps. It's just the traditional thing that's implanted in our minds, oh we need a step to go up to the house, but if you've got a ramp that is set out the right way and I've been in several buildings and thought this is quite easy and it's easy for a wheelchair operator too. (P784 — couple, age not specified, suburban, separate house, self-funded retiree.)

Most negative responses to regulating Visitable Design expressed concern about over-regulation impinging on individual freedom or adding unnecessarily to the cost of housing.

I think it might be interfering a bit... I doubt it is something that anybody would be thinking of when they bought their first home. I wouldn't expect it. I wouldn't agree with it either. (P1554 — female, 85+ years, living alone, suburban, separate house pensioner requiring assistance.)

Not really... Not everyone has people who need wheelchairs and things. I think that's spending a lot of money on something that is not really necessary.

(P392 — female, 70–74 years, living alone, CALD, suburban, separate house, working part-time.)

Some respondents had mixed opinions, being mindful of the needs of people with disabilities but cautious about regulating these features for all new dwellings.

I don't see the need for having every place set up that way, unless somebody has visitors in that situation, or have difficulties or handicaps, so I don't see any reason why you need to set up every property in the same way, although if there was some regulation that said any new place built had to have that, that would probably be okay because it would save you having to demolish walls and make bigger doors or something if a person became incapacitated. Like if I had a problem and needed a wheelchair obviously I couldn't stay here, but as a general rule I don't see it is a necessity. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

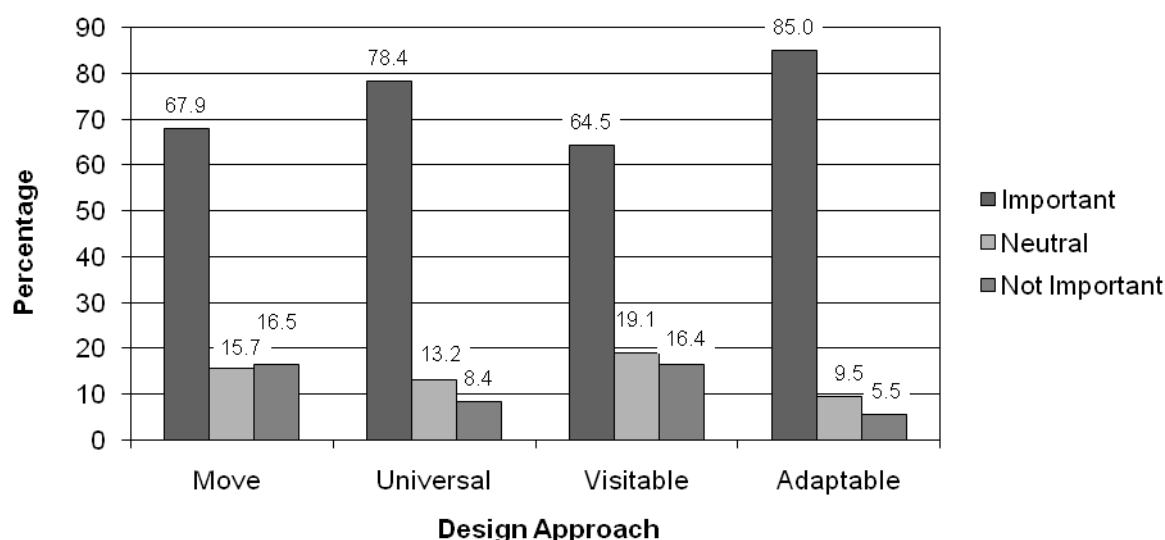
Interviewees were therefore quite divided on whether VISIBLE Design should be regulated with supporters generally being those who had some personal experience with disability and opponents being primarily concerned about additional cost to housing, over regulation and the unfairness of imposing this on people who did not need it.

7.3.5 Comparing consumer acceptance of the design approaches

If the four responses seeking attitudes to the importance of VISIBLE Design features are combined and equally weighted, the importance of the three design options compared to moving can be compared, as illustrated in Figure 127 below. This shows the strongest support among older home owners for the importance of Adaptable Design (85.0%) followed by the Universal Design approach (78.4%). Both moving to a more suitable dwelling (67.9%) and VISIBLE Design were less supported (64.8%) by respondents to this survey.

Figure 127: A comparison of support for different approaches to design

(n=1086, 1035, 1173* and 1139 respectively)



* mean of three constituent variables

7.4 Conclusions

There appears to be strong consumer acceptance among older home owners of the principles behind Universal, Adaptable and VISIBLE Design of housing; that is, designing homes to be more accessible so that people who need assistance can more easily and safely live at home and visit the homes of their friends and family. Each of these approaches provides accessibility differently: VISIBLE through the minimum access features in all homes; Adaptable, through easier and lower cost modifications that provide access at a later time; and Universal, which includes the access features for people of all ages and the widest range of abilities in the dwelling construction. In the survey, easy and low cost modifications, the Adaptable approach, was the most strongly supported.

A range of minimum access features in all housing for VISIBILITY was also considered important by many; however, this does not necessarily translate into support for regulating VISIBLE Design, as the interviews found respondents to be divided over this issue. Those in favour were often those who had some experience of a disability of their own or of a family member or friends. Those opposed were mostly concerned about the additional costs and the impact of over regulation on individual freedom. This possibly explains the highest support for the Adaptable Design approach, reported in the previous chapter, as the costs of adaptation are perceived to be only imposed if and when needed within the household.

The resistance of older home owners to regulation of minimum access features in all housing also needs to be balanced with the numbers of older homeowners who could not, or did not know if they could, afford modification to their home if needed in the future. With the increase in the older population combined with the already greater demand for government-funded home modification services, some preventative action could be warranted.

Moving to a home that better suits the older person's needs was also a quite strongly supported option, actually outranking the principles of VISIBLE Design. Least favoured, however, was moving to a retirement village, which underlines the preference of older people for living in the general community. It suggests a market demand for more accessible dwelling designs, to provide those homes that 'better suit needs', preferably in the general housing market rather than age-segregated housing developments.

The cost-benefit analysis looked at the costs and benefits of three design approaches: Universal, Adaptable and VISIBLE, compared to Home Modifications. It confirmed the findings of previous studies: inclusion of VISIBLE and Adaptable features in housing at the time of construction has a minimal effect on cost (Landcom, 2008; Hill PDA, 1998; Concrete Change, 2003; JRF, 1997), and it is far more cost effective to include these features at the time of construction than modify a conventionally designed dwelling to have these features at a later date (Hill PDA, 1998, Concrete Change, 2003; JRF, 1997).

VISIBLE Design was shown to have the greatest benefit at the lowest cost of all the design approaches. This is, in part, because the fewest design features are included. In the apartment design, the multi-story apartment development included an accessible path of travel from the entrance and parking basement to the dwelling entrance, and to the communal facilities on the site. This avoided the massive construction costs of attempting to retrofit these features in an apartment building at a later date. Though it is understood that many other apartment buildings without this in-built access would have a very different result, this demonstrates the cost-benefits of

regulating basic accessibility in higher density housing, a scenario that will be realised if Access to Premises standards (HRSC/LCA, 2009) are in place.

The cost-benefit analysis and detailed design analysis also illustrated the difficulties faced when providing access to the upper floor(s) of multi-storey dwellings, in particular the cost effect of lifts.

In the cost-benefit analysis, three dwelling types: a separate house, an attached house, and an apartment in a recent residential development, formed the basis of the analysis of each design approach and calculation of costs. It is understood that these results would vary with the selection of different dwellings, different criteria for each design approach, and different methods of meeting each of those criteria in each dwelling. In addition, costs in industry could differ from those in the Cordell Housing Building Cost Guide, according to the supplier of materials and labour, supplier relationships and purchasing volume discounts. However, this method provides valuable detail on the original dwelling designs and proposed designs for each design approach, and cost calculations for these design changes. Future publications examining the design and costing details will provide designers, builders and developers the opportunity to evaluate the suitability and costs of design features in their own residential developments.

This more detailed approach to the designs in the cost-benefit analysis also revealed issues that need to be considered by researchers, regulators and industry, if the implementation of these design approaches is to be increased or regulated. These issues include: the importance of providing the dwelling with access from the start, the urgent requirement for further anthropometric and movement research so that irrespective of the design approach(es) to be implemented, the design criteria are based on data that accurately represents the needs of residents; and the need for the design criteria to be communicated in a format that is feasible for use within the constraints of the housing design process, and readily available to all.

8 COMMUNITY PARTICIPATION, SUPPORT AND NEIGHBOURHOOD DESIGN

The Positioning Paper established that not only is the design of the dwelling important to the independence and wellbeing of older people, but neighbourhood design also has an important impact on their safety, independence and social participation. Important aspects of neighbourhood design were found to include well maintained and safe paths of travel and pedestrian crossings, age friendly transport infrastructure design, accessibility to public and commercial premises, easy wayfinding and crime prevention through environmental design (Quinn et al., 2009).

This chapter investigates the participation of older home owners in a range of community activities and the role of neighbourhood design in enhancing or inhibiting social participation and access to services. It addresses the four following research questions:

Research Question 6: What are the levels of participation of older home owners in locally based activities and social networks and how important is residential location in maintaining these?

Research Question 7: How important is access to familiar support services (e.g. medical, health etc) for older home owners and hence residential location in maintaining such access?

Research Question 8: How important is propinquity to family and friends for older home owners, and hence location in respect to maintaining such access?

Research Question 9: How important are design elements external to the land and dwelling (urban design) in maintaining access to local services, activities and amenities for older home owners?

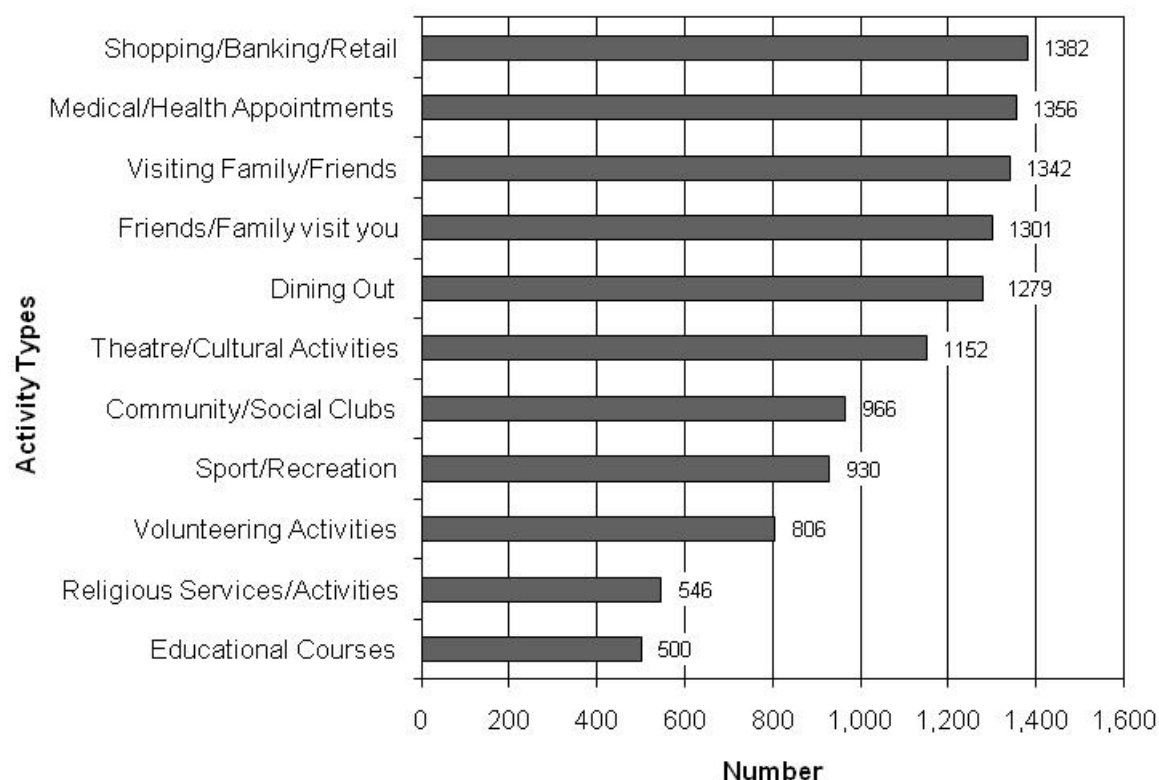
8.1 Participation in local activities and social networks

To understand the range of local activities in which older home owners participate, how they travel to them, and the importance of their proximity to the home, respondents were invited to indicate how often they attended 11 types of activities, what form of transport was used, and how important it was to have close access to them both at present and in five years time.

Figure 128 shows overall current participation in the 11 activities. Not surprisingly, the most common activity was shopping/banking and retail followed closely by medical/health appointments, visiting family and friends, and having family and friends visit you. Theatre and cultural activities were also quite common. The second tier of activities in which respondents participated were community & social clubs, sport and recreation, and volunteering. The two activities least participated in were religious services and activities and educational courses.

This provides an interesting picture of older home owners' activities. The highest participation of older home owners is in the necessities of life — retail and medical services — and in social engagement with family and friends. More discretionary cultural, sport and volunteering activities are also common, but fewer respondents participated in religious and education activities.

Figure 128: Number participating in activities



The interviews revealed that many older people were involved in a large range of activities outside the home on many days of the week. Examples of the range of extensive weekly activities some older people were involved in are included below.

[I go out] six days out of seven, sometimes seven. I have a regular local coffee shop that I go to three or four times a week. Movies, since I've retired I go to galleries and music a fair bit more. I enjoy simply being out walking around the neighbourhood. It's an aesthetically pleasing neighbourhood and I like looking at people's gardens as well as the buildings. And I go to a fair number of community courses and that sort of thing. So yeah, there's lots of stuff, lots of reasons for going out. But obviously it's not like going to work, and then packing in a lot of stuff outside of work. It might be just one or two things in a day (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

About five days out of the seven I go out at some time during the day. I actually tutor children after school on Mondays and Tuesdays. I also work in the Parish office voluntarily on Mondays. I take the dog to the nursing homes and that. That is community service. I go to CWA¹¹ — we have a meal and a meeting, a few clubs a meal and a meeting. Thursday is shopping. That is mainly it and visiting friends. There are three of us in town who are single, so we take turns on Thursday night at eating at each other's house. (P516 — female, 60–64 years, living alone, separate house, regional.)

As in the following case, this can even involve multiple outings per day.

¹¹ Country Women's Association

Oh my God, I'm out more than I'm in. So far today I've taken my car down to [place name] to have it serviced and come back, I've walked down the foreshore, fifteen minute walk to do Tai Chi, had coffee with a friend, came back here, took a bus to collect the car. So that's three times I've been out so far, and then I'll be going out after you've finished to collect a projector for tomorrow and do some photocopying, and then tonight I'm going out to a Rotary meeting. So that's what, five times in one day. Yesterday, Sunday, I went off rowing first thing in the morning and then went out for coffee in the afternoon. It's random, Saturday, rowing first thing in the morning. Friday I went out to Rotary at seven, kayaking at nine and something in the afternoon. So it's frequently. (P374 — female, 65–69 years, living alone, flat/apartment, capital city, self-funded retiree.)

In the following case, activities included a mixture of family, education, shopping and clubs.

I did play bridge for quite a long time, but I lost my two partners — one with dementia and one with the eye problem. So I don't do that regularly. I took up Probus¹² and I've been on committees, served on their committees. I joined U3A, the University of the Third Age. I just haven't been getting to do lectures and things nearly as much as I would. I'm also very involved with my sister in laws [sic]. I'm on call to help one of them every now and again. It's a large, interwoven family, but we support each other in times if they're not well or that sort of thing...Visiting friends, shopping. Mundane things. Filling up your car on Tuesday for cheaper petrol. I think I need to give myself sometimes a little bit more leisure time to take my book and give myself time to read outside the house... I'm interested in my Probus and outings which I organise. Yesterday we went to the reserve bank. We found that very well presented. (P1336 — age/gender not specified, living alone, attached house, suburban, pensioner.)

Volunteering and religious activities can also play an important part in regular weekly activities.

[I do] two mornings at the local English immersion school as a volunteer. A minimum of one half day a week and usually two playing croquet. Now I'm not playing croquet today which is a play day because they have a competition on. But I shall be there on Monday afternoon because we are teaching the pupils of one of our local good schools the elements of croquet. So we go and we do all sorts of things. Church, every Sunday I'm the organist. We have a home group that meets once a fortnight for church and sometimes we meet in people's houses and you will see the big room downstairs is ideal for having a home grouping. Church, croquet, [town name], [agency name], looking after disabled. I take a meal to the [agency name], an evening meal, about once every two to three weeks. I personally befriended one of the adults who comes here to stay occasionally and I take them out, and [an] assistant who I help... I would suggest that out of a normal working week of seven days I am out of the house on five days — taking part in some community something. And on the extra day I might be in church practicing the organ, but that's personal, that's not something to do with other people, that's when I've got a bit of spare time and I go and play, yes. (P173 — female, 70–74 years, living alone, separate house, suburban, self-funded retiree.)

¹² Probus is an association of retired and semi-retired people with around 1,800 branches around Australia.

In couple households, partners can have quite different activities to each other as in the following case.

F: I go to gym on Monday. Tuesday/Wednesday we go over to the grandchildren's house. That's the main things I do.

M: Yeah, well I go to the model railway club on the Monday night and at least once a month is the cricket association meeting which I go to. They're the main things.

F: ...and off to the MCG (P1589 — couple, 65–69 years, separate house, suburban.)

Other couples, however, do most things together.

M: We go to exercise classes, we're in the local retirement activities group and it's all happening around here. So we wouldn't want to go and move to Sydney or somewhere entirely different.

F: We go to Keep Fit twice a week. We go walking with a walking group once a week.

M: The Walking Activities Group, yes.

F: Once a fortnight we play Scrabble, and once a fortnight we play cards. Different cards alternating. Is that all?

M: Yes, but then there's quarterly meetings with our Retirement Activities Group.

F: Then there's the Caravan, big Cabin Groups that go away. We go away once or twice a year, and other bits and pieces that come up from time to time. But that's the basic ones. (P1274 — couple, 60–64 years, separate house, suburban, self-funded retiree.)

For older people with a disability going out can also be important, even if difficult and less frequent, and may depend on the availability of someone to assist.

I have friends who will take me out, who have adjusted very well to getting me in and out of cars and pushing wheelchairs and things. Mostly I would get out at least once a week. Yeah, I would get out once a week. Sometimes it might only be to the doctors, it may not be to anything else. And then I will have a run and I'll have sort of two or three things in the one week. I try not to do that. I like to go to the movies. And the movie theatre that we go to, mainly down in [local town], it's just a little theatre. There's a ramp up to it and there's a ramp inside. It's designed for — they've changed it and it's always been accessible to people in a wheelchair. I like to go to people's houses and sort of see people, but it doesn't necessarily work. I like going to concerts, more classical music than anything else. (P161 — female, 55–59 years with partner, separate house, regional, pensioner with a disability.)

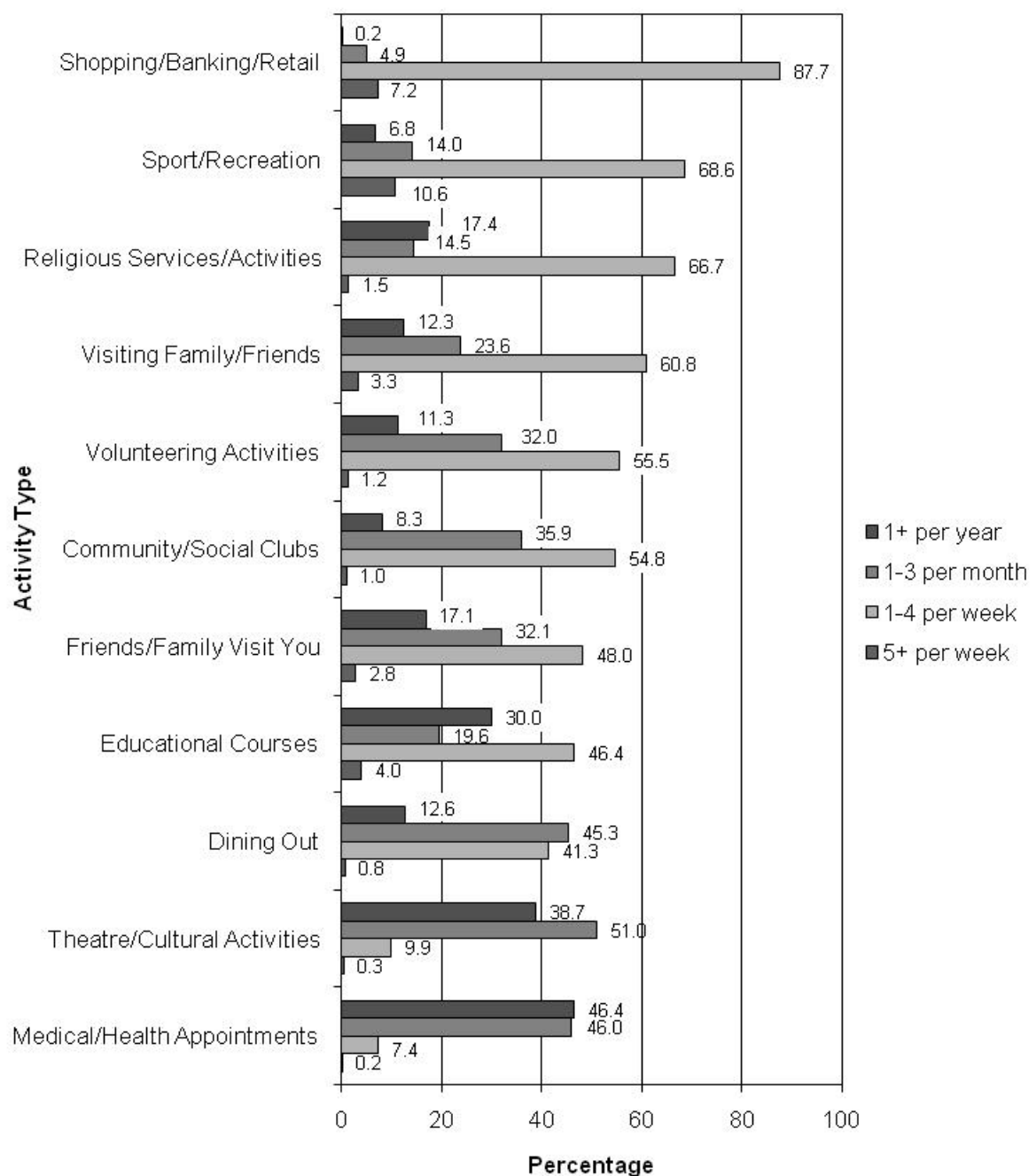
8.1.1 Frequency of participation in activities

An important dimension of participation is the frequency which it occurs. When viewed from this perspective, a somewhat different pattern to the range of activities emerges. While Figure 129 indicates that by far the most frequent activity (1–4 times per week) is also shopping, banking and retail, it was followed by a clear majority who participated 1–4 times per week in sport/recreation, religious services and visiting family and friends. A third tier of activities were attended between once and one or a few times per month by around half the participants. These were volunteering,

community and social clubs, having family and friends visit, attending educational courses and dining out. Least frequently attended, only a few times a month or year, were theatre and cultural activities and medical and health appointments. Frequency of participation appears therefore also to be related to the necessities of daily life (shopping and banking), but also to weekly patterns of attending religious services and sport and recreation (which would appear to include daily exercise). The more discretionary activities of educational courses, theatre and cultural activities and dining out are those in which people participated least often.

Figure 129: Frequency of participation in various activities now

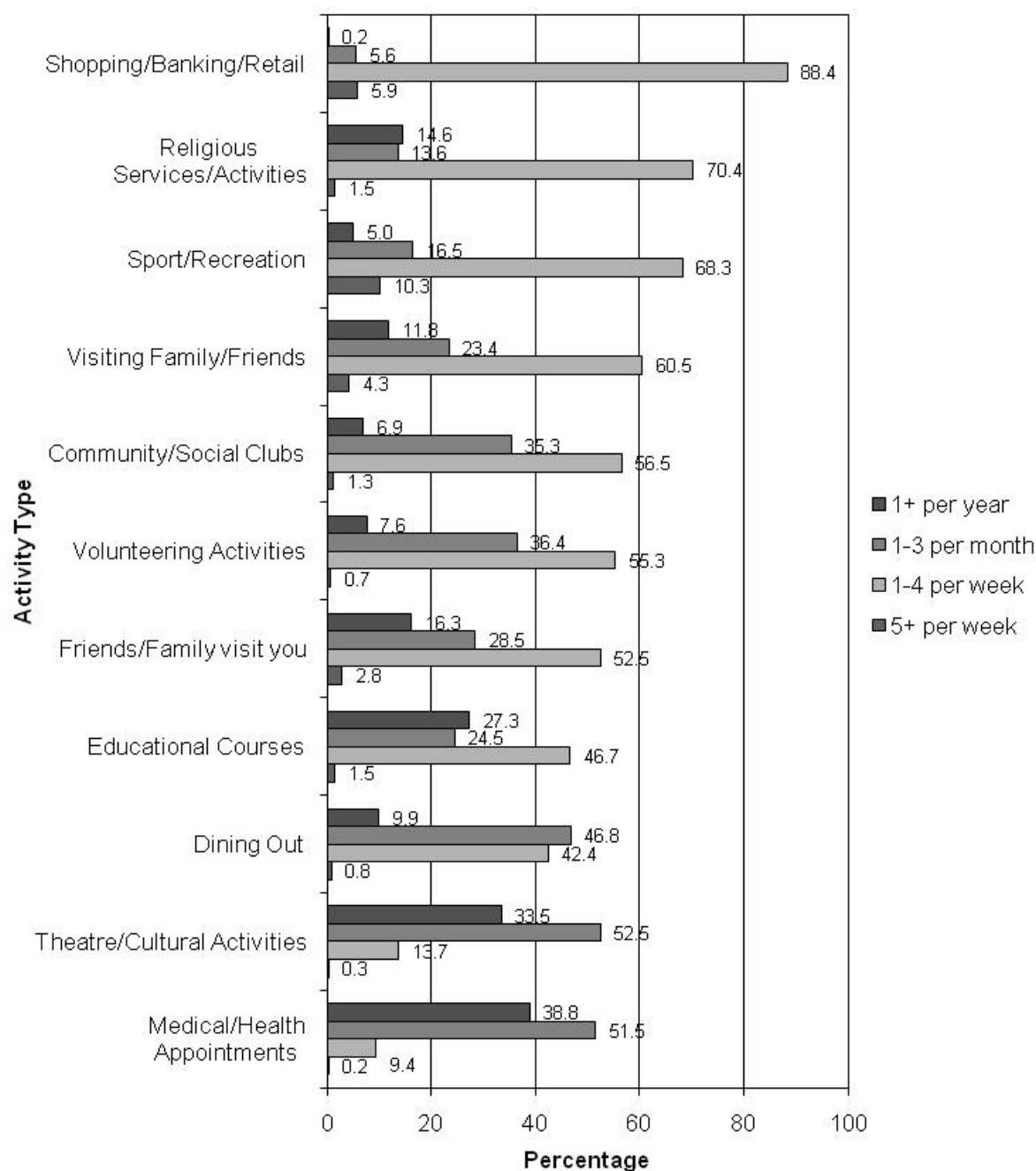
(n varies for each activity, see Figure 128)



Respondents were also asked to anticipate the likely frequency of the activities in five years time. Figure 130 shows these for each activity type.

Figure 130: Anticipated frequency of participation in various activities in five years

(n varies for each activity)



For most activities, frequencies are quite similar to current participation. The main differences are increased frequency of having family and friends visit 1–4 times per week (+4.5%), attendance of religious services or activities (+3.7 per cent for 1–4 times per week) and attending medical and health appointments 1–4 times per week (5.5%).

Gender differences in the level of participation in some activities were evident. Most notably, women were much more involved in educational courses and activities than men (+32.1 per cent 1–4 times per week and +7.8 per cent 1–3 times per month) and somewhat more involved in visiting family and friends (+10.0%), having family and friends visit (+5.0%) and attending community and social clubs (+3.9%) 1–4 times per

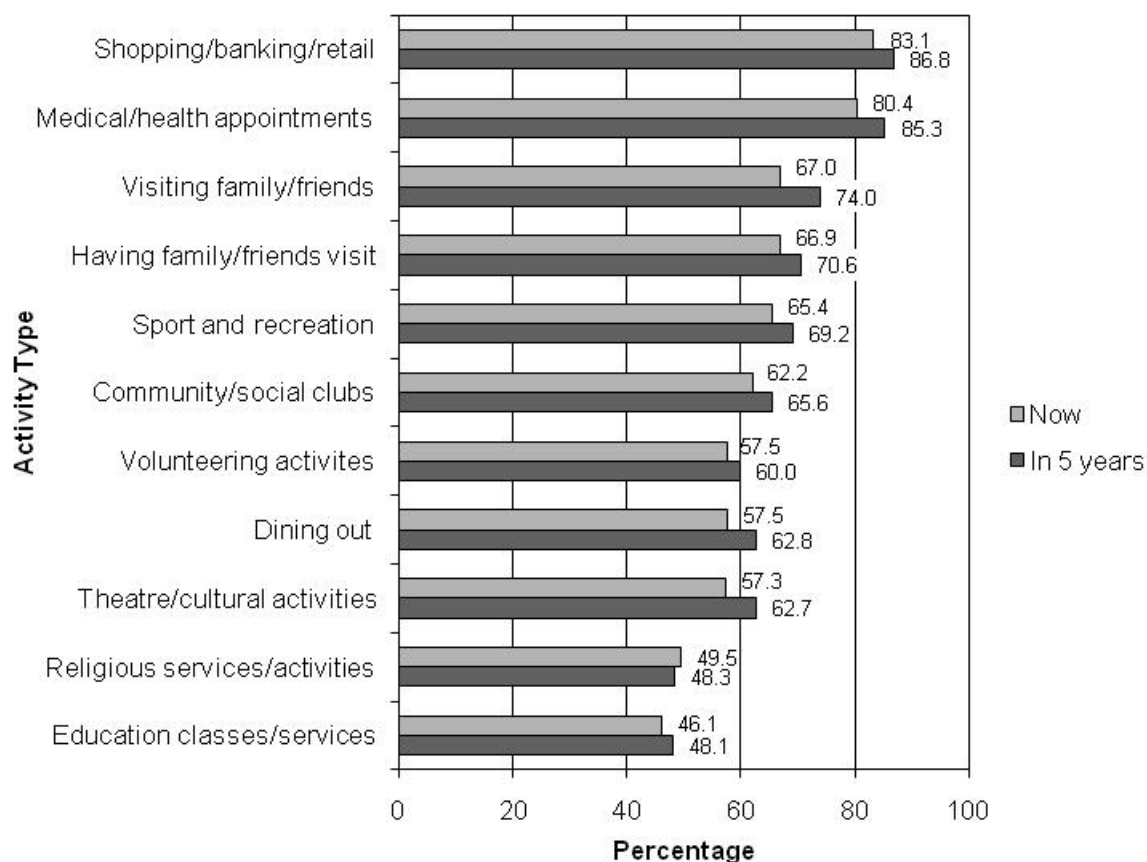
week. Men were a little more frequently involved than women in volunteering 1–4 times per week (+3.9%) and in medical and health appointments 1–4 times per month (+5.8%). Other differences were marginal.

8.1.2 Importance of close access to activities

Figure 131 shows the importance of close access to activities both now and as anticipated in five years. Shopping/banking/retail (83.1 per cent important or very important) and medical/health appointments (80.4%) stand out as the two most important activities to be close to the home. Other activities that more than half of the participants felt were important to be located close to home were visiting and being visited by family and friends (67.0 per cent each), sport and recreation activities (65.4%), community and social clubs (62.2%), volunteering (57.5%) and theatre and cultural activities (57.3%). Only two activities were considered important or very important by less than 50 per cent of respondents, religious services and activities (49.5%) and education classes and services (45.1%). When projected five years into the future, the importance of almost all increased by a few per cent, the greatest increases being in visiting family and friends (+7.0%), theatre and cultural activities (+5.4%), dining out (+5.4%), and medical and health appointments (+ 4.9%). Only one, religious services and activities (-1.2%) was considered to be marginally less important in five years time.

Figure 131: Importance of close access to activities now and in five years

(n varies for each activity type)



As indicated in Table 18, gender differences were more pronounced in importance of proximity to activities. Women generally placed more importance than men on the close proximity of activities at present to home, particularly in regard to education classes and services (+12.8%), shopping, banking and retail (+4.7%) and dining out

(4.6%). The differences were even greater for importance of close proximity in five years time with increases in every activity except attending religious services and activities. The greatest differences were with the proximity of education classes and services (+18.6%), community and social clubs (+9.0%), having family and friends visit (+8.9%), theatre and cultural activities (+8.8%) and visiting family and friends (+8.5%). This indicates having activities available close to the home is more important for older women than men and becomes more important with age.

Table 18: Gender differences in importance of close proximity of activities to the home

(n varies with activity type)

<i>Activity type</i>	<i>NOW</i>			<i>IN 5 YEARS</i>		
	<i>Females</i>	<i>Males</i>	<i>F-M</i>	<i>Females</i>	<i>Males</i>	<i>F-M</i>
	%	%	%	%	%	%
Visiting family and friends	67.8	65.7	2.1	77.3	68.8	8.5
Having family and friends visit	67.6	65.8	1.8	74.1	65.2	8.9
Community and social clubs	63.4	62.2	1.2	69.1	60.1	9.0
Religious services and activities	48.7	50.7	-2.0	47.6	49.4	-1.8
Sport and recreation	66.3	63.9	2.4	70.1	67.6	2.5
Education classes and activities	50.3	37.5	12.8	54.2	35.6	18.6
Dining out	59.2	54.6	4.6	64.8	59.6	5.2
Shopping, banking and retail	84.9	80.2	4.7	89.1	83.1	6.0
Theatre and cultural activities	59.6	57.3	2.3	66.0	57.2	8.8
Medical and health appointments	80.5	80.4	0.1	86.3	83.7	2.6
Volunteering activities	58.5	55.9	2.6	62.1	56.3	5.8

The interviews reinforce the importance of close location to activities and services as an important consideration for the future. When asked about the option of moving in the future, some interviewees cited the importance of location to services and activities as a reason for not wanting to move.

I find that I sometimes consider leaving Sydney, but where this is it's so convenient to transport, doctors, dentists, hairdressers, you name it — hospitals. It's going to have to be a really serious decision to make. But no, not really, I just think it's an ideal place — if you don't mind the hustle and bustle and the noise... (P1379 — female, 60–64 years, living with child, attached dwelling.)

Others cited close location to services and family as a reason for moving from poorly serviced rural or regional areas to more urban locations.

But whether it's five years, or seven years, or ten years...when we come to the point where we're really geriatric, [we will] go to [town name]. Not necessarily an old people's home. Just a place [within] walking distance from all the amenities, and then when we need help. (P1153 — male, 65–69 with partner, CALD, regional, self-funded retiree.)

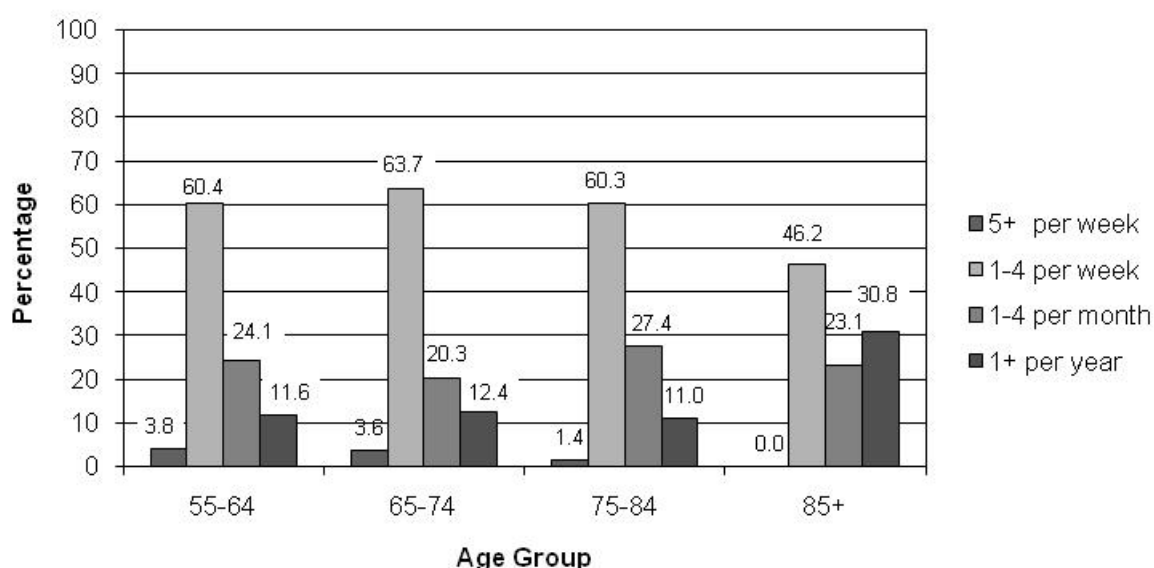
One hundred per cent we're going to move back to [city name]. My wife wants to keep this house, but I can't see the point of it you know? Yeah, but also — I'm not so keen for the family — but she wants to be close to her family, but again the writing's on the wall. We're going to get older and we're going to need to be close to public transport — good public transport — and we have to be near medical sorts of things. (P538 — gender and age not specified, CALD with partner, coastal regional, working full-time.)

8.2 Access to family and friends

This section looks in more detail at the frequency and importance of close access to family and friends, including the differences between the four age cohorts and the attitudes and experiences of people interviewed on this topic. Figure 132 shows that the frequency of visiting family and friends is fairly consistent at around 60 per cent of respondents over the first three age cohorts, reducing only in the oldest cohort. While arguably this is due to the greater difficulty of people in the oldest group of people to visit, caution about this conclusion is required due to the small number of respondents in the 85+ category.

Figure 132: Frequency of visiting family and friends

(n=1180)



Note: 85+ figures are unreliable due to small number of respondents (n=13).

As would be expected, the interviews revealed varying degrees of socialising with family members depending on whether they lived nearby, the quality of relationships and how busy their relatives were with work and family commitments. Many did not have family living nearby, but instead located in more distant suburbs, interstate or overseas. However, for some, visiting their distant family and friends was still a regular and important commitment.

I am a widow who owns a large family home in a remote capital city. All my four adult children live interstate — scattered SA, ACT, QLD. I am fit and strong so far I am fortunate in being able to travel and visit family and friends — away for approx four months per year. Whilst I am healthy and can afford it, I enjoy sharing time with my family both at home and at their homes. (P1436 — female, 65–74 years, living alone, separate house, capital city, self-funded retiree.)

Some, however, had family in close proximity.

Yeah, I've got five sons altogether. One, well one is staying here, one that lives just around, well five minutes in the car, ...another one lives up in [nearby suburb] which is not far away. Oh, one lives in [country town] which is up North, and [another lives] in [suburb name] which isn't really far, oh, about half an hour from here. Yeah, and my daughter lives over there, but the other daughter's in [foreign country] like I said. But I have a brother, my youngest brother lives just five minutes down the road, and my other brother lives five minutes from here and then my sister lives...so, sort of like a little circle of my brothers and sisters. And then, like my kids are around there, the only one that lives [further away], ...that's living here now, he normally lives in [suburb] which is north of the river. (P668 — female, 65–69 years with partner, separate house, suburban.)

Those who had lived in the area for many years often had a network of longstanding friends, and sometimes this was cited as a reason for not moving from the area.

I've got a lot of friends in this area. That's why I didn't want to move too far away and the street I lived in down there, I was friendly — it was only a small street, and they were a great lot, the people in that street really and they still come up here and see me. So you know, it's good I haven't moved too far away. (P1183 — female, age not specified, living alone, CALD, flat/apartment, suburban, self-funded retiree.)

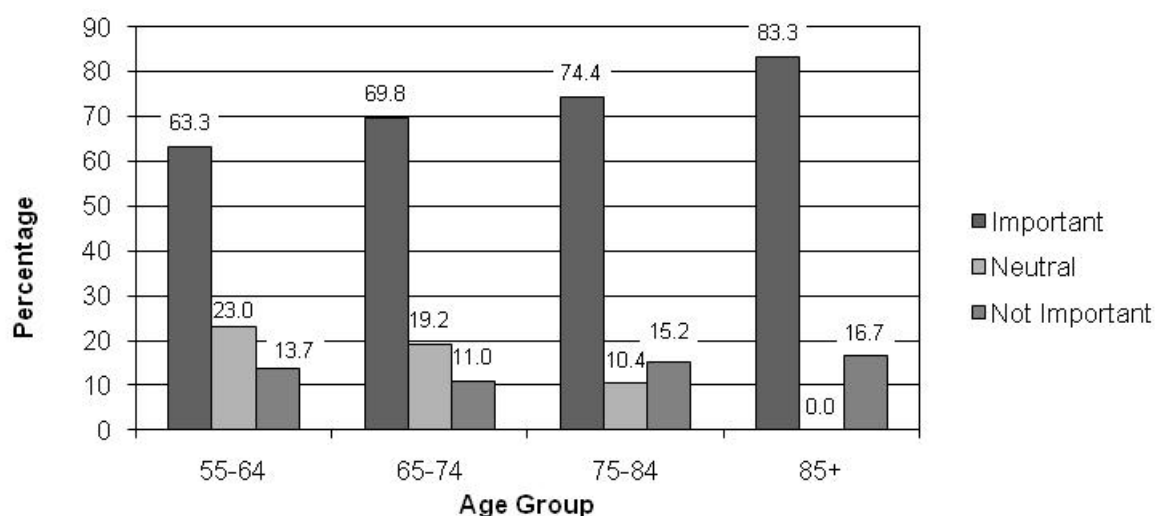
For the following interviewee, having a good network of friends in the area compensated for having family members distant.

All my immediate family are interstate. I have a sort of surrogate family who now lives fifteen minutes walk down there, a couple of small kids, substitute grand children and so on. And friends, well, since I've been here for so long, I have lots of acquaintances around, some friends, and then friends which live in further suburbs. (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

With regard to the importance of proximity to family and friends, Figure 133 shows that the importance of having family and friends within close proximity increased significantly with age — by a total of 20 percentage points over the four age cohorts.

Figure 133: Importance of proximity to visit family and friends now

(n=1061)



Note: 85+ figures are unreliable due to small number of respondents (n=12).

When asked about how important it was to be near to family and friends, many interviewees thought it important.

Yes, oh yes. Got to live close to my family. Got to know what they're doing. (P668 — female, 65–69 years, with partner, attached house, suburban, assistance required.)

Yes, it's important to be near friends, though. I do a lot of things with my friends, and my neighbour next door is a very close friend, the widowed lady, she and I are very good friends. So we've got a door between us, not even cars. (P374 — female, 65–69 years, living alone, flat/apartment, capital city, self-funded retiree.)

Some had regretted a move away from family, or were aware of others who had.

I moved to [regional centre]. But I didn't like that because I was too far away. I've got two daughters and it was a little bit far. It was a bit far for them to visit me for the odd cup of coffee. It was a day trip if they were coming to see me. Well, they've got their own lives and I found from there I was coming up to [capital city] more often than not. (P746 — female, 60–64 years, living alone, flat/apartment, working full-time.)

Others had no regrets about moving away from friends and still managed to visit them and keep in contact over the internet.

Well again, you see one of the first things I did was buy myself a car once I became financial and I've always said 'have car will travel'. And I've kept up contact with friends. I mean prior to meeting [partner's name,] my network was girlfriends and we've kept up social contact and I was always computer literate so you know you can keep in touch with everybody that way. So again I didn't have to be down in that area where I came from to keep in contact. (P784 — couple, age not specified, separate house, suburban, self-funded retirees.)

Some, though, actually preferred to be more independent and have their family at a distance to maintain independence.

INT: Do you wish that they did live closer? Is that important to you?

INT: In terms of distance, how close would you like to be living near family or friends?

RESP: I still want to be independent. I don't really want to be an extension of anyone else's household. (P1204 — female, 60–64 years with partner, suburban, working part-time, assistance required.)

A few definitely preferred to keep their family at a distance — in this case a woman without children referring to her sisters.

Well, we have never been a close family. So after a couple of days you get on each other's nerves anyway. It is far enough away that they can come for a couple of days and go. (P516 — female, 60–64 years, living alone, separate house, regional.)

And in another case to avoid being exploited by a daughter.

INT: So if you had your wish, would you want to live closer to your daughter?

RESP: No. I'd be made use of too much. She's a bossy bee.

INT: So you're quite happy with the distance at the moment?

RESP: Yes, she's wanted me to come down there, and either buy a house or move into a retirement village, but I just wouldn't consider it, because she would take over. (P79 — female, 65–69 years, living with two sons, CALD, flat/apartment, suburban, pensioner.)

Another who had a child seven hours drive away was quite satisfied with the distance.

No, that's fine. Absolutely fine...and we've got cars and they can just ring up if they need me. (P531 — female, 60–64 years, living alone, flat/apartment, capital city, self-funded retiree.)

For some people, being close to friends was a more important reason for remaining in the same location. Even though they had a daughter nearby, one rural interviewee insisted that friends were more important than family in determining their residential location.

Friends yes, family no. Don't get me wrong, we love our children, but family's only one or two or three members, whereas friends in town it's where...I'd rather be there where I'm walking in the street and I can see John and Mary...And that's where I want to stay. It's more the friends than the daughter...because [if] the daughter leaves, and the husband decides to live in [a foreign country] I wouldn't follow them. (P1153 — male, 65–69 years with partner, CALD, regional, self-funded retiree.)

Uncertainty about the location of children was shared by another couple when asked how important it was to be located close to family.

F: See I don't know how important that would be, because our family could go anywhere at any time. Well, the one that's come back from overseas is not looking at going overseas now, but...

M: He could go and work in Hong Kong or something, you know, so that might not be a factor. And the other one lives an hour away down past [regional city].

F: And he's...already looking at jobs overseas. I don't know, I mean if they were here I guess it would be important, but we don't know where they would be. (P1274 — couple, 60–64 years, separate house, suburban, self-funded retirees.)

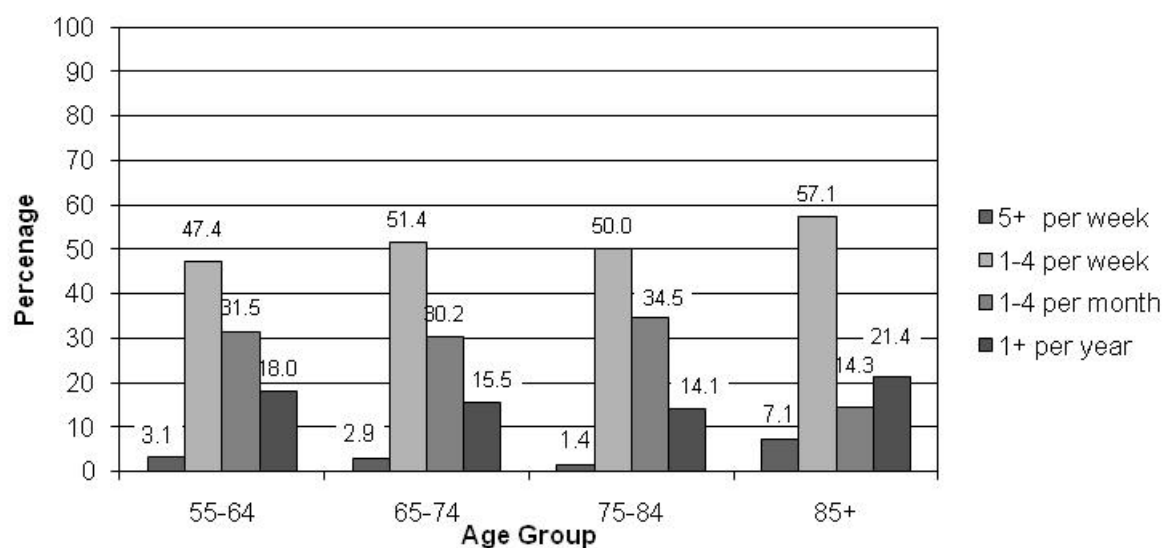
The interviews demonstrate the complexity of issues surrounding relationships with family and friends and the many different circumstances and motivations that impinge on older people's desire to live or not live at close proximity. In some cases, circumstances dictate the necessity to live at a distance from family, sometimes uncertainty of the stability of their location, in other cases a concern for maintaining their or their children's independence, and sometimes to assist in negotiating difficult relationships.

Similarly, long term friends and family can move away, or older people can move away from such friends at retirement and new friendships may be easily or not so easily formed in a new location. Resources or skills available to older people for travel and maintaining contact via communication technology can also be a factor in their ability to remain connected with more distant family and friends. Few of the people interviewed were without contact with family and friends, whether local or distant. Some would have preferred more personal contact, but accepted that under the circumstances this was not possible. Living alone or with a partner did not seem to be an important factor in the desire to live close to family and friends, and in some cases closeness to friends was considered more important or reliable than relying on family.

Figure 134 shows the frequency of having family and friends visit the respondent. Although a little less frequent than respondents visiting them, the frequency is once again fairly consistently around half of all respondents across the four age groups, but increasing a little with age.

Figure 134: Frequency of having family and friends visit

(n=1143)



Note: 85+ figures are unreliable due to small number of respondents (n=14).

It was noted earlier that nearly a quarter of all survey respondents had temporary residents who stayed for 20 nights per year or more. This alone indicates that older home owners frequently have friends or family come to stay for extended periods of time. In addition, many interviewees had family and friends coming to stay for shorter periods or for day visits. An account of regular family and friends visiting is given below:

We have a daughter who's a single mum and she has a daughter so we see her quite frequently, every school holidays. We have a son and daughter-in-

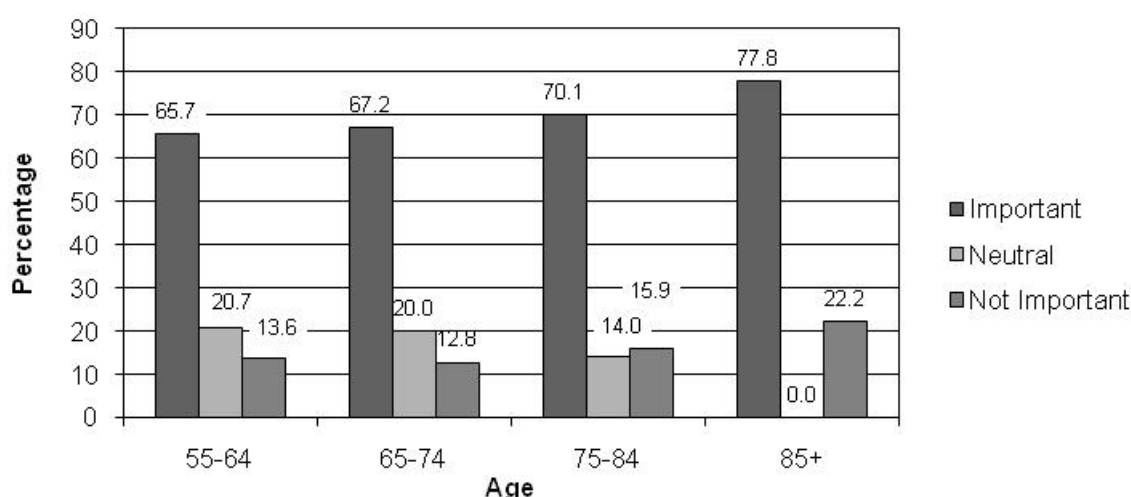
law with two more grandchildren so we see them fairly regularly. We have another son who isn't married and he lives in Canberra and he often stays here. He probably lives here for about a third of the year...I said to somebody the other day, I don't know what we've done with our time, it's just flown and they said, look, every time I speak to you, you've either just had visitors or you're about to have visitors or you've got them right now and that seems to be it. (P1019 — male, 65–69 years with partner, separate house, regional, self-funded retiree.)

While for others the number and regularity of visitors were more modest, having family and friends come to visit, and often to stay over, is a regular activity among most older home owners.

The importance of proximity for having friends visit also increases over the four age cohorts, as indicated in Figure 135 below, indicating that as people age it becomes more important to have family and friends visiting them, as well as for them to visit their family and friends. However, while the importance of visiting, or being visited by, family and friends is of a similar order, the reality is that older people visit (Figure 132) more than they are visited by (Figure 134) family and friends, except perhaps in the oldest 84+ age cohort, if these figures can be relied upon.

Figure 135: Importance of proximity for having family and friends visit

(n=973)



Note: 85+ figures are unreliable due to small number of respondents (n=9).

Many interviewees agreed that proximity was an important factor in having friends and family visit them.

Later in life, I think your family is more important, and your friends are important too but for convenience, because you're going to be, well not that you're going to be a problem, but you don't want to inconvenience your family to have to get to you, to have to be travelling far. (P22 — female, 60–64 years, with partner, attached house, capital city, pensioner, assistance required.)

We've always lived in this area, but we have lots of friends associated with the children at school and that, and a lot of people moved away. So a lot of our friends are a fair distance away. We sort of have to drive to see them, they drive to see us. We've got one friend that stays if they come, so friends are a

bit further afield. It'd be nice if they were closer. (P435 — male, 85+ years with partner, separate house, suburban, pensioner.)

It was so important to one couple that they sought the approval of their friends before moving, to ensure their willingness to visit.

We asked them, we brought them all here, one at a time, but as to whether it would be a problem for them to come and visit us and they all said, no, no, this was okay, it wasn't that far away. (P1252 — male, 80–84 years, with partner, flat/apartment in seniors' development, suburban, self-funded retiree.)

In summary, it is clear from both the data on temporary residents and the comments of many interviewees, that older home owners are very active recipients of visitors, both family and friends, and that location is an important factor in determining the extent and types of visits. Local family and friends visit for short periods, and more distant, inter-state and overseas friends and relatives for longer periods of time. Maintaining contact with family and friends through having them visit is extremely important. However, it would seem that it is more important to live close to family and friends so that older home owners can visit them, rather than have them visit you, and for many this is expected to become more important in the future.

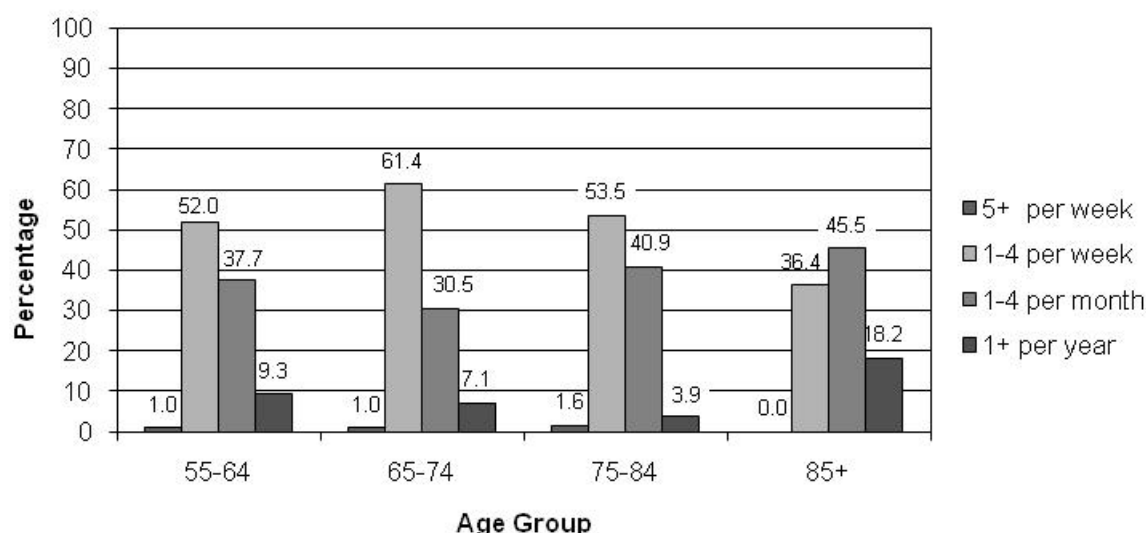
8.3 Access to community based social activities

8.3.1 Community and social clubs

The frequency of participation in community and social clubs is shown for the different age groups in Figure 136 below. Not surprisingly, it peaks in the 65–74 age group where most people are retired and still fairly active, and reduces in the older two age groups.

Figure 136: Frequency of participation in community and social clubs

(n=852)



Note: 85+ figures are unreliable due to small number of respondents (n=11).

The interviews revealed that prominent among the kind of clubs interviewees were members of or attended were local services clubs, sporting clubs (golf, bowling, football, cricket, gyms), recreation clubs (bushwalking, cycling). Other common interest groups included book clubs, bridge groups, craft groups, theatre groups, car

clubs, model railway clubs, women's groups, ethnic/cultural clubs and Rotary clubs. Among the specialised seniors' organisations were local branches of National Seniors (not surprisingly as interviewees were predominantly subscribers to their magazine, *50 Something*) and Probus (one of the leading associations for 'active retirees').

It was not uncommon for older homeowners to be a member of a number of clubs or social groups as illustrated by the following comments:

As a matter of fact I go out quite a lot. I lunch with five different groups of women so my month is pretty busy. I belong to a business and professional woman's club, and we have meetings once a month, but we also have functions that I attend and help with those. I also belong to an organisation that owns a heritage house, and we go to functions there, but also like next week I've got to spend a day there showing people over the house. (P422 — female, 70–74 years with partner, capital city, flat/apartment, pensioner.)

I'm a member of a number of clubs. But because I'm alone now, I find it very hard... you're not enjoying to be on your own in a club. So I try with my classes to have two days a year to have a lunch together with my classes. So I go either to... the [cultural club name] or one of the local clubs here. We have reunion. Then sometimes, if I have friends that visit me, or even my son, if it is my birthday or whatever, I go to the club for having lunch. (P72 — female, 75–79 years, CALD, regional, separate house, pensioner.)

Others focused more on one particular interest group.

Well I'm involved in the motorcycle club. I don't ride a bike anymore, but I did ride a motorbike up until last year. I sold my bike, but I'm still involved in the club. We have get-togethers and today we had our annual pink ribbon motorcycle ride ... I'm not actually on the committee, but I'm an authorised helper there and it's a set run. (P746 — female, 60–64 years, living alone, flat/apartment, working full-time.)

Sometimes these activity groups were more home-based.

We're members of retirement activities groups and sometimes we have 14 people, so playing cards on this table and we have to put a table out there as well. (P1274 — male, 60–64 with partner, separate house, suburban, self-funded retiree.)

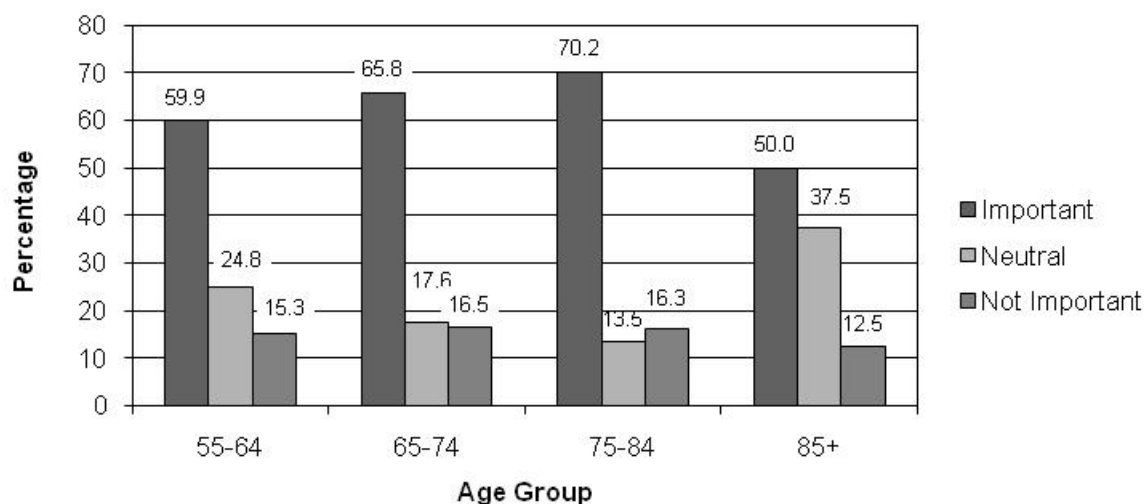
In some cases, membership of clubs was constrained by cost.

I belong to a Probus group, of which I am at the moment the president of this club ... I did belong to some others, but suddenly you look at the memberships and you're paying out this and that. I don't belong to [club name] any more. Just the [local services club] because it allows me to park there when we have our meetings. That's where we hold our Probus meetings. And I still belong to [football club name] because I keep saying I'll use their swimming pool. (P1336 — age/gender not specified, living alone, attached house, suburban, pensioner.)

The importance of close proximity to social and community clubs to survey respondents in the various age groups is illustrated in Figure 137. It shows that the importance of having these facilities close by increases with age, at least for the first three age groups.

Figure 137: Importance of proximity to social and community clubs now

(n=847)



Note: 85+ figures are unreliable due to small number of respondents (n=8).

One couple interviewed extolled the range of activities available through their local club facilities to older people.

M: Wonderful. I'll tell you what else too — wonderful entertainment every day for the aged. You've got your bingo, your indoor bowls, your scrabble, for males there's a couple turning clubs if you're interested. There's lapidary — you've got Bridge.

F: Yeah. There's two or three bridge clubs.

M: The library is excellent.

F: There are things like lace-making, you name it, there's birds — [a] club for it somewhere along the lines. (P621 — male, 60–64 years with partner, separate house, regional, pensioner, assistance required.)

Another interviewee lamented the lack of social clubs and community facilities in her area, particularly for older men.

You know this area's not got many social clubs, it's very sparse. There's no sort of community situation here very much. There's a lot of little bits and pieces attached to churches and things like that, but we're not church goers. We've lived here for a long time, it always has been a bit sparse in relation to that kind of thing. Social activities are more in different areas for me... I'd like a better community centre or something for senior people here would be good. If there was somewhere that [partner's name] could access, you know play cards with men or read or I don't know what they do but whatever. It would be great. So there's no social life, particularly for men. I mean women tend to make their own, so that's okay. (P424 — female, 60–64 years with disabled partner, separate house, suburban, self-funded retiree.)

In summary, for the 53.1 per cent of respondents who participated in social and community clubs, a little over half were involved on a weekly basis and an additional third on a monthly basis. The types of community and social club activities vary widely from visiting local established community, sporting or services clubs to formal and informal common interest and seniors groups. Some are members of a number of

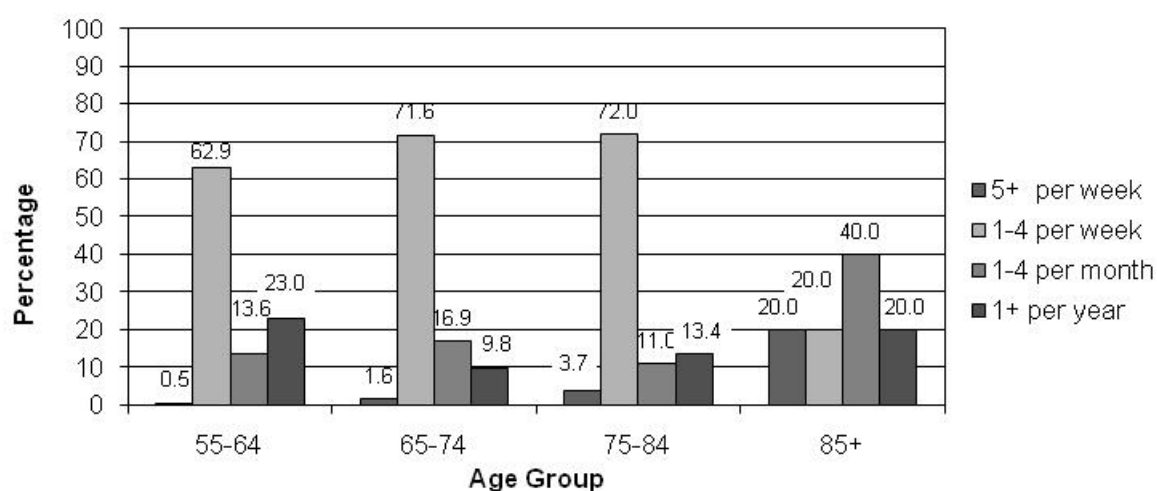
clubs or groups. The importance of having these located close to the dwelling increased with age

8.3.2 Religious services and activities

Although only around 30 per cent of respondents were involved in religious services or activities, their frequency of participation was found to be higher than many other activity categories (see Figure 129) except for shopping and, marginally, sport and recreation. In comparing the age groups, Figure 138 below shows that the frequency of participation increases in two main post-retirement age groups of 65–74 and 75–84 at 72 per cent of respondents. Representation in the 86+ age groups was too low to be reliable.

Figure 138: Frequency of participation in religious services or activities

(n=483)

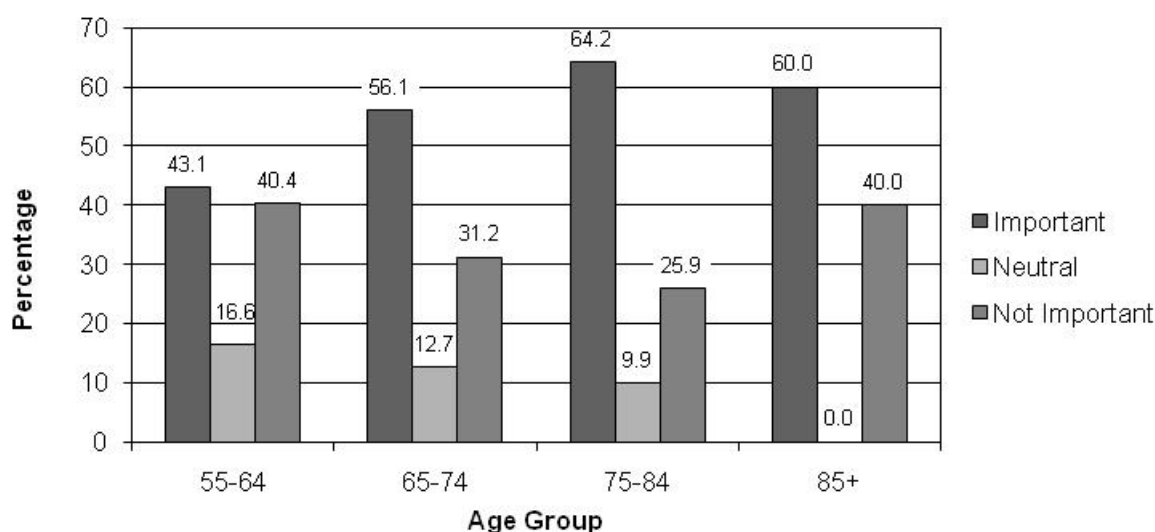


Note: 85+ figures are unreliable due to small number of respondents (n=5).

The importance of weekly attendance to religious services increased sharply with age from less than half in the 55–64 age group to close to two-thirds in the 75–84 age group, as illustrated in Figure 139 below.

Figure 139: Importance of proximity to religious services or activities now

(n=639)



Note: 85+ figures are unreliable due to small number of respondents (n=5).

In the interviews, a number of people elaborated on the extent and importance of their religious activities.

I go to a group meeting at least once a week and go to church [on] Sunday. A lot of our social things are connected with our church. (P473 — male, 65–69 years with partner, separate house, suburban, working part-time, assistance required.)

Sometimes it also provides important connections with a cultural community.

And also because of [our] Indian background, we've got sort of religious festivals, which we like to take part with our friends, you know? Like, so those days we go out. All week, you know? Sometimes we'll have a sleep, other [times] the big community prayer, like five or six times we've joined now. Now we go to their house... (P1498 — couple and adult child, age not specified, CALD, suburban, separate house, assistance required, working full time.)

For some, this involvement is despite considerable difficulty.

Well, I can avoid them, but I don't avoid steps very much because I go to Mass pretty well every morning and when I go to Mass I go down through the school. Fifty-three steps down and fifty-three steps back. (1554 — male, 85+ years, living alone, suburban, separate house, pensioner, assistance required.)

Often religious activities also involved volunteering and home-based activities.

We are...coordinators for Eucharist to the sick and elderly for the Parish of [name] on the [location], which involves carrying Eucharist to approximately 140–150 people in either their own home, hospital, nursing homes [or] dementia centre. We coordinate transport by parish bus [for] elderly residents to Catholic mass each week end with seven volunteer drivers. (P1238 — female, 75–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

Church, every Sunday I'm the organist. We have a home group that meets once a fortnight for church and sometimes we meet in people's houses and

you will see the big room downstairs is ideal for having a home grouping.
(P173 — female, 70–74 years, living alone, suburban, separate house, assistance required, self-funded retiree.)

Thus, for some older home owners, religious services and activities are central and important to their lives, and both frequency of participation and importance appear to increase with age.

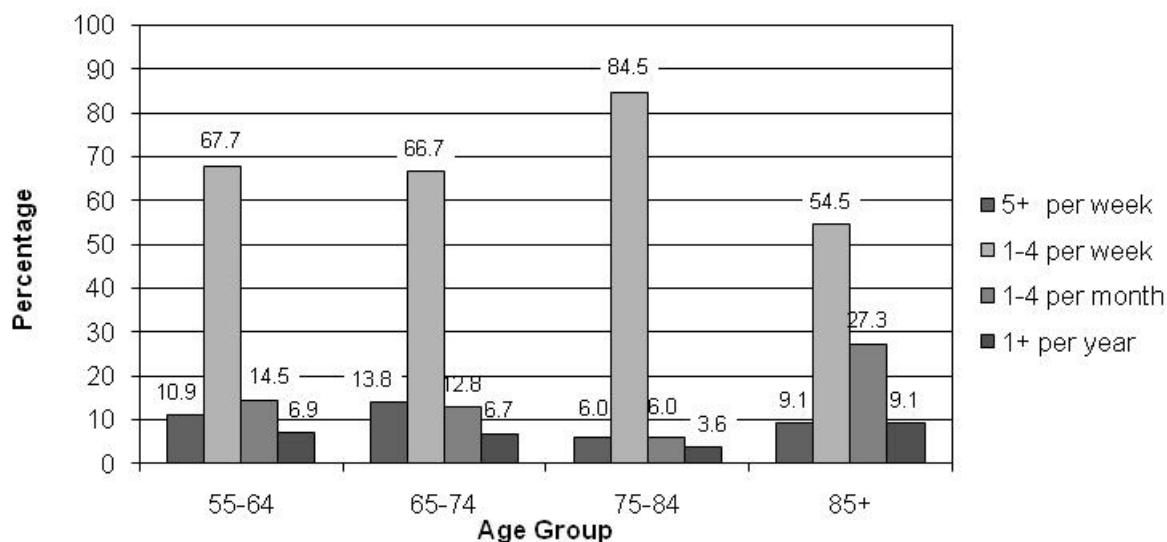
8.3.3 Sport and recreation

As noted earlier (Figure 128), sport and recreation was participated in by about half of respondents to the question on frequency and importance of participation in activities, and ranked fourth lowest of all 11 activities listed. However, despite this, the frequency of participation by those involved in sport and recreation was second only to shopping, banking and retail activities with close to 70 per cent involved on a weekly basis. It also had the distinction of having by far the highest daily (i.e. at least five times per week) participation of 11.4 per cent. This can possibly be explained by the inclusion of regular physical exercise activities in this category.

Not surprisingly, frequency of participation in sport and recreation five or more times per week is greatest in the two younger age groups, albeit for a fairly small percentage of respondents (10.9 and 13.8 per cent respectively). In the 75–84 age group, participation on 1–4 days per week is much more common, and reduces significantly in the 85+ age group, although once again the number of respondents in this age category is small.

Figure 140: Frequency of participation in sport and recreation activities

(n=826)



Note: 85+ figures are unreliable due to small number of respondents (n=11).

In the interviews, a wide range of sporting and recreational activities were reported. These included walking, yoga, swimming, gym & fitness classes, cycling, dancing and golf and attending sporting events. For some, exercise was a daily activity.

I belong to a gym where I go, they've got sort of a pool there and a gymnasium there. I've just started archery actually... I like walking. I do heaps of walking. And I'll probably go to the gym about four or five times a week and swim the pool, you know, because I've got friends there. I go to soccer as well,

Sundays, sometimes, with me mates. (P1608 — male, 65–69 years, living alone, capital city, attached house, working full-time.)

This was not limited to the younger age groups, as this 85+ year old couple indicated.

M: The friends that we've got are through swimming and...

F: We did have dancing friends.

M: But we don't go dancing anymore.

F: ...Swimming I do a lot with that, but until this is properly healed.

M: Yes, exercises every day she does 25 minutes exercises every morning.

F: Yes I do exercises before breakfast.

M: That went on unailing every day for 40 years, never missed a day. (P322 — couple, 85+ years, regional, separate house, pensioner, assistance required.)

Others were involved one or a few times a week.

We go to Keep Fit twice a week. We go walking with a walking group once a week. (P1274 — male, 60–64 years, with partner, suburban, self-funded retiree.)

No, because I go to work. It's quite a physical job. I often do, what's it called, Exercise for People over Fifty, I go Tuesdays and Thursdays, I do an hour of each a day, but we try and walk every weekend. (P663 — male, 70–74 years with partner, regional, working part-time, assistance required.)

Some involvement with sport was more as a spectator than a participant.

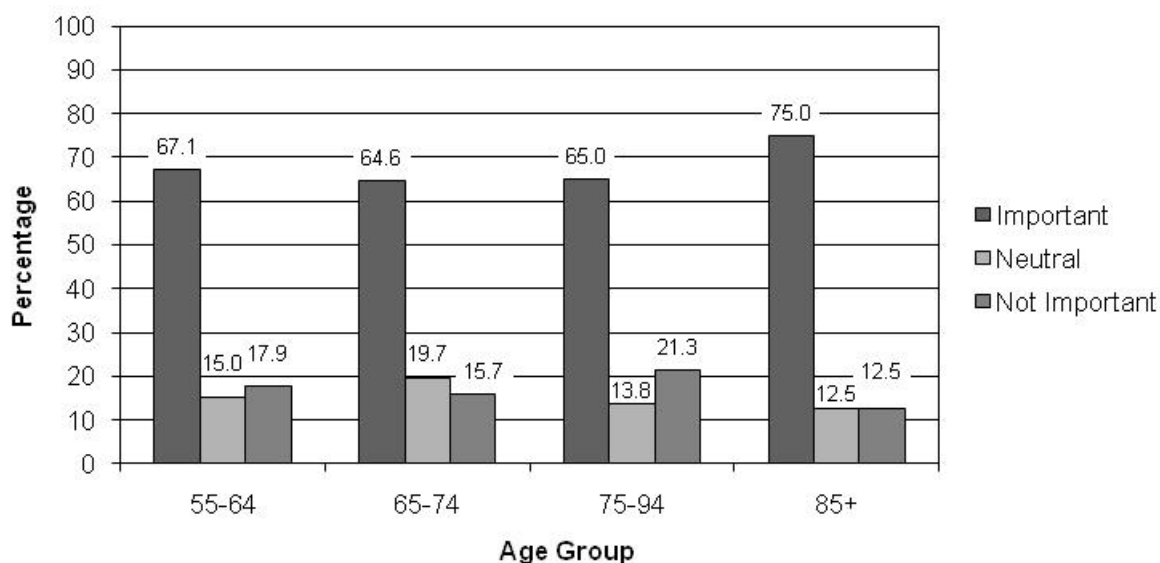
When the football is on, it's weekly. They have it Friday night, Saturdays and Sundays and it just depends on where the games are played. If they're played at the MCG on Friday night well because I'm retired [unclear]. And I often get a Saturday or a Sunday. Sometimes you'll get the three. Sometimes you'll just get one or two. (P1589 — female, 65–69 years with partner, separate house, suburban.)

From Figure 141 below, it can be seen that the importance of proximity to sport and recreation facilities is similar over the first three age groups — around two-thirds of sport and recreation participants.

Keeping fit through exercise and sporting activities is clearly important to many of the older home owners participating in this study. While daily exercise is more prevalent among the younger two age groups, those of older age are still often involved in regular exercise at least one or a few times per week. Two-thirds of participants in these activities thought it important that sport and recreation facilities were within close proximity to where they lived. This has implications for planning and urban design in an ageing society.

Figure 141: Importance of proximity to sport and recreation activities now

(n=795)



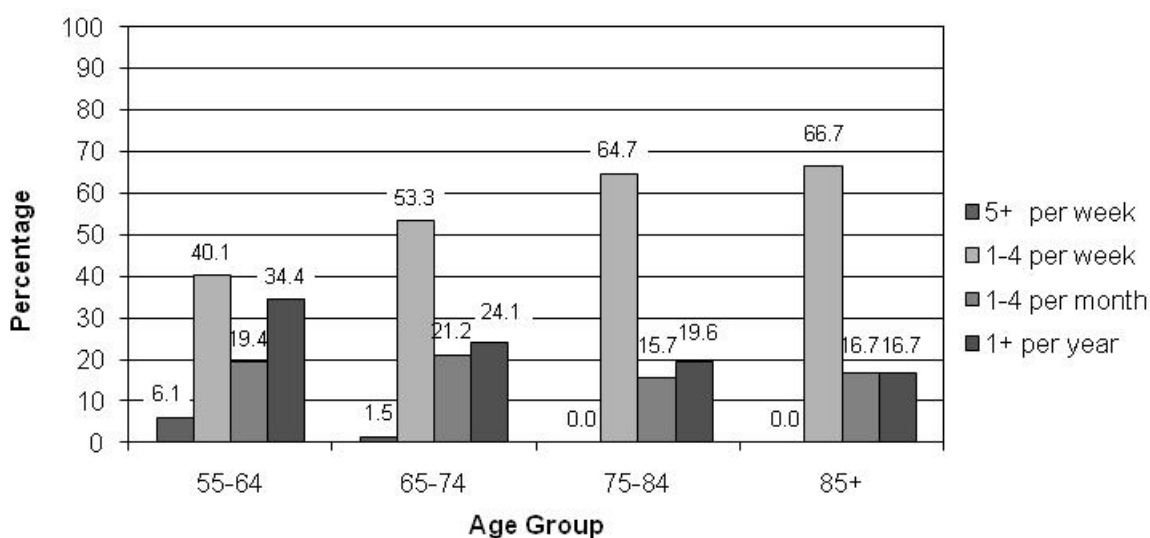
Note: 85+ figures are unreliable due to small number of respondents (n=4).

8.3.4 Educational activities

The survey results indicate that involvement in education classes and activities was the least participated in of the 11 activities specified. However, despite the relatively low level of participation (27.5 per cent of all respondents), Figure 142 shows that the rate of weekly participation increases by over 60 per cent over the first three age groups.

Figure 142: Frequency of participation in educational courses and activities

(n=441)



Note: 85+ figures are unreliable due to small number of respondents (n=6).

When the importance of close proximity was considered (Figure 142), less than half of the participants in education in the first three age groups thought it important that the

educational facilities were close to home. This suggests that the majority of older participants in education are quite prepared or expect to travel some distance to these activities.

The most commonly mentioned educational activity in the interviewees was involvement in classes with the University of the New Age (U3A), an international educational movement for older people that has numerous branches around Australia including an on-line facility. A number of those undertaking education were people requiring assistance.

I belong to — I go to U3A. I'm doing astronomy at the moment...[a]t the community centre. (P43 — female, 75–79 years, living alone, attached house, regional, pensioner requiring assistance.)

Others were undertaking courses with Universities, TAFE or other organisations.

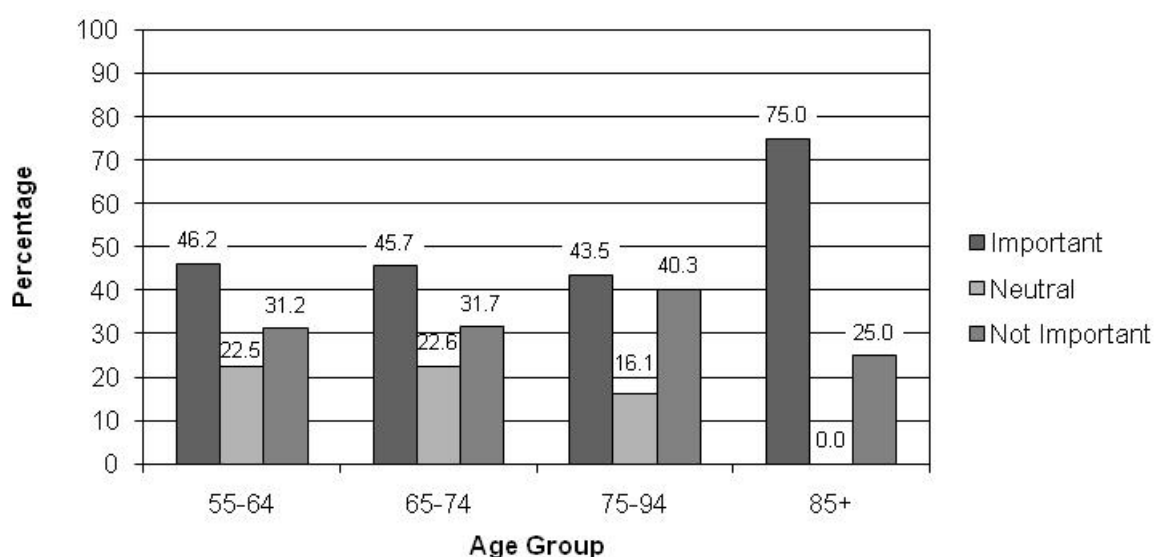
I was a member of the [U3A] for some time before. Then I used to attend — in the Brisbane area, I used to attend drawing classes. Then I became ill and I was not well for quite a long time. Then the U3A...separated...so I became a member in [place name 1]. Here we started off with different classes and different groups. I started an Italian group up here. So now — this is the tenth year that I've been going [there]. Because I also do — I also go to TAFE. ... I've been studying computers. (P72 — female, 75–79 years, CALD, regional, separate house, pensioner.)

I have my youngest son lives in the city. He lives in the city and he works in the city, but we do a philosophy course together on Saturday so I catch up with him once a week, which is great fun. (P898 — female, 60–64 years, living alone, suburban, separate house, self-funded retiree requiring assistance.)

Compared to other activities, importance of close proximity was rated less by survey respondent participants than other activities, and there was little difference for each of the first three age groups (Figure 143).

Figure 143: Importance of proximity to educational courses and activities now

(n=598)



Note: 85+ figures are unreliable due to small number of respondents (n=4).

Despite the lower levels of participation in educational courses and activities, and the lower importance put on close location to home, clearly for some older home owners participation in education through avenues such as U3A, TAFE and University courses is important, and participation does appear to increase with age.

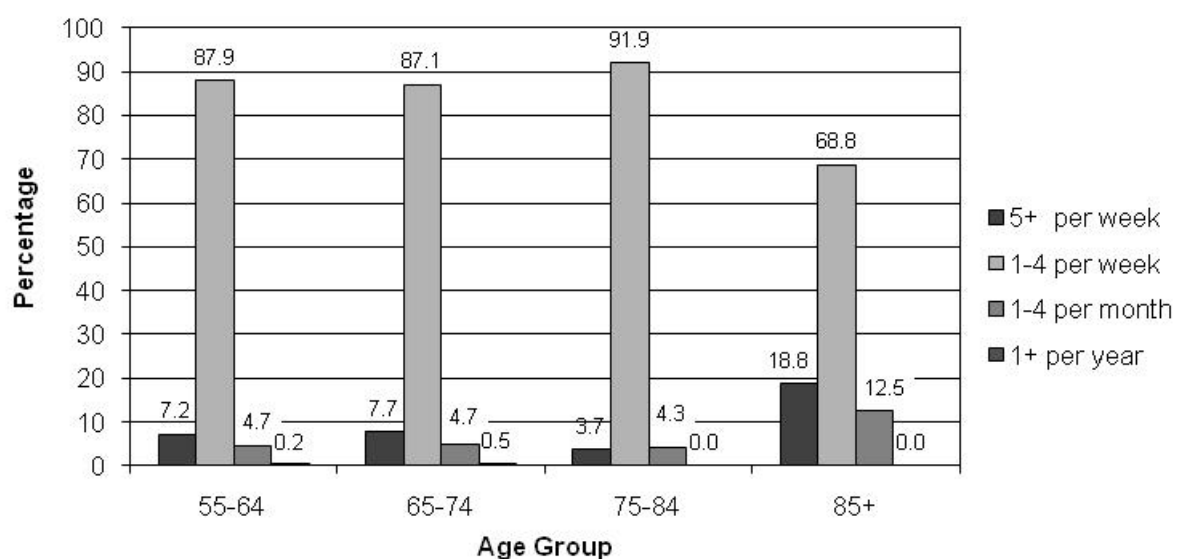
8.4 Access to shopping, banking and retail services

8.4.1 Shopping, banking and retail

As noted earlier, participation in shopping, banking and retail services was the highest of all activities. Figure 144 below shows that frequency of involvement in these activities was predominantly 1–4 times per week and is fairly consistent across the first three age groups and decreases only in the 85+ group.

Figure 144: Frequency of participation in shopping, banking and retail services

(n=1215)



Consistent with these findings, most people interviewed were doing their major shopping weekly, and some fortnightly or more than once per week. However, it was common to make a distinction between the use of local neighbourhood shops and larger shopping centres, both in terms of frequency of visits as well as the kind of goods purchased. Local neighbourhood shops were used more often for convenience items and larger shopping centres for weekly or fortnightly grocery shopping.

INT: How close are they to here, the nearest shops?

F: Well the ones in [local centre] you can walk to.

INT: How long does it take you to walk there?

M: Ten minutes.

F: Oh, a bit more than that now. It used to take me 12 minutes to get to the station, so 15 minutes tops. And we've got two major ones down there. The other one that way which is even bigger you jump in the car and it takes you five or seven minutes I suppose. (P784 — couple, age not specified, suburban, separate house, self-funded retiree.)

INT: Have you got a neighbourhood shopping centre anywhere near here?

F: There is, yeah, just a couple of streets away.

INT: Do you use that much?

F: Probably on a weekly basis.

M: Yeah, the supermarket, ...it's only a small one so a lot of the things we use it doesn't stock. We just get some supplies. Or if...she's getting dinner ready and she's run out of onions, you know? I go out there and get a couple of onions and things like that, that sort of thing. It's handy to have, yeah.

INT: Not [for] your main shopping?

F: No, and there's a post office and a newsagent so if we have to go to the post office it's easier there than to go to the post office at [large shopping centre] and the newsagency.

M: ...The [large] shopping centre, it's only about 10 minutes down the road. (P1216 — couple, 55–59 years, regional, separate house, working full-time, assistance required.)

Some made very little use of their neighbourhood shops, preferring to use the larger shopping centres.

[W]e're close to two shopping centres. You've got a main shopping centre there. [then] there is a little shopping centre just up the road that has a service store and so on, [but] we very rarely use that. But I don't know, we've got two shopping centres in [nearby town centre], the one near the pub that has Woolworth in it, and a chemist and quite a few things, and then we have what was the original village ... that has Coles and Mitre 10 and all that. So yes, if you call that local, yes, we use that quite regularly. (P473 — male, 65–69 years with partner, separate house, suburban, working part-time, assistance required.)

Others relied more heavily on their local neighbourhood shops.

Well the...shopping centre where I do my food shopping, it is three minutes drive. I usually drive because I don't want to carry large stuff, otherwise I walk. If I go without shopping, just for something else to [place name], sometimes I walk, sometimes I drive. Probably 15 minutes walk. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

Sometimes using the local shops was seen as supporting the local community.

The shops I walk down to here for small things. [It takes] about eight minutes. I go to the hairdresser there. I try to do things locally if I can because I think, to support the local community. Very good greengrocer, a good hairdresser and so on. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

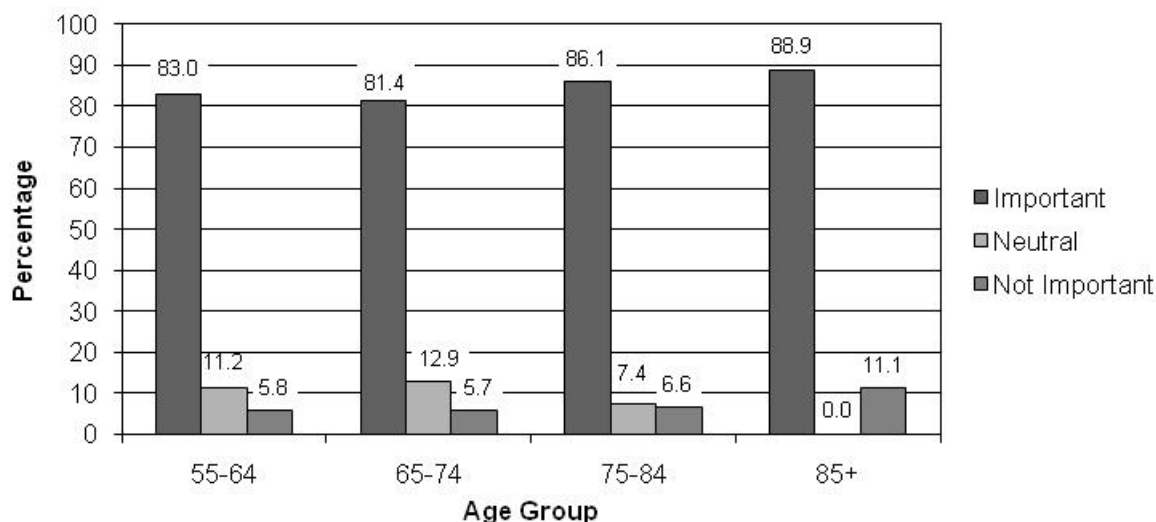
For some, convenience was more important to them than price, even if it was necessary to go further afield for items not available there.

Yes. I use the regular [shops] here. Most of the time, I use the one here. Because I find that most of the things [I need are there]. [For] a special thing I need, I go down to [place name]. [There] is a deli there. So I use the deli. Sometimes I also go to another deli...when I come back from the city [by] train, because it's on the line of the train. So I might stop there to have extra things. I then catch a train back home. So I try to make it my way like that... Some you prefer to just go for — if you have very special things to purchase. (P72 — female, 75–79 years, CALD, regional, separate house, pensioner.)

Figure 145 below shows that the high importance of proximity to shopping increases slightly over the last three age groups.

Figure 145: Importance of proximity to shopping, banking and retail services now

(n=1017)



Note: 85+ figures are unreliable due to small number of respondents (n=9).

A number of interviewees were conscious of their changing abilities and how this impacts on convenience of access to retail facilities.

It's only a 20 minute walk, which isn't a racing walk either. It's just gentle. I used to do it in 15 and now it's 20. It's just comfortable. I sort of walk briskly but I don't power walk or anything. And I can carry the shopping home... The other way, if I really buy something, I will catch the bus because my arms start aching and my neck starts aching. My son will do all the heavy stuff, the potatoes and things. (P1222 — female, 70–74 years, pensioner requiring assistance.)

A number of interviewees spoke of the importance of having shopping and other retail facilities close at hand, especially when these were not already available in their immediate neighbourhood.

A little shopping thing around here would be ideal, you know, just a small convenience area would be ideal with one shop, one with a grocery shop [and] a coffee shop. But once you have that then they would say, if you are going to have a shop you should also have a little butcher shop and you should also have a little fish shop. (P1252 — male, 80–84 years with partner, flat/apartment in seniors' development, suburban, self-funded retiree.)

Well, if I had my wish, they'd be next door. I mean I really like inner city living, like New York is fantastic. But I know that's not possible, and it wasn't possible to live in the city, it didn't suit us really in a number of ways. But I do love the accessibility of shops and restaurants and that, I love it. (P424 — female, 60–64 years with partner, separate house, suburban, self-funded retiree.)

For some close proximity to retail had been an important factor in choosing a suitable home.

INT: So when you chose this house, its location in relationship to services like shops and doctor and things like that, was that an important consideration?

RESP: It was very important. Because now I say my world is only three kilometres. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

Others appreciated the value of the retail facilities that they had close at hand.

Oh, regularly. I do a big shop about once a fortnight, but..., you know, if you go for a walk, you'll call in, buy something or other. And we go to meals here, there's nice coffee shops local. I think that's very important that you could walk or get easy access to fresh milk, bread, veg. I don't mind walking to [street name] or to [street name]. And also you could get there on a gopher. And that's important. [It takes about] ten, fifteen minutes [to walk there]. (P22 — female, 60–64 years, with partner, attached house, capital city, pensioner, assistance required.)

However, not all respondents felt that close proximity was important — for example, in this case of a person in the younger age group having experienced a recent reduction in household size.

Well I think as the family demands change, which mine have dramatically, our shopping has gone down quite considerably, so my wife and I can basically go out once a fortnight really and just stock up. So the shops being close by is not a necessity anymore. (P2003 — male, 55–59 years with partner, working full-time.)

An important cultural dimension to access to retail was also raised by some of the CALD respondents.

When we go, we go [to] two area[s]. One's the traditional supermarket and then the other area where we can buy the Asian groceries...Very good for us, we thought about that before we chose this location. Because supermarket, supermarket at [large shopping centre] ...it's one area where we do our major shopping because anything from Hong Kong we... still like to go to Chinatown. I think when you first arrive, newly migrated, you know for sure that's where you get a lot of Chinese stuff. Yum Cha and restaurants. (P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

Both the survey and interview results reinforce the importance of access to retail for older home owners, as the most common and frequent activity outside the home. A reduction in ability with age can also impact significantly on an older person's access to the very basic necessities of life, and hence to their independence and wellbeing. This has some important implications for urban planning, design and infrastructure.

8.5 Access to entertainment and cultural activities

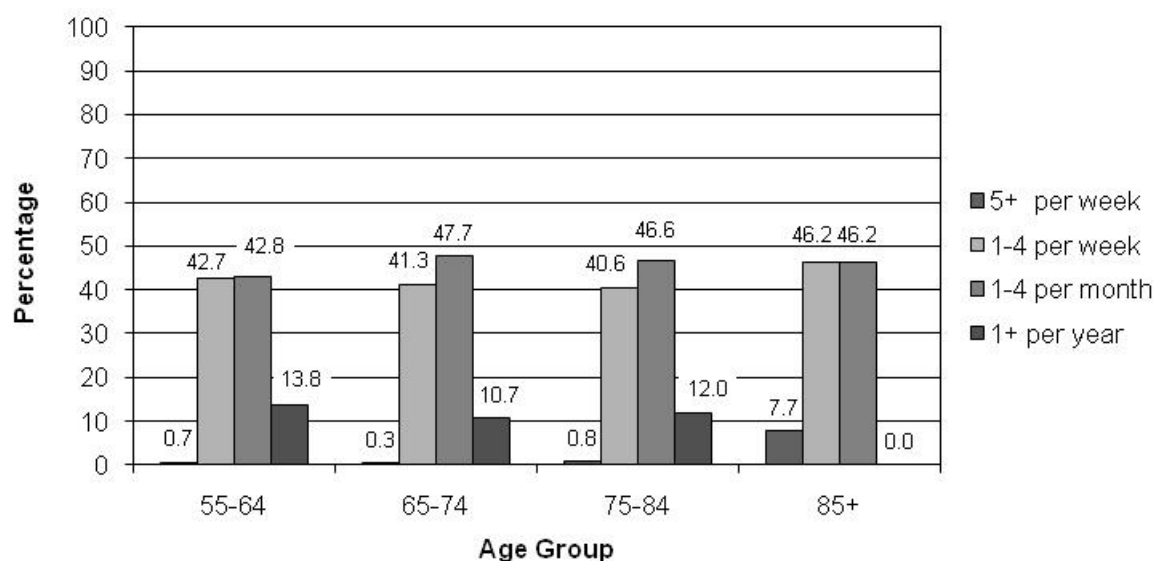
Two activities are grouped in this section — dining out and theatre and cultural activities.

8.5.1 Dining out

Dining out was identified earlier (Figure 128) as the fifth most common activity in which survey respondents participated (69.9 per cent of respondents) and yet the most infrequent of all activities (Figure 129) with marginally more respondents involved monthly (45.0%) than weekly (42.0%). Figure 146 below shows that there was also little difference in frequency of participation throughout the various age groups.

Figure 146: Frequency of participation in dining out

(n=1121)

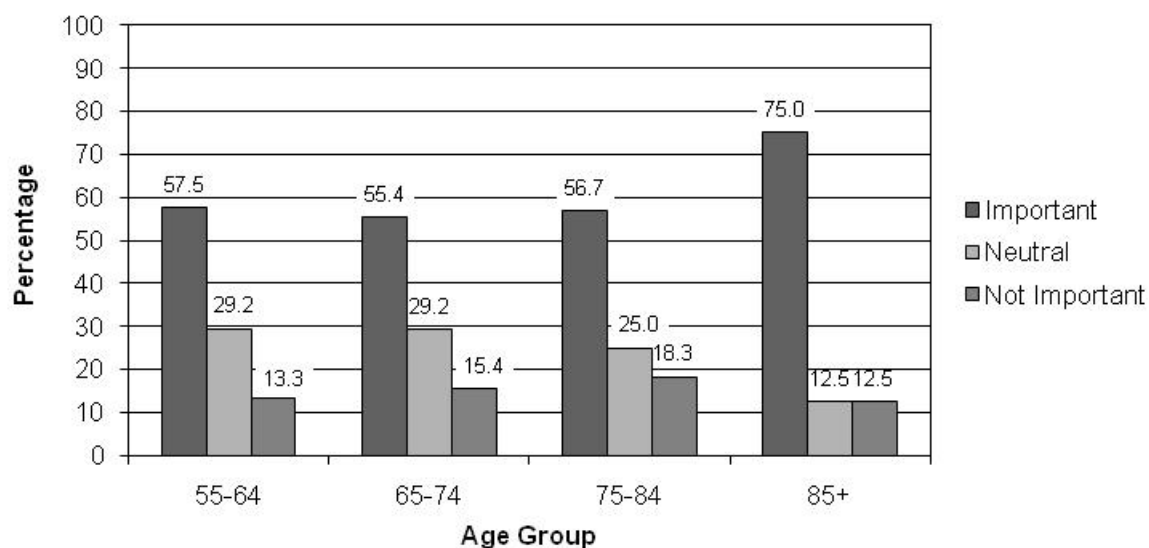


Note: 85+ figures are unreliable due to small no of respondents (n=13).

Neither did views about the importance of close proximity to dining out facilities vary significantly throughout the first three age groups (Figure 147).

Figure 147: Importance of proximity to dining out now

(n=958)



Note: 85+ figures are unreliable due to small number of respondents (n=8).

In the interviews there are few specific comments about dining out, although coffee shops, cafés and restaurants were mentioned among the activities people regularly were involved in.

I go to [suburban centre], on Sundays. I usually go up there and have a coffee in the morning and read the paper for a while... It is just at the end of the street, so it is handy from that point of view. I quite like that. Last night, for

example, my family came and we walked down the road here to a pizzeria and had dinner there. I am a regular there. They know me. It is nice to go in and they greet you by name. It is a nice little community atmosphere and it is part of the city, but it is still enough isolated to be friendly. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

[Partner's name] is a great one for saying, well let's go out and do some shopping and we'll stop and have lunch somewhere, so we might do that two or three times a week. That is important to me. I love to sit down, eat and have a cup of coffee and just watch people going by, and all different walks of people, and I love seeing that go on... (P784 — male, age not specified, with partner, suburban, separate house, self-funded retiree.)

Some included them in the facilities that they thought were important to have within walking distance of their home.

Well, if I had my wish, [the shops would] be next door. I mean I really like inner city living, like New York is fantastic. But I know that's not possible, and it wasn't possible to live in the city, it didn't suit us really in a number of ways. But I do love the accessibility of shops and restaurants and that. I love it. (P424 — female, 60–64 years with partner, separate house, suburban, self-funded retiree.)

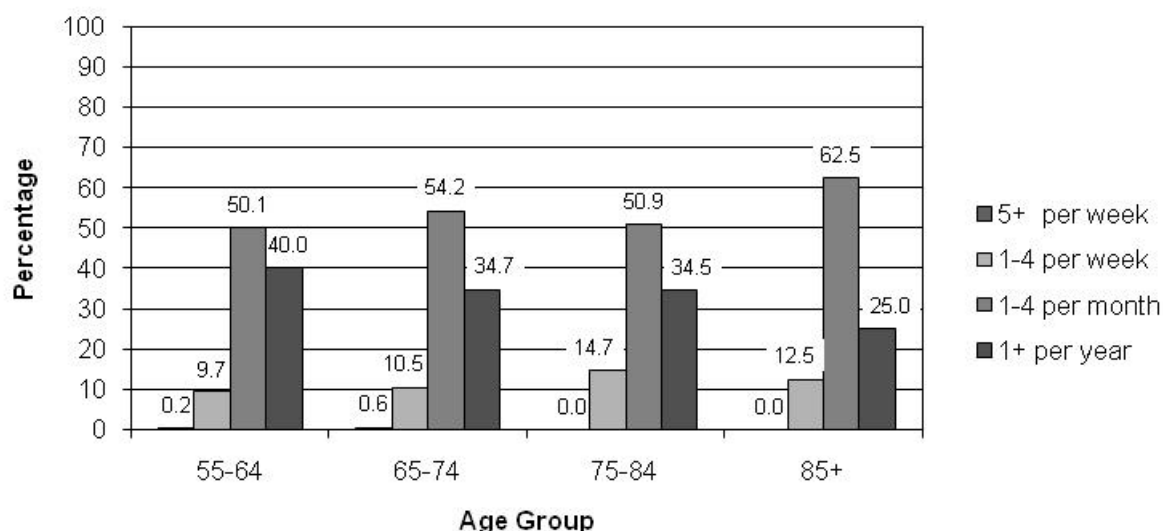
The association of dining out with shopping and clubs in these comments makes an important point. It suggests that we need to take a broader view of dining out as an activity, not limited to formal restaurant patronage but including having coffee, attending clubs, and more broadly shopping and retail activities, all of which are often associated (see for example many of the interviewee comments in section 8.2.1 and 8.3 above) and even visiting and being visited by family and friends (section 9.1).

8.5.2 Theatre and cultural activities

The participation of the respondents in theatre and other cultural activities was considerable (63.1 per cent of respondents) with overall frequency of participation of 51.7 per cent on a monthly basis, and an additional 37.6 per cent on an annual basis (see Figure 128 and Figure 129). Figure 148 below shows that participation is similar across the age groups.

Figure 148: Frequency of participation in theatre and other cultural activities

(n=1012)



Note: 85+ figures are unreliable due to small number of respondents (n=8).

Examples of the kinds of cultural events attended by interviewees are given below.

I subscribe to Chamber of Music concerts which happen five times a year, and I'm looking at going to some other concerts but I won't go to the whole 12 months worth. (P1480 — female, 75–79 years, living alone, attached house, capital city, self-funded retiree.)

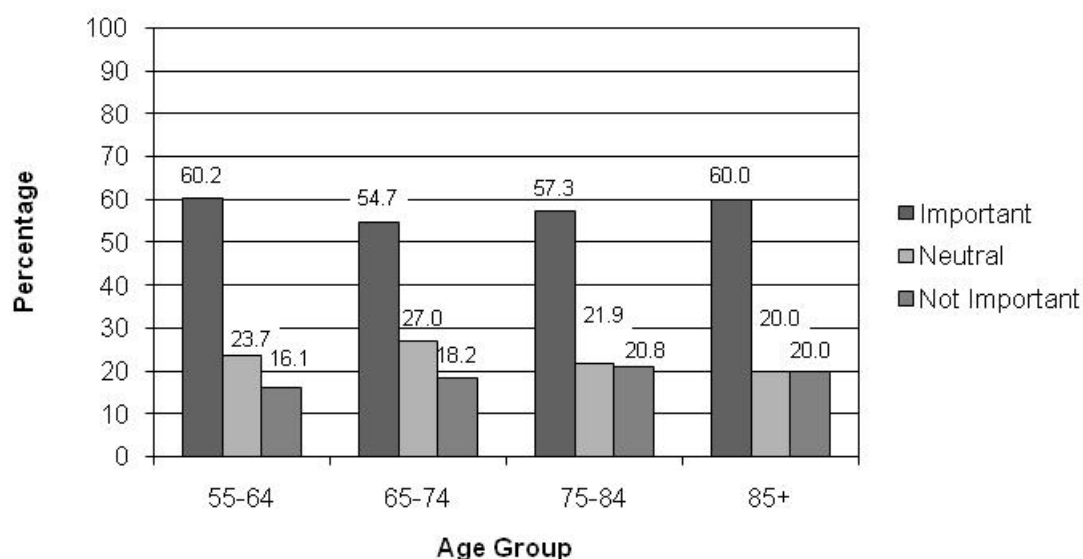
I enjoy stage shows and I drive to a large entertainment centre in [nearby town name], 30 mins drive. (PS1570 — female, 65–74 years, regional, separate house, self-funded retiree.)

I like to go to the movies. And the movie theatre that we go to, mainly down in Glenbrook, it's just a little theatre. There's a ramp up to it and there's a ramp inside. It's designed for — they've changed it and it's always been accessible to people in a wheelchair. I like to go to people's houses and sort of see people, but it doesn't necessarily work. I like going to concerts, more classical music than anything else. (P161 — female, 50–59 years, regional, pensioner requiring assistance.)

As indicated in Figure 149, close proximity was important to between 55 and 60 per cent for all age groups.

Figure 149: Importance of proximity to theatre and other cultural facilities now

(n=894)



Note: 85+ figures are unreliable due to small number of respondents (n=5).

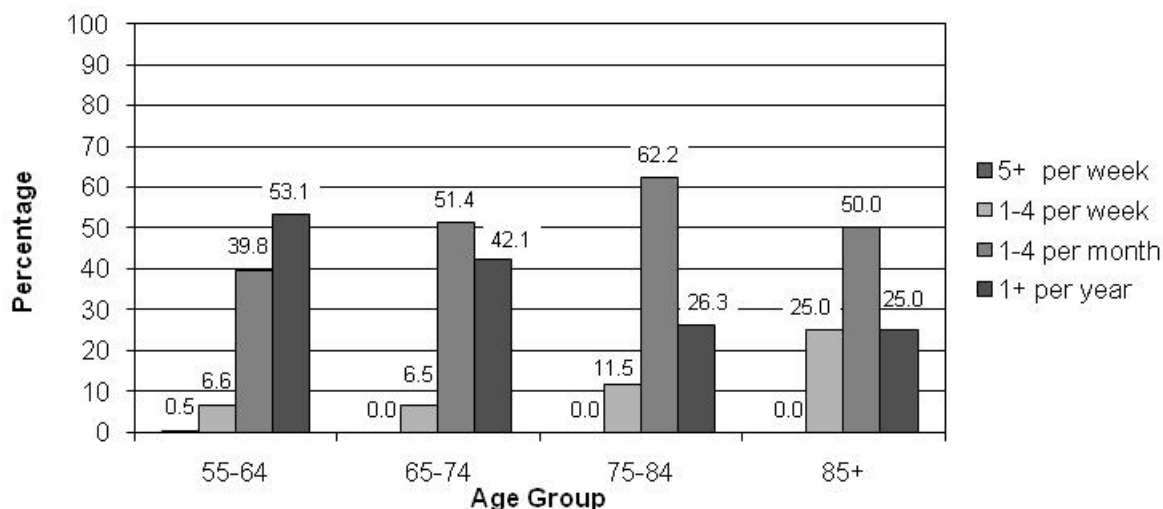
8.6 Access to medical and health services

The Positioning Paper reviewed the evidence that health and disability problems increase with age and that access to transport and access to health services were likely to be important factors in enabling older people to maintain independent living in their own homes (Quinn et al., 2009: 41–42, 54). It was important, therefore, to investigate the use of medical services by older home owners, and the importance of having these services at close proximity to the dwelling.

Although use of medical and health facilities was the second most common activity of the older home owners surveyed, with 81.0 per cent of respondents involved in some kind of medical or health care facility, it was one of the lowest in terms of frequency of participation, with an almost equal percentage of respondents attending either 1–3 times per month (46.7%), one or a few times per year (45.6%). When broken down by age group, frequency of use is shown in Figure 150.

Figure 150: Frequency of participation in medical and health appointments now

(n=1194)



Note: 85+ figures are unreliable due to small number of respondents (n=16).

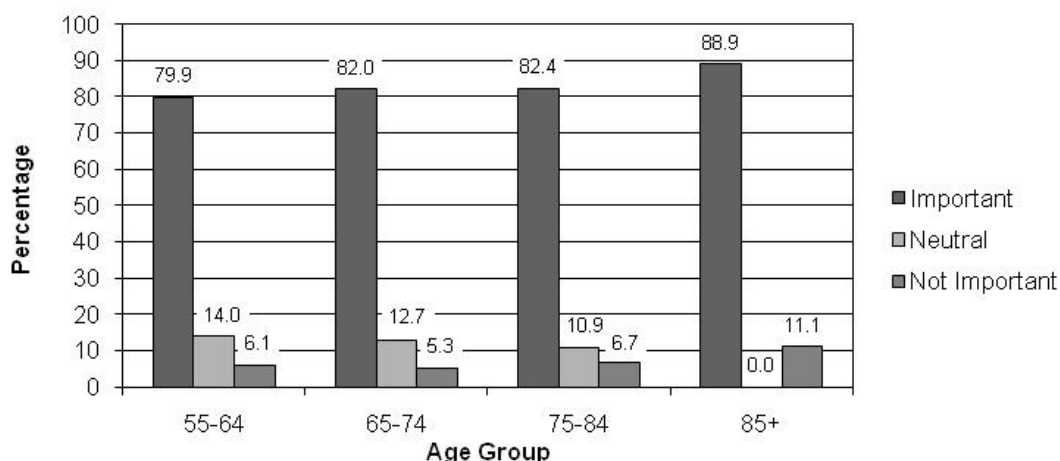
It demonstrates that the frequency of use of medical and health facilities increases with age. Monthly use increases from 39.8 to 62.2 per cent over the first three age groups, and annual use decreases accordingly. Weekly visits also increase progressively from only 5.5 per cent in the 55–64 age group to 25.0 per cent in the 85+ age group.

This reflects evidence from the Australian Institute of Health and Welfare that ‘General practitioners (GPs) play a significant role in the lives of many older people as primary health-care providers and as a point of referral to other health services’ and that the number of GP visits and prescriptions increases with age (AIHW, 2007:105,109)

The importance of close proximity to medical and health facilities was earlier identified in Figure 131 as the second highest of all activities at 80.4 per cent overall — second only to shopping, banking and retail (83.1%). Figure 151 below shows differences across the age groups and indicates only a very marginal increase with age.

Figure 151: Importance of proximity to medical and health appointments now

(n=993)



Note: 85+ figures are unreliable due to small number of respondents (n=9).

Many of the interviewees expressed the importance of having medical services close to home.

It is important to me, yes, because I had a doctor in [country town] and then changed to [place name]. So it's important to me that they are close because I'm looking in the future. I still can't get there, any other way than by car because we still too far away from [place name]. (P152 — male, 60–64 years, living alone, CALD, separate house, regional, self-funded retiree.)

Well, I think for most older people, the most important...thing is that you can get as close as possible to the shop where you can buy your essentials, you can buy fresh vegetables and fresh food, but equally important is to have your doctor [as] close as possible, I feel. (P600 — female, 70–74 years, living alone, CALD, capital city, flat/apartment, pensioner.)

The advantage of living in an area well served by local health services was well illustrated by this comment:

We've got all the facilities that we need close at hand and I'm talking about as we get older medical facilities. We can walk to the doctors. We can walk to the medical centre. We've used the physio just down the road, we've got a chiropractor, dentist, everything is just here if we want it, not that we are utilising them necessarily at the moment because I still go to my original dentist and that sort of thing which is some distance away because I can drive. But for the future, everything we need is very close by. If we can't walk there, if we had to get somebody to drive us it's not putting a huge imposition on them because it's all close by. (P784 — male, age not specified, with partner, suburban, separate house, self-funded retiree.)

A comment from an older person living in an area with poor access to health facilities stands in contrast to this.

Hospital — you can't get to the local hospital by public transport. If low income and no car you can't afford to visit a relative in hospital. In five years if I am on my own and get sicker than I am, I would have to consider moving somewhere with medical facilities. (P43 — female, 75–79 years, living alone, attached house, regional, pensioner requiring assistance.)

Good provision of local health services was not limited to major metropolitan areas, as this regional couple explained.

INT: [Do you have] medical services close by?

M: Yeah.

F: Close enough, they're around.

M: Excellent.

F: That's another thing we were really pleased about when we came here.

M: Yeah. Superb here.

F: Yeah. We couldn't get over the amount of doctors in the place.

M: Yeah. Just superb here, especially...

F: Because there were three surgeries...

M: Dental surgeons, we've got lovely hospital built — super million dollar base hospital another huge hospital.

F: A private one.

M: [Name] Private Hospital which is second to none.

F: Then they're building a second private hospital.

M: A second private hospital and there's a daytime surgery, a mob of doctors had built a daytime for the...

F: Day surgery.

M: Just really we're spoilt.

F: We do have neurologists etc here.

M: All the dental stuff. (P621 — male, 60–64 years, with partner, regional, separate house, pensioner, assistance required.)

Sometimes age or specific health issues required very local medical services.

Health wise, I've got a pacemaker and the other thing for here was I've got a private hospital around the corner — which they've already given me a card for — and if I ever needed an ambulance they would take me immediately to the hospital where they have a heart surgeon. (P1114 — female, 55–59 years, living alone, coastal regional, attached dwelling, self-funded retiree.)

For people who had moved, however, many preferred to use medical services located where they had previously lived or worked because of an established relationship with a practitioner, but might use local medical facilities if necessary in an emergency or if their doctor was away.

F: Our GP is in [suburb name 1], so that is 15 minutes by car depending on the traffic. The optometrist is in [suburb name 2], which is 20 minutes depending on the traffic, but again...

M: Our choice.

F: These were the people who we have since 1980 when we came here. So we kept them on. Whenever there is an emergency and I can't get to the GP and I have to, then there are medical centres around. (P1253 — female, 55–59 years, living alone, CALD, suburban, separate house.)

Others used a mixture of local and more distant medical and health services.

I use the local chemist; I also use pharmacy direct which is a very reasonably priced place where you can buy everything and they deliver it and if you buy over a hundred dollars worth then there is no delivery fee so that is very convenient and, but I have my GP in the city. (P1321 — female, 55–59 years, living with child, CALD, suburban, attached house, working full-time.)

Sometimes there were other reasons why older people preferred to travel further for some health services. In this case because it was cheaper.

Yes, for a family doctor or for dentist for example, they need to be fairly close. I have a, my family doctor is just up the road there, I could walk there in 20 minutes if I wanted to. My dentist who has rooms in the city centre has a surgery at Darra which is 10 minutes in the car. But...it's nice to get free parking these days and if I go into the city centre I take the train from [station name] in because being elderly...for \$2.40 I can get the cheap day return and nip into town. If I took the car in, it would be \$15 or \$20 if I could find somewhere to park. (P173 — female, 70–74 years, living alone, separate house, suburban, self-funded retiree.)

In the following case, cultural factors were more important than close location of medical services.

INT: What about medical services, doctors and pharmacists and things like that? Have you got those handy to where you live?

RESP: We go to [suburb name].

INT: How far would [that] be away from where you are?

RESP: Ten kilometres... where I [used to] work.

INT: Do you ever wish that any of those shops or doctors or pharmacists were closer to where you live?

RESP: That seems reasonable, but of course, if closer that's better. GP I go to originally came from [Asian country], speak the same language. That's very important... Particularly for family members who don't speak fluent. Then it's hard to communicate. Doctor came from [Asian Country], went through Sydney Uni and does acupuncture. Because no matter how good your English is, you can't understand medical terms and that stuff. (P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

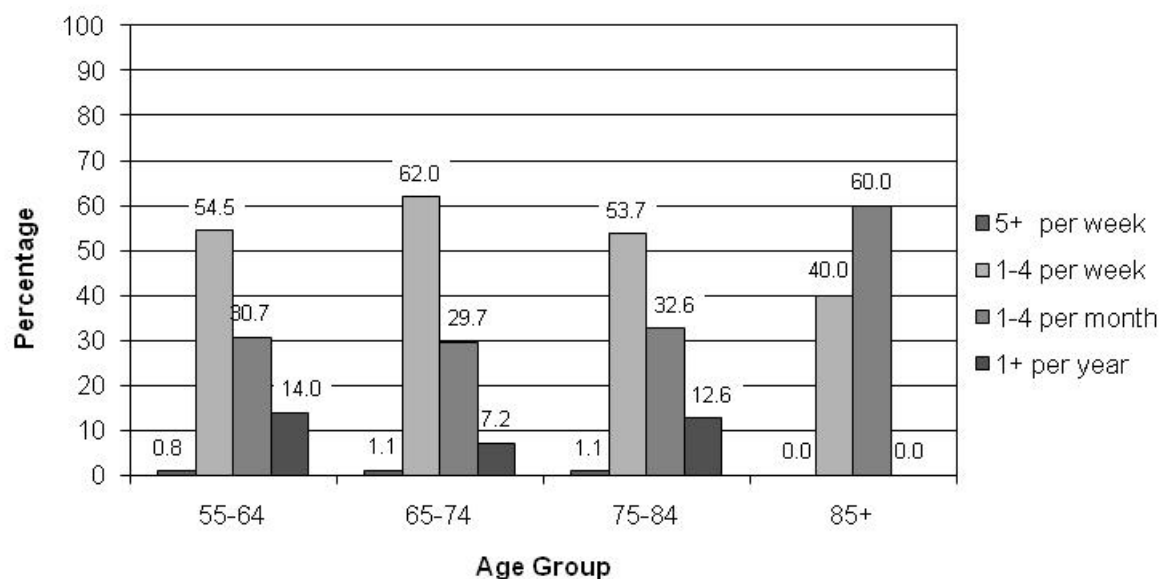
What this illustrates is that, while access to health care is increasingly important as people age, the need to live in close proximity to health services varies considerably depending on whether interviewees had lived in the same area for some time or whether they had moved, the quality of existing relationships with practitioners, the seriousness of people's health needs, their age, cultural considerations, and even cost of transport and parking. Choice is therefore probably more important than location per se.

8.7 Access to volunteering activities

The Australian Institute of Health and Welfare (AIHW, 2007) estimates that 30 per cent of older Australians (aged 65 and over) are involved in volunteering, and that this decreases with age from 32.4 per cent for 55–64-year-olds to 14.2 per cent for 85+ year-olds (AIHW, 2007: Table 8.1 as cited in Quinn et al., 2009). In this study, as indicated earlier in Figure 129, participation in volunteering was the third least participated in activity with 45 per cent of older home owner survey respondents involved. Figure 152 below shows how frequency of participation varied over the four age groups with 65–74-year-olds being most frequently involved on a weekly basis. For all age groups the majority of participants were involved on a weekly basis (1–4 times per week) with around 30 per cent involved on a monthly basis.

Figure 152: Frequency of participation in volunteering activities

(n=721)



Note: 85+ figures are unreliable due to small number of respondents (n=5).

The kinds of activities interviewees were involved in were many and varied. Some examples of the diversity and frequency of volunteering activities are included below. Some were involved in more than one volunteering activity.

I do at least one day a week voluntary work. One takes me to town by train [to the city] and one takes me up to [local rehabilitation hospital]. I visit a few old people in nursing homes. I'm one myself of course, I know that, but older than I, in their 90s. I do that at least once a week, sometimes two. (P1543 — female, 80–84 years, living alone, separate house.)

Two mornings at the local English immersion school as a volunteer [and] looking after disabled. I take a meal to the [agency name], an evening meal, about once every two to three weeks. (P173 — female, 70–74 years, living alone, suburban, separate house, assistance required, self-funded retiree.)

I actually tutor children after school on Mondays and Tuesdays. I also work in the Parish office voluntarily on Mondays. I take the dog to the nursing homes and that. That is community service...[M]y dogs are trained therapy pets and we go to [name] retirement home. We also go and visit people who are shut in their house and who like to have a visit. (P516 — female, 60–64 years, living alone, regional.)

Others focused mainly on one main volunteering activity.

I go to work, I also do a voluntary job up at the [hospital name], I do that Wednesdays. (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

I drive to them [people with disabilities], take them meals. Next weekend the one intellectually disabled adult I look after is coming to stay here and I also usually look after one of the people who help; an assistant in one of the houses, and we often meet in the city centre or something. (P173 — male, 65–

69 years with partner, regional, separate house, self-funded retiree, assistance required.)

Volunteering is also sometimes connected with religious services and activities.

We are at age 77. Coordinators for Eucharist to the sick and elderly for the Parish of [Church name and location]. Which involves carrying Eucharist to approximately 140–150 people in...their own home, hospital, nursing homes, [or] dementia centre. We [also] coordinate transport by parish bus elderly residents to Catholic mass each weekend with seven volunteer drivers. (P1238 — female, 75–84 years with partner, regional, separate house, self-funded retiree, assistance required.)

Some who were not currently involved in volunteering had plans to get involved in the future.

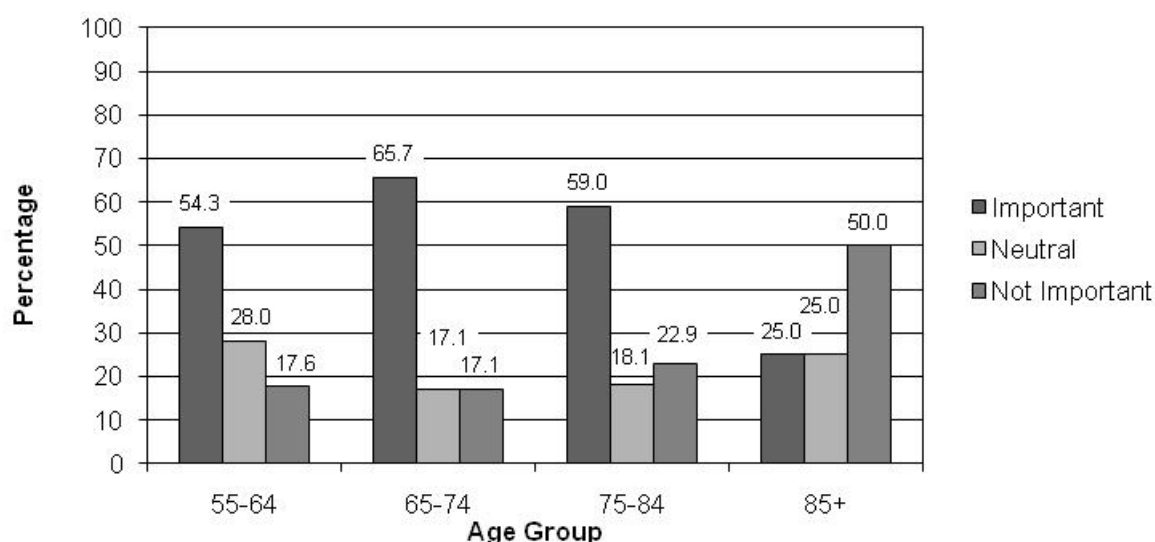
But we want to build a men's shed for [regional town]. Our men's shed, we want the people of [regional town] to own it, no one individual, no company, just we'll get money and then sign it over to the people. (P621 — male, 60–64 years with partner, separate house, regional, pensioner, assistance required.)

It was noted earlier (see Figure 131) that 58.5 per cent of volunteering participants thought it important that they lived within close proximity to the location of their volunteering activity.

Figure 153 below shows the breakdown for the four age groups under study. Importance of proximity is highest in the 65–74 age cohort, probably because of the much higher percentage still working in the younger 55–64 age group (see Figure 12).

Figure 153: Importance of proximity to volunteering activities now

(n=735)



Note: 85+ figures are unreliable due to small number of respondents (n=4).

A few interviewees commented on the importance of close location to volunteering activities.

[I]n my last home I was a volunteer at the zoo. So I did that two Fridays a month. And I have only just resigned from that, because it was further away,

and my Fridays now I want to use differently. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

8.8 Other activities

Survey respondents were able to list other activities that they were involved in that did not fit the other 11 activity categories. A total of 335 or 20.9 per cent of respondent to this question listed other activities, though some of these could fit into the 11 specified activities. Many also listed 'work' in this category which was not within the intended scope of the question. It is important, however, to recognise some of the more prominent 'other activities' in which people participated. Three additional activities stood out as the most common: 'travel' and 'holidays' (local, national and international); 'walking' including 'walking the dog' (also included by some in sport and recreation); and gardening. Less common, but given by a few respondents, were 'crafts', 'library', 'exercise/fitness/gym' (which others included in 'sport and recreation') 'babysitting/child minding', 'swimming' and 'boating/sailing/yachting'.

Comments from the interviewees reflected the importance of some of the most prominent 'other activities' such as travel.

We haven't been [here] because we've done other things. This is the European trip and so forth. It cost a dollar or two. Plus...last year, we went to Norfolk Island and we did a two-week tour of New South Wales [and] Queensland, where we went to Toowoomba and so forth, to the flower show, you know, that sort of thing. (P1063 — male living with child, age not specified, CALD, suburban, separate house, pensioner.)

Walking was identified earlier under 'sport and recreation' as an important activity for many older home owners, but specifically walking the dog was mentioned by a few interviewees.

He [the dog] gets three or four walks a day but I don't take him out every time, my husband does. They go for about half an hour and a half in the morning, very slowly. That's too slow for me. I have arthritis too so it's better for me to be moving. (P1222 — female, 70–74 years, pensioner requiring assistance.)

Owning and caring for pets was important to a number of people, and for some had been an important factor in housing choice (see also section 4.3.1).

The other thing about those particular [seniors'] communities is that many of them, at present anyway, don't encourage pets and I think pets are important particularly for older people, as long as I don't trip over them, but they are important particularly if a person is alone. (P1581 — female, 65–69 years, living alone, attached house, pensioner, assistance required.)

I was looking at semis...and so it just happened that in my search, one Saturday, I saw this villa complex, pets allowed, so the pets was the thing that attracted me to it. (P1321 — female, 55–59 years, living with child, CALD, suburban, attached house, working full-time.)

Gardening was not mentioned by interviewees, probably because the questions about activities were concerned more with what they did outside the home rather than within the home. Library visits were mentioned by a few.

I mean at least once every, I go out, get my library books to pick up, or somebody takes me to pick up. That's once every week. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

In the context of understanding activities outside the home, travel is the most important of these, and needs to be recognised as an important and frequent activity of many older home owners. The importance of animals and gardening to housing choice has previously been covered in section 4.3.1.

8.9 Access to transport services

Given that many of the activities of survey respondents are outside the immediate neighbourhood, access to transport services becomes extremely important to the participation of older people in activities outside the home. The extent to which people are able to walk, use private motor vehicles or public transport for access to these activities is also important to understanding how they participate.

8.9.1 Private transport

As noted earlier in Section 4.2.5, Figure 52, motor vehicle ownership among the survey respondents was very high (96.3%) with an almost equal number having one (46.0%) and more than one (46.6) vehicle and only 6.6 not owning a motor vehicle. The extent to which older home owners valued private motor vehicle transport is also evident from many of the interviews. Major reasons were the convenience, freedom and independence that private car transport represents.

I have a car and I prefer to use the car because it's quicker. Because to get anywhere, I can get a ferry into the city, but then that changeover time to get anywhere else. Either walk up to the train station or change buses, and you're sitting at a bus stop for too long while you're waiting for the next one. (P374 — female, 65–69 years, living alone, capital city, suburban, flat/apartment, working part-time, self funded retiree.)

For a number of interviewees, including some living in regional areas, the use of the car was seen as necessary because of inadequate public transport services.

We rely on our cars here, because it just isn't very good public transport. It has improved in the last year, there's been extra buses put on down here to cope with increased travel, but still not very good. I mean my husband's great, he takes me — he drops me at the train and picks me up whatever. But without that it would be difficult. (P424 — female, 60–64 years with partner, suburban, separate house, self-funded retiree, assistance required.)

In some cases, a health or medical condition resulted in car dependency.

[Public] transport [is] available, but as I cannot walk without a walker I must use car. (P149 — female, 85+ years with partner, capital city, separate house, working part-time, assistance required.)

In other cases, health problems prevented them from driving.

...[I]t is only 18 months ago that I got rid of my car. I had two dizzy spells in a fortnight which frightened the living daylights out of me. Because I was due to get my licence renewed at the time. It sort of hit me I would feel real good having a dizzy spell driving down George Street one Wednesday afternoon so I just got rid of the car and cancelled my licence. (P1554 — female, 85+ years, living alone, suburban, separate house pensioner requiring assistance.)

Some felt that the impact of not having a car would have a very negative impact on their social participation and result in isolation or precipitate a move.

Well, at the moment it [driving] suits us very nicely. If I were not allowed to drive, and I dread that happening, Oh my god, I don't know how I'd manage.

[Partner's name] can't drive now, but he's got this [motorised scooter]...I don't know what we'd do. He'd be confined to the house except for me driving. (P322 — couple, 85+ years, regional, separate house, pensioner, assistance required.)

One interview explained how this had become a reality.

That's what has happened since I've become older. My friendship or my meeting them is practically shutting down completely, because due to not being able to drive, I don't go, I have no social thing out of club. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

Others felt that they could adapt to other forms of transport.

RESP: Yeah, I'm comfortable driving. It was agony when I couldn't drive.

INT: Yes, even if in the future when maybe you couldn't drive?

RESP: Yeah, well, the bus is there, that's why I've got the bus. I'd buy myself one of those scooters. (P43 — female, 75–79 years, living alone, attached house, regional, pensioner requiring assistance.)

Not all people were negative about losing access to a car. This person for health and safety reasons.

No, not at all and probably not having a car was a very deliberate decision to get used to not having a car because I find I became aware much earlier than most people that petrol would be a very precious commodity and I didn't want the stress of a car and so I use a bicycle for shopping and I plan to do that until I drop dead and getting use to that, I feel it is very important to continue doing that so I don't have a fear of it...It is for all of the above; it is for economic, environmental and physical. (P1321 — female, 55–59 years, living with child, CALD, suburban, attached house, working full-time.)

For some people, cars were a means of accessing public transport.

I go into the city sometimes to the [library name]. I drive the car to a place where I can park it without being fined and then I get on the tram. (P1480 — female, 75–79 years, living alone, attached house, capital city, self-funded retiree.)

For one interviewee, the use of a car actually encouraged walking.

If I'm shopping I'll always take the car. I walk; I try to walk about a kilometre or a kilometre and a half every day. But some of the more pleasant walks that don't involve a lot of traffic around parks and things,...I drive to them. So I get in my motor car and I'll drive up to the [park name] or drive down to [lake name] and then I'll do a half an hour or so walk around which is on a walking path or a cycle track, but not for major traffic. And then I'll get in my car and come home again. (P173 — female, 70–74 years, living alone, separate house, suburban, self-funded retiree.)

In the event of developing a disability, the motorised scooter (or gopher) has now become an alternative source of private transport.

INT: So, if you did not have access to your car, what mode of transport would you prefer?

RESP: My little buggy.

INT: Buggy, yeah. So, you wouldn't take the bus or the train?

RESP: Only if I really, really, really had to because I go up those steps, across the bridge to get to the train or the bus and that's a fair way. (P435 — male, 85+ years, living alone, separate house, suburban, pensioner.)

Bicycles were also used by a few interview respondents. In this case to economise and reduce stress.

...Not having a car was a very deliberate decision to get used to not having a car because I find I became aware much earlier than most people that petrol would be a very precious commodity and I didn't want the stress of a car and so I use a bicycle for shopping and I plan to do that until I drop dead and [am] getting use to that, I feel it is very important to continue doing that so I don't have a fear of it...The shopping bicycle is a very sturdy bike with two big baskets, one at the front and one at the back and I have been known to carry fifty kilos on it and I have even carried a box of oranges and... I go at 6am; for two reasons, it's not much traffic and there is no queues in the supermarket and then...once a month or so, there is a...fruit market...in [suburb name], so I will cycle there which is a lot further...and I will get things like coffee and things that I don't get every week. (P1321 — female, 55–59 years, living with child, CALD, suburban, attached house, working full-time.)

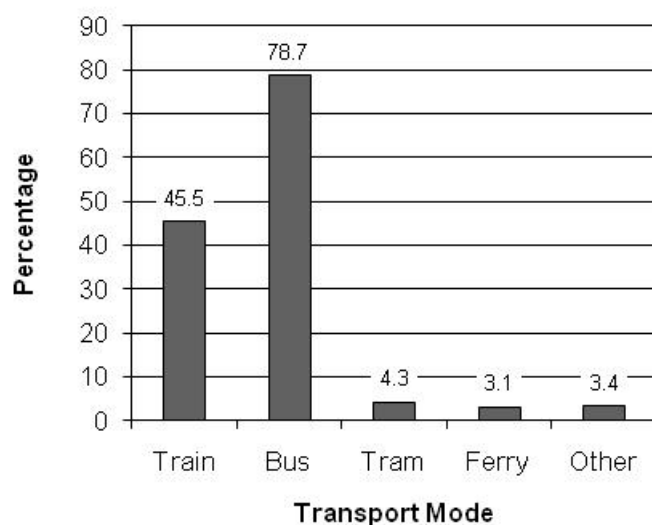
It is clear that for most people the private car is the norm, whether for convenience, independence, health and ability factors, or due to the inadequacy of public transport provision. However, private and public transport uses were not found to be mutually exclusive as some used them in combination. There was recognition among interviewees, however, that future circumstances might make driving impossible. Expectations of the impact of this varied considerably from fear of isolation, to various coping options (including increased use of public transport, walking or motorised scooter. Clearly, ability to adapt is to a large extent dependent on the quality of public transport provision.

8.9.2 Availability of public transport

When asked about access to transport services, 85.3 per cent of respondents had public transport available. As indicated in Figure 154, over three quarters (78.7%) had access to bus transport, 45.5 per cent to rail transport, and only a small percentage to tram, ferry or other modes of transport.

Figure 154: Public transport availability

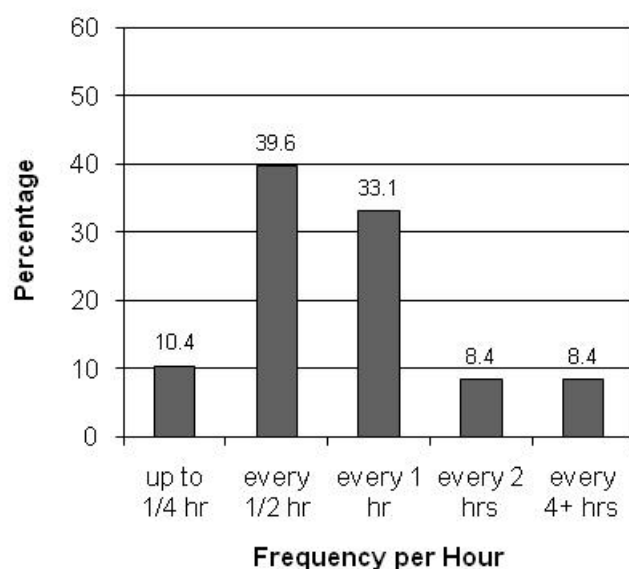
(Multiple response)



For those with access to bus transport, two thirds (67.1%) had a bus stop within 400m, 22.4 per cent within 800m, and 10.5 per cent more than 800m. Frequency of bus services is shown in Figure 155 below and indicates that most had half or one hour services and 83.1 per cent had a frequency of service of one hour or less. Close to half (47.3%) with bus services were satisfied with the availability of the service, 28.9 per cent were dissatisfied, and 17.7 neutral.

Figure 155: Frequency of bus services

(n=1327)

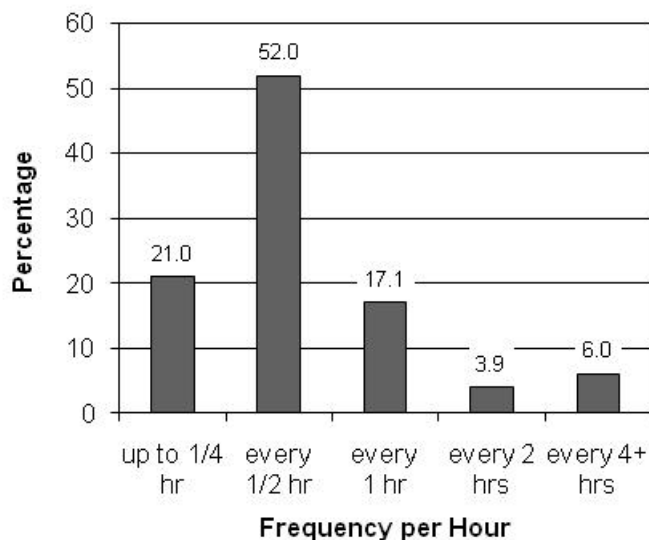


The number with access to rail transport was considerably lower (45.2%) and the distances to stations were considerably greater, with only 14.4 per cent having a station within 400m, 16.3 per cent within 800m, and 69.3 per cent more than 800 metres. Frequency of service was generally better than for bus transport, with over half (52.0%) having a half hour service, double the percentage of buses with a quarter hour service, and 90.1 per cent with a frequency of one hour or less. Satisfaction

levels were also higher than for buses, with 59.6 per cent satisfied, only 16.1 dissatisfied, and 24.3 per cent neutral.

Figure 156: Frequency of rail services

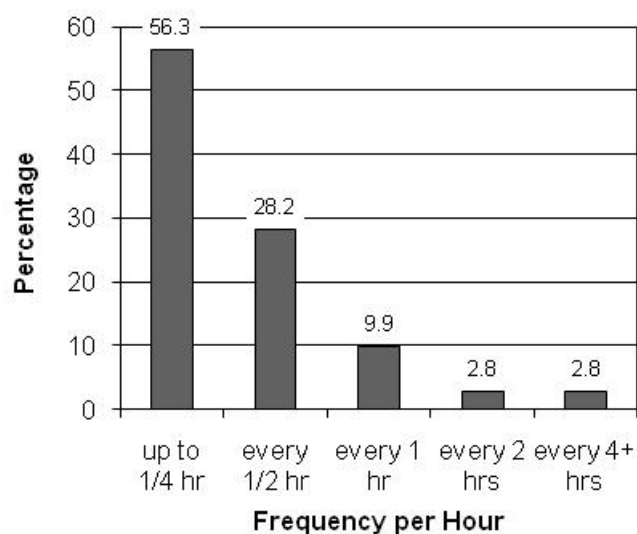
(n=762)



Only 4.6 per cent of respondents had access to tram services and distances were inbetween those of bus and trains, with 33.3 per cent of stops within 400m, 13.6 per cent within 800m, and 53.1 per cent greater than 800m. However, for most of this group, the frequency of service was the best of all three modes, with over half (56.3%) enjoying a quarter hour service, and an additional 29.3 per cent having a half hour service (See Figure 157 below). Satisfaction with the availability of tram services was rated as satisfied by 67.9 per cent, unsatisfied by 16.7 per cent, and 15.4 per cent were neutral.

Figure 157: Frequency of tram services

(n=761)

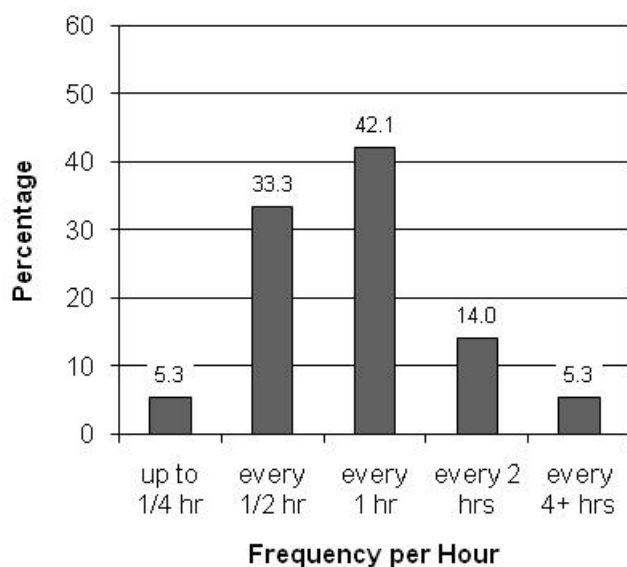


There were also a small number of respondents who had access to ferry services. Distances to these services were generally greater than for the other modes with only

9.4 per cent within 400m, 25 per cent within 800m, and 65.6 per cent more than 800m from the respondent's home. Again frequency was most commonly one hourly (42.1%) or half hourly (33.3%) with 94.4 per cent in one hour or less. In terms of satisfaction with ferry services, 42.4 per cent were satisfied, 21.3 per cent unsatisfied, and 36.4 per cent neutral.

Figure 158: Frequency of ferry services

(n=57)

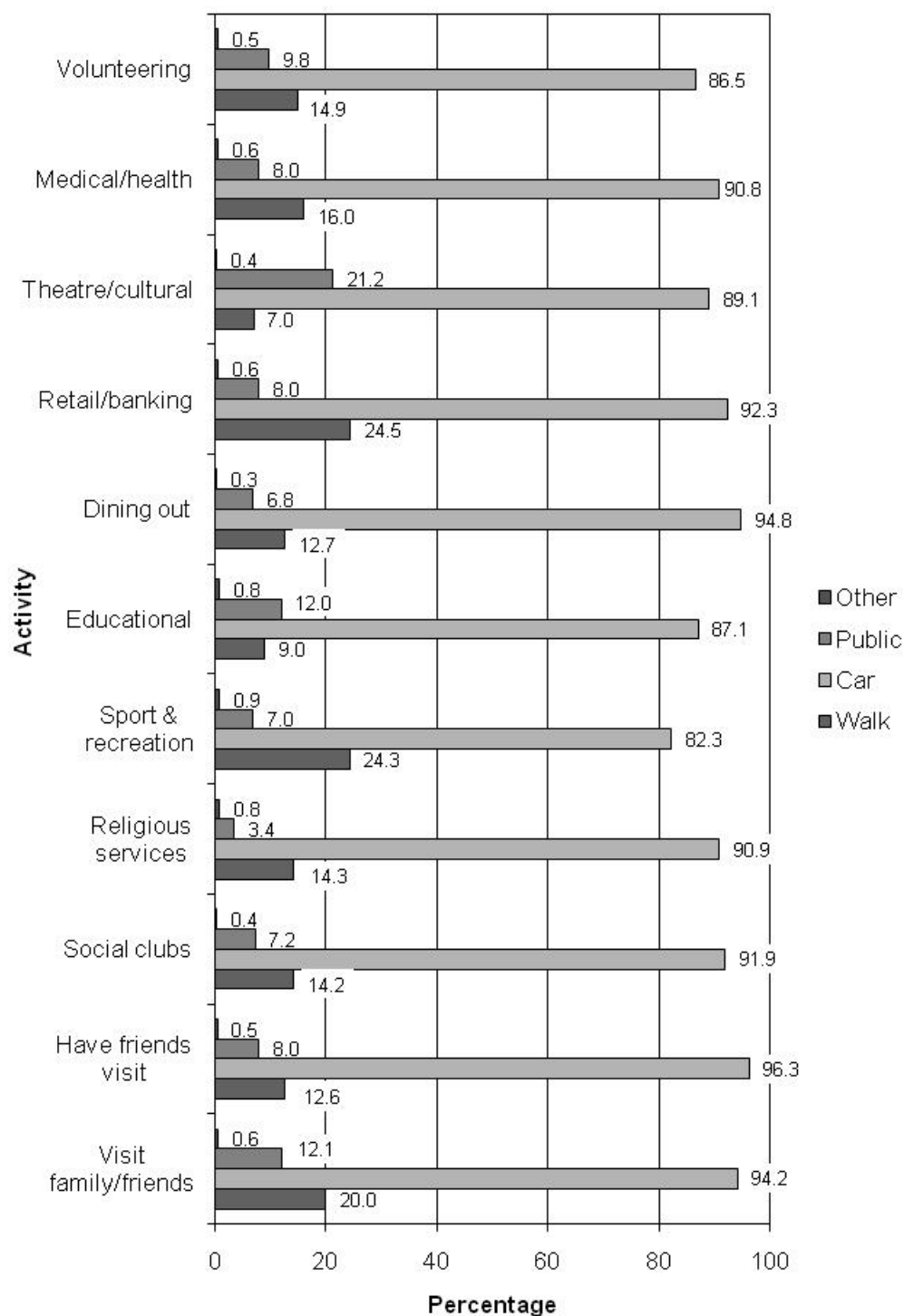


8.9.3 Use of public transport

Despite the fact that two-thirds of respondents had access to bus transport and nearly half to rail transport, use of public transport was very limited, with between 85.5 and 95.3 per cent using private motor vehicles for transport for the range of activities listed in Figure 159. Highest public transport usage was for theatre/cultural pursuits (21.2%) and visiting family or friends (12.1%), while all other activities had less than 10 per cent of respondents using public transport.

Figure 159: Use of public transport by activity type

(n=1043, Multiple response)



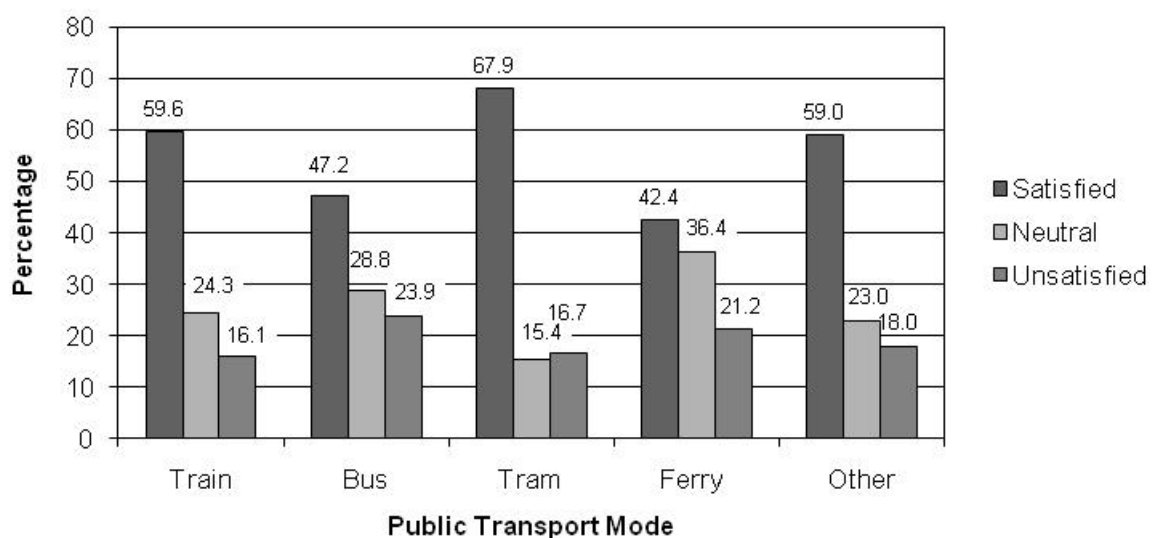
The greatest use of walking was for access to sport and recreation activities (24.3%), retail & banking (24.3%) and visiting family and friends (20%) and to a less extent volunteering (14.9%) and visiting social clubs (14.2%). Highest use of motor vehicles was for having friends visit (96.3%), dining out (94.8%), visiting family and friends (94.3%), and shopping/retail/banking activities, though motor vehicles continued to be relied on heavily in all other categories.

Gender differences in transport usage were small with women walking (23.0%) and using public transport (13.2%) only marginally more than men (15.4 and 10.3 per cent respectively). This varied very little over the age groups with the older two age cohorts only using motor vehicles marginally less.

It is interesting to compare the satisfaction of transport availability across the various transport modes. This is shown in Figure 160 below. For the few people who had access to tram facilities (only 4.3 per cent of respondents), the level of satisfaction was highest at 67.9 per cent. Those with train services were next most satisfied (59.5%), and less than half those with access to bus transport (47.2%) were satisfied with its availability. That means that the most available mode (bus transport) has the lowest satisfaction level of all the transport modes, except for ferries. Bus transport also has a comparatively high percentage who were neutral — i.e., neither satisfied or dissatisfied.

Figure 160: Satisfaction with transport availability by mode of transport

(n varies for each mode)



The most obvious and important finding from the analysis of transport availability, use and attitudes, is that older home owners are hugely car dependent for all the activities listed, and for most activities (with the exception of educational and theatre/cultural activities) they actually walk more than they use public transport. No doubt this is partly due to the convenience and independence that private motor transport offers, but also to dissatisfaction with the provision and quality of public transport. While satisfaction with availability of service is reasonably strong for trains and trams, less than half those with access to bus services are satisfied with the availability. The extent to which this provides barriers to public transport use is discussed in the following section.

8.9.4 Barriers to use of public transport use

Given the great disparity between private motor vehicle and public transport use by the older home owners surveyed, the interviews provided an opportunity to explore in more detail the barriers to public transport use. For some, simply getting to the transport node because of distance or difficulty with walking was a problem and therefore a disincentive to use public transport.

The closest train station to me is [station name] and that is 25 minutes walk. I would like to have it closer than that, but you can't have everything. There is

no bus service to get to [station name 2]. I have got to walk there. So the only bus I get is at the end of [street name]...and that goes into town. That is one of the disadvantages of actual centralised transport. It is only suitable for going into the city, which is what I use it for. (P538 — gender/age not specified, living with partner, CALD, separate house, working full-time.)

I have to walk up the hill [to the bus stop] and I rarely ever do that because it's getting too difficult. (P1581 — female, 65–69 years, living alone, attached house, pensioner, assistance required.)

In some cases, having to use more than one mode of transport (mostly bus and train) and the time taken waiting for transfers was a barrier.

It's not so much the distance, it's the number of times you've got to change transport. (P22 — female, 60–64 years, with partner, attached house, capital city, pensioner, assistance required.)

I have a car and I prefer to use the car because it's quicker. Because to get anywhere, I can get a ferry into the city, but then that changeover time to get anywhere else, either walk up to the train station or change buses and you're sitting at a bus stop for too long while you're waiting for the next one. (P374 — female, 65–69 years, living alone, flat/apartment, capital city, self-funded retiree.)

Lack of parking at stations, particularly at the hours older people are likely to travel, was a disincentive to some who could not walk to the station.

Well, you know, it's nice to be able to go to the bus stop and for there to be a bus come along within say 10 to 15 minutes. It's not much fun to wait 45 minutes for a bus, and with the train where you know it's going to come every — pretty regularly, it's nice to get to [local station] for the train, it's very quick to the city. But you do have to get there and there aren't any parks there. If you're not there before 9:00am or 8:00am there's no parking, so it's a problem. (P424 — female, 60–64 years with partner, suburban, separate house, self-funded retiree, assistance required.)

In many cases, there was poor public transport provision serving the area where interviewees lived.

RESP: I'm not satisfied with the amount of carriages on the train, which we're all fighting up here. Saturday morning 8 o'clock and they put four carriages on.

INT: So there's not enough, it's too crowded is it on weekends?

RESP: Yes, shocking.

INT: So there are still a few issues there with services?

RESP: I think we'll always have the services issues and the car parking issues at the station.

We rely on our cars here, because it just isn't very good public transport. It has improved in the last year there's been extra buses put on down here to cope with increased travel, but still not very good. (P424 — female, 60–64 years with partner, separate house, suburban, self-funded retiree.)

In some regional areas, lack of public transport services was a particular problem for people needing to travel for medical services.

Now for public transport, we have but two buses per day to [nearest large town], approximately 100 kms away (our nearest medical specialists) and then

on to [capital city] 270 kms away, should further medical treatment be required. I cannot even get to my dentist 35 kms away and back in the same day with public transport! Way back in 1898, a rail line was built to here and in the 19 years I've been living in this town there has never been any passenger rail services. I have written to our state parliamentarians and local government about this, but to no avail. If we can get to Bunbury we can catch the mid-day train there. So for public transport your questions would not be applicable to the many folk who live in many regional towns. I do hope we are not to be the totally ignored part of the community in Australia. (PS1527 — female, age not specified, living alone, regional, separate house, assistance required.)

Some did not use public transport because of irregularity of services.

No, I don't find [public transport] comfortable. Because the frequency of public transport is so low. It's just like going to India. Maybe once I catch a bus it's comfortable, but the timing between one, if I miss one bus, then I'm just standing for half an hour. Maybe in rush hour it's alright, but not in the evening, too much of a crowd. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

In busy metropolitan areas waiting in queues at bus stops was a problem for some older people.

Going to [local town centre] and having to catch buses up there, the norm now seems to be people stand in queues. And for a lot of — well, some people, young or old, can't stand. Now, what I do, I'll sort of tell people, I'm sorry, but I can't stand, and then I'll walk up and down. But it's a bit difficult, yes. So I think a few seats along where people have to stand would be a good idea. I suppose people can talk walkers and sit on them, that would be one thing, but then they can't lift them up into the buses, so that's another problem. (P79 — female, 65–69 years, living with two sons, CALD, flat/apartment, suburban, pensioner.)

For others, a major concern was the crowding on trains or buses and not being able to be assured of getting a seat.

To try out once I took the bus, the city bus from Castle Hill into the city, because I really wanted to try that and it was on a Saturday and I could get a seat in Castle Hill, Old Northern Road, but two stops further and it hadn't even gotten to that intersection at Baulkham Hills, standing room only. From then on the bus was chock-a-block full and of course it is not speeding but it drives fast, 80 kilometres plus, and everybody has to hang on for dear life. The seats are narrow, so you sit two together and cramped it was. You couldn't read, no way you could read on the bus because it was bumping and chock-a-[block]. On the way back, I had to get back at 4 o'clock from the Queen Victoria Building, I just managed a seat, although I had been in a queue for 50 minutes, just managed to snare a seat and it was the same thing. Oh, it was scary. (P1222 — female, 70–74 years, pensioner requiring assistance.)

Unreliability or lateness of service was also mentioned as a reason for not using public transport.

The buses come from [major centre], and it is virtually five minutes from [there] to here, and the 6 o'clock bus is invariably 15 minutes late. I don't know why. I have asked the bus drivers about it and he said oh it's because of the way they give us a turnaround time, it is impossible to do it. So you think they

would have worked it out by now. But I don't know why. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

For others, the problem was bus routes that were confusing, inconvenient, circuitous or not servicing preferred destinations.

INT: I was going to say do you use it [public transport] much?

RESP: No, not a lot, because it doesn't go where I want to go. (P1076 — female 75–79 years, living alone, separate house, suburban, working part-time.)

Yes, the corner of the street there is a bus stop. Years ago, I thought that is a good idea, if I want to go to [station name] to go to the city I can take the bus here. In those days there was an express service. No sooner had I looked it up in the timetable, the timetable changed, and the express service was dropped and then it became a kind of milk run. It would take an hour to get to [station name], that sort of thing. So I never bothered. (P1253 — female, 55–59 years with partner, CALD, suburban, separate house.)

Bus routes being changed or cancelled was a problem for some interviewees.

To do with the buses, now this is rather important. When we first came here the bus from [town centre] used to go to the [shopping centre 1] and then on to [shopping centre 2] but they cut that out the [shopping centre 1]. So the bus doesn't go there now. You've got, where they drop you off, about four hundred yards, half a kilometre to walk. (P322 — male, 85+ years with partner, regional, separate house, pensioner, assistance required.)

Termination of services too early in the evening was also inconvenient for some.

The only problem with [capital city name] transport is that the moment it gets dark it stops. So the ferry you can go out to the city in, but you can't come back in. (P374 — female, 65–69 years, living alone, capital city, flat/apartment, self-funded retiree.)

In some cases, steps at stations or getting into buses were considered a hazard.

INT: So, if you did not have access to your car, what mode of transport would you prefer?

RESP: My little buggy.

INT: So, you wouldn't take the bus or the train?

RESP: Only if I really, really, really had to because I go up those steps, across the bridge to get to the train or the bus and that's a fair way. (P435 — male, 85+ years, living alone, separate house, suburban, pensioner.)

I mean, getting out of the bus and getting on the step, and I'm in the city, I don't know where is the gutter, all these hazards. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

For older people in wheelchairs, accessing public transport can be extremely difficult — buses even more so than trains.

RESP: And the bus has — it's a local bus service and they do have buses that actually will go down — the step goes down to the ground so you just step on and then the step lifts up to get you into the bus. I could use train if somebody's with me. And I would be in the wheelchair and they would just put the ramps up and wheel me in. Not from [nearest station], but from [nearby

station] 'cause there's a lift at [other station name]. And there's a lift about every third — about every fourth...station.

INT: And what about a bus? Would it be possible for you on the bus with someone assisting you?

RESP: No, I don't really think so. You don't see wheelchairs in buses — wheelchair taxi, but not [buses]. (P161 — female, 55–59 years with partner, separate house, regional, pensioner with a disability.)

A number of interviewees had concerns about personal safety while travelling in public transport — particularly trains.

Trams I prefer because I'm scared on the trains now. There are times in the daytime I still use a train, but I'm wary. I like to get on where there's other people. Because there's so many drug affected ratty people, and I mean I'm used to them and I cope pretty well, even if there is someone like that, but you shouldn't have to. Yeah, so it's easier on the tram. (P531 — female, 60–64 years, living alone, flat/apartment, capital city, self-funded retiree.)

The barriers to public transport use by older people are varied and this suggests that major improvements will be required in provision, regularity, reliability, accessibility and safety in many residential neighbourhoods if older people are to be encouraged to be less automobile dependent. In the event of not being able to drive, poor quality public transport can be an obstacle to participation in activities outside the home with implications for their health and wellbeing.

8.10 Neighbourhood design and participation

This section is structured around seven aspects of neighbourhood design identified in the Positioning Paper from the literature, namely: paths of travel, transport, buildings, open spaces, street fixtures and furniture, wayfinding, and safety and security. Since there were no specific questions in the survey on neighbourhood design, this section relies entirely on qualitative data from the interviews and some written comments on the online and hard copy survey forms.

8.10.1 Paths of travel

Paths of travel refer to all pedestrian routes 'between all residents' homes and the homes of their friends, transport nodes, services and amenities' (Quinn et al., 2009:6). The Positioning Paper identified from the literature that for older people it is important that paths of travel '...are well maintained, separated from traffic, and designed for safety of pedestrians as well as users of faster moving wheeled mobility devices and bicycles' (Quinn et al., 2009:6). Interviewees were questioned about the quality of paths of travel in their neighbourhood. Responses were mixed, depending on the area. Some were happy with the provision and maintenance of pedestrian paths, others felt some progress had been made by their local council to improve them, but still had a way to go, and others were very critical of lack of provision and maintenance of paths.

Figure 161: Some examples of good quality paths of travel



In a coastal retirement area



In an inner urban area

The key issues for those not satisfied with the quality of paths of travel are outlined below.

In a number of cases footpaths simply did not exist, creating safety problems for older pedestrians.

In this, our street, I would like to see a footpath being erected. We do not have a footpath in this street...because if any of my neighbours here, for instance, they mind children. [Female neighbour], next door, often has her grandchildren. When she wants to go for a walk — because we've got a little park up the other end of this street — see they've got to walk on the footpath, on the roadway, with the stroller to take the children there for them to have a bit of a play. So there's no footpath in our street. I would like [it] there — [but] the Council... Will we get it or not, that's another story? (P1063 — male, living with child, age not specified, CALD, suburban, separate house, pensioner.)

As illustrated in Figure 162 below, lack of any footpaths in the street was more common in the regional and coastal towns that are often attractive to 'sea change' or 'tree change' retirees.

Figure 162: Examples of streets without footpaths in regional and coastal centres



There were also many complaints about poorly maintained footpaths that were damaged and uneven, resulting in inconvenience and safety risks for older people.

[Older people would] trip up very easily because they're all different levels. They're concrete, there's concrete paths everywhere, but most of them have got cracks and you know one portion has subsided beside the other portion so if you're not watching you can trip very easily. (P1216 — male, 55–59 years, regional, separate house working full-time, requiring assistance.)

[Speaking of footpaths] In some areas there is. In some areas there isn't. The route that I take on my morning walk, some of it's got great footpaths, but I usually walk on the road, it's actually safer. Because — I mean there's not much traffic, so it's okay, but the footpaths are a bit up and down and you're likely to trip and there's grass and — I mean I took a friend for a walk not that long ago and she slipped on the...slight verge of grass that goes to the road. It just slopes slightly like that...it's not a very big slope, but it's grass and her foot when she slipped and she actually broke a rib. (P424 — female, 60–64 years with partner, separate house, suburban, self-funded retiree.)

Some found that Councils were responsive to the concern of older people about poor quality or maintenance of footpaths, even if it took some time.

They are trying to improve that, because I had a fall some years back. Right out of the blue. It's the first time I've ever fallen. The footpaths had just collapsed and it was the trunks of the trees. But they do the patch jobs. If you keep letting them know there are holes there they come and fill them in. (P1336 — age/gender not specified, living alone, attached house, suburban, pensioner.)

Figure 163: Poorly maintained, uneven and discontinuous footpaths



Regional Town Centre



Inner suburb of a capital city



Outer suburb of a capital city



Coastal retirement area

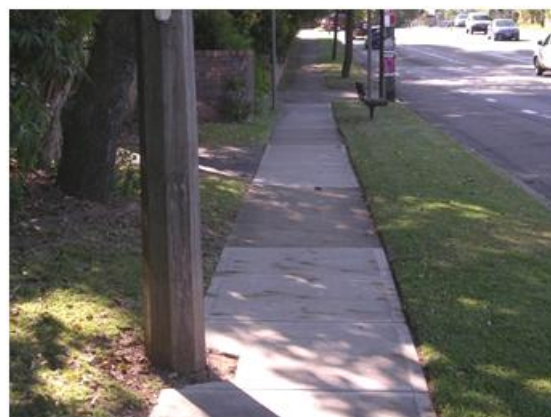
In some areas widths of footpaths were considered inadequate.

The footpaths around here are pretty atrocious and almost dangerous to walk on at times, because of the blue scrub and things like that. Even when I had Mum here in the wheelchair we used to go up the other side of the road, so a lot of work needs to be done in that regard with footpaths. Even the little walk bridge over the river going the short way, the wheelchair barely fitted, barely fitted. In fact I used to have to walk in front of Mum in case she — because she would only have to get off track a little bit and she would end up jammed on the side of the bridge. The [name] river bridge where there is footpath there, that is only just wide enough and that is all for a wheelchair. (P516 — female, 60–64 years, living alone, regional.)

Figure 164: Narrow footpaths



Regional town



Suburb of a capital city

In other cases, interviewees considered footpaths to be dangerously close to roads.

Now the thing is the footpath is not that wide and it's not that far away from the road. ...[T]he ideal situation would be some form of barrier going along that road which would look nice. Because if a car misjudged or had a flat or whatever moved over, you would just bowl into the pedestrians. So if we've got a lot of people ageing and in 20 years time you're not going to have four or five people walking down there, you could have 20 people walking down there. So you've got a lot of people and a lot of cars — there are going to be more cars on the road, so it is going to be an issue in itself. (P784 — male, age not specified, with partner, suburban, separate house, self-funded retiree.)

Figure 165: Footpaths close to busy roads



Capital city suburb

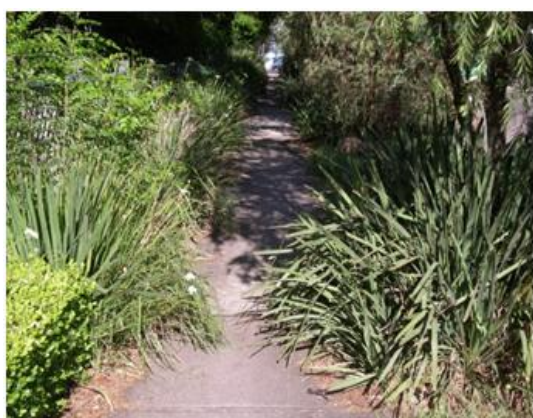


Regional town

Obstructions, particularly overhanging shrubs and trees were a very common complaint.

The Council has made some footpaths on the nature strips, but they are not really suitable for walking because they're interrupted by driveways into houses, they're not always flat, the driveways are often on a slope. They have kept trees and bushes on some of the nature strips which means you've got to go round them, or you've got to walk on the road. (P173 — female, 70–74 years, living alone, suburban, separate house, assistance required, self-funded retiree.)

Figure 166: Footpaths obstructed by vegetation



Suburb of capital city



Suburb of capital city

Maybe once upon a time they were even better than they are now, actually. Because once upon a time you used to have rules about your trees overhanging on the footpaths and those sorts of things. And councils now don't send out notices to offending people and I'm really, really upset about that. We have a number of people in this area who drive motorised wheelchairs...and it must be hell on earth for them trying to negotiate around these streets. One would like to think in the newer sub-divisions obviously the footpaths and stuff are better suited to those sorts of people. But if I had to be in a motorised wheelchair, I'd go crazy really. I just don't think there is enough thought given to those sorts of things — and [for] people with impaired vision, it must be awful for them having to walk the streets... I think a lot more councils are going to get sued if they don't pull their socks up and start attending to [those kind of] things — particularly as we've got an ageing population and it's going to get greater... It's going to impair people's mobility and enjoyment of life. (P784 — male, age not specified, with partner, suburban, separate house, self-funded retiree.)

In some areas a lack of pedestrian crossings, or excessive distance to lights, underpasses or crossings made crossing busy roads extremely difficult and putting older people's safety at risk.

Now my nearest traffic light is eight minutes down there which, if I'm, as I did yesterday, or when I went away, I went away three days ago, I had to cross the road over to the, outside the hotel on South Road. The traffic is getting very heavy. That is a problem. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

I don't think there's one pedestrian crossing... No, it's a reasonable arterial. It carries a fair bit of traffic. There's a few roundabouts along there, but no, there's not one pedestrian crossing from [cross street name], I can't think of one, where the next pedestrian crossing would be. [F]or anyone wanting to walk to the shops from here you've got to cross [street name] and there's nowhere to do it where there's a crossing. (P1216 — male, 55–59 years with partner, regional, separate house, working full-time, assistance required.)

In some cases, lack of pedestrian crossings had resulted in death and injury to older pedestrians.

M: But [main road name] [is] just about to be made three lanes, up and down and there's no pedestrian crossing and no lights. So if we did want to walk

across there...the only way to get up is to go right to the top of the hill and cross at the traffic lights...

F: ...or right to the bottom of the hill and use the underpass. Occasionally we run across in the middle don't we.

M: Yes, which is dangerous...There have been people killed. There is a retirement hostel down the bottom of the hill and people have been killed crossing.

F: I don't think it's the hostel that's caused the problems though with people being killed, I think it's the bus stop on this side of the road, where people have got to get off the bus stop there to get home and then they go across.

M: They go across six lanes.

F: I'd say there's been two or three people killed there. (P1274 — couple, 60–64 years, suburban, separate house, self-funded retirees.)

In one situation paving design actually created confusion about whether vehicles or pedestrians had priority.

No, there's no crossings really. You've got to watch what you're doing. But, particularly the main road, there's a double carriageway. So you can always get halfway across and then you just wait in the middle the rest of the way. But you know, you just have to watch the traffic. Because there's no lights at all. And even down on the foreshore, which is a lot of walking down there, they've got a ridiculous set-up, where they've got this section on the road that looks like it's a crosswalk, it's sort of different from the rest of the road. And so the poor tourists think it's a crosswalk, but in fact it's a poster with a little plaque on it that says 'Pedestrians must give way to traffic', there's no crosswalk to get across the road, traffic has right of way all the time and it's quite dangerous, and people write in the local paper about it all the time, but they've never done anything to change it. (P729 — female, 70–74 years, living alone, attached house, capital city, self-funded retiree requiring assistance.)

For people with hearing or visual impairment the safety risks were increased.

M: Every time I go out, [partner's name] says now you be careful.

F: Yeah, because if he doesn't put those [hearing] aids on, he wouldn't hear a car coming. I said make sure you look.

M: Not hearing you. By golly, you look. Because a car could hit me...

INT: Are there pedestrian crossings and that on the road that you can use?

M: No. There's no pedestrian crossings. There's an island and a break in the island.

F: Yeah. You can go and stop halfway and then the other way. (P494 — couple, 80–84 years, regional, separate house, self-funded retirees, assistance required.)

Inadequate lighting of pedestrian paths at night also caused safety concerns for some interviewees.

Some of the lighting could be improved slightly, because a lot of trees down here. For example in that park, that is a fairly isolated area and if there was a risk of being mugged or anything like that, which there isn't at the moment, but if it became that way with an old person being more at risk, there could be a problem down there because it is very isolated, just where the pedestrian

overbridge goes. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

One respondent recognised that improving pedestrian safety would benefit not only older people, but also younger people with disabilities and children.

I watch older people as well, and having seen my mother restrict her movements as her vision got less good,...I think that the dominance of cars, even in the centre of [town name], where cars tend to give way to pedestrians more than say in the centre of [capital city name], I think that for older people, safer pedestrian walkways, more consideration for pedestrians...I really think that the consideration of pedestrians needs a lot more thought. Because it's always seemed to be that's the way you cater for older people, and people with young kids and people with disabilities is the real test of a public system or design. (P1287 — female, 60–64 years, living alone, attached house, suburban, self-funded retiree.)

Another interviewee identified the need for a much broader approach to planning beyond the mere provision of sidewalks, for the benefit of all age groups.

Actually, you see what is happening. Suburbs are all designed for the young motor car people. Old people don't fit in, they get old only in those suburbs... I mean some of them can determine villages designed for the old people, but not these suburbs. They are designed for young car people. Car is more important. Sidewalk is only a part of the standard set into the cross-section of the road. I would try to create at least a walkway system. Which is not only for old people, for young and old and middle, which leads to certain facilities which is not there [now]. And even start with the primary school, or parks. These are the two common elements between the young and the old. (P666 — male, 80–84 years with partner, CALD, suburban, attached house, pensioner requiring assistance.)

In summary, while the interviewees' assessment of the provision of paths and quality of maintenance was mixed, a number of key design and management issues emerge that still require greater attention in many neighbourhoods — adequate provision of pedestrian paths and road crossings, adequate width of paths, particularly to accommodate wheelchairs and scooters, avoiding unnecessary obstructions, well maintained paving, and trimming associated shrubbery and trees, whether these be in the public domain or overhanging from private gardens.

8.10.2 Transport

The Positioning Paper found that 'the design of infrastructure for transport affects use by older people, with low transport use being attributed to difficulty getting in and out of transport vehicles and getting to stops and stations' and that the number of priority spaces for older people need to be reconsidered with the increasing size of the older population (Quinn et al., 2009:17).

Comments by interviewees on design-related public transport issues have already been presented in detail in section 8.8.4 on barriers to public transport use. Neighbourhood design related issues that discouraged use of public transport included: distance to transport nodes; topography; the lack of shelters and seating at transit nodes; poor signage and confusing timetable and route information; stair access to railway stations and onto buses, and concerns about crime and safety around major public transport nodes. This confirms that neighbourhood design has a role to play in encouraging use of public transport, and hence to the participation of

older people in activities outside the home that contribute to their health and wellbeing.

8.10.3 Buildings

While the study focused on streets and public spaces outside the home, rather than access to public and commercial buildings, some interviewees did make reference to building related accessibility problems. These tended to echo the themes raised in relation to open spaces — lack of seating, steps making access difficult (or impossible) for older people with disabilities, and inadequate provision or design of toilets. However, some new building-related issues were also identified — namely, seating and steps.

Seating remains a problem in some public buildings and shopping centres.

One thing I do find when you're going into places like art galleries and that, I really do wish there were more seats, and even shopping malls. I really do wish there were more seats, but they tend not to build them, because then they get loiterers and such...and...I think that's why they don't do it. (P22 — female, 60–64 years, with partner, attached house, capital city, pensioner, assistance required.)

Steps to important buildings, such as post offices and banks, can create problems for older people, especially those with disabilities. In some areas, this renders access to essential services difficult at best and impossible at worst. In the following case, both had been inaccessible in a regional town.

Figure 167: Step only access to two public buildings in a regional town centre



RESP: Yes. We couldn't even get to the ATM machine or into the bank once...[w]hen Mum was here. But now the teller is lower and [there] is accessible and automatic open[ing] doors into the bank. So we are getting there.

INT: What are the main things that need to be improved in town to make it better for older people?

RESP: Well, the post office does not have access. It is three too large steps and they are cut in like that. So when you come out the door you have got to watch you don't fall down that step there. (P516 — female, 60–64 years, living alone, regional, previously living with disabled mother.)

Another respondent explained her difficulty with stairs, particularly if they did not have handrails.

Yes. I have no trouble getting up the stairs. I have trouble going down public stairs — it doesn't have a rail, that's all. Looking down, I can't quite see where the edge is. Yes. But going up is alright because you can see the steps ahead of you. You can get a rhythm. But not going down. I have to lean on the rail so if I start to fall I can grab on before I fall over. But I go up stairs, so I'm not going to get a heart attack. (P1222 — female, 70–74 years, pensioner requiring assistance.)

For another city dweller, access to the major cultural and entertainment building was extremely difficult.

INT: Are you able to get out much?

RESP: No, but we did, but I suffered for it. So it's always a price to pay but we actually went to two concerts in a fortnight....I mean 500 steps! Too many steps for elderly people who are mostly the ones who go to concerts....It's just poor planning again. (P598 — female, 60–64 years with partner, regional, separate house, assistance required.)

Ironically, another older woman with a disability identified an accessibility problem within doctors' surgeries.

I do have a beef with my medical service and with all medical services in that all doctors — and I don't know why this has never come up — all doctors' couches have a step up and they're all rigidly the set height. And I find it amazing in this day and age when you can go to a masseur and you sit on the table and they will elevate it to the height they want. But doctors' surgeries have not come up to that level as well. It hadn't affected me until something I needed to do at the doctor's and I thought, I can't go, can't do it. So I'm about to write a letter to the surgery and, you know — and you want me to go to the dentist — and you sit in a chair and he pumps it up to what height he wants. And I know a lady in the support group for motor neurone has just had a cataract done. And they said, 'how did you manage'? She said 'darling, I just sit in the chair and he lifts my feet up and he tips my head back and lifts it up to the height he wants'. And I thought if some people can do it, why can't the others... And I have a friend who was telling me — she had a really bad fall. And she went to the doctor and he said, hop up on the couch. And she said, you're joking. ((P161 — female, 50–59 years, regional, pensioner requiring assistance.)

Although there were a limited number of comments about accessibility issues in public and commercial buildings, the cases outlined above do serve as a reminder that despite the improvements in access to public and commercial buildings arising from the development of AS1428 and reference to it in the Building Code of Australia, these are not mandated, despite the Australian Disability Discrimination Act's requirement that 'it is unlawful to discriminate against a person with a disability in relation to provision of access to premises other than where providing access would cause "unjustifiable hardship"' (ABCB, 2004). It is also a salient reminder that some older essential service buildings (notably banks and post offices) may not yet be accessible for older people and others with disabilities.

8.10.4 Public open space

Clearly the quantity and quality of public open space varied enormously between the different locations that interviewees lived in. Some were very satisfied with open

space provision. Where provision was good, it was appreciated and well used by the interviewees.

I like the park down here that has seating in it. Yes, actually we're very fortunate that we do have nice parks. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

Many interviewees used their local parks for walking, or exercising dogs.

I have a lovely park down the bottom of my street, [park name], which I enjoy walking through — that's my nature walk. It suits people with dogs. On the other side of the road there's a dog park. And the thing they've kept here is the trees and the landscape. We've got a very good council. They might have made a few mistakes, but generally it's a good council. (P1336 — gender and age not specified, living alone, suburban, attached house, pensioner.)

Having good local parks was also important for older people with grandchildren.

I must say, [council name] does a good job in parks and gardens and what have you. You drive — cross over to [main road name], on the end of [street name]. You've got the national park. It's beautiful. All along the river there, you've got so many places where you can take your family or grandchildren or — like people here do. They've got a little park here on the end of the street, where you can take your children. My granddaughter's been there. She's...had a great time there (P1063 — male, age not given, CALD, suburban, separate house, pensioner.)

In some locations there was very little public open space and this was a disincentive to go walking in the neighbourhood.

There isn't really anything around the place. I don't know of any parks. If you were to go out walking I don't think it would be that pleasant. (P746 — female, 60–64 years, living alone, flat/apartment, working full-time.)

However, mere provision of open space alone is not enough; it needs to be well designed for access for older people, particularly if they have mobility problems. When asked how often she used the neighbouring park, one woman responded:

Not very often, no. I mean I have, but...Just because I find it's got a slope on it, and again with my knees...Yes, and I just don't find it easy to walk around the park. I've done it, but I don't find it, you know, as I say, it's not good for me, with my knees...[Y]ou've got to walk on wet lawn and, but it's more the slope part that I find difficult. (P729 — female, 70–74 years, living alone, separate house, suburban.)

The park in question had sloping grassed edges on both road frontages with no paths, steps, ramps, shade structure or seating.

While lamenting a lack of parks, the following interviewee emphasised their therapeutic value.

[I would like to see] a few more parks up in the city centre. I feel cities should have more parks. All this concrete makes them hotter and there's nowhere to generate fresh air or to relax. And I feel relaxation, greenery, flowers, grass, is just a very, therapeutic, very good for you. (P79 — female, 65–69 years, living alone, CALD, flat/apartment, suburban, pensioner.)

One person from a European cultural background advocated the adoption of a piazza type of social space in her local town centre as exists in Italy.

What I would like to see would be something like, although it is a cultural thing...for example in Italy where they are very much family orientated, they have the Piazza on the weekend, you know, and people sit in the park and usually it is a park like a plaza, the central area of the town, with cafés around it and seats in the park and a lot of people sit and use it and go out there. There is not such a thing here. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

The provision and quality of local parks and public spaces is therefore important for older people as places to walk for pleasure and exercise, to walk the dog, to take grandchildren, to socialise with friends, or to simply relax and enjoy the beauty of nature. A lack of nearby public spaces, or their poor design for accessibility, can limit older people's activities outside the home. These findings support those of the Positioning Paper based on the National Heart Foundation's Healthy by Design recommendations and the IDGO (Inclusive Design for Getting Outdoors) study in the UK (Quinn et al., 2009:127; NHF, 2004; IDGO, 2007a,b).

8.10.5 Street fixtures and furniture

This section discusses the views of interviewees on the adequacy and quality of street fixtures and furniture such as seating, bus shelters and public toilets and their influence on participation in activities outside the home. Because of their close association with the street, it also covers their views on adequacy of provision of cafes in their neighbourhood as places where they can sit and rest or enjoy refreshments in their local area.

Provision of seating and bus shelters varied considerably between the various locations of interviewees. Many respondents reported good provision of these facilities in their area.

We have seats down at the shopping centre. We have seats in the main park down here. I don't think we have any over there that I can remember. Oh yes we have, we've got some down near the cricket club. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

In one case, older residents had actually campaigned successfully for the provision of seating in their local shopping centres.

Well actually, well most of the bus stops have got like a seat, so if you're walking and you need a break, you can sit at a bus stop, I suppose, that's not too bad. Ah, they've got quite a fair bit of seating down there, it's not too bad. And I noticed, the shopping centre — that was one project that we thought up, we actually got that passed, one of our projects was putting more seats in the shopping centres, which they have done. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

However, it was more common for the provision of seats and bus shelters to be mixed, with adequate provision in some parts of their neighbourhood and none or few elsewhere.

F: Well if you're walking around the streets, there's no seating, but there's plenty of seating in [park name].

M: But I mean we've got a park right opposite. There's no seats in that park for example and there's another park just further on down the court. I think there might be one seat there or something in the playground. (P1274 — couple, 60–64 years, suburban, separate house, self-funded retirees.)

It was quite common for seating provision to be limited to shopping centres, rather than in streets and public spaces.

INT: What about facilities such as seating, public toilets and things like that?

RESP: There aren't any except in the shopping centres. (P185 — age/gender not specified, living with partner, CALD, suburban, separate house, pensioner.)

Oh, we have to refer to the shopping centre. There's seating there and there's public toilets there, but there's no seating or — you don't get public toilets along streets. (P1581 — female, 65–69 years, living alone, attached house, pensioner, assistance required.)

In many areas, however, seating and bus shelter provision was either non-existent or very poor, creating problems for older people.

[The lack of benches] is [amazing], isn't it? In fact that's the reason why [partner's name] can't walk, because he needs to sit down every few — five minutes or so, and he really can't. It's the same with shopping centres. He needs to sit down...so we only go to the shopping centres when he knows that it's got seats, because he loves to go shopping, but you know. Benches would be fantastic. Benches at bus stops would be just lovely to have a bit of a rest. (P424 — female, 60–64 years with disabled partner, separate house, suburban, self-funded retiree.)

A number of interviewees called for more seating and bus shelters in their area.

Yes, particularly I think there should be [seating]. I think particularly if they've got a grass verge between the footpath and that, if there's a bus stop there should be a seat there. And a lot of bus stops don't, they just have the bus stop. It would be an opportunity for someone to sit even if they're not catching a bus. And I think in the parks there should be quite a few places to sit around. And there's a couple, but not very many. And definitely more seats, more outdoor seats around. (P1405 — female, 55–59 years, living alone, capital city, flat/apartment, working part-time.)

Sometimes seating or bus shelters were poorly located or designed, making them unsuitable, inconvenient or uncomfortable for older people.

The bus stop that I use is an idiotic design and I actually complained to the [roads authority], but they said that is not ours, it's the council's, that one there, and I think a lot of them are like that. It is cunningly designed so that when it rains the rain runs over the lip in the front and up in the inside and drips on you while you are sitting on the seat. It is cunningly designed to get you more wet inside than outside. Stupid design basically. At the end of [street name] here there is a little park there where they couldn't fit anything else in when they cut the section in half because of the freeway, there is a little park, there is a couple of seats, benches there, but I never sit there. It is sort of an isolated little park and I don't think I have ever seen anybody actually use it for anything. Other than that, there aren't any places to sit other than at bus stops. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

Vandalism of seating and bus shelters was considered to be a problem in some cases.

M: Yes the bus shelter is fine. It has actually just been re-modernised with electronic information and so forth, so that part has actually improved hasn't it?

F: Yeah, but the bus shelters on the bus routes along here get vandalised on a regular basis.

M: Yeah, vandalism is the big issue. How that ever gets converted I don't know. (P784 — couple, age not specified, suburban, separate house, self-funded retirees.)

Provision of public toilets was very important for some older people and in some areas they were well provided.

M: There's public toilets in the park here and there and I have to use them on my walk, or the bush, every hour on the hour because of my old age I'd have to have a leak yeah. (P538 — male, age not specified, CALD with partner, working full-time.)

However, this was not the case in many neighbourhoods and lack of public toilets was a common complaint of interviewees.

If you were to go walking around the streets of [home suburb] and close by suburbs, and it wasn't a main street where there are restaurants, there is no seating; there wouldn't be anywhere you could stop and go to the toilet if you needed to. (P1379 — female, 60–64 years with partner, attached house.)

This was a problem both for older people themselves, and also for when they take their grandchildren to public parks.

I used to walk because it's not far to the hospital, but my husband can't. He shuffles along and wants to go to the toilet. There's nowhere to go until you get to the hospital and by that time it's too late. (P1222 — female, 70–74, pensioner requiring assistance.)

The only trouble we have, we take the kiddies down to — there's a big park down here 20 minutes away and there aren't toilets there for kids. (P1589 — couple, 65–69 years, separate house, suburban.)

One disabled woman explained her difficulty in using public toilets, despite the provision of grab rails.

[W]ithin the public toilets, the disabled toilet — I have the need to have a raised toilet because I can't push myself up. And you can't be accommodated that, it's a set toilet. And the handle bars go down at a slope for people to grab onto, but I can't grab anything. I need things that push me, that I can push against. (P161 — female, 50–59 years, regional, pensioner requiring assistance.)

Vandalism of public toilets was also a problem in some areas and reduced their availability in the neighbourhood.

Yes, there's a major public toilet block in [town name]. They've closed two others that were there because they were getting sort of vandalised so...there's only the one big public block in the middle of the town. (P161 — female, 55–59 years with partner, separate house, regional, pensioner with a disability.)

Early closing times of toilets in public parks could also be inconvenient.

And the time they close along the waterfront, four pm they close one and the other one closes at eight pm. Sometimes they close earlier and we just have to hold on...Not very good for old people if they can't hold on. They have to go

somewhere to go. (P2005 — male with partner, age not specified, CALD, suburban, flat/apartment, working part-time.)

Some dissatisfaction was also expressed about pay toilets, and in one case residents had campaigned to the local council and had fees removed.

There is improvement at the moment with [council name]. There used to be [a] toilet, they charge us money, and I have waged a campaign about it for quite a lot of time and...now they do not charge us any money. This is a public toilet. They charge us 50 cents each time, but for us elderly people we have to go there at least three times...So eventually they stopped charging us money. (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

Cafes were also regarded as important places where older people could sit, relax and read the paper. In some neighbourhoods there were a number to choose from.

Well there is [nearby town centre], which is where I go. It is there. It is available. They make good coffee. There [are] places at [another town centre], but I usually don't use them. There is [larger town centre] and unless I am going with somebody I wouldn't go there. Here I go just by myself and have a cup of coffee and sit and read the paper. (P63 — male, 60–64 years, living alone, CALD, capital city, separate house, working part-time.)

Where they did not exist, some interviewees lamented this.

You know it would be nice if you had somewhere, if you said let's go for a walk, you pick up the paper on a Sunday morning, you stroll and you have a cup of coffee and pick up hot bread or whatever you know. It's pretty lacking, it is very much lacking. (P746 — female, 60–64 years, living alone, flat/apartment, working full-time.)

The interviews demonstrate that appropriate, well designed and well located seating, bus shelters and public toilets are regarded by many older people as important neighbourhood facilities that facilitate their participation in activities outside the home. This is consistent with the findings of the IDGO (Inclusive Design for Getting Outdoors) study in the UK (IDGO, 2007a,b,c) that '...the presence of street furniture such as seats, toilets, cafes and shelters were predictors of the time participants spent outdoors, and were considered a significant incentive for older people participating in outdoor activities'. (Quinn et al., 2009:128)

8.10.6 Wayfinding

Wayfinding in the neighbourhood was also not a particular focus of the interviews, and was only rarely mentioned by interviewees. This is understandable since older people with disabilities or illnesses that cause confusion were probably less likely to have completed the survey and therefore been available for an interview. Also, since the interviews were concerned with the local neighbourhood, rather than the wider city, confusion about finding ones way about is less likely in a familiar environment.

However, one respondent regarded the curved street layout of her neighbourhood as confusing for some people.

I guess the main problem with the area is that it is not in squares, it goes around in circles and can be difficult for people to find us here...I have written to our local councillor to try and get an extra sign put on the top of [street name], because if you look it up it shows two streets coming out so you are looking for this one that goes to our place, the actual sign is for this one that goes around there. I've gone and collected people that have lost themselves.

(P473 — male, 65–69 years with partner, separate house, suburban, working part-time, assistance required.)

One CALD interviewee with little English capability found bus routes very confusing, quite possibly because of difficulties with reading in English.

I am not quite used to using the bus. It takes such a long time to wait for a bus and then it is very confusing for me. The buses are very confusing to me. All I know is two routes, taking the bus route to [hospital name], I get down from [station name] and change another bus to [station name] or going to the city using the train and then take another bus to the Embassy... (P2007 — male, 85+ years, with partner, CALD, suburban, attached house, pensioner, assistance required.)

This does highlight two issues relevant to consideration of older people in neighbourhood design. Firstly the importance of legibility in street layouts and signage (particularly for visitors), and secondly the challenge of making critical information such as bus routes available to people in a multi-cultural society where some older immigrants may not have good English skills, perhaps through the use of interactive, multi-language technology.

8.10.7 Safety and security

In considering issues of safety and security, it is important to distinguish between safety issues arising from danger or fear of accidents, falls, etc, as opposed to safety and security in relation to crime and anti-social behaviour. Issues of traffic and safety in public places are largely covered in the earlier section 8.9.1 on paths of travel. This section is concerned primarily with safety and security in relation to crime and anti-social behaviour in the public realm. However, sometimes there were references to pedestrian safety as well, some of which are included here.

To gauge perceptions of safety and security from crime and anti-social behaviour, Interviewees were asked if they felt safe walking around their neighbourhood. Many did not feel safe walking for fear of crime, particularly at night.

In the daytime, yes. But there is very, very few street lights, so you wouldn't want to do it at night. (P836 — female, 55–59 years, living with child, regional, separate house, working part-time.)

For some, concerns about safety and security were based on their own experiences as victims, or news about incidents involving other residents in the area.

I do [go out at night], but I don't do it often, batten down the hatches usually at dusk. Actually we have quite a few robberies and stuff around here, one just this week down the street, I've had a couple, but not for a few years now. Which makes you nervous. [At] the shops down the station, someone got assaulted in the middle of the day. Just a few months ago. (P1543 — female, 80–84 years, living alone, separate house.)

Others were fearful of the anti-social behaviour of young people.

I do [feel safe], but I know we've got to be aware that there are a lot of louts. We've had them in this street, so we've been through a bit of a thing with that. So, yes, there are, not enough for kids to do. (P1076 — female, 75–79 years, living alone, separate house, suburban, working part-time.)

Having a hotel in the neighbourhood was considered by some to be a major risk of crime and anti social behaviour.

No, I wouldn't because as I've said, we've had break ins here, and there is a pub up the road there, and a pub on [street name], and Friday evenings, the natives are very restless and very noisy. So I personally think, to be on the safe side, you must use your own common sense, as old as you are. (P600 — male, 60–64 years, living alone, CALD, capital city, separate house, pensioner.)

It was clear that for some interviewees, fear of crime had curtailed their participation in social activities they had previously enjoyed.

Well it's not safe, I wouldn't feel safe. I mean, I used to, [but I] haven't gone out for a while. I miss out on it. I used to go dancing on a Monday night, and used to go on a Wednesday night, used to go down to the centre down there, that would be on a Monday night, and you'd drive down there, get out, dance, and drive home. And it's fairly well lit up there for when you park your cars, but even then, some of the cars got broken into. So you always have to be on the lookout and be careful and that. So no, I definitely would not go around walking after dark, no. (P668 — female, 65–69 years with partner, suburban, separate house, assistance required.)

A number of interviewees specifically mentioned poor lighting at night as a factor contributing to the risk of being a victim of crime or accidentally tripping or falling.

I think it would be safe to do so, but I wouldn't do it. Two reasons, okay the personal safety is one reason, but the other reason is that though the street lighting is fairly good, unless one walked on the road there is a slight risk of tripping over uneven surfaces or roots of trees or something, so one would have to walk with a torch. (P173 — female, 70–74 years, living alone, separate house, suburban, self-funded retiree.)

The perceptions of interviewees generally support the findings outlined in the Positioning Paper that fear of crime is a major concern for older people, that the design of the physical environment can facilitate or ameliorate criminal behaviour, and their perception of safety, and hence influence the social participation of older people (Quinn et al., 2009). Two important planning and design issues impacting on the older home owners' fear of crime and participation were inadequate lighting at night time and the location of hotels in relation to residential areas. Poor lighting also contributes to the risk of tripping and falling due to poor visibility where uneven paving surfaces exist, and can therefore also reduce the participation of older people in evening activities.

8.11 Conclusions

This investigation has shown that older home owners are typically active participants in activities outside the home, and many in a wide range of activities. Highest participation rates were in relation to shopping/banking/retail, medical/health appointments, having family and friends visit, and dining out. Activities most frequently participated in were shopping/banking/retail and sport and recreation (possibly because the latter includes daily exercise). Women were found to be more frequently involved in visiting, or being visited by family and friends, educational courses and theatre/cultural activities. Men were more involved in medical/health appointments and volunteering. Activities expected to increase in five years time included medical/health appointments, having family and friends visit, and attending religious services or activities. The interviews revealed that many older home owners are involved in multiple activities often with multiple outings in a week and sometimes even in a day. Couples could be involved in similar or quite different activities. These

findings emphasise the diversity of the interests of older people and therefore the importance of offering choice within ageing residential neighbourhoods.

The most important activities to be located close to home were found to be shopping/banking/retail and medical/health services. When asked to anticipate the importance of close location of activities in five years, all but two were rated as more important, and gender differences were even more pronounced with women placing greater importance on location of many of the activities. The interviews reinforced the importance of location of services and facilities, with some in well serviced areas citing this as a reason for not wanting to move, and those in poorly serviced (often regional areas) considering moving to better serviced (urban or regional centre) locations. This would appear to support the case for having more opportunities for older people to live in more intense, mixed-use neighbourhood centres with high quality public open spaces where housing and services (including transport) are at close proximity to housing, but would require some change in housing type preferences.

Despite the high importance of having facilities and activities within the neighbourhood, the older home owners surveyed were highly dependent on motor vehicle transport, being used for between 86–95 per cent of trips for activities outside the home. The interviews reveal that private motor vehicles were preferred for reasons of the convenience, freedom and independence that they offer. For some, a health or disability could make them more car dependent, while for others it could prevent them from driving and therefore limit their ability to participate in activities outside the home. In the event of not being able to drive, some felt that they could adapt to public transport, but this depended on the availability and quality of local public transport services. Walking was used mostly for shopping/banking/retail and recreation activities.

A number of barriers to public transport use were identified, namely: lack of services (in some areas); excessive distances to transport nodes; irregular or unreliable services and hence waiting times; inconvenient bus routes; routes being changed or cancelled; queues and lack of seating at bus stops; transfer/waiting times between transport modes (e.g. bus and train); lack of parking at railway stations (particularly at the hours older people like to travel); crowding on trains and buses; negotiation of steps to railway stations or onto buses; difficulties with wheelchair access on buses; and concerns about safety both on public transport and at transport nodes. All this suggests that major improvements in public transport infrastructure, services, access and safety will be necessary if older home owners are to be more attracted to using public transport and be less dependent on private motor vehicles.

While there was considerable variation in the quality of neighbourhood design in the locations of respondents, it seems clear from the interviews that poor provision of neighbourhood facilities or design of the public realm can discourage older home owners from participating in activities outside the home. Problems with pathways that can pose safety risks and thereby discourage use include: inadequate distances from busy roads; obstructions by vegetation; lack of pedestrian crossings or excessive distance to crossings or traffic lights; ambiguous and confusing paving cues; and inadequate lighting at night.

Older home owners were found to be regular users of public open space for activities such as walking, exercising dogs, and entertaining grandchildren. Inadequate provision or poor design of open space was regarded by some as a disincentive for participation in outdoor activities. Likewise, lack of seating, cafes and public toilets in streets, parks or public places can also discourage participation. Concerns about safety and security are common among older people and poor lighting at night was identified as a major issue in some areas. Other issues of concern in the public realm

were lack of public toilets, steps to essential public or commercial buildings (banks, post offices etc.) and lack of handrails on steps.

Clearly, from the responses of older home owners, some local authorities are doing better than others in implementing age friendly neighbourhood design. However, as the number of older people increase this will become increasingly important, particularly in those areas where older people are likely to be more highly concentrated. Since attention to the design of the public realm can encourage participation, a more coordinated approach to standards for age friendly planning and urban design could help to reshape Australian cities and neighbourhoods to better support an ageing population.

9 CONCLUSIONS AND IMPLICATIONS FOR PUBLIC POLICY, THE DEVELOPMENT INDUSTRY AND OLDER HOME OWNERS

The findings of this study raise a number of important issues for consideration by policy makers, the housing industry and consumers.

9.1 Implications for ageing and housing policy

Policy issues concerning older home owners and their housing that arise from this study fall into the following four themes.

9.1.1 Measuring utilisation and efficiency among older home owners

The efficient use of housing and land by older home owners is an important issue with implications for three important current policy areas: housing affordability, ecological sustainability and positive and healthy ageing. If, as suggested by the CNOS calculation method, older home owners grossly under-utilise their dwellings and their incomes are low, then a range of more appropriate, smaller and hence more affordable housing options needs to be encouraged. If under-occupancy exists to the extent suggested, it is also an inefficient use of resources as larger houses and land will inevitably consume more energy, water and require more maintenance than smaller or multi-unit ones. Also under-utilisation may create unnecessary burdens on older owners for housekeeping, gardening and maintenance. The importance of appropriate, affordable, accessible and manageable housing is now widely accepted as important to healthy ageing (Kendig and Neutze, 1999; Andrews, 2001; PMSEIC, 2003; DoHA 2006b, WHO 2002, 2007). However, to fully understand the dimensions of the problems of housing under-utilisation by older home owners, accurate methods of measurement are required.

This research has shown that there is a need to review currently accepted measures of housing utilisation in order to gain a more accurate picture of how efficiently older home owners use space in their dwellings. The CNOS which has been widely adopted in Australia takes into account only the number of permanent residents and the number of bedrooms, with some consideration of marital status and gender and age of children. It fails to take into account the floor area of the dwelling, temporary residents (which this research has shown to be present in a significant proportion of households), accommodation for family and friends to visit for short or extended periods, or alternative uses of bedrooms for activities important to healthy and active ageing, including: home office/study, hobbies, arts and crafts, exercise, storage of sporting equipment.

The evidence from this research is that under-utilisation is not as pronounced as the CNOS method suggests, and is therefore a less serious problem than apparent. Although their households are smaller, older home owners do not necessarily need less space in the home as they reach retirement years, many simply use what space they have differently for activities that are important to their positive and healthy ageing. Indeed, the vast majority regard their home as suitable for the number of permanent and temporary residents in their household.

If under-utilisation is to be accurately assessed, a new method of calculating under and over-occupancy needs to be developed to take into account these factors. This would also require more systematic collection of data about temporary residents, floor area of dwellings and number and type of rooms in the dwelling. These data could either be collected as part of the five yearly Census, or via a more regular inter-

Census sample survey, such as the Australian Housing Survey, and would permit a more accurate analysis of housing efficiency. The last AHS was undertaken in 1999 and so is now quite dated.

The recently established National Housing Supply Council may be an appropriate body to coordinate the development of a new measure and the collection of this data given its mandate to 'provide research, forecasts and policy advice to the Commonwealth Government and to COAG [Council of Australian Governments]'; to 'coordinate local, state and national supply and demand information'; and its intention is that 'future reports will also consider the changing housing preferences of Australia's ageing population' (FaHCSIA, 2009b).

In the survey, only 56 per cent of respondents provided the floor area of their dwelling and there was a variety of measurement units: squares, perches, square feet and square metres. This suggests that in Australia, there is a lack of knowledge among home owners of the area measurement of their dwelling and the common unit of measurement varies with location and age of the resident. Also, the different functions of designated 'bedrooms' that range from bedroom, study, library, rumpus room, etc., makes the interpretation of the number of bedrooms in a dwelling ambiguous. These factors will need to be considered in future housing utilisation data collection.

9.1.2 Improving efficiency and liveability for older home owners

This research has confirmed the overwhelming desire of older home owners to remain in their own homes for as long as possible. It has also found that the vast majority (92%) regarded their dwelling as suitable or very suitable for the number of permanent and temporary residents. While some interviewees had downsized to smaller dwellings or retirement villages, and a few did regard their houses as excessive and planned to downsize, this was a distinct minority. The vast majority were in households of one or two people, living in separate houses of three or more bedrooms.

However, the research has found that the apparent under-utilisation according to CNOS calculation methods does not match the views or space usage reported by most older home owners themselves. This is due to a number of factors including: needing extra bedrooms for temporary residents, visiting family and friends or in some cases for partners to sleep separately; or for other activities, such as office/study space, hobbies, arts and crafts, exercise equipment, or even for partners to have personal retreat space. Even the amount of outdoor space was seen by most as an asset rather than a liability. Inefficiency in the use of dwellings and land does not, therefore, appear to be a major problem among older home owners.

It is not surprising that survey respondents so strongly favoured remaining in the home supported with professional care services (91%) compared to the range of options for more efficient dwelling utilisation, whether by moving to a self-care retirement village (63%), an over 55s seniors development (55%), or a residential aged care facility (57%). This suggests that the focus of policies for the future housing of the ageing homeowner population should be on appropriate housing in the community rather than increasing the provision of segregated and specialised aged-specific housing developments, including retirement villages. Though 'downsizing' may have appeal for some home owners and those who see a benefit in releasing overly-large land and dwellings to younger, larger households; the demand is not for very small dwellings or one-bedroom units, as might be suggested by the predominance of single- and couple-households. Future space-efficient dwelling types could include smaller three-bedroom dwellings; flexible dwellings with spaces that can convert to temporary bedrooms for guests at the times they are required; and multi-

purpose rooms that can accommodate different uses, including hobbies, child care (grandchildren), fitness equipment, or private personal space, depending on the changing interests and life stages of the residents.

In the survey, the least favoured shared use housing options were having adult children live with them (42%), living with their adult children (18%), or renting out part of their home to a tenant or boarder (13%). Living with children in the parents' home was far more acceptable than living with children in the children's home; however, this reflected respondents' preparedness to help their children out in an emergency and was seen only as a temporary arrangement. Their main objections to sharing accommodation with children were differences in attitudes, values and lifestyle with their children and believing it important to maintain their, and their children's, independence and autonomy.

However, when the option of separate, self-contained accommodation within their or their children's dwelling was raised in the interviews, many responded positively because it would enable them to maintain their independence as well as benefit from the advantage of having family support close by. This suggests that facilitating the development of flexible housing designs incorporating Accessory Dwelling Units¹³ (ADUs) could be a useful strategy for encouraging more efficient use of housing for some older people through the sharing of accommodation. This would require policy support from all levels of government — the Federal Government through broad policy settings, state governments for aligning planning policy, and local government for enabling supportive development controls and approval processes. It would also have the added benefits of providing a supply of affordable accommodation for lower income older people, and facilitate multi-generational living arrangements important to some CALD groups. In Canada, it has been estimated that ADUs (also known as secondary or garden suites) comprise up to 20 per cent of the rental housing stock in some cities (CHMC, undated) and recent Australian research indicates renewed interest in ADUs for affordable housing and intergenerational family housing (Landcom, undated; Faulkner & Maginn, 2009).

However, there are some for whom moving to a smaller or more accessible dwelling will remain the most appropriate and attractive option yet for whom the cost and inconvenience may be a barrier. Strategies for facilitating moving are therefore also important and could include removal of stamp duty, assistance with audits of prospective homes, and improved availability of information on housing options.

9.1.3 Improving housing design to support ageing in place

Irrespective of whether their choice is to stay in their current dwelling or move to another, the design of the home environment needs to be accessible, usable and safe if older home owners are to achieve their preference to remain 'at home' in the future.

When asked to consider the importance of possible housing design options in their own home in the event of developing a disability or need for assistance, the most favoured option was that '...the home you are living in can be modified easily and at low cost to meet your needs'; the Adaptable Design approach (85 per cent important or very important). This was followed by the Universal Design approach (78%) of having the home designed to meet needs from the start so '... the home you are living

¹³ Accessory Dwelling Units (ADUs) have been defined as 'a self-contained, but not separately titled, dwelling...located within, attached to, or detached from, and existing or proposed principle dwelling'.(Landcom, undated).

in will meet your needs without any modification being required'. At face value, this indicates strong market acceptance for both these options.

Improving the design of other peoples' homes to provide access was slightly less important, yet more than two-thirds of respondents supported 'the homes of friends and family you like to visit' having some critical wheelchair-access features for Visitability: having a toilet on entry level (72%), having a kitchen and dining room at entry level (65%), no steps to the entrance (63%), and a bedroom on entry level (58%). These features are also some of the most critical and difficult to provide in the residents own home if a resident develops a disability in the future.

However, when the issue of regulating these features intended to make housing more 'Visable' was discussed in the interviews, responses to a regulatory approach were sharply divided. Some (mostly those with personal experience of disability among family or friends) were strongly supportive, whereas others were opposed on the basis of the additional costs, fears of over regulation, or the unfairness of imposing Visitable Design on people who felt they did not need it.

The following two alternative policy responses can be envisaged, involving different levels of market intervention:

1. A market based, self regulation approach, whereby the role of government would assist in the development and promotion of design guidelines for minimum critical access features in all homes (Visitable Design); additional features that can be planned into the dwelling when it is designed so it can be easily and inexpensively adapted in future (Adaptable Design); or designing the home to have the access features designed and built in during construction so modifications are avoided (Universal Design). Incentives for compliance could be provided through a star rating system, subsidy or tax incentive. Even so, this would probably result in a low take up rate. This approach has been adopted in some cities in the USA (Centre for Inclusive Design and Environmental Access [IDeA] 2007a,b).
2. A government regulated approach through the Building Code of Australia mandating an Australian Standard for providing features for improved accessibility in housing, through a Visitable, Adaptable or Universal approach; thus ensuring compliance on all new residential buildings. This approach has been adopted for minimum accessibility features (Visitable Design) in the UK (ODPM, 2004) and Visitable Design features are also included in various US state regulations and the Inclusive Home Design Act currently before the US Congress (Maisel et al., 2008). Regulation of Visitable Design is also supported by Australian advocates (Hill, 1999; RAIA, 2005; Ward, 2005) and is being proposed for the BCA. The question remains, however, about regulation of the more comprehensive accessibility features provided through an Adaptable or Universal Design approach, though these also have their advocates (Ward, 2005; ACSA, undated, RAIA, 2005; Nissim, 2008).

In the USA, where both policies are used in different jurisdictions, the implementation of minimum accessibility features through regulation far exceeded implementation through incentives (Maisel et al., 2008). In Australia, some local government control plans have requirements for a proportion of dwellings in a development to have some accessibility features, or comply with aspects of AS 4299 Adaptable Housing. The National Rental Affordability Scheme also has a requirement for accessibility to be considered through 'use of Universal Design principles or other measures that make properties more accessible to people who are ageing or live with disabilities' (National Rental Affordability Scheme Regulations 2008). Likewise, the Commonwealth Government's recent Social Housing Initiative under the Nation Building — Economic Stimulus Plan which will produce 20,000 new dwellings and 40,000 refurbishments

includes criteria for ensuring access for older low income people and those with disabilities (Australian Government, 2009).

Of the two moving options explored in the survey, 'moving to a home that better suits your needs' was considered important or very important by 68 per cent of respondents and 'moving to housing specially designed for older people' by 61 per cent of respondents. This indicates that for those older home owners who choose, or are forced to move, there is strong market expectation that housing, which already includes access features (whether basic Visitable features, or more comprehensive access features that have been provided through Adaptable or Universal Design), is or will be available in the housing market; and a preference for this housing being provided in the general community rather than a segregated age-specific development.

Adaptable, universal, visitable, or just keep modifying housing?

The cost-benefit analysis comparing Visitable Design, Adaptable Design and Universal Design with the current practice of Home Modifications confirmed the results of previous Australian and international cost analyses: that allowing for accessibility in the initial construction of a dwelling is more cost effective than making changes in the future (Landcom, 2008; Hill PDA, 1998; Concrete Change, 2003; JRF, 1997). Of course, providing even the most comprehensive range of features for accessibility and safety will not be able to eliminate the requirement for future modifications in all cases, particularly for residents whose care needs are very complex and unforeseen. However, by eliminating the need to modify housing with the features most common and costly, with more Universal approach to housing design, the limited funding and resources for Home Modifications can be targeted to providing better home solutions for those residents with the most complex care requirements.

Taking a more detailed approach than prior cost benefit work also revealed a number of important and quite separate issues relevant to future consideration of policies for more widespread implementation of Visitable, Adaptable or Universal Design. These were:

- First, the preferable design approach is to provide access from the start; that is, a Universal approach.
- Second, that irrespective of the design approach, the design criteria need to be based on data that accurately represents the needs of residents.
- Finally, these criteria need to be presented in a format that is feasible for use in the design process.

The preferred universal approach

The Universal approach, that is, including features suited to people of all ages and the widest range of abilities at the time of construction, is preferable to the Adaptable approach of planning for simple and low cost design changes if residents require them in the future, because:

- Initial design time is reduced since there is no need to provide additional design and documentation of future adaptations.
- It avoids the unnecessary replacement of otherwise good fittings and fixtures during future adaptations, which is particularly costly when premium products such as European appliances or glass shower screens must be changed to provide access.
- The design costs must be considered by the designer and builder at the time of construction and design solutions need to be marketable to everyone.

- The accessible features are already in place if the resident develops a temporary disability — some temporary disabilities would not justify large adaptation costs.
- Limiting the amount and cost of future adaptation also fits the preferred approach of older home owners, revealed in the survey.

Design criteria representing needs of residents: the need for evidence-based data

Though design approaches such as Adaptable, VISIBLE and Universal Design are often linked to specific standards, guidelines and lists of criteria; the design approach and the design criteria need to be evaluated separately, as criteria could be common to, or interchangeable between, all three approaches.

The design analysis revealed a lack of consistency between the same design features in the criteria used for the different design approaches: VISIBLE, Adaptable and Universal, and even within the different guides for Universal Design. These variations in criteria (such as entrance door clearances being 800mm, 850mm or 920mm) had a considerable effect on whether the existing dwellings were already suitable, and the degree of changes (and cost of those changes) required. There has been a concentrated effort in recent years to implement regulations in the building codes, as has been the practice in other countries. Most recently, the National Dialogue on Universal Design targeted a national code for universal features in all new housing by 2020 (Shorten, 2009). However, these discrepancies in design criteria suggest that there needs to be a greater focus on which features are needed.

The greatest impact on dwelling space was due to the circulation space requirements at doors and for the bathroom (shower and toilet) in the Adaptable Housing Standard AS 4299 (adopted from AS 1428.1 and AS 1428.2). These space requirements were based on anthropometric and movement data from a study in the 1980s, of adults aged 18–60 years. The age and small number of participants in this study, combined with the age of the data and reported limitations in records of data changes when incorporated into the Standards (Hunter, 2003), suggest that the requirements might not adequately reflect the space requirements for today's older residents. It highlights the need for reliable anthropometric data for dwelling residents of all ages and abilities to be incorporated into design criteria for each of the design approaches in future. The deficiencies in anthropometric and movement data, particularly for wheelchair users, have been recognised internationally and were an important issue for both academia and industry in the Access to Premises Standard. (House of Representatives Standing Committee on Legal and Constitutional Affairs [HRSCLA], 2009; Steinfeld et al., 2005). A comprehensive, national anthropometric and movement study of people of all ages and abilities, including people who require assistance of a carer or an assistive device such as a wheelchair, needs to be an immediate priority. This study would need to identify the spatial and circulation requirements for the home environment, particularly with the use of assistive devices, separately to the requirements for public environments (communal paths, public toilets, public buildings etc.).

Format of design criteria

Irrespective of the design approach, the required design criteria need to be in a concise, self-contained format if their implementation is to be feasible within the time constraints of commercial housing development. Also these criteria and supporting information should be readily available.

In the design analysis, the complexity and ambiguity in the current AS 4299 Adaptable Housing Standard, had a major effect on design time. AS 4299 relied on extensive

cross-referencing with AS 1428.1 and AS 1428.2, and required individual multi-variable calculations for measurements of features such as door clearances. Even the basic Visitability requirements required consultation of AS1428.1.

Currently, the Australian Standards AS1428 and AS4299 must be purchased (at considerable cost for consumers), limiting availability of this information; a situation criticised in the recent Access to Premises Standards enquiry (HRSCLA, 2009). In contrast, the UK Lifetime Homes Standards are easily accessed, with supporting information, on a website (www.lifetimehomes.org.uk). Similarly, Australian housing design guides written for industry and consumers, such as Welcome — Design Ideas for Accessible Homes (www.buildforlife.com.au) and Housing for Life (available at www.mba.org.au) can be accessed free on the internet.

To ensure that the design criteria and supporting information are in a format that is readily usable and available to housing designers and developers, as well as residents selecting a new home or modifying their existing home, the housing industry and consumer groups should have an active role in their development.

Regulation of minimum access features

The need for regulation of minimum access features has been a recurring debate in Australia. Features have been proposed for the Australian Building Code, similar to Part M requirements in the UK and Visitability regulations in the USA. Despite the reservations of some interview participants regarding regulations, the survey and interview findings appear to support some type of regulated access in all housing so that older residents could minimise the degree and cost of making their home accessible. With respect to access features in the older residents' own homes:

- Approximately one third (34%) of participants had already made modifications to their home, and 40 per cent thought they would need to make a modification to their home in future.
- Of the 40 per cent of participants who thought they would need to make modifications in future, 46 per cent either did not think they could pay for them or were uncertain as to whether they could.

Likewise, in line with their earlier discussed support for access features in friends' and family's homes, regulated access appears to be needed so that older residents could continue to have access to the homes of friends and family they like to visit, even if their mobility declines: more than 60 per cent of participants visited the homes of friends and family at least weekly.

The design study undertaken for the cost-benefit analysis also supported some type of regulated minimum access in all housing. The apartment building already had a local regulatory requirement for an accessible path of travel to each dwelling and all common facilities. This dramatically decreased the need for redesign and the cost of all three design approaches, as well as home modification. Certainly, had there not been the accessible path from the street entrance, the sufficiently wide corridors and the lift linking basement parking with the street and each dwelling, a modification to provide these would be financially unfeasible. In the houses, the accessible path to the entry was feasible as a modification, but at a far higher cost than the minimal changes at the time of construction.

From this study, the most critical features recommended to be regulated are:

- Accessible path to a main entrance to the dwelling.
- Accessible path from this entrance to the kitchen, a toilet, a living area and a space that could be used as a bedroom.

- Sufficient space surrounding the toilet area for a wheelchair user to enter the room, close the door and use the toilet.

These features are the same as the current Visitability requirements in AS4299, with the exception of providing more generous space for the toilet. The current Visitability requirements do not permit a wheelchair user to enter the toilet room and close the door.

The recent National Dialogue on Universal Design identified essential elements for housing: 'wider doorways and passages; wet areas, such as bathrooms, on an entry level; and reinforced bathroom walls to allow grab rails to be easily fitted in the future'. (Shorten, 2009). It was recommended that these essential features and potentially some other 'more aspirational' features be implemented in a national code for all new housing by 2020 (Shorten, 2009).

Irrespective of the features selected for any future regulations, the performance requirements (particularly dimensions) for these features would need to be determined through further anthropometric study as discussed earlier. Consultation with a variety of peak bodies, state governments and the industry would also be necessary and may require the establishment of national Task Force with broad representation to undertake this work and make recommendations to government.

Two-storey dwellings

The current Adaptable Housing standard AS 4299 is focused on having accessible features contained on the entry level of a dwelling; there is no reference to stair design or vertical travel. This could be due to a traditional Australian approach of providing single-storey dwellings for people with reduced physical ability. However, increases in two-storey dwellings due to market preferences and land efficiency mean that single-storey dwellings can no longer be the sole solution for accessibility. Access in multi-story dwellings will need to be managed as it is in UK standards and regulations.

As well as domestic lifts, design criteria for stairs will also need to be addressed. Criteria for ambulant use of stairs (rather than just stairs designed to accommodate a stair lift), could include hand rails on both sides, elimination of winder stairs, and further consideration of the depth of stair tread, height of stair riser, and the maximum number of stairs per flight. Increasing the usability of stairs has the potential to reduce falls and reduce the reliance on high-cost lifts.

9.1.4 Improving neighbourhood design for an ageing society

It is widely recognised that an important aspect of positive and healthy ageing is participation in activities outside the home and that urban design and planning can influence participation (WHO, 2002, 2007; DoHA, 2006b; Mitchell & Burton, 2006; IDGO, 2007a,b.). The age friendly cities agenda also intersects with the recent emphasis on healthy cities, which recognises the important role of planning and urban design in promoting health and wellbeing (NHF,2004). These areas of research and policy development are still in their infancy, but will become more critical as the population ages.

Participation in activities

This study has confirmed that the design of the neighbourhood and provision of neighbourhood facilities can enhance or inhibit participation. Firstly, it has demonstrated the kinds of activities that older people are involved in outside the home, the frequency with which they occur, and the importance to older home owners of having them in close proximity to the home. Secondly, it has looked at the modes of

transport used to access these activities, and thirdly, through the in-depth interviews, has identified aspects of neighbourhood design that enhance or inhibit participation.

Participation in shopping banking and retail stood out as the most frequent (one or more times per week) and important to be located near to the home. The other high frequency activity was sport and recreation. Although less frequent, having medical and health facilities close to the home was also considered important by a high percentage of respondents. Other activities attended frequently by more than half of the respondents included religious services, visiting family and friends, volunteering, community and social clubs and having family and friends visit. Activities considered as important to have in close proximity by more than half of the respondents included visiting family and friends, having family and friends visit, sport and recreation, volunteering and dining out.

What this suggests is that older home owners wish to live in areas that are well serviced by a combination of such facilities. This aligns with widely held current urban design views that promote mixed use centres and neighbourhoods and have recently been adopted in most metropolitan strategy plans of major Australian cities — for example, the Sydney Metropolitan Strategy (DoP, 2005); Melbourne 2030 (DSE, 2005); and the South East Queensland Regional Plan (OUM, 2004). This approach co-locates residential and other uses around transport nodes thus providing pedestrian access to local retail, commercial, community and cultural facilities with related public open space. This is also advocated in the healthy cities guidelines (NHF, 2004), which promotes 'local destinations to support lively, walkable and rideable neighbourhoods' (NHF, 2004:13). It does, however, also pre-suppose higher density housing forms, contrary to the preferences of most older home owners at present.

Public transport

While most respondents had access to public transport in the form of bus or rail services, few were users of public transport and the vast majority were highly dependent on private motor vehicles. This was partly because of the convenience, autonomy and independence offered by the private motor vehicle, but also because of dissatisfaction with public transport services. The barriers to using public transport were many, including: non-existent or poor service provision (particularly in regional areas); irregular or unreliable services; confusing timetables; distance or steepness to transport nodes; queues and lack of seating at bus stops; infrequent services and long waiting times; transfer times between modes; terminated or changed bus routes; difficulty negotiating steps at railway stations or entering buses; lack of parking at stations (particularly outside commuter hours) and concerns about crime and safety on trains and around stations. This long list of concerns suggests that considerable improvement in public transport services will be necessary to attract older home owners away from their dependence on the private motor vehicle.

The importance of safe, accessible and convenient public transport to active ageing and independent living is widely recognised (WHO 2002, 2007; IDIGO, 2007a,b; UNCHS 1993; Ritter et al., 2002; PMSEIC, 2003; ALGA, 2006). Australia has had Disability Standards for Public Transport since 2002 (Attorney General's Department, 2004) under the Disability Discrimination Act 1992 with which all new or substantially upgraded transport infrastructure must comply, but determines that '...existing public transport will become accessible over a 20-year period with substantial access within 10 to 15 years (30 years for trams and trains)' and 25 per cent compliance targets for train and bus infrastructure by 2007 (Attorney Generals Department, 2004:36). A five-year review undertaken in 2007 indicated that some progress had been made in improving public transport accessibility with around one third of metropolitan railway

stations accessible for people with impaired mobility, but identified ‘...access to bus services infrastructure, notably bus stops, as an issue that has not been adequately addressed in the first five years of the Transport Standards’ (The Allen Consulting Group, 2007:53) and less so in regional than metropolitan areas. Draft Guidelines for Assessing Compliance of bus stops with the Disability Standards for Accessible Public Transport have recently been released for public comment (HREC, 2009).

Neighbourhood design

The quality of neighbourhood facilities and design varied considerably between locations. Some interviewees were very satisfied with the design and facilities in their neighbourhood and this encouraged their participation in activities outside the home. In other areas where interviewees expressed concerns about the design of the public realm, this did appear to discourage participation. Inadequate provision or poor quality of paths of travel, transport nodes, public open space, access to public buildings, street furniture, local cafes and public toilets were issues raised by some interviewees along with fear of crime and anti-social behaviour. What emerges from the interviews is an uneven standard of design, provision of facilities and maintenance of the public realm.

These issues also feature strongly in the age friendly cities and healthy cities agenda (WHO, 2002, 2007; NHF, 2004; IDGO 2007a,b,c; Ritter et al., 2002) for improving the design of cities and neighbourhoods, a task that needs to involve all levels of government. In Australia, the Federal Government has already taken a lead in identifying the design of urban environments as an important response to an ageing population via DoHA’s National Speaker Series ‘A Community for All Ages’ (DoHA, 2006a,b,c). The importance of the role of local government has been recognised by the Australian Local Government Association which, with the support of DoHA, has published *Age Friendly Built Environments: Opportunities for Local Government* (ALGA, 2006) and established the website ‘Planning for an Ageing Community’ which includes material on age-friendly built environments for local government.

Two Australian cities have participated in the WHO Age-Friendly Cities Project — Melbourne, Victoria, and Melville in the Perth metropolitan area, Western Australia. The Municipal Association of Victoria (MVA) has also collaborated with the Council of the Ageing (COTA) and the McCaughey Centre at Melbourne University in the WHO project (MAV, Undated). A number of individual Local Government Areas have adopted age friendly planning, transport and housing strategies (ALGA, 2006; MAV, undated). However, despite these initiatives,, there are no consistent national guidelines or standards specifically for age friendly urban environments in Australia. While the interests of older people intersect with healthy city, urban design), CPTED and sustainable city concepts and guidelines, to date there has been no systematic appraisal of how comprehensively these represent the interests and needs of older people — for example, those with mild dementia (Mitchell et al., 2003; Mitchell and Burton, 2006). Whether a stand-alone set of guidelines or systematically incorporated into other broader guidelines, this is an important task that is yet to be undertaken and would require the cooperation of all levels of government.

9.2 Implications for the housing and development industry

As the Australian population ages, there is little doubt that there is a growing market for age-friendly housing and that this will impact on the housing industry. The major question for the industry is how should it respond to this increasing demand?

9.2.1 Meeting preferences for housing type, size, density and features

Factors to be considered include the preference for living in the general community or more specialised age-specific housing; traditional separate dwellings or higher density options like town houses and apartments, the number of bedrooms required, and the provision of design features that meet needs and fulfil aspirations and expectations.

The prevailing approach of the industry views older people as a specialised market requiring specialised housing design located in enclaves of older people (i.e. in 'Over 55' (seniors living) developments or retirement villages). This research suggests that only a small percentage of older home owners live in such accommodation while most live in the general community in conventional separate houses and many are not attracted to living in age-specific enclaves. Most live in the general community in conventional suburban housing. It is estimated that in 2008 between 145,000 and 150,000 lived in 1756 retirement villages — 5.2 per cent of the over 65-year-old population at the 2006 Census (Jones Lang LaSalle, 2008). In our survey of older home owners, 86.8 per cent lived in the general community, and only 3.8 per cent in a 'seniors residential development'. While 64 per cent of respondents said that there were circumstances under which they would consider moving to a self-care or independent unit in a managed retirement village, the vast majority of respondents (91%) favoured remaining in their own home with professional care services and this strong desire was echoed in the in-depth interviews.

When taken together with the strong support expressed for homes that are designed to be more accessible for older people, there are two main options available to the industry for responding to the needs of an increasing older market. These are to:

1. Continue to produce specialised aged housing in enclaves designed around the needs of older people.
2. Increase the supply of mainstream housing that can accommodate a wider range of ages and abilities.

In each option, the design approach could be to make the housing design suited to older residents' needs right from the start, to make housing easier and less costly to modify if required in the future, or to only provide basic and critical access features and custom modify the housing if it is required.

The first approach suffers from the problem that enclave aged living does not appear to be what most older home owners want. The second requires that housing meets the needs of older people, but is also marketable to a wide range of age groups and different household types, and is cost efficient for the development industry. These approaches are not necessarily mutually exclusive, but could sit side by side in a suite of housing options for older people providing greater choice. If self-regulated by the industry, however, take-up is likely to be limited if not accompanied with financial incentives (cash grant or tax credit). If regulated by government, take up for all new housing would be guaranteed.

Clearly there is considerable room for more innovation on the part of the industry in developing new housing models suitable for older Australians, and the opportunity for local government to requiring greater provision of Adaptable or Universal Design to cater for the growing number of older Australians.

Older home owners' apparent small household size (predominantly singles and couples) does not reflect their preference and utilisation of larger dwellings evident in the survey and interviews. Generally, at least one 'additional' bedroom was needed beyond what might be perceived as the 'requirement' for the household size; and often, two bedrooms were in use. Older home owners made use of these bedrooms

for a wide variety of activities, predominantly as office space and/or guest bedrooms for their visiting children, grandchildren, extended family and friends. As a guest bedroom, the majority were configured with double beds rather than singles. Other frequent uses for these rooms were sewing and other hobbies, fitness equipment, and as personal space to retreat from the rest of the household. This indicates that dwellings in new residential developments would need to include a good mix of three bedroom dwellings, and/or flexible rooms that can be used to accommodate guests, participate in special interests and hobbies, and undertake office work.

Flexibility in dwelling designs to accommodate accessory dwelling units would also benefit from further industry consideration. As well as providing a source of affordable rental housing, and higher housing densities with much reduced impact on neighbourhoods with predominantly separate houses, it enables multi-generation family living. The respondents in the survey and interviews were very much against living with their children and only slightly less so, having their adult children live with them. However, by enabling the parent and child households to remain independent in self-contained dwellings within the same building or on the same land, this option was far more acceptable to older home owners.

The preference for dwelling type was mixed among respondents, but certainly single-level dwellings were very important and houses were favoured over apartments. This preference is at odds with current trends towards higher density housing development and multi-storey dwellings. To attract older home purchasers to higher density and apartment living, the inclusion of those features of houses that are a priority for older home owners will need to be considered in future designs: low-maintenance, a small private outdoor area, good safety and security and the ability to have pets.

9.2.2 Designing housing that provides the safety, usability and access required

Increased application and regulation of access features in the general housing market has been met with concern by the development industry particularly due to perceived effects on cost and marketability. The detailed design analysis undertaken as part of the cost-benefit analysis aimed to further examine the implications of including a variety of design approaches: Universal, Adaptable and VISIBLE in the development process; and provide the residential development industry with additional information on design options, features and cost so that they can evaluate the effects of these approaches in their own developments.

The regulation of minimum access features in the USA and UK; rapidly increasing demand for, and cost of, Home Modifications; and overwhelming preference by the ageing population to remain living at home with the assistance of care services; suggest that at least the minimum access features will be regulated. In the case of the apartment in the design analysis, an accessible path of travel had already been regulated by the local government. The cost of providing this access in the apartment building was not examined in the study; however, the potential savings in future modification were massive. The remaining visibility features: sufficiently wide entrance door, accessible path to living area and toilet, and VISIBLE toilet were already available or easily achieved in each dwelling type, at minimal cost.

As for more comprehensive access features, it was clear from the study that these features are better integrated into the construction of the dwelling, and planned future adaptation be minimised. Adaptations that rely on a future stair lift to reach an accessible bedroom and bathroom; or the construction or major renovation of a ground floor bathroom (albeit with plumbing already in place) would be beyond the

finances of some homeowners. Home owners were clear in their preference for adaptations that were easily implemented, at low cost.

The expectation of many respondents that they could move to housing in the community that better meets their needs, highlights the need for more housing that is designed to provide access from the start. The challenge for residential designers, builders and developers is to provide this housing in a manner that is marketable to all, to avoid enclaves of older peoples' housing. It appears that designing and marketing dwellings as 'age-friendly' or 'accessible', and including obvious features for disability, is not the best approach for appealing to older purchasers.

However, there is potential for marketing housing features that would be useful for all residents, and in particular, older residents. These could include:

- A greater provision for more flexible and usable storage, both built-in and in spaces designed to house free standing furniture — in the study, some respondents were using bedrooms for storage: their own belongings, those of children who had left home, and grandchildren's toys and equipment.
- Increased flexibility and usability in kitchen designs; such as adjustability in worktop height, or worktops at different heights, including some that could be used when seated; pantry, cookware and tableware storage that is easy to access at appropriate heights, and appliances with safety features such as cool-touch oven doors, child locks, and automatic gas cut-out (particularly as many children have care provided by their grandparents).
- Adjustable lighting levels in all rooms, which can change the 'mood' of the room, provide higher light levels for those with reduced vision, and low-level lighting requiring less visual adjustment for night use.
- Slip-resistant flooring in all areas of the dwelling.

The larger circulation space requirements for wheelchair use, ambulant support devices such as walking frames, or the assistance of a carer that would usually lead to the recommendation for open plan spaces, compete with the respondents' preferences for multiple bedrooms and private spaces. This suggests potential for better configuration of space and flexible room division.

The study findings indicate that simply adopting current standards such as AS 4299 as guidelines or regulations is not feasible for the broader housing market due to the potential inaccuracy in specified features and dimensions, and the complexity of the standards themselves. The need for further research to determine the housing features that meet residents' requirements has already been discussed. There is a role for industry in determining the most appropriate format for design criteria and supporting information.

9.2.3 Meeting preferences for location and community facilities

While many of these features are the responsibility of state and local governments, developers have the opportunity to provide features onsite in their residential developments, including:

- Most importantly, accessible pathways throughout the site (separated from traffic) and to nearby transport stops and retail services.
- Communal parks and playground areas for residents, that could be shared with the local community.
- Adequate seating along pathways and at parks and playgrounds.

9.2.4 Opportunities for innovation in the housing industry

Fixtures and fittings

During the design analysis it was evident that the feasibility of the design approaches was very dependent on the availability of appropriately designed fixtures and fittings and that, in some areas, there was a lack of suitable products. This points to a considerable market opportunity for new housing product designs.

The method of vertical travel had the single greatest impact on the feasibility and cost of providing accessible two-storey dwellings. In the design analysis, the cost of an open vertical lift to suit the available space in the atrium of the four-bedroom separate house was well in excess of \$60,000, even when there was no requirement for demolition of the part of existing dwelling structure, or the need for a lift shaft. This cost would not be feasible in the new construction of a project house and may be prohibitive for later addition if a resident had a disability. Currently in Australia, domestic vertical lifts remain a prestige product or a disability product and are priced at a premium. Until there is increased competition from more lift suppliers, and there are more cost-effective lift products designed for domestic use rather than adapted from commercial use, product volumes will remain low and costs high. In the absence of vertical lifts, inclined stair lifts and platform lifts are an option. Though far lower in cost at \$15–\$20,000, and can certainly provide access to upper storeys for some residents, they are products that are designed for disability, can compromise the staircase visually and functionally, and are not marketable to the wider population.

In the design analysis, both of the two-storey dwellings featured large main bedrooms and en-suites, with sufficient space to minimise changes (and resulting cost) to achieve the circulation spaces in the design criteria. They also contained all of the bedrooms and bathrooms, and were well in excess of half of the habitable space. Certainly it would be more efficient to make use of these spaces rather than restrict residents to the ground floor. While more cost effective methods of vertical travel in dwellings will need to be pursued, improvements in mass-produced staircase designs would reduce the need for lifts.

During the design analysis, there were some design criteria across the different design approaches that had few or no products on the market to comply. AS 4299 required a kitchen sink bowl with a maximum depth of 150mm deep, yet no such sink could be sourced on the Australian market. Similarly, kitchen bench tops at the lower end of the AS 4299 height range of 750–850mm did not fit a standard under-bench dishwasher, and there was only one brand of dishwasher that could be accommodated. The availability of a vertical support rail for attaching a hand-held shower was very limited; despite there being a very wide range of vertical bar/hand shower systems, most rails could not be used as a support. Likewise, other bathroom fittings such as towel rails, paper holders and shelving could not be used to support a resident.

It was not only meeting the specific design criteria where product availability was problematic. For example, sliding doors were useful where there was insufficient space for a door to swing, particularly in the bathroom/en-suite etc. and potentially between the garage and adjacent living area in the dwelling to make use of the unoccupied garage as living space, and increase circulation space around a vehicle.

Also, there were very few floor tiles that had been tested for slip-resistance and provided these ratings for purchasers. Increasing the variety and volume of slip-resistant tiles and providing test ratings for purchasers will assist not only the housing industry, but also home owners, to build or renovate safer bathrooms, kitchens and living environments in their housing.

This need for increased functionality, flexibility and safety for users of all ages and a wide range of abilities provides product suppliers, designers and manufacturers with opportunities for product innovation and differentiation, in what are often mature product markets.

Innovation in building methods

The traditional approach of achieving accessible housing through custom modifications has involved labour-intensive building practices, with materials adapted from other uses; for example, reinforcing bathroom walls for grab rails with localised blocking to frames and layers of ply underneath or inserted into sections of fibre cement sheet wall linings. These practices could have been the most appropriate and cost effective solution of modifications and specialised housing designs. However, broader implementation of accessible design approaches provides opportunities to devise labour-saving construction methods, using innovative materials that will better meet accessible design criteria, in a more cost-effective manner.

9.3 Implications for older Australians

This research has confirmed the importance of home ownership and ageing in place to older Australians and to their positive and healthy ageing. Despite apparent under-utilisation, older home owners spend more time in the home and the vast majority regarded their homes as suitable or very suitable for the number of permanent and temporary residents. Surplus, or spare, bedrooms play an important role in social life by providing accommodation for family, friends and grandchildren — as well as for a wide variety of activities that have meaning and value to older people.

However, older home owners are also aware that their needs may change with time and that the design of housing is an important constraint on their future housing options. Modifying the home is the conventional response, but this can be a challenging and expensive process and many on pensions or lower incomes were uncertain as to their ability to afford the modifications. Moving to a more suitable dwelling, or to a retirement village, is another option, but can result in disconnection from existing social networks and a familiar neighbourhood, and some older people do not like the idea of living in a community of older people or are concerned about the costs and conditions, preferring to live in the general community. However, finding a home with the right features for maintaining independence (single level, no or few steps, level bathroom floors, a seat in the shower, lower or adjustable kitchen benches, cupboard and appliances, etc) can be difficult. Options involving sharing the dwelling with children or a tenant are generally not attractive, unless to assist children in an emergency, but they are more favourable to this if there is separate, self-contained accommodation in the form of an accessory dwelling or 'granny flat'.

9.3.1 Planning for the future: multi-generational homes with autonomy & independence — improving liveability

The desire of so very many older home owners to remain living either in their present home or at least within the location and community with which they are familiar has been a major finding of this project. At the same time, there is a recognition that large scale redevelopment of existing stand alone homes in existing locations into high density housing areas is very difficult, indeed perhaps unlikely to eventuate. This further underscores the merit of widespread and immediate consideration of options for Accessory Dwelling Units to make multi-generational living options a more possible and probable choice for older home owners to remain living and gain increased liveability in their current abode. This is an issue for public policy attention involving all levels of government.

The idea of housing being designed in such a way that it can be easily modified (Adaptable Design), or designed to accommodate the needs of a wider range of ages and abilities (Universal Design), or designed so that a person with a disability can visit (Visitable Design) are attractive to many older home owners, but they are divided about whether this should be regulated because of the additional cost or the fairness of forcing this on people who do not need it. However, the preference for a home that requires minimal modification for future needs, combined with the considerable number of participants who could not afford, or did not know if they could afford, to modify their home if required, suggests that home owners need to better plan their homes for the future. Regulation of at least critical access features, and perhaps even more comprehensive features through Adaptable or Universal Design, could be required in addition to market led approaches. The overwhelming desire to remain at home and receive care services will only be achievable if home environments are safe and usable by family and professional carers.

9.3.2 Financial incentives can relieve future fiscal burdens

The findings of this report demonstrate clearly that older people are aware that their needs may change as they age, and that many desire to improve the liveability of their present home to accommodate those changes. The report also reveals that older people accept the practicality and desirability as well as the contribution to healthy ageing of adapting their homes to cope with future frailty or morbidity.

Currently, as stated early in this report, more than 80 per cent of older Australians live in their own home and, of these, the majority (82.1%) live in separate houses. It is an acceptable fact that these people are better placed for the future than say older people who are in private rental situations. However, this report represents the views of the overwhelming majority of older Australians who are home owners, and the possible belief that these older Australians are in no need of any form of support and can provide entirely for their own needs when it comes to home modification. The findings of this research study demonstrate that not to be the case. In fact, many older Australian home owners are, as people say, 'asset rich, but income poor'. And certainly this research revealed that many older home owners have little liquid wealth or financial resources that are surplus to their present requirements. Many older home owners exist only on the government provided age pension, a large number also are eligible for the Commonwealth Health Benefit and so have restricted disposable income. Many respondents stated that they were not able or were uncertain that they could ever pay for renovations, despite recognising the preventative value of such modifications for their future health and liveability. While some people are able to take advantage of reverse mortgages to fund these renovations, the reverse mortgage products are not widely accepted by older home owners (see Olsberg & Winters, 2005), and in fact many reverse mortgage products that did offer reasonable conditions have been closed, sometimes as financially unviable, others as a result of the recent global financial crisis and tighter credit controls and availability of credit.

In the context of current widespread debates and the major review of Australia's health system as it confronts the fiscal demands of the ageing population, the findings above suggest the necessity for inclusion of some measures to support older people to make Adaptable changes as part of these policy discussions. Such initiatives will not only provide greater possibilities of healthy ageing, greater liveability and quality of life for individual men and women and their families, but will also relieve fiscal burdens of future medical interventions and reduce or, at the very least, delay demands for residential care.

Some possible initiatives may include the following:

- Provide tax subsidies for Adaptable home renovations for people over the age of 65 or for people who have been assessed for a Disability Pension. At present, a variety of community and charitable organisations provide some assistance for Home Modifications, but this is largely after an event or the onset of morbidity. What is needed is support for older Australians to make changes in their home to support them AS they age, and by so doing hopefully prevent falls and mishaps that have been shown to be personally extremely debilitating and fiscally expensive.
- For some years now some pension funds in the US and in the UK have provided for contributions and for benefits for long-term care insurance. While this has been proposed by some for Australia, it has largely been resisted by government, policy analysts and Australia's superannuation funds as unwise under the present nine per cent contribution regime. The argument being that with only nine per cent contributed by most employees, compulsorily allocating a proportion of this contribution for long-term care insurance would reduce everybody's retirement savings when some people may never require long-term or even short-term residential care.
- Current retirement benefits, which are generously tax advantaged within superannuation funds, could include say a \$5000 maximum benefit for people to make changes or renovations to their home either in anticipation of retirement or at the point of retirement. At the very least this could be provided as an option by funds for members as part of their compulsory disability insurances within superannuation funds.

9.3.3 Communication, collaboration, research and consultation

While this project found that the majority of older home owners supported the possibility of adapting their home, many seemed ignorant about what sorts of support would be most useful and how their own home might be able to be adapted for the future. Most Australian states have advice on Home Modifications and individual assessments by occupational therapists provided for people with a disability or need for assistance through HACC. However, these services are usually accessed when older people are already facing problems with access and safety in their homes. There is a need for information on how homes can be designed and adapted for better access and safety, which is readily available to older homeowners before they develop a disability or requirement for assistance, and particularly before they are injured through a trip, fall or other accident in their home.

In recent years, publications for residents with information on improving access in their homes, including the BCV's *Welcome* (2002) and MBA's *Housing for Life* (2001), have become available in printed format and through the internet. Some states have home design information programs instead of, or as well as, the HACC-funded home modification service that can be used by any resident over the age of 60 years, irrespective of disability or income. The Queensland Government's Home Secure Assist program, administered by the Department of Housing, provides assessments on security and personal safety (in conjunction with Queensland Police), and advice on home maintenance and legal and consumer protection issues. Subsidised assistance for minor maintenance and repairs is also available for eligible residents (Queensland Government Department of Housing, 2007; Queensland Police, 2009). This program is run in addition to the HACC home modification program. In Victoria, rather than Home Modifications through HACC, a Home Renovation Service is provided through the Department of Human Services and Archicentre. This service is available to anyone aged over 60 or with a disability. It involves a free home

inspection by an architect and occupational therapist to identify the work required on the home to make it healthy and safe. Low interest renovation loans of up to \$25,000 are also available for home repairs (Archicentre, 2008:1).

These publications and programs that are targeted to older residents have the potential to assist them to better plan their homes for the future, before it becomes critical due to immediate disability or need for assistance. This has a number of advantages for home owners: they could cost-effectively incorporate some of these design elements when making other renovations such as landscaping, new kitchens and new bathrooms; they could be in a better financial position to afford these design changes when they are younger and in better health; and they have additional time for, and can have greater involvement in, design decisions. The architectural inspection could also have considerable appeal (without perceived stigma) for those home owners who do not want to face the prospect of future disability.

The urgent need for further anthropometric and movement research on older people (and indeed people of all ages and abilities) in their home environment was a key finding in this study. It is vital that older home owners modifying their homes to make them more accessible for developing disability, or planning for better access in their homes for their future years at the time of construction or during major renovations, have reliable information on the features and spatial requirements that will address their needs.

There are also possibilities of approaching trade unions in the areas of building and construction, electrical trades, etc., concerning opportunities to collaborate in perhaps subsidised or volunteer programs of home renovations. These trades are marked currently by high average ages of members and the expected imminent retirement of many of their members. Support for a program using the skills of older building, construction and electrical trades workers could be developed with attendant benefits for all parties. It is likely that such programs would have strong local linkages and provide valuable social networking opportunities for older people in communities across Australia.

These initiatives may be seen as somewhat ambitious, but the future health, quality of life and liveability of older home-owning Australians and their families, and any measure that may relieve the undoubted fiscal pressures to be borne by all levels of government confronting Australia's ageing population, means that bold thinking is warranted and must be encouraged.

9.3.4 The wider neighbourhood

Home owners are also conscious of the importance of the wider neighbourhood to the ability to ageing in place and in encouraging active and healthy ageing. They value convenient access to public transport, retail, medical, community, cultural and recreational facilities. They require well maintained and safe pedestrian networks, crossings and lighting at night. They want places to walk, sit, have a cup of coffee and read the paper. They need good seating, bus shelters and public toilets.

However, bringing about the necessary changes to achieve more age-friendly housing and neighbourhoods also presents some challenges to consumers. It is unlikely, for example that current forms of low density suburban development can deliver the mixed-use neighbourhood outcomes that best support an ageing society. Mixed use neighbourhood centres and improvements to public transport will require more dense neighbourhoods with more accessible multi-unit housing forms and this may be a difficult adjustment for many older home owners to make. Increased densities also improve the viability of improved public transport systems, though the necessary patronage depends on less reliance on the private automobile to which older people

seem strongly dependent. Ultimately, building age friendly neighbourhoods and cities will require such important trade-offs to be made by consumers.

The increasing percentage of older people in the community will see a growing influence on all levels of the political system, support services and the housing/development industries to achieve more appropriate housing options, more age-friendly neighbourhoods and transport infrastructure that will support their desire to remain living in their own homes and familiar neighbourhoods for as long as possible or make other informed and appropriate choices.

REFERENCES

- Aged and Community Services Australia (ACSA), (Undated) Towards Barrier Free Housing for an Ageing Australia: Accessible, Adaptable and Universal Design, An Issues Paper and Resource Guide, South Melbourne: ACSA.
- Archicentre (2008), *Safe & Sound: A housing profile of Victoria's older population* (2008), third edition, Melbourne: Archicentre.
- Andrews, K. (2001), National Strategy for an Ageing Australia: An Older Australia, An Older Australia, Challenges and Opportunities for All, Canberra ACT: Commonwealth of Australia.
- Australian Building Codes Board (ABCB) (2004), Regulatory Impact Statement. Proposal to Formulate Disability Standards for Access to Premises and Amend the Access Provisions of the Building Code of Australia (RIS2004), Canberra: ABCB.
- Australian Bureau of Statistics (ABS) (2000), *Australian Housing Survey: Housing Characteristics, Costs and Conditions, 1999*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics (ABS) (2001), *Technical Paper, 1999 Australian Housing Survey: Confidential Unit Record File*, Cat No 4186.0.30.001, Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics (ABS) (2003), *Census of Population and Housing: Ageing in Australia 2001*. Canberra: ABS.
- Australian Bureau of Statistics (ABS) (2006a), *Population Projections 2004–2021*, (Cat No 3222.0, Canberra: ABS.
- Australian Bureau of Statistics (ABS) (2006b), *Census 8 August 2006 Household Form*, Canberra: ABS
- Australian Bureau of Statistics (ABS) (2006c), *Census Dictionary, 2006*, (Reissue), Cat No 2901.0, Canberra: Australian Bureau of Statistics.
Internet: www.abs.gov.au/
- Australian Bureau of Statistics ABS) (2007a), *2006 Census Table*, Cat No 2068.0, Internet: www.Censusdata.abs.gov.au/
- Australian Bureau of Statistics [ABS] (2007b), *Housing Occupancy and Costs, Australia, 2005-06* Cat No 410.0.55.001, Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics (ABS) (2008), *Feature Article: Average Floor Area of New Residential Dwellings*, Cat No 8731.0 — Building Approvals, Australia, Feb 2008. Internet: <http://www.abs.gov.au/ausstats/abs@.nsf/>
- Attorney-Generals Department (2004), *Disability Standards for Accessible Public Transport Guidelines, 2004*, (no 3) (consolidated to include all amendments), Canberra ACT: Commonwealth of Australia.
- Australian Government. (2002-b), *Budget Paper No 5, Intergenerational Report 2002–2003*, Canberra: Commonwealth of Australia.
- Australian Government. (2007), *Intergenerational Report II 2007*, Canberra: Commonwealth of Australia.

- Australian Government (2009), Nation Building Economic Stimulus Plan, Social Housing Initiative Guidelines: Element 1 — New Construction, Canberra ACT: Commonwealth of Australia. Retrieved 27 November, 2009, from http://www.fahcsia.gov.au/sa/housing/pubs/housing/socialhousing/social_housing_init_guidelines/Pages/default.aspx
- Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FAHCSIA) (2009) *National Rental Affordability Scheme (NRAS)*. Canberra: Commonwealth of Australia. Retrieved 27 November, 2009 from: <http://www.fahcsia.gov.au/sa/housing/progserv/affordability/nras/Pages/default.aspx>
- Australian Government Department of Health and Ageing (DoHA) (2006a), *A Community for All Ages: Building the Future: The Findings and Recommendations of the National Speakers Series June 2006*, Canberra: Commonwealth of Australia.
- Australian Government Department of Health and Ageing (DoHA) (2006b), *A Community for All Ages: Building the Future: The Report on the Findings and Recommendations of the National Speakers Series June 2006*, Canberra: Commonwealth of Australia.
- Australian Government Department of Health and Ageing (DoHA) (2006c), *Findings and Recommendations of the National Speakers Series. Healthy Spaces and Places: National Planning Guidelines Project*. Retrieved 29 December 2007, from <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/ageing-national-planning-guidelines-project.htm>
- Australian Government Department of Health and Ageing (DoHA) (2007a), *Top 10 Housing Features for All Stages of Life* (brochure), Canberra: DoHA.
- Australian Government Department of Health and Ageing (DOHA) (2007b), *Australian Health and Ageing System: The Concise Factbook*, Canberra: Commonwealth of Australia.
- Australian Human Rights Commission (AHRC) (1999) *Draft Guidelines for Assessing Compliance of Bus Stops with the Disability Standards for Accessible Public Transport 2002: Draft for Public Comment*. Retrieved 27 November, 2009 from: <http://www.hreoc.gov.au/about/index.html>
- Australian Local Government Association (ALGA) (2006), *Age Friendly Built Environments: Opportunities for Local Government*. Deakin, ACT: Australian Local Government Association.
- Australian Network for Universal Housing Design (ANUHD) (2006), *Universal Housing: A lifestyle approach to sustainable housing design*, Sydney: ANUHD/Disability Council of NSW.
- Australian Urban and Regional Development Review (AURDR) (1994), *New Homes for Old: Strategy Paper 1*, Melbourne: Commonwealth of Australia.
- Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) (2009a), *Accommodation Choices for Older Australians and their Families: What older Australians and their families need to know*, Canberra: Commonwealth of Australia. Retrieved 23 November, 2009, from: http://www.fahcsia.gov.au/SA/SENIORS/PUBS/ACCOM_CHOICES/Pages/default.aspx

- Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) (2009b), *National Housing Supply Council*, Canberra: Commonwealth of Australia. Retrieved 22 November 2009, from: <http://www.fahcsia.gov.au/sa/housing/progserv/affordability/Pages/NationalHousingSupplyCouncil.aspx#housing>
- Australian Institute of Health and Welfare [AIHW] (2007). *Older Australia at a Glance: 4th edition* (No. AGE 52). Canberra: AIHW.
- Australian Network for Universal Housing Design (ANUHD) (2008) *Top Ten Housing Features and Better Practice Universal Design Features*. Strawberry Hills: ANUHD. Retrieved 22nd November 2009 from: <http://anuhd.org/content/housing-features>
- Batten, D. (1999), 'The Mismatch Argument: The Construction of a Housing Orthodoxy in Australia', *Urban Studies*, 36:1 pp. 137–151.
- Building Commission Victoria (BCV) (2002), *Welcome: Design Ideas for Accessible Homes*, Melbourne: BCV.
- Canadian Mortgage and Housing Corporation (CHMC) (undated) *Residential Rehabilitation Assistance Program (RRAP) – Secondary/Garden Suite*. Retrieved 22nd November, 2009 from: http://www.cmhc-schl.gc.ca/en/co/prfinas/prfinas_002.cfm
- Center for Inclusive Design and Environmental Access (2007a), *Existing Local Visitation Laws*. Retrieved 29 December 2007, from <http://www.ap.buffalo.edu/idea/visitation/>
- Center for Inclusive Design and Environmental Access (2007b), *Existing State Visitation Laws*. Retrieved 29 December 2007, from <http://www.ap.buffalo.edu/idea/visitation/>
- Churchill, G. Jnr. (1995), *Marketing Research: Methodological Foundations*, Fort Worth Texas: Dryden Press.
- Canada Mortgage and Housing Corporation (CMHC) (Undated), *Permitting Secondary Suites*, available online: www.cmhc-schl.gc.ca, Retrieved 14 December 2007.
- Cobbold, C. (1997), *A Cost Benefit Analysis of Lifetime Homes*, York: Joseph Rowntree Foundation.
- Cochran, W. (1977), *Sampling Techniques*, third edition, New York: Wiley and Sons.
- Concrete Change. (2003), *Cost Data for Features Required in Federally Funded New Construction by the Inclusive Home Design Act HR 2353*, June 2003. Retrieved 29 December 2007, from <http://www.concretechange.org/hb2353costsheet.pdf>
- Cordell Housing Building Cost Guide — NSW, December 2008, Sydney: Reed Construction Data.
- Davison, B., Kendig, H., Stephens, F. & Merrill, V. (1993). *It's Our Place: Older People Talk About Their Homes*. Canberra: AGPS.
- Department of Planning (DoP) (2005), *City of Cities: A Plan for Sydney's Future*, Metropolitan Strategy Supporting Information, Sydney: NSW Department of Planning.
- Department of Sustainability and Environment (DSE) (2005), *Melbourne 2030 — Planning for Sustainable Growth*, [www.dse.vic.gov.au/melbourne2030online //](http://www.dse.vic.gov.au/melbourne2030online//)

- Faulkner & Maginn (2009), *Scoping the Opportunities for Accessory Dwelling Units (ADU) to contribute to the Supply of Affordable Housing*, Final Report prepared for the Department of Families and Communities, South Australian Government, Adelaide: Southern Research Centre, Australian Housing and Urban Research Institute.
- Hambleton, P, Keeling, S. & McKenzie, M (2009), 'The Jungle of Quality of Life: Mapping measures and meaning for elders', *Australian Journal on Ageing*, Vol 28, Issue 1, March 2009, pp. 3–6.
- Hill, M. (1999), *Breaking Into Adaptable Housing: A Cost Benefit Analysis of Adaptable Home*, Paper presented at ACT Adaptable and Accessible Housing Conference. Retrieved 12 July 2007, from <http://www.anuhd.org/publications/ACT%20Cost%20Benefit.doc>
- Hill PDA (1998), *Adaptable Housing Study: A cost benefit analysis of Adaptable Homes*, Prepared for New South Wales Government Department of Urban Affairs and Planning Housing and Metropolitan Branch December 1998 by Hill PDA In Association with Brian Elton and Associates & Rider Hunt Quantity Surveyors
- House of Representatives Standing Committee on Legal and Constitutional Affairs (HRSCLCR) (2009), *Report of the Inquiry into Draft Disability (Access to Premises Buildings) Standards*, June 2009, Canberra: Commonwealth of Australia.
- Howe, A. (1992), *The National Housing Strategy: Housing for Older Australians: Affordability, Adjustments and Care*, Canberra: Commonwealth of Australia.
- Hunter R.A. (2003), *Review of Bails's A80 Wheelchair Research and its Application to AS1428*, Hunarch Consulting.
- Inclusive Design for Getting Outdoors (IDGO) (2007a, 10 June), *Older People and the Outdoors*. Retrieved 31 January 2008, from http://www.idgo.ac.uk/older_people_outdoors/index.htm
- Inclusive Design for Getting Outdoors [IDGO] (2007b, 10 June). *Research Methods and Tools*. Retrieved 31 January 2008, from http://www.idgo.ac.uk/theories_and_methods/researchtools.htm
- Inclusive Design for Getting Outdoors (IDGO) (2007c, 10 June), *What are the Critical Issues?* Retrieved 31 January 2008, from http://www.idgo.ac.uk/older_people_outdoors/critical_issues.htm
- Jones Lang LaSalle (2008), *Development in the Retirement Sector: Is Supply Meeting Demand or Missing the Mark?*
- Joseph Rowntree Foundation (JRF) (1997, February), *Foundations 2 — Building Lifetime Homes*, from <http://www.jrf.org.uk/knowledge/findings/foundations/2.asp>
- Judd, B., Kavanagh, K., Morris, A. & Naidoo, Y. (2004). *Housing Options and Independent Living: Sustainable Outcomes for Older People Who are Homeless* (Final Report). Melbourne: Australian Housing and Urban Research Institute.
- Kendig, H. & Neutze, M. (1999). *Housing Implications of Population Ageing in Australia*. Canberra: Productivity Commission, Canberra: Australian Government Publishing Service.

- Kihl, M., Brennan, D., Gabhawala, N., List, J. and Mittal, P. (2005), *Liveable Communities: An Evaluation Guide*, Washington DC: AARP Public Policy Institute.
- King, R. (1973) *The Dimensions of Housing Need in Australia*. Sydney: Faculty of Architecture, University of Sydney.
- Landcom (undated), *Accessory Dwelling Units: Playing a Significant Role in Market Based Affordable Housing*, Parramatta, NSW: Landcom.
- Landcom (2008), *Universal Housing Design Guidelines for Landcom Projects*, available at www.landcom.com.au
- Maisel J.L., Smith, E., Steinfeld E. (2008). *Increasing Home Access: Designing for Visitability*, Washington DC, AARP Public Policy Institute.
- Master Builders Association of the ACT (2001)., *Housing for Life: Designed for Everybody*, Canberra: MBA.
- Mitchell, L. & Burton, E. (2006), 'Neighbourhoods for Life: Designing Dementia-Friendly Outdoor Environments', *Quality in Ageing*, 7(1), pp. 26–27.
- Mitchell, L., Burton, E., Raman, S., Blackman, T., Jenks, M. & Williams, K. (2003), 'Making the Outside World Dementia-Friendly: Design Issues and Considerations', *Environment and Planning B*, *Planning and Design*, 30(4), pp. 605–632.
- Municipal Association of Victoria (MAV) (undated), *Age Friendly Environments: WHO Global Age-Friendly Cities Project*. Retrieved 17 June, 2009, from <http://www.mav.asn.au/>
- National Heart Foundation of Australia (Victorian Division) (NHF) (2004), *Healthy by Design: A Planners Guide to Environments for Active Living*, Melbourne: NHF.
- National Housing Strategy (NHS) (1991a) *The Affordability of Australian Housing*. Canberra: Australian Government Publishing Service.
- National Housing Strategy (NHS) (1991b) *Australian Housing: The Demographic, Economic and Social Environment*. Canberra: Australian Government Publishing Service
- National Housing Strategy (NHS) (1992a) *Housing Choice: Reducing the Barriers*. Canberra: Australian Government Publishing Service.
- National Housing Strategy (NHS) (1992b) *National Housing Strategy: Agenda for Action* (Issues Paper No 7). Canberra: Australian Government Publishing Service.
- National Rental Affordability Scheme Regulations (NRAS) 2008 Schedule 1.*
- Neal, A. (1985) *The Dynamic Process of Life-Cycle Change and its Impact on Inner Area Population Loss*. Urban Policy and Research, 3, pp. 16-27.
- Nissim, R. (2008), *Universal Housing Universal Benefits*, Victorian Council of Social Service, Melbourne.
- Olsberg, D. & Winters, M. (2005), *Ageing in Place: Intergenerational and Intrafamilial Housing Transfers and Shifts in Later Life (Final Report)*, Melbourne: Australian Housing and Urban Research Institute.
- Office of the Deputy Prime Minister (ODPM) (2004), *Approved Document M — Access to and use of buildings*. London.


- Office of Urban Management (OUM) (2004), *Draft South East Queensland Regional Plan 2005–2026*, Brisbane: Department of Local Government, Planning, Sport and Recreation.
- O'Neill, M. (2009), 'Editorial', *50 Something*, February 2009.
- Prime Minister's Science Engineering and Innovation Council (PMSEIC) (2003), *Promoting Healthy Ageing in Australia* (Tenth Meeting — 27 June 2003, Canberra: Australian Government.
- Planning Institute of Australia (PIA) (2009), *Healthy Spaces and Places*, Kingston ACT: Planning Institute of Australia.
- Queensland Government Department of Housing (2007), Home Assist Secure. Retrieved 19 November 2009 from http://www.housing.qld.gov.au/programs/pdf/homeassist_factsheet.pdf
- Queensland Police (2009), Home Assist Secure. Retrieved 19 November 2009 from <http://www.police.qld.gov.au/programs/crimePrevention/homeassist/default.htm>
- Quinn, J. (2006), *A Home of All Ages: Housing Design Criteria*, Kensington: University of New South Wales (Unpublished PhD research) Sydney: University of New South Wales.
- Quinn, J., Judd, B. Olsberg, D. & Demirbilek, O. (2009), *Dwelling, Land and Neighbourhood Use by Older Home Owners*, AHURI Positioning Paper No 111, Melbourne: Australian Housing and Urban Research Institute.
- Ritter, A., Straight, A and Evans, E. (2002) *Understanding Senior Transportation: Report and Analysis of a Survey of Consumers Age 50+*. Washington CD: AARP Public Policy Institute.
- Royal Australian Institute of Architects (RAIA) (2005), *Accessible Housing in Australia: Response to the Workshops in July 2005*, facilitated by Jaguar Consulting subsequent to the public comment phase. Retrieved 12 July 2007, from [www.architecture.com.au/i-cms_file?page=4104/RAIA_Supplementary_Submission - Accessible Housing in Austr.pdf](http://www.architecture.com.au/i-cms_file?page=4104/RAIA_Supplementary_Submission_-_Accessible_Housing_in_Austr.pdf)
- Shorten, B (2009), Media Release: 'National Dialogue Agrees to Improve Accessible Housing Options', 27 October 2009. Retrieved from http://www.billshorten.fahcsia.gov.au/internet/billshorten.nsf/content/nat_dialogue_improve_hsing_options_27oct2009.htm
- Standards Australia (1995), *AS 4299-1995 Adaptable Housing*, Standards Australia International.
- Steinfeld, E., Maisel, J. & Feathers, D. (2005). *Standards and Anthropometry for Wheeled Mobility*. Report Prepared for: U.S. Access Board, Washington DC. Buffalo: Center for Inclusive Design and Environmental Access [IDEA].
- Sweeney Research. (2006). *Insights into the Housing Decisions Made by Empty Nesters* (Study No. 15285). Melbourne: Victorian Department of Sustainability and Environment.
- The Allen Consulting Group (2008) *Review of the Disability Standards for Accessible Public Transport* (Draft Report). Canberra: Allen Consulting Group.
- United Nations Centre for Human Settlements (Habitat) (UNCHS) (1993), *Improving the Quality of Life of Elderly and Disabled People in Human Settlements, Volume 1: A Resource Book of Policy and Programs from around the World*.

Nairobi: United Nations Centre for Human Settlements.
Internet: www.unhabitat.org/list.asp?typeid=15&catid=298&RecsPerPage=ALL
)

- Ward, M. (2005), Universal Housing Design: It Just Makes Good Sense. Paper presented at the *National Housing Conference*, Perth.
- World Health Organisation (WHO) (2002), *Active Ageing: A Policy Framework*, Geneva: World Health Organisation.
- World Health Organisation (WHO) (2007), *Global Age Friendly Cities: A Guide*, Geneva: World Health Organisation.
- Wulff, M., Healy, E. & Reynolds, M. (2002). Why Don't Small Households Live in Small Dwellings? Disentangling a Planning Dilemma. *People and Place*, 12(1), 57-66.

Appendix 1: Survey form

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Please tell us about the requirements of your household...

Q7 Who are the PERMANENT and TEMPORARY residents in your household?
The PERMANENT residents in a household live there continuously for 6 months or more and the TEMPORARY residents in a household are people who regularly visit and stay overnight (at least 20 nights each year).

Please identify each resident as PERMANENT or TEMPORARY

Fill in last section for TEMPORARY residents only

	PERMANENT RESIDENT	TEMPORARY RESIDENT	RELATIONSHIP TO YOU										GENDER circle M or F	AGE state AGE in years	TEMPORARY RESIDENTS ONLY									
			self	partner (spouse)	your/partner's child	your/partner's parent	your/partner's grandchild	other relative	friend	tenant/boarder	other	USUAL LENGTH OF STAY			VISITS PER WEEK, MONTH OR YEAR									
PERSON 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON 10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 Has your household size changed in the last 5 years?
☐ yes ☐ no If yes, how? ☐ increased by number _____ residents ☐ decreased by number _____ residents
 reason for change(s)? _____
 effect of change(s)? ☐ moved to a different home ☐ made alterations to home ☐ neither

Q9 Do any of the above residents in your household require assistance with activities at home?
☐ yes ☐ no

	self-care activities eg. eating, toileting, showering, dressing	TYPES OF ASSISTANCE					REASONS FOR ASSISTANCE					CARE PROVIDED BY												
		moving about the home	communicating with others	supervision	preparing meals	cleaning inside the home	maintaining garden	home maintenance	a short-term health condition (lasting less than 6 months)	a long-term health condition (lasting 6 months or more)	disability (lasting 6 months or more)	old age	young child	difficulty with language	other cause please specify	person(s) in your household	visiting family/friend carer	visiting professional carer	other carer please specify	no current carer				
PERSON _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PERSON _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 How suitable is your current dwelling for the following? very suitable ← → not suitable

Accommodating the number of permanent and temporary residents

Accommodating any residents' special care requirements (if applicable)

☐ n/a



Please tell us about your local activities and how you think they are likely to change in 5 years...

Q11 A How often do you attend the following activities?

B What method(s) of travel is usually used?

C How important is close access for attending these activities?

		A HOW OFTEN YOU ATTEND						B TRAVEL			C IMPORTANCE OF CLOSE ACCESS TO THESE LOCAL ACTIVITIES				
		number of times each...	week	month	year	don't attend	don't know	walk	car	public transport	very important	← →			not important
visit friends and/or family you like to spend time with	now														
	in 5 years														
have friends and/or family visit you	now														
	in 5 years														
community and/or social clubs	now														
	in 5 years														
religious services and activities	now														
	in 5 years														
sport & recreational activities	now														
	in 5 years														
educational courses: teaching or learning	now														
	in 5 years														
dining out	now														
	in 5 years														
shopping, banking & other retail services	now														
	in 5 years														
theatre & other cultural activities	now														
	in 5 years														
medical and other health appointments	now														
	in 5 years														
volunteering activities	now														
	in 5 years														
other activities <i>please specify</i>	now														
	in 5 years														

Q12 Does your household have a car(s)?

☐ yes ☐ no

If yes, how many? _____

A Driven by you?

now ☐ yes ☐ no
in 5 years ☐ yes ☐ no

B Driven by others in household?

now ☐ yes ☐ no
in 5 years ☐ yes ☐ no


Q13 Do you have public transport available?

☐ yes ☐ no

If yes, Please give details for each TYPE OF TRANSPORT that is available. (eg. bus, train, tram)

Types of Transport

	DISTANCE TO TRANSPORT	APPROX. FREQUENCY OF DAYTIME SERVICE					SATISFACTION WITH AVAILABILITY OF EACH OF THESE TYPES OF PUBLIC TRANSPORT								
		400m (1/4 mile) or less	800m (1/2 mile) or less	more than 800m (1/2 mile)	up to 1/4 hr	every 1/2 hr	every 1 hr	every 2 hrs	every 4 hrs +	very satisfied	← →			very unsatisfied	
1															
2															
3															



We would like your opinion on how suitable your home will be as you get older...

Q14 Have you already made any modifications to your dwelling to make it safer or easier to use?
☐ yes ☐ no If yes, please specify: _____

Q15 Are you likely to need to modify your current dwelling in the future to make it safer or easier to use?
☐ yes ☐ no If yes, please specify: _____
 If yes, are you likely to be able to pay for these? ☐ yes ☐ no ☐ uncertain

Q16 If you develop a disability and/or your need for assistance increases, how important would it be...?

	very important				not important
A that the home you are living in...					
will meet your needs without any modifications being required	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
can be modified easily and at low cost to meet your needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B that you can move to a home...					
that better meets your needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
that is specially-designed for older people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C that the homes of friends and family you like to visit...					
have no steps leading to the entrance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
have a toilet on the entry level of 2 storey housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
have a kitchen and living room on the entry level of 2 storey housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
have a bedroom on the entry level of 2 storey housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q17 Are there circumstances under which you would consider the following?

Have adult children live in your home
☐ yes ☐ no ☐ n/a reasons: _____

Live with adult children in their home
☐ yes ☐ no ☐ n/a reasons: _____

Rent part of your home to others
☐ yes ☐ no ☐ n/a reasons: _____

Move to a self-care or independent unit in a managed retirement village
☐ yes ☐ no ☐ n/a reasons: _____

Move to a dwelling in an 'over-55s' or 'seniors living' housing development in the general community
☐ yes ☐ no ☐ n/a reasons: _____

Move to a residential aged care facility (hostel or nursing home)
☐ yes ☐ no ☐ n/a reasons: _____

Use professional care services in your home if you require assistance
☐ yes ☐ no ☐ n/a reasons: _____

Q18 Now, a few questions about you...

Your country of birth? _____ If not Australia, how many years have you lived here? _____

Your main language spoken at home? _____ Are you an Aboriginal or Torres Strait Islander? ☐ yes ☐ no

Your postcode? _____ Number of years you have lived in your current home? _____

Are you...? ☐ working full-time ☐ working part-time ☐ self-funded retiree ☐ pensioner/part pensioner ☐ other

Your annual household income (before tax)? ☐ under \$25,000 ☐ \$25,000-\$49,999 ☐ \$50,000-\$74,999
☐ \$75,000-\$99,999 ☐ \$100,000-\$124,999 ☐ \$125,000 or more

Thank you for your time.
 If you are willing to be contacted for a follow-up interview please add your phone number: () _____

Appendix 2: Follow up advertisement in *50 Something*



 **UNSW** THE UNIVERSITY OF NEW SOUTH WALES

 **AHURI**
Australian Housing
and Urban Research Institute

 Australian Government
Department of Health and Ageing

Seniors Housing Survey

As most senior Australians want to remain living in their choice of housing as they age, it is important that housing is available to suit their household, lifestyle and future care needs; and that governments, the private sector and the community are aware of those needs.

The City Futures Research Centre at UNSW is inviting seniors to share their opinions on their housing needs, by completing the Seniors Housing Survey in the October/November issue of *50 something*.

Have you shared your opinion yet?

The survey is now also available online: www.cityfutures.net.au

Appendix 3: Project information statement



PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM

Project: **Land, Dwelling and Neighbourhood Use by Older Home Owners**

Funded by: **Australian Housing and Urban Research Institute (AHURI)
and the Commonwealth Department of Health and Ageing**

Approval No.: **75054**

Participant selection and purpose of study

As most senior Australians want to remain living in their choice of housing as they age, it is important that housing is available to suit their household, lifestyle and future care needs; and that governments, the private sector and the community are aware of older people's needs.

The City Futures Research Centre at UNSW invited senior residents to share their opinions on their future home by completing the Seniors Housing Survey. This survey was available in the October-November 2007 issue of the National Seniors Association magazine *50 Something*, as a printed leaflet, or online at www.cityfutures.net.au. You were selected as a possible participant in this study because you are aged 55 years or more.

This study examines how senior housing residents use their neighbourhood and their land and housing space, and aims to provide a far better insight into residents' needs and preferences for the housing environment as they get older. This will enable us to identify housing solutions that can make best use of available land and housing, while ensuring that older residents' requirements and preferences are met. While the study has a focus on home owners, the findings of the study will also assist in identifying appropriate housing solutions for older people in private and public rental housing.

Description of study

You participated in the Seniors Housing Survey, either in the October-November 2007 issue of the National Seniors Association magazine *50 Something*, in the printed leaflet, or online at www.cityfutures.net.au. At the end of the survey you indicated that you would be willing to participate in a follow up interview.

Now that the survey has been completed, we will be conducting 70 follow-up interviews with respondents from across Australia, in order to obtain some additional in-depth information on requirements and preferences for the design and use of housing and neighbourhoods. If you would still like to participate in one of the follow-up interviews, we will ask you to sign a consent form. These interviews will take approximately 2 hours.

Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, except as required by law. For those agreeing to participate in the in-depth interviews, we would like to tape record the interview to ensure that your views and responses are accurately recorded. We would also like to take photographs of some aspects of your home and neighbourhood, if you agree that this would help explain some of your responses in the interview. If you have any concerns about the tape recording or photographs, please let us know.

The overall survey and interview findings will be integrated into a Final Report provided to the Australian Housing & Urban Research Institute (AHURI) and the Commonwealth Department of Health and Ageing. The Final Report will be available for download on the AHURI (www.ahuri.edu.au) and the UNSW City Futures Research Centre website (www.cityfutures.net.au). Selected findings may also be disseminated at conferences and in academic journals. In any publication, information will be provided in such a way that you cannot be identified.

Complaints may be directed to the Ethics Secretariat, The University of New South Wales, SYDNEY 2052 AUSTRALIA (phone 02 9385 4234, fax 02 9385 6648, email ethics_sec@unsw.edu.au). Any complaint you make will be investigated promptly and you will be informed of the outcome.

PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM (continued)

Project: **Land, Dwelling and Neighbourhood Use by Older Home Owners**

Your consent

Your decision whether or not to participate will not prejudice your future relations with the University of New South Wales, Australian Housing and Urban Research Institute or Commonwealth Department of Health and Ageing. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

If you have any questions, please feel free to ask us. If you have any additional questions later, Dr Bruce Judd (phone 02 935 7777, email b.judd@unsw.edu.au) will be happy to answer them.

You will be given a copy of this form to keep.

You are making a decision whether or not to participate.

Your signature indicates that, having read the information provided on this form, you have decided to participate.

.....
Signature of Research Participant

.....
(Please PRINT name)

.....
Date

REVOCATION OF CONSENT

Project: **Land, Dwelling and Neighbourhood Use by Older Home Owners**

I hereby wish to **WITHDRAW** my consent to participate in the research proposal described on this form and understand that such withdrawal **WILL NOT** jeopardise any treatment or my relationship with The University of New South Wales, Australian Housing and Urban Research Institute or Commonwealth Department of Health and Ageing.

.....
Signature

.....
Please PRINT Name

.....
Date

If you wish to withdraw your consent to participate in the research, this section for Revocation of Consent should be forwarded to Dr Bruce Judd, City Futures Research Centre, The University of New South Wales, Sydney, 2052, Australia.

Appendix 4: Interview schedule

Page 1

PARTICIPANT # _____

Interview Schedule

INTRODUCTION

Thank you for participating in our housing survey and interviews. We had close to 1800 responses to the survey in '50 something' magazine, and we are now conducting 70 interviews across Australia.

I have a copy of your survey here. Today I am going to discuss some additional housing issues with you in a little more detail than what was covered in your survey. This should take about an hour.

(PROVIDE PROJECT INFORMATION STATEMENT AND CONSENT FORM)

I have a tape recorder so that I can record our discussion. You will not be identified in our results - anything that is recorded that might identify you will not be used.

As I would like to talk with you about how you use the space in your home, I also have a camera so that we can take photographs of any parts of your home that you think can be better explained with pictures. Again, if we take any photos, we will make sure that they do not identify you.

Household

Before we start, I'd just like to confirm the number of people in your household, and check whether there have been any changes since you filled in the survey:

- ☐ permanent residents
☐ temporary residents (20 nights per year)

SIZE AND FUNCTION OF ROOMS IN HOME

Use of Rooms in Home

I'd like to start by talking about the rooms and the size of your home. You mentioned in your survey that your home has

- | | |
|---|--|
| <input type="checkbox"/> bedrooms | <input type="checkbox"/> kitchens |
| <input type="checkbox"/> full bathrooms | <input type="checkbox"/> combined lounge-dining rooms |
| <input type="checkbox"/> separate toilets | <input type="checkbox"/> separate lounge rooms |
| <input type="checkbox"/> bathrooms without a toilet | <input type="checkbox"/> separate dining rooms |
| <input type="checkbox"/> separate laundries | <input type="checkbox"/> separate offices or study rooms |
| and other rooms <input type="checkbox"/> | <input type="checkbox"/> |

1. Which of these rooms in your home would you use the most (every day or many times a day)?

(prompt) how often?
(prompt) what functions?

2. Which of these rooms in your home would you use the least?

(prompt) how often?
(prompt) what functions?

3. Has the frequency that you and your household use these rooms changed much in the last 5 years?

4. What about the outdoor space [front and backyard / balcony / courtyard] for your home?

(prompt) how often do you use it?
(prompt) what functions?

You mentioned in the survey that you have a garage (CHECK SURVEY - ONLY ASK IF THERE IS A GARAGE)

5. Do you use your garage for functions other than parking a vehicle?

(prompt) how often do you use it for parking a vehicle
(prompt) what else is it used for?

Size of Rooms

6. Are there any rooms you wish were larger or smaller?

(prompt) Which rooms?

(prompt) How much larger or smaller?

(prompt) Why?

7. If you were granted three wishes to change the sizes or functions of any of the rooms in this home to make it better suit your needs right now, is there anything you would change?

(prompt) What are they?

8. If you had been granted these three wishes in previous years that you have lived here, is there anything you would have changed?

Effect of temporary residents on use of rooms (CHECK SURVEY - ONLY ASK IF THERE ARE TEMPORARY RESIDENTS)

You mentioned that you have [] temporary residents in your household

9. Do you have a bedroom set aside for visits by these temporary residents?
10. How does the frequency and length of stay of your temporary residents affect how much space you need in your home, and how this space is used?

Effect of residents' need for assistance on use and size of rooms (ONLY ASK IF REQUIRING ASSISTANCE)

You mentioned that [you / another member] of your household require[s] assistance

11. Who provides this assistance?
12. What affect does the need for care and assistance have on how much space you need in your home and how you use this space?

Effect of CALD background on use and size of rooms (ONLY ASK IF CALD BACKGROUND)

13. Are there any features of your home - the size, design, layout of rooms, features or furniture, that are particularly important in your culture?

Effect of work on use and size of rooms (ALL RESIDENTS)

You mentioned you are [still working full-time / working part-time / not working]

14. How does [working / no longer working] affect how you use your home?

Effect of hobbies and lifestyle on use and size of rooms (ALL RESIDENTS)

15. Are there any rooms or features in your home that are set up to suit your lifestyle, hobbies or interests, or those of your household?

Efficiency of home size (ALL RESIDENTS)

16. Some reports in the media have said that in Australia, homes are getting bigger while households are getting smaller, and that in many cases people are living in homes that are larger than what is needed for the number of residents who live there. What do you think about this view?

SELECTING A HOME

Now I'd like to talk about what you look for when you select your home

Reasons for selecting this home

You mentioned in your survey that you have been living here for [number ____] years

17. When you selected this home, was there a particular reason you chose a [house/townhouse/villa/unit/____]?
(prompt) with [1 / 2 / 3] storeys?
(ONLY IF UNIT/APARTMENT, prompt) On the [number____] floor?
18. What things were you looking for in a home when you chose this one?
(prompt) location? size? storeys? number and function of rooms? outdoor space? features?
(prompt) distance to friends/family/services?
(prompt) cost?
19. Have there been any changes in the things which you like or need in your home from that time?
20. How well does a [house/townhouse/villa/unit/ ____] suit your household and lifestyle now?

If moving from this home

21. Can you think of any circumstances that might make you consider moving from this home?
22. How likely is it that you would move to another home in the next 5 years?
23. What type of home would you prefer to move to if you ever did move?
(prompt) structure? location? size? storeys? number and function of rooms? outdoor space? features?
(prompt) distance to friends/family/services?
(prompt) cost?
(prompt) community / over-55s / retirement village / residential aged care?

THE DESIGN OF HOUSING

In the survey, there were some questions on the importance of having housing designed to assist you if you were to develop a disability or if your need for assistance increases.

Modifications, Adaptability, Universal Design

24. If you could choose or build a home that you would be happy to live in right now, but you could also remain living in for the rest of your life, what particular features do you think it would need to have?

Visitability

In some countries there are regulations that require ALL new homes that are built have no steps leading to the entrance, doors wide enough to fit a wheelchair through, and a toilet on the ground floor of a 2-storey house, so that people in wheelchairs can visit the homes of their friends and family. Other features that are useful are having a living area, full bathroom and kitchen on the ground floor as well.

25. What do you think about this type of regulation?
26. If you were to purchase or build a new home, how important would having these features be to you?

PARTICIPATING IN THE COMMUNITY

Next, I'd like to talk about your activities outside your home

Frequency of community participation

27. How often do you go out in a typical week, and for how long?

Shops and services

28. Do you regularly use the local shops or local services such as the doctor or social clubs?

29. If you had your wish, what would be the distance between your home and

a. shops, services and recreational facilities?

b. GP/other medical services?

(prompt) which ones are most important?

(prompt) which ones within walking distance?

Family and friends

30. Do you have family or friends living nearby?

31. If you had your wish, what would be the distance between the home of your family/friends you like to spend time with, and your home?

Regarding living with family, you said [_____]

32 a. If you lived in a home with separate independent accommodation (like a granny flat) would you feel any differently about having your children living with you?

b. What about if the situation was reversed:

If your children lived in a home with separate independent accommodation (like a granny flat), would you feel any differently about living with them?

Transport

You mentioned you have [train / bus/ _____] transport available, every [frequency _____], and [distance _____] away

33. If you did not have access to a car,

a. what mode of transport would you prefer to travel on?

b. what is an acceptable distance for you to travel to transport?

c. what frequency of daytime service would you need to your nearby friends and family, shops, and services?

Cultural diversity of local community

34. How important is living in an area with people of a similar cultural background to you?

THE NEIGHBOURHOOD

In this last set of questions, I'd like to talk about the design of your neighbourhood

35. How well does living in this neighbourhood suit your needs as you get older?

36. How often do you walk in your neighbourhood?

a - to get to where you are going?

b - just for exercise or pleasure?

37. If you were to go out walking (for exercise, to transport, or to the shops or park), what is the route like?

- *(prompt)* is there a suitable footpath?

- *(prompt)* is it fairly flat ground, or hilly or with steps?

- *(prompt)* are there many roads to cross?

- *(prompt)* are there facilities such as seating, toilets, cafe's etc. ?

- *(prompt)* would you travel after dark?

38. Is there anything about the paths, streets, footpaths or buildings, that makes activities in your neighbourhood

a - more pleasant or easier?

b - more difficult?

39. If you could change anything about your neighbourhood, is there anything you would change?

Is there anything else you would like to add on how housing and neighbourhood might better suit Australians as they age?

Appendix 5: Key design principles costed

Key design principles	
1	Ensure there is direct and level access from the car parking space to the house.
2	Provide a car parking space that is at least 6.0m in length and with potential for a width of 3.8m (internal dimensions).
3	Ensure the front entrance has a minimum internal clearance of 850mm.
4	Ensure internal doors on at least the entry level have a minimum internal clearance of 820mm.
5	Ensure internal corridors on at least the entry level have a minimum width of 1000mm.
6	Ensure that the ground (or entry) level includes a living/family room, a room or other space capable of being used as a bedroom, and a bathroom.
7	Ensure that the living or family room has at least 2.25m diameter circulation space, clear of furniture.
8	Ensure that the bedroom space on the ground (or entry) level is large enough for a queen size bed and a wardrobe, with space to move around them.
9	Ensure that the bathroom on the ground (or entry) level: <ul style="list-style-type: none"> - is at least 2.4 x 2.4m (<i>or provision made for this</i>) - has a shower with no hob and full-floor waterproofing - has wall strengthening around the toilet (<i>700-1500mm above the floor</i>) - has wall strengthening around the shower (<i>700-1500mm above the floor</i>)
10	Ensure kitchen is designed with a minimum of 2.7m between any facing walls.
11	Ensure the laundry is designed with a minimum clear circulation space of 1.55m diameter.
12	Ensure window sills on at least the ground (or entry) level are no higher than 730mm above the floor level (excluding utility areas).

Source: Adapted from Landcom (2008)

Appendix 6: Ten-feature Universal Design guidelines

Top 10 features for all stages of life (DoHA, 2007 a)	Top 10 Housing Features (ANUHD, 2008)	Universal Housing Standard (Nissim, 2008)
<p>1. Easy access to the home Access to the home should include a step-free covered entry with a clear pathway, from the street or the garage to the main entry.</p> <p>2. Safety and security A clear line of sight to the entry provides safety and security. Movement sensor activated lights give good visibility between all indoor and outdoor living areas.</p> <p>3. Wide doorways, openings and corridors All internal and external doorways (920mm) and corridors (1200mm) should be wide enough for prams, trolleys, wheelchairs, crutches and walking frames.</p> <p>4. Light switches and door handles It is good to have light switches, electrical outlets and thermostat controls in an easy to reach spot for a person sitting or standing. Lever door handles are easier for everyone to use no matter what their age or ability.</p> <p>5. Reinforced walls for future grab rails Reinforcing the walls in the bathroom, shower and toilet makes it easier to install grab rails at a later date if required.</p> <p>6. Slip-resistant flooring Slip-resistant flooring throughout, especially in wet areas such as kitchens, bathrooms and laundries will help to reduce the risk of falls.</p> <p>7. Open plan kitchen Kitchens with an open floor area provide good access for everyone. Where possible install adjustable shelving and pull-out storage drawers. Lever handles on all taps will allow them to be used with minimum force.</p> <p>8. Open plan bathroom Sufficient floor space in bathrooms and toilets and level entry to the shower recess allow access for everyone. A hand held/height-adjustable showerhead is easy for people sitting or standing.</p> <p>9. Smart house technology Include cabling and outlet points in all rooms throughout the home for future integrated electronic control and communication systems, such as; telephone, television, security and internet, plus the possible need for tele-care at a later date.</p> <p>10. Two storey houses, villas, apartments It is a good idea to consider the possibility of extra space near internal stairs for later installation of a lift or stair climber if needed.</p>	<p>1. Easy access People of all ages and abilities are able to gain easy access from the front boundary or car parking area to the entrance of the dwelling;</p> <p>2. At least one level entrance The dwelling features at least one level entrance to enable all home occupants to enter and exit the dwelling with ease;</p> <p>3. Bathroom, living space and bedroom on the entrance level The entry level to the dwelling provides a living space, bathroom & WC and a bedroom space or space capable of accommodating a bedroom space;</p> <p>4. Bathrooms designed for easy adaptation The bathroom provides a hobless shower and accommodates more generous internal circulation spaces to enable future adaptation;</p> <p>5. Reinforcement of bathroom walls Walls in the bathroom and shower are reinforced to enable easy installation of grab rails if required by home occupants;</p> <p>6. Kitchen access The kitchen design enables all home occupants to easily maneuver within the kitchen area and between fixed kitchen benches;</p> <p>7. Easy access doors and corridors The internal passages and doorways within the dwelling facilitate ease of movement between rooms and accommodate the circulation needs of all occupants;</p> <p>8. Consistent installation of switches, GPOs and window controls Light switches, GPOs and other operating devices are installed at a consistent height to ensure ease of access for all home occupants;</p> <p>9. Easy operable door, tap and window controls Door and window operating hardware is easy to manipulate and can be operated by the home occupants regardless of age or ability;</p> <p>10. Slip-resistance of floor surfaces Kitchens, bathrooms and laundries, feature flooring which provides slip resistance in both wet and dry conditions.</p>	<p>a. A clear pathway to a step-free well-lit entry with access to street/car parking</p> <p>b. Appropriate lighting evenly distributed throughout the house</p> <p>c. Identifiable light switches, controls and handles in easy-to-reach places for someone sitting or standing</p> <p>d. Reinforced walls in the bathroom, shower and toilet</p> <p>e. Wide doorways and corridors</p> <p>f. A straight staircase adjacent to a load-bearing wall</p> <p>g. Slip-resistant flooring</p> <p>h. Open-plan kitchen, lounge and bathroom with step-free shower</p> <p>i. Open-plan room on entry level that can be used as a bedroom</p> <p>j. Accessible toilet and bathroom on entry level</p>

Appendix 7: Minimum criteria for Universal Design

10 Minimum Criteria for a Universal Home	Performance requirements
<p>1 Easy access to the home</p> <p>A step-free, hard standing, clear pathway connecting the parking space or the street to the main dwelling entrance.</p> <p>A minimum of this one entrance step-free.</p> <p>This entrance covered from the weather.</p> <p>This entrance in close proximity to a parking/garage space</p> <p>A clear line of sight to this entry.</p>	<p><i>A step-free pathway from the parking space or street 1200mm wide to the main entrance to the dwelling</i></p> <p><i>A minimum of this one entrance step-free.</i></p> <p><i>The area outside these entrance doors to the dwelling building covered from the weather</i></p> <p><i>Maximum distance of route of travel between the garage space and the entrance of the dwelling, 25m</i></p> <p><i>A clear, well-lit line of sight between a vehicle drop-off area and a secure main entrance to the dwelling building</i></p>
<p>2 Slip resistant flooring</p> <p>Slip-resistant flooring throughout, especially in wet areas such as kitchens, bathrooms and laundries.</p>	<p><i>A hard-surfaced path of travel with minimum R10 slip resistance inside and outside the dwelling, with the edges of external steps and paths of travel with a gradient greater than 1:20 having a surface with minimum slip resistance of R11.</i></p>
<p>3 Circulation space to meet the needs of all occupants</p> <p>Circulation space facilitates ease of movement between rooms for all occupants</p> <p>All entry doorways with 920mm clearance</p> <p>All internal doorways with 920mm clearance</p> <p>Internal corridors with 1200mm clearance</p>	<p><i>A continuous clear path of travel at least 1000mm wide provided throughout the dwelling (other than in doorways), with a clear turning space for a wheelchair user, piece of furniture, or other large item, requiring a minimum 800mm wide x 1300mm long clearance, provided at each change of direction on the path of travel (requires a 1525mm diameter space).</i></p> <p><i>The entrance doorway opening a minimum of 920mm wide</i></p> <p><i>All doorway openings in the dwelling a minimum of 920mm wide</i></p> <p><i>All corridors in the dwelling a minimum of 1200mm wide</i></p>
<p>4 Access to 2 storey dwellings</p> <p>Straight stairways adjacent to a load-bearing wall with additional space for later installation of a lift or stair climber</p>	<p><i>Straight staircase with 1000mm clear width, with landings of minimum 1200mm length at the top and bottom of each flight and additional turning space at each change of direction. No winder steps on landings .</i></p>
<p>5 Bathroom, kitchen, living space and bedroom on entry level</p> <p>An accessible bathroom and toilet on entry level</p>	<p><i>A minimum of one full set of bathroom facilities including a shower, toilet and basin on the entry level of the dwelling</i></p>

A kitchen on entry level	<i>A full kitchen on the entry level of the dwelling</i>
A living space on the entry level	<i>A minimum of one recreational space on the entry level of the dwelling for use as a lounge area</i>
A bedroom space (or space capable of accommodating a bedroom) on the entry level	<i>A bedroom that can be provided as required on the entry level of a multi-storey dwelling; located close to a bathroom, ideally having direct access.</i>
6 Bathroom accommodating everyone and enabling future support	
Sufficient bathroom circulation space to accommodate everyone	<i>Bathtubs with a clear 1000mm path of travel parallel to the length of at least one long side, provided as required.</i>
	<i>Basins with a clear 1000mm path of travel for a front approach.</i>
	<i>Clear space from a maximum of 150mm underneath the top surface of the basin to the floor, at least 800mm wide x 300mm deep from the front edge of the basin or vanity unit (whichever projects furthest) provided as required</i>
A level entry shower with sufficient floor space	<i>Hob-free' shower area of minimum 1200mm x 1200mm or 900mm x 1500mm with doorway capable of being opened up to provide clearance along the full side of the shower as required</i>
A hand-held, adjustable shower head	<i>Shower outlets designed and located so that the water spray can be directed onto the user's entire body whether they are seated or standing, allows a user to avoid getting wet when operating water controls, and allows the outlet to be used hands-free.</i>
Accessible toilet with P-trap for easy repositioning	<i>Toilet with a clear 1000mm wide path of travel to the front of the pan, and parallel to at least one side of the pan. Side clearance should extend 800mm behind the front edge of the bowl as required.</i>
Reinforced walls in the bathroom, shower and toilet to install grab rails	<i>All current and future bathroom fixtures (including towel rails, hand rails, shower-head rails, seating and shelving) and bathroom walls up to 1800mm above the floor capable of supporting a load of 110kg</i>
7 Kitchen access	
Open-plan kitchen with adequate circulation space between fixed kitchen benches.	<i>Kitchen with a minimum of 1200mm clear space between the sink, work surfaces, appliances, storage, and the wall or fixtures opposite, when they are located along a path of travel, with a additional turning space on the path of travel provided where required</i>
A bench area adjoining the oven and cook top to enable the easy transfer of items	<i>A minimum of a 500mm deep, 800mm continuous length of work surface adjacent to the sink, the cook top and the oven.</i>
Cook tops with side-access controls to reduce the risk of injury	<i>Appliances designed and located so users do not reach over a hot surface to access any part of the appliance needed for use, or to access another appliance, window, work surface or storage area.</i>

A shallow sink to suit people seated or standing	<i>Clear space from a maximum of 150mm underneath the top surface of the sink to the floor, at least 800mm wide x 300mm deep from the front edge of the bench, with additional 200mm deep foot space extending at least 290mm up from the floor.</i>
Fridge switch in easily reachable location	<i>Fridge switch and a GPO for use at a work surface to be operable within 300mm horizontal distance of a user.</i>
A GPO within 300mm of the front of the bench	
Storage with adjustable shelving and pull-out storage drawers	<i>The internal layout of storage space in the kitchen providing direct visual access to all contents. Users not required to stand on another structure, crouch or kneel, to view or reach contents. Shelving, drawers and other storage devices in the kitchen removable and adjustable so they can be repositioned as required, at a height suitable for the users' reach.</i>
8 Appropriate lighting levels throughout the dwelling	
Appropriate lighting levels throughout the dwelling, with lighting evenly distributed	<i>Hallways, ramps and staircases, bedrooms, bathrooms, indoor and outdoor recreational spaces and the approach to the dwelling entrance having an adjustable level of lighting between 50 and 350 lux.</i>
Enhanced lighting levels at the entrance to encourage safe access	
Task lighting over the sink, cooking and food preparation area	<i>Task lighting over the sink, cooking and food preparation area</i>
Automated sensor lights providing visibility between indoor and outdoor living areas.	<i>Lighting in outdoor recreation areas and approaches to dwelling entrances operating automatically from outside the dwelling, and controllable from inside a dwelling</i>
2-way light switching in bedrooms	<i>Lighting within the dwelling controllable from entry and exit points of all hallways, ramps and staircases, bedrooms, kitchens, bathrooms, laundries and separate work or recreational spaces, and from the bed in the bedroom.</i>
9 Easily identified and operated controls, for use when seated or standing	
Identifiable light switches, controls and handles	<i>Installed controls visually contrasting with their surrounds by a luminance factor of 0.3</i>
Door and window hardware easy to manipulate	
Lever handles on taps	<i>Installed door, window and water controls to be accessed by all residents and visitors ,operable with a maximum of one hand, not requiring grasping or pinching of the fingers or twisting of the wrist, and operable by right- or left-handed users.</i>
Light switches, and thermostat controls located a consistent height above floor for operation when seated or standing.	<i>Installed controls requiring hand operation at a consistent height: - door, window and lift controls located 900mm-1200mm above the floor; - environmental controls: at the same height as door and window controls and adjacent to door controls where applicable, - power points located 600-1200mm above the floor.</i>
Power outlets located a consistent height, at least 600mm above floor for operation when seated or standing.	
10 Smart home technology	

Cabling and outlet points in all rooms for future integrated electronic control and communication systems, such as; telephone, television, security and internet, and possible need for tele-care.

Dwelling with communication and data access capability (including telephone, television, security and internet) in all areas that could be used as bedrooms, kitchen, and work or recreation areas

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