To Allan, who has always believed in me.
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Yet again, I embarked on a project that sometimes took me away from family events, so my sincere thanks to my family for their patience and understanding.
Statement of authentication

To the best of my knowledge, the work contained in this thesis contains no material previously published or written by another person. The views expressed in the thesis are mine and do not necessarily represent the views of the University of Western Sydney. I hereby declare that I have not submitted this material, in full or in part, for a degree at this or any other institution.

Signed

Date
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### ABBREVIATIONS

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<td>ABCB</td>
<td>Australian Building Codes Board</td>
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<td>ANUHD</td>
<td>Australian Network for Universal Housing Design</td>
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<td>AS 1428</td>
<td>Australian Standard: Design for access and mobility</td>
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<td>AS 4299</td>
<td>Australian Standard: Adaptable Housing</td>
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<tr>
<td>BCA</td>
<td>Building Code of Australia</td>
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<td>DCP</td>
<td>Development Control Plan</td>
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<td>DDA</td>
<td>Australian Disability Discrimination Act 1992</td>
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<td>HMMS</td>
<td>Home Modifications and Maintenance Service (NSW)</td>
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<td>HREC</td>
<td>Human Research Ethics Committee</td>
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<td>HREOC</td>
<td>Human Rights and Equal Opportunity Commission (now Human Rights Commission)</td>
</tr>
<tr>
<td>OT</td>
<td>Occupational Therapist</td>
</tr>
<tr>
<td>SEPP</td>
<td>State Environmental Planning Policy</td>
</tr>
<tr>
<td>URC</td>
<td>Urban Research Centre (University of Western Sydney)</td>
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<td>UWS</td>
<td>University of Western Sydney</td>
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ABSTRACT

The aim of this study was to find out why the mass-market house building industry in Australia appears reticent to incorporate universal design principles into project homes. The central tenet of universal design is inclusiveness. Apart from social equity issues, there is an economic imperative stemming from designs that exclude. People who cannot easily participate in social and economic activities are at risk of becoming dependent on state assistance and tax payer support.

Using an interpretivist framework the study explored industry stakeholder attitudes and opinions of universal housing design as a means of identifying barriers, and just as importantly, why they exist. It was anticipated that more appropriate processes for overcoming barriers might be identified. A survey questionnaire and in-depth interviews were used to gather information from across the professional spectrum including property developers, regulators, architects, building designers, land developers, and project home builders. Two sets of public documents were also analysed, one set relating to housing design policy and the other set relating to public access requirements. An exploratory investigation of the new home purchaser experience was also undertaken in an attempt to gain a consumer perspective of the industry. A small scale survey of new homeowners, and five in-depth interviews were carried out for this purpose. The findings revealed a complex web of barriers to implementing change within the house-building industry, and that overcoming the barriers is
unlikely to be a simple case of devising a new design policy or a new building regulation.

This study contributes to the field of housing research from an industry perspective, and provides insights into the structural and procedural complexities inherent in the built environment industry in general. The study also points to the need for further inquiry into the structure and processes of the built environment industry in terms of adopting new practices to suit the changing needs of society.
PREAMBLE

My path to this study began many years ago. A career in the community sector eventually led me to the role of executive director of the Independent Living Centre NSW\(^1\). This not-for profit organisation assists people with reduced physical capabilities by providing free information about products and home designs that help maintain day-to-day functioning. When the construction industry became concerned about meeting the requirements of the Disability Discrimination Act (1992), the Centre was one of the first to offer an access consulting service to industry on a fee for service basis. After nearly ten years of providing this service, I noticed we were still furnishing similar advice for “disability access” on each new development. Whilst this was good for business, it seemed methods were not changing and this puzzled me.

As my interest in accessible environments and universal design grew, I joined various committees and working parties seeking to address architectural exclusion and promote more inclusive designing. Many of these activities brought me into contact with personnel in the built environment industry as well as those advocating for people with disabilities and older people. A Churchill Fellowship\(^2\) allowed me to visit USA, UK, Denmark and the Netherlands to see the state of play elsewhere in the world around the topic of assistive technology, accessible environments and universal design.

---

\(^1\) For more information about Independent Living Centres: [www.ilcaustralia.org.au](http://www.ilcaustralia.org.au)

The Center for Universal Design in North Carolina was one of my ports of call and after spending time with the founder’s widow, I became more strongly drawn towards the concept of universal design which seemed simple, achievable and affordable\(^3\). Furthermore, it was about functional convenience for everyone – parents with prams, people with delivery trolleys, people of all shapes, sizes and ages. It was not about disability \textit{per se}, because universal design allows the line between ability and disability to melt away. With an underpinning philosophy of inclusion, this looked like a way forward without the need for specialised and stigmatising designs.

Although the public environment contains many examples of stigmatising designs, such as tacked-on ramps and separate entrances, many people previously denied access can now utilise public buildings and spaces. The same is not true for housing which falls outside the scope of disability discrimination legislation. Consequently, a person might gain access to a public building but not their neighbour’s home, or indeed, their own home. This anomaly became my quest.

\(^3\) See Appendix E for the Principles of Universal Design
1 INTRODUCTION

Why do people trip over shower hobs, stumble over thresholds, stub their toe at the bathroom door, get their luggage stuck in a turnstile, catch their sleeve on a door knob, struggle up steps with strollers and shopping, camp out in the living room for a month because they can’t get upstairs, or break their heel on a grating? Why can’t people find the public toilet when they need it, remember where they parked the car, turn on the tap or open a blister pack?

Universal design is a simple idea: it is a proposition that products and environments should be designed with the whole population in mind. It is about maximum amenity and useability by the widest number of people possible regardless of background, age, gender, or status. While there will always be niche markets for particular goods to suit particular groups of people, there are many items that almost everyone uses (a kettle, a door handle, a tap), or wants to use (a shop, a school, a bus). At first glance this seems a reasonable idea – why exclude people by design, after all, the more people who can use the item, the more there are to purchase it. By delving a little deeper, many social and political processes are revealed that act as barriers to such inclusive design ideas. So, while universal design is considered a ‘good idea’ by many, this has been insufficient to change design processes in any significant way. The question now is, why?
The notion of universal design is not new: the term ‘universal design’ was coined in the mid 1980s when those advocating for barrier-free environments realised that barrier-free designs were good for everyone, not just wheelchair users. It was from this thought that the Center for Universal Design was set up within the North Carolina State University in the late 1980s. Since that time other countries have set up similar centres (Centre for Universal Design, 2008a; 2008c) and the universal design movement is now a global endeavour.

Explaining the concept to others is one of the difficulties faced by proponents of universal design. Whilst designing inclusively considers the functionality of the widest possible range of users, those most regularly excluded by design are its strongest advocates with the loudest voices – people with disabilities. Consequently, universal design is perceived as a design template for people with a disability and/or older people. Parents with prams, cyclists, people carrying parcels, people with delivery trolleys or briefcases on wheels, pregnant women, and young children, all of whom benefit from inclusive design, are left out of the discourse. While the presence of only people with a disability and absence of others within the current discourse is perplexing, this might help explain why universal design has not received the attention it might. For an interpretation of this aspect, the literature on disability studies provides some insights and indeed much of the discussion includes issues of disability and ageing for this reason. However, it is important not to lose sight of the original concept of universal design – designs everyone can use.
Universal design is not a label for a product type; rather it is an iterative process that seeks the most inclusive design solutions over time. Of itself, universal design is neither a policy nor a theory, but a practice: it is a means by which to achieve social and economic inclusive policies, and a means by which to achieve inclusive designs. Consequently, abstractly mandating universal design is not likely to be met enthusiastically if the broader issues of social inclusion are not addressed. Also, if the current design paradigm of market segmentation based on population demographics is not re-examined, universal design will be considered yet another product type for a particular target group. Nevertheless, the term ‘universal design’ has been captured by recent Australian policy documents and universal design might now, by default, be considered a policy. The main conundrum for universal design is one of mistaken identity, a matter discussed in greater detail in Chapter 3.

The purpose of this study was to uncover the attitudes and opinions about universal design to see if they pose real and/or perceived barriers to implementation. In keeping with such interpretive studies, the emphasis is on the perspectives of the people involved rather than any institutional or structural issues that may be present. Consequently, the way that barriers to universal design might be resolved, as the thesis title suggests, are less developed within the scope of the study. Rather, in revealing some of the underlying attitudes and opinions, the thesis seeks to show that tackling institutional barriers alone may not be sufficient to bring about change. Although the thesis title implies that change should happen, change management issues and theories are not covered specifically. The aim of the
study was to ascertain the perspectives of people working in the house building
industry in relation to implementing universal design principles in new-build
housing. The focus therefore is on the resistance factors which might
eventually lead to instituting particular change factors, but not on change
factors per se.

1.1 The research question

As universal design principles can be applied to everything that is designed in
the world, this study focuses on one particular aspect in the Australian context:
universal design in housing, particularly the mass market housing of project
home builders in new development sites. Whilst the public domain is subject to
regulations that support inclusively designed environments, private homes
remain outside the scope of such regulations. This lack of connection between
the public and the private domains is therefore worthy of investigation.

To identify the factors preventing the implementation of universal design, and
the degree to which they apply, the overarching question posed was:

"Why doesn't the house-building industry embrace universal design?"

The quest then involved identifying the barriers to universal design in new
housing and by so doing, ways in which to overcome them might be found. The
more specific sub questions posed therefore were:

"What are industry opinions of universal design in housing?"

"What are the barriers and facilitators of universal design?"

"Are any particular stakeholder groups more influential than others?"
“How might barriers to the implementation of universal design be overcome?”

Given that universal design is now considered ‘disability design” it was likely that some of the normative attitudes of society might play a role alongside technical issues. Consequently the study was approached from an interpretivist perspective where the actors could relate their experiences and express their views about the various issues. In short, they could tell the story from their perspective. Once this was decided three modes of data collection were used, surveys, in-depth interviewing and document analysis. Although the focus was on industry stakeholders, new homeowners were included in the study to provide additional contextual depth.

1.2 The case for this study

Universal design is not a policy position per se. Rather it is one means of achieving policies of inclusion and equity. The emphasis is on the process of designing inclusively rather than prescribing particular design details. Nevertheless, two issues have brought universal design to greater prominence within the realms of social policy: one, concerns about an ageing population and two, recognising the civil rights of persons with disability. While universal design is in a good position to offer design solutions, it requires more than just mandating its implementation by abstractly including it in policy documents as an edict: practitioners need to know how to design universally, and indeed, policy makers need to understand the underpinning principles are wider than issues of ageing and disability.
The academic literature on universal design, accessible environments, and visitable housing is largely based in the United Kingdom (for example, Rob Imrie on housing, and John Clarkson and Simon Keates on product design) and in the United States (Edward Steinfeld and Gary Danford on accessible environments, and Jordana Maisel and Eleanor Smith on visitable housing). In Australia these topics are less developed in academic literature although a recent study by Judd, Olsberg, Quinn, Groenhart and Demirbilek (2010b) addresses issues of adaptable, visitable and universal housing, mostly looking at market issues and associated cost factors.

The main differences between the Australian context and that of the UK is that mandatory accessibility standards for all new single dwelling homes were enacted in 1999 (Imrie, 2006) in England and Wales. The standards focus on disability access particularly for wheelchair users – a level entry, circulation space in the living area, and a toilet on the entry level. In its purest sense, this approach is not one of universal design because it has a focus on a specific group of people. This is therefore the dilemma: allow designers to develop their skills to design universally and perhaps wait forever, or mandate aspects of access and at least achieve a measure of improvement for the people who need it most. By so doing universal design is transformed from a design paradigm into a policy. Similarly, the visitability standard, which is the focus of accessible homes in the USA (Maisel, 2005) faces the same dilemma. Again the focus is on disability access with the same three features forming the core of the standard.
Adoption has been slow in the United States with only a handful of counties supporting the standard (Maisel, Smith and Steinfeld, 2008).

Aspects of the USA visitability code are included in the Australian adaptable housing standard, which similarly to the USA, has been adopted in varying degrees by local authorities. However, it should be noted that universal design is a different philosophy to accessible or adaptable design because it is an inclusive and pluralistic model in which design for differences is the key strategy (Maisel, 2005:10). In both the USA and the UK earlier literature, such as that by Steinfeld (1986,) Danford and Tauke (2001), and Keates, Lebbon and Clarkson (2000), focused on promoting the concepts of universal design to the design disciplines. More recent literature shows that implementation was more than just a matter of persuading designers: a business case was needed (Dong, 2004) as well as education and academic collaboration (Steinfeld 2009). The work by Judd et al (2010b) has focused on forming an economic case and ways of addressing lack of consumer demand. Nevertheless, there appears to be one common theme: regardless of well constructed arguments industry still appears reticent to embrace changes to home designs such that they could become more inclusive and suit people across their lifetime. By focusing on industry attitudes and opinions this study seeks to see the issues from the perspectives of this apparently reticent group. It is not the intention of this study to construct specific arguments for instituting change: rather it is to discover resisters to change and whether these are real or perceived within the industry. This should add another dimension to the existing body of literature.
1.3 The case for universal design

Apart from the civil rights aspect of inclusive practice, as enacted in the Disability Discrimination Act (1992) and various other legal instruments, there is a pressing economic and social need for housing to be designed for the whole of the lifespan and to cope with all those things that happen to human beings – to themselves and family members: illness, accidents, childbirth, ageing relatives, a family member with a disability. A house built today is almost certain to contain a household with a family member with a disability at some stage of its existence (Smith, Rayer, Smith, 2008). A home should cope with a range of ability levels across all its occupants and across time, yet the reverse seems true - the occupants must fit into the pre-existing built environment (Imrie and Hall, 2001: 147).

In Australia, new housing stock accounts for approximately 1.6% of all housing stock each year (Department of Families, Housing, Community Services and Indigenous Affairs, 2010). Whilst this is a small proportion of existing housing stock, it represents some 145,000 dwellings each year (Australian Bureau of Statistics, 2005) and these are the homes most amenable to design changes. Over time, more housing stock would accommodate people across their lifespan, their lifestyle changes, and their family commitments. Perhaps if new homes were universally designed, renovations to older homes would follow suit.

Disability and impairment affect not only those with the condition, but all those around them – a factor often left out of analyses. Consequently, the national rate
of disability of twenty percent (Australian Bureau of Statistics, 2003) is a useful statistic, but an insufficient measure to account for the full impact of disability both socially and economically. Disability is also a factor in the ageing process with more than fifty percent of people over the age of sixty years reporting a core activity limitation (Australian Bureau of Statistics, 2003). A core activity limitation means the person is unable to accomplish basic activities of daily living such as personal care and mobilising. People who need assistance with a core activity are considered to have a profound or severe disability (Australian Bureau of Statistics, 2003). The severity of the limitation and the proportion of those who might experience a high level of limitation is not at issue here because universal design recognises that a lives change and a person without a limitation today might find the situation changed tomorrow and this is why designs need to be flexible and accommodating.

In a study of older Australians, Olsberg and Winters (2005) found that overall, homeowners aged over sixty years value their independence and ability to make lifestyle choices, and that they are likely to want to age in place. The majority of those surveyed declared a preference for independent living and being able to stay in their current home (2005:79). Judd, Olsberg, Quinn, Groenhart, and Demirbilek (2010a) also found that even when considering future decline in abilities, most older homeowners wanted their current homes to accommodate their needs, either by being easily and inexpensively modified, or being designed so that modifications were unnecessary. However, unless their current or potential new home is designed in a way that minimises the
need for modifications, that is, more inclusively, the aim of ageing in place is less likely to be achieved, or at least, not for as long as could be the case.

The economic aspects of ageing in place are now being considered. The cost of keeping an older person at home in the community is approximately fifteen to twenty three percent less than supporting an older person in an institutional setting (Bridge, Phibbs, Kendig, Mathews and Cooper, 2010: 2). The additional factor here is that as Australians age, they are more likely to want to remain in familiar surroundings if not their existing home (Judd et al, 2010b). The question is, to where can they move if there are few, if any homes with inclusive features? Those aged less than sixty years were less likely to entertain the notion of discussing or considering ageing in place, because it conjured up images of old age, “something which is not yet part of their cultural vocabulary” (Olsberg and Winters, 2005:80) and retirement villages are not for everyone (Olsberg and Winters, 2005:85, Stimpson and McCrea, 2004). The over fifty five age group is not homogenous and the perception that older people will sell up and downsize or sell up and go into age specific housing may be misplaced (Stimpson and McCrea, 2004).

For people who acquire disability through a traumatic event or serious illness at a younger age the situation regarding their current home design can be more problematic. In some cases they cannot return home after rehabilitation either because the house cannot be suitably modified, or the cost is prohibitive (Beer and Faulkner, 2009). Steve, who was one of the participants in this study, explained the additional trauma of not being able to return home:
“If you have a traumatic injury, just the thought that you can’t even go back home – it’s a huge blow, a big blow ... I mean there is enough happened to you physically and as a person, but the fact that mentally and emotionally you can’t even go back home, I think is huge.”

Steve, 4 June 2009

A note of explanation is required here. As mentioned earlier, universal design is philosophically about inclusivity – including all people. Yet it appears that those who are most often excluded by design have become the focus of any discussion on universally designed housing (Australian Network for Universal Housing Design, 2009). Nevertheless, it is through the eyes of people with disabilities that we most clearly see some of the architectural barriers present in the built environment (Sire, 2002). It is only when exclusion and inconvenience is experienced that the issues are identified. Some parents, for example, might be prepared to accept the inconvenience (and lack of safety considerations) of carrying a pram up steps. For a wheelchair or walking frame user steps are more than an inconvenience, they are a barrier to access. Consequently, this group is most likely to complain about architectural impediments. Also, as mentioned earlier, the numbers of people affected are more than the statistical percentage of the population with a disability, which is one in five people: more than half the population is affected when family units are considered. This is without counting the added convenience, and in some cases safety, that others in the community would enjoy. So perhaps in the first instance the complex reality of the issues are best illustrated by the experiences of consumers with a disability, and that is why the experiences of five wheelchair users are presented next. But first the structure of the thesis needs to be outlined.
In Chapter Two, the extracts from the interviews with the five participants who are wheelchair users illustrate not just their perspective; they also provide a broader context to the study and the research question. They begin to show how the issues arising in the study are multi-faceted and inextricably linked. These scene-setting stories are followed in Chapter Three by a broader introduction to the issues surrounding the implementation of universal design. Chapter Four charts the methodological approach and the three methods used in the study. Industry perspectives are covered in Chapter Five which presents the findings of the survey and in-depth interviews with industry participants. Industry perspectives are further explored in Chapter Six through the examination of two sets of public documents related to issues of universal design in housing and accessible public environments. Chapter Seven presents a consumer perspective on project homes and the house-building industry and includes the key features of the five wheelchair users’ stories presented in Chapter Two. Finally, the issues and findings are brought together and discussed in Chapter Eight and conclusions are drawn in Chapter Nine. References to the literature are made throughout, particularly in Chapter Three and the discussion in Chapter Eight.
2 SETTING THE SCENE

The purpose of this chapter is to set the scene from a specific consumer perspective, that is, one of wheelchair users. I refrain from using the term, ‘persons with a disability’ because with a wheelchair to replace their legs, and an accessible environment, wheelchair users are just that, wheelchair users. Without an accessible environment, however, they are indeed disabled. Their stories tell of their interactions with industry personnel and the difficulties they encountered in achieving their design aims. The interviews were carried out in their workplaces rather than their homes to meet with the university’s ethics committee requirements.

Four of the five homeowners interviewed were wheelchair users who had recently built a new home. They were male, married, employed and were agile manual wheelchair users. Three participants, Steve, Mike and George, have been using a wheelchair for ten years or more after sustaining a spinal cord injury and Tomas has used a wheelchair since childhood. The fifth participant, Sam, organised a new-build home for his cousin who has a degenerative condition and now uses a powered wheelchair. Their experiences of building a home are presented here as background and their experiences are included in the final discussion. The real names are changed to protect anonymity.
2.1 The Architect and Mike

Mike and his wife spent some time researching project homes and discovered they required significant adjustment to suit their requirements. When the cost and difficulties were factored in, as well as the uncertainty of achieving their aims, they decided to engage an architect. As they were looking at staying in the house long term, they felt they could justify the extra expense to ensure their requirements were met:

“Having been in a chair for approximately ten years, I truly understood the value of getting it right and what a difference it makes. We will get exactly what we want and won’t have to compromise on a door width or a hallway width.”

They found an architect who claimed to have experience in designing for people with a disability, but this was not altogether advantageous. Mike felt communication with the architect was difficult because he continued to apply his own values to the design. Mike is a very active person and has lived in many different situations, and he knew exactly what he wanted. He told the architect, “I know what I need and despite your experience and good intentions, I can’t accept that you can actually tell me what I need.” He felt the architect would be good for someone who was newly injured and had little experience of what they might require, but he felt many of the features incorporated by the architect were not needed:

“My problem was actually scaling that back and saying, I’m looking for a house that is very accessible, but it’s done so in a very subtle manner. I don’t need large rails. I don’t need all these things.”
Mike claimed he had to continually reinforce his role as the client and as a person with experience with building features. Eventually they came to an understanding and the architect was able to offer good ideas, such as a comfortable and accessible outdoor living space. The main difficulties arose when it came to the details. For the money they were outlaying, Mike felt they should have all the details exactly as they wanted them. He was astonished, therefore, when the architect showed him drawings of an inaccessible space:

“And the architect drew in a powder room in the house, like a bathroom. And I said, what’s that? [The architect said] That’s a powder room. I said I couldn’t get in there and close the door and use that thing. [The architect said] Oh, but it wouldn’t be for you, and I thought, why would I build a house with a room I can’t get in? ... I have the opportunity to have a one hundred percent accessible house – why compromise and incorporate something that’s not?”

After explaining how he and his wife worked directly with the cabinet-maker on the detailed drawings of the kitchen, bathroom and laundry, Mike explained that once all the completed drawings were with Council for approval, they terminated the services of the architect and found a builder with whom they could communicate better:

“Looking back on that – the best decision we ever made – we got a builder we liked, very good, very thorough and we found that relationship with the builder took out the middle man and the architect, and the builder had very practical ideas.”

Mike regularly met with the builder on site and together they discussed design ideas and weighed up the costs. He felt that working with the person who was going to carry out the task, and not pass the message on, was the key to success:
“The builder was of the same opinion – let’s solve this together. [He had] a lot of good ideas that worked out really well for us”. The need to be very clear in explaining what he wanted was emphasised – that flat means flush:

“…not kinda flat-ish. Flat is when you roll a marble and it goes straight through. Once he got it – I mean flat – he said, OK fine. He was wise enough to think, let’s do it properly the first time.”

The builder had not embarked on such a project previously, and as the project progressed, Mike believed the builder gradually began to appreciate the importance of accessibility throughout the house and the subtle ways in which it could be achieved. He went on to explain particular features that could not be described as “features for a person in a wheelchair”, rather they were just good design. For example, drawers instead of cupboards in the kitchen, a lower section of kitchen bench that is also a breakfast bar, and an induction cook-top that allows knee access below. It would appear that the builder began to enjoy the challenge of creating solutions. Mike wanted the designs to be:

“…smart and clever – I didn’t want clunky. A ramp going from here to there because it was just the easiest thing to do – that’s not OK. Let’s stretch out the gradient and reduce it by being smart about it. And he was good like that. At times I think he almost enjoyed the challenge too.”

Owning a home that looked good and did not look as if it was specifically for a wheelchair user was an important factor for Mike, and he was pleased his friends could see that the design is comfortable and functional for anyone:

“The amount of people who come to the house and say, it’s just so flat and easy to get around and easy to move through – and it is, right from the front footpath right through the front door [to the patio at the back].
They glide or flow through the whole house. And I’m talking friends my own age who haven’t even thought about it. Friends who live in two storey homes, they say, this is really nice to move through – they like the single level, the flow, how easy it is, not up and down stairs or tiny nooks and crannies – things like that.”

Mike described many of the design details of his home and how they had increased his ability to carry out simple day to day tasks such as doing the laundry and cooking a meal. His new found level of domestic independence was empowering:

“It’s the ease of day to day living activities, on many levels. Having been able bodied before my accident, many of the activities are more difficult. The key parts, like the laundry, are key parts to independence, but by having the environment that accommodates them all, it ... significantly reduces that difficulty in a task. So doing my laundry myself is the same as my wife. There’s no added challenge because you’re in a chair – it kinda levels the playing field – it brings you back – like it’s empowering and it’s pleasing.”

The other issue he raised was how smart and thoughtful design can make the difference to creating that level of empowerment:

“You know, you’ve had a set back by the disability, but then again you've made that ground up through some smart design – it kinda brings you back to neutral rather than set back with the disability - the environment is not very accommodating – so you’re constantly kind of stuck there in this – [exasperated sigh] – there is no way I can get back, whereas I think the smart design brings you back to even.”

The local council regulators caused some problems for Mike and it took a year for these to be resolved. He was met with a rigid adherence to policies without
any consideration for practical issues, such as grading the landscaping to avoid the need for steps. Council required retention of stormwater in the front of the house so that in a major rainstorm, water would be retained and released slowly into the street. However, with a relatively flat block and level entry into the home, Council were concerned about drainage away from the house. Although this was a frustrating problem in itself, Mike was further frustrated by the attitudes of council staff which caused the drawn out process. Eventually Mike met the council stormwater engineer on site to explain the issues and finally the situation was understood:

“... they really weren’t interested in considering another reason or what makes sense for this situation other than ‘what does my policy say?’ ... By the end of it all ... the gentleman who actually came to the house said, oh that’s fine, it’s fine, fine, no problems. I thought, I’ve been butting heads with you for almost a year because of this. ... He came to the house – I met him in the chair. He could like, get it. Once he saw me and could see what we were trying to do ... it was like the penny dropped. But when it was him in his office our builder would call him on the phone, having the stormwater engineer re-doing the plans – there was a disconnect – he couldn’t kinda - get it.”

As Mike raised the issue of “a disconnect”, I asked whether he thought a connection had been made between public and home environments. He thought the connection had not been made and this was because industry has a particular way of doing things and that change is not readily accepted by either builders or council staff:

“It’s that mindset of kinda scared of change, or I don’t want to be the first to be doing this. From the builder’s perspective – I’ll just keep on doing it the same as everyone else.”
At the end of the interview I asked if he thought a family moving into his home would want to change anything in his house. After a pause he said it was unlikely as he couldn’t think of anything that was branded or stereotyped as ‘disabled’. He also made the point that good design is just that, good design, and therefore good for everyone:

“There is a normal shower, just larger than a normal shower, a normal bathtub, but with a hob at the top that is a little wider. Under all the sinks, they have a slight cut out so I can roll in forwards whereas in a typical home they would just have cupboards or drawers. There’s not one rail, there’s not a bench, there’s not ... [pause]. Apart from right at the back fence where there’s the patio – and even that – it’s just a short ramp, which anyone could have anyway, say I wanted to roll a wheelbarrow down there. Friends come round and look and say, oh it’s so easy – why don’t we have drawers? Why do I dig into cupboards when it doesn’t need to be so? There’s a lot of crossover there – I think that’s what’s often missed as well, if it’s branded or stereotyped as ‘disabled’ design or alteration, maybe it’s less appealing rather than being common sense to have a kitchen full of drawers and everything comes to you. So it adds a lot of value to the regular user. There’s nothing that’s like oh, of course, there’s a rail in the bathroom.”

2.2 Two Wheelchairs and Tomas

Tomas and his wife Lisa are both wheelchair users. Tomas has been using a wheelchair since childhood and grew up in Europe in a country where, compared to Australia, assistive technology and accessible accommodation are more readily available for people with a disability. Lisa sustained a spinal cord injury some twenty years ago and had her then current house altered by a builder with whom she was previously acquainted. When Tomas and Lisa
married they lived in Lisa’s house for a short while before building a new home with the help of Lisa’s builder who recommended an architect. Now they have two children, they are in the process of building a new house and are using the same builder and architect. Tomas began the interview by saying that because of personal connections, to this point, the experience has been good:

“Because of the great experience we’ve had with both the architect and the builder we [are using] the same guys again.”

To gain a better perspective of the personal connections, I asked Tomas to tell me about Lisa’s house when they first got together. After Lisa had her accident, the builder helped out with some basic alterations, but the inexperience was apparent:

“I think it must have been a massive learning process. When I got there, I saw the place. You could tell it was done by someone who didn’t have a lot of experience.”

The main design issues for Thomas were those of ‘tacked-on” rather than integrated solutions, which “were perfectly fine, but you could definitely tell it was an altered place.” Their current home has integrated designs and most importantly, more space:

“When you’re with two people in wheelchairs, you need to manoeuvre around each other, which means … as soon as you put a bed and some furniture in a place it becomes challenging to move around in a wheelchair, let alone two wheelchairs. So definitely [need] floor space … it’s very crucial that you look at where you going to move and where you move at the same time … [so] you don’t get annoyed with each other constantly running into each other.
The need for extra space will require a two storey home, particularly to give the children their own space. Based on the design of their current home, they will make changes to the kitchen, bathroom and pool designs and eliminate gardening. The challenge was to create bathrooms and a kitchen that are “great to use but look very attractive at the same time.” Their brief to the architect for their new home was to create an attractive design without compromising functionality:

“Make it look fantastic ... do whatever you can so that it doesn’t look like a rehab facility.”

Tomas and Lisa both have full time jobs and prepare for their day at the same time. They are overcoming this with two showers in the ensuite so that Tomas no longer has to share a bathroom with the children. Because they cannot go to the beach they decided on a pool, but the design took some time to resolve because they did not want “big ramps and hoists and that kind of stuff” and it was important to have easy access to the skimmer box, which was not the case in their current home:

“One of my biggest frustrations, which might seem minor, is the pool, the skimmer box – I can’t get to it. I have to get out of my chair in order to clean the pool – pretty silly – something the pool designer didn’t think of – the wheelchair thing. And at that stage of building the house, I didn’t think of it – I’ve never built a pool before.”

While the pool designer failed to think through the issues for a wheelchair user, the architect is paying more attention to these smaller issues. Tomas explained the architect “did a lot of drawing and measuring, [for] a really good understanding” of how they moved around in the home.
Tomas said things had run smoothly with council so far, and he mentioned that this might be due to Lisa having a high profile in the local community. They had built up a good relationship with the builder with their first house and were confident that they could dispense with the architect’s services once the plans were with council. For Tomas and Lisa, this was both cost effective and convenient:

“We're using the same architect, but we are not going to get him to project manage it, we are going to get the builder to take that responsibility. He’s local … he drops by with drawings.”

Throughout the interview Tomas discussed differences between Australia and Europe on matters of government support for people with disabilities, and the way the housing industry approaches home design. I asked Tomas if he thought his builder would now incorporate more accessible design in other houses. Tomas thought not because in Australia the house and land package format allows purchasers some measure of design individualisation before construction takes place. Consequently the builder is driven by customer specifications, so including greater accessibility is not necessarily an option:

“When you’re building here compared to Europe – not a lot of people actually design their house – lots of housing is built as an estate. [In Australia] I think there are a lot of small builders that build exactly to the specs of what the customer wants. They’re not in a situation to put too much of their idealism into place.”
According to Tomas many European governments assist with home design, and use builders with experience, which is not only efficient, it provides a better outcome:

“In Europe ... the government does all of that for you - you’ve got certain builders and companies that come and they use proper techniques and products. So in Australia, you’re always kind of looking to reinvent the wheel each and every time ... because nobody really knows, they’re not specialised – there’s no money in it. ... In general, I don’t think the builders really know what they are doing.”

However, Tomas acknowledged that an experienced builder and access to sufficient funds results in an outcome superior to those achieved in Europe. It was at this point he introduced a related issue, one also raised by Mike, about designer assumptions underpinning some design features such as grab rails. Tomas explained that in Australia there is more opportunity to minimise the obvious ‘disabled’ features that are not needed so that “the results are probably better than in Europe because you don’t get all the overkill.” While every need had been considered, Tomas did not consider it the perfect solution:

“I [recently went to] Europe and I went to some houses there and when a person gets there they get all the renovations done. It’s just amazing, the amount of equipment and space they create. You could tell straight away that this is a place for someone in a wheelchair, which I don’t find very attractive.”

The issue of design ‘overkill’ was significant for two reasons: the future saleability of the home and personal self esteem. It was important therefore that the house not look like an institution or public facility:
“We are thinking commercially as well, so we are thinking re-sell ...you don’t want to sell a hospital. And on top of that – we’re pretty proud people and very independent and the last thing you want is that when someone walks in they straight away see this is a place for people in wheelchairs. You don’t want hoists and disabled related materials lying around everywhere – you want them to be nicely integrated.”

At the end of the interview I asked Tomas what advice he might have for a wheelchair user building their own home. He felt that spending initial time researching the options was very important including visiting the homes of other wheelchair users if possible:

“I think spending sufficient time on research is crucial [before engaging an architect] because an architect has no idea – you need to educate them, in general, unless you are lucky enough to get an architect that has done it previously.”

2.3 George, his Dad, and the Builder

Coming from a family of builders, George’s father and brother built a home for him some time ago, but his new house was built using a project home builder. George sustained a spinal cord injury more than twenty years ago and he begins his story after leaving the rehabilitation hospital to go home to a room and bathroom created by his father with the design help of the hospital’s occupational therapist (OT):

“I came out of hospital and went to a normal standard house. The room that was added was naturally added by my dad, but it was just a copy of a hospital room, it was really horrible ... it wasn’t really pleasant. But that was by advice of the OT at the time.
As soon as he was able, he built another room and bathroom that were more to his liking and without some of the occupational therapist’s recommendations:

“I learned since then that I don’t need that. So the house that I built next had a bathroom that looked like any other bathroom and a house that looked like any other house in the street. My room looked like any other room – everything was accessible without making it look silly.”

Later, George built another house with his father and brother, but due to circumstances and events did not move into it. Given past experiences with family members, George and his wife decided to build their new home with a project home builder. They thought their experience within the building industry would help them, but this was not the case:

“My wife and I shopped around for a project home ... we thought it would be easy, but we found it a lot more difficult than we imagined”

The first hurdle was gaining access into the display home sales offices, and the second was being dismissed as genuine purchasers. Having suffered discrimination in many quarters in the past, George did not take this attitude lightly:

“...and the attitude from the sales team was that of, well, he’s not going to buy a house – a good house – it was just a horrible attitude, and they just didn’t want to talk to me, but they wanted to talk to the person behind me who had gold bracelets and a jacket and whatever. So that put a big black spot on it, but even then, I kept on going back. ... Later on when I drove up and I was dressed properly and I told my wife to put on all her gold and make up and everything, they wanted to talk to us then, and I told them I wasn’t going to deal with them, and I told them why.”
Sales staff also fell into the trap of assuming George was not capable of speaking for himself:

“[They] gave me such a hard time with their attitude. The person who makes the decisions on building in our family is me. And they should be talking to me and not to go right past me and start talking to my wife asking, what does he need? They can ask me. That irks me.”

Eventually they found a sympathetic project home builder who claimed to have built for other people with disabilities. George felt they were prepared to listen and accommodate his requirements. Overall he felt most of the home designs were spatially suitable, but it was details such as the fifteen to thirty millimetre step into tiled wet areas that caused problems because the builder was reluctant to make the floor levels flush:

“For some unknown reason, ninety-nine percent of the houses that we saw in the display homes, if not all of them, had a step in and out of the bathrooms. ... That was a headache, just to ratify that, even though I know the solution’s easy. They should have it as standard.”

George gave way to the builder on this issue, mainly because he knows there are two solutions to the problem – either create a set down in the slab for the wet areas, or build the main floor up to the same level as the wet areas, and for George “in this particular instance, the argument wasn’t worth it” so he agreed to raise the floors with battens, which was at his expense. There was a similar issue with access to the outdoor living area and the front entry, both of which George solved in a similar way to the wet areas – by adding decking. However, this was not his preferred option, which was a tiled alfresco:
“I’m going to have decking added to it which will be in line. You know, I could have had tiles if the floor was going to be the right height, but they won’t do it.”

As George chose a two storey home, he required a through-floor elevator, but the builder would not allow other contractors on site during construction. Consequently, the elevator was installed after handover. The one feature about which George was not prepared to compromise was the garage and internal entry from the garage into the house. George understood the inconvenience for the builder and the issues around the efficiencies of mass produced housing, but this became an issue of equity with other homeowners:

“This was an argument I almost didn’t win, but in the end they decided they will ramp to my garage [doorway to the house] and they will build it at their own cost. It came to a head … they were telling me things are impossible when they are not. “

The builder could not see why George wanted level entry into the house from the garage – they said he could use the front door. However, George was adamant that he was entitled to utilise his garage in the same way as his neighbours:

“And I said no. I want to be able to do what everybody else is entitled to do, get out of my car, in the dry, and get into the house, in the dry. I don’t want to be excluded, I don’t want to use the back door, I don’t want to use a side door, I want be like everybody else.”

George was clearly determined to achieve the same kind of equitable access to his own home as he would expect in the public domain so when the builder
inferred that one level entry was sufficient, George was unwavering in his response, particularly as the slope of the land posed no problems:

“You know, it was difficult for them to say, oh your rear entry will be perfectly flat – no, I don’t care – my guests aren’t going to start going through the back door. I’m a stickler and I gave them a hard time, but we were very fortunate that we were able to put this property on our land at a certain level which made the rear entry accessible and the front entry accessible just with landscaping.”

There were many other issues that stemmed from the builder’s failure to understand that being a wheelchair user does not preclude a person from undertaking the simplest of everyday tasks, such as accessing the electrical switch box. George also felt that the builders thought that he should have some sort of detachment to the house. It was “very difficult to make them understand that I’m interested in the house, and it’s my house – I don’t care. It’s my house!”

Similarly to Mike, George experienced some difficulties with local council regulators. Some of the issues related to caveats within the development site, such as the style and set-back for the garage so that a living area is more prominent at the front of the house. As George pointed out, councils know the dimensions of a public accessible parking space, so he would need a similar size for his garage:

“Boy did I have to jump through hoops. Even though the builder said it would [cost more] I said I’ve got to be able to get out of my car otherwise it is a pointless garage. ... Then I had a council fight when they said the proportion of my garage frontage was greater than whatever – it’s a visual thing.”
After a lot of work and persistence George eventually succeeded in arguing that the garage would not visually dominate the house. George said the builder was supposed to be representing him in council issues, but their approach was an unconvincing letter saying their client was in a wheelchair without any further elaboration. When council refused the design changes, the builder acquiesced. Consequently George ended up dealing with council himself:

“I gave them all the tools, all the firearms they needed [and] they wrote a letter, oh, our client is in a wheelchair, needs disability access, thanks very much, but that was the end of it – and it’s more than that – it has to be elaborated. And the builder said, I told you so, and I said no, I’m not going to stop there ... I’ll sort it out and I did. I know councils have got regulations, but it was very difficult to bend them a bit.”

As part of his paid work, George visits other wheelchair users and on one occasion he visited a large multi unit development in a northern suburb of Sydney, and was deeply impressed with the design:

“It was brilliantly wheelchair accessible... and I thought, wow, this is the pinnacle of what I think a house should be built like ... when you went into the apartments there were no steps. They had alfresco and balconies absolutely dead level. The bathrooms were accessible – no monkey bars or anything, but were user friendly to me ... everything – it was unbelievable! ... If I didn’t have a disability I would live there – you can’t say this is for a disabled person – it’s built for the general public.”

Small tasks most people take for granted, such as being able to test the temperature of the water in the shower before entering, were designed with everyone in mind and for George this was wonderful:
“You could switch on the water ... without getting wet, feel with your hand, yeah, water temperature’s right. It’s good to know that such a big project can be done and cater for everyone. So why can’t project home builders do the same?”

George highlighted that the technical expertise and design ideas are readily available and being used, but not in project homes. I raised the lack of generalisation – the issue that builders are not transferring experience of disability in their personal lives into their professional lives and home designs. George then related a story of his builder-father. Although his father was obviously aware that George is a wheelchair user, he was not necessarily giving it consideration at every turn. When George was building the first house after his accident he wanted to include a granny flat:

“I was building a granny flat for my grandmother at the time and I said, what’s this step we’re going to have here, and my dad said oh, you know, it’s only one little step. I said, dad, I’m in a wheelchair! Ah yeah, but it’s for your grandmother. Dad, [voice rises] I don’t give a stuff – I want to be able to go into my own house. Now fix the bastard up! I couldn’t believe it – my own dad!”

George explained that the bathroom, set out by his brother, also had to be changed because of thoughtlessness. This experience demonstrates that being a builder with a family member who uses a wheelchair does not guarantee integrated thinking about the issues involved:

“Yeah, and that’s family and they are aware and they just think, oh well, he’s not going in there, it’s for his grandmother, and all of a sudden, all those ideas about accessibility go out the window.”
Coming from a building family George clearly understood the delivery chain efficiencies in mass market housing. However, he felt that just a few small changes to the way things were done would make a significant difference to wheelchair users overall, and that also means convenience for everyone who has a mobility problem. Towards the end of the interview I asked George what was the one thing he would persuade project home builders to change. George returned to the theme of level access throughout the home and to outdoor areas:

“One thing that all project home builders should do is get the basics right, which is, there’s no need for that little step into – whether it’s a single storey building, a two storey building – into the bathrooms and into the buildings themselves. Personally, I think that should be a design feature which is incorporated into the design of the building – it can be done, but it has to be engineered, drawn up before it’s actually made into a thousand homes.”

2.4 Steve and the “Standard House”

Steve sustained a spinal cord injury more than fifteen years ago and is an active member of a disability support group and understands the regulations related to public access as well as issues for people living in social housing. Steve and his wife recently built a two storey project home. As they wanted most things as standard, that is, nothing that needed to be custom made and the designs were spacious, they thought a project home would be quite suitable. At the same time the costs of an architect could be avoided. However, they did not allow for builder resistance towards what they considered minor changes to standard features:
“We used a project home because ... we were told they know the standard sizes and so they can work with that. ...so unless you are having some [custom made or imported feature], everything is standard, so I think it is more the mindset of the builder – this is how I’ve always done it, this is how my grandfather taught me how to do it.

Nevertheless, when Steve began to interact with the tradespeople he found that with a little explanation and some persuasion, small changes were acceptable even if they were not standard practice:

“The plumbers, once they got their head around the idea of putting a shower hose – instead of putting the connection at the top, you can put it at the bottom of the pole – that gives you much more room with the hose to play with. Originally there was sucking in of breath through the teeth and then oh, of course we can. It was like, all defences were up ‘cos it’s something different and then hmmm, yeah. So thinking outside the box, eventually they realised it was no problem at all, in fact, it saved them a bit of copper. I think it’s that mindset of how we’ve always done it so therefore we can’t differ.”

Steve thought there might be a fear of litigation possibly due to concern about making mistakes if they don’t fully understand what the client wants and that a mistake “could lead to all kinds of liabilities and all those things.” The concern over mistakes may be one of the reasons for the inflated charges associated with any changes to the standard house design because the “minute we were outside the ordinary, God, you paid through the nose for it.”

Similarly to other interviewees, achieving level access throughout proved difficult. In this instance, the outdoor area was under the roof line and they
“have never had problems even with horizontal rain”. Although level access to the alfresco was agreed, the builder demanded a disclaimer for water intrusion:

“We had a bone of contention with our builders because we wanted to take the level access through to the bi-fold doors so I could wheel out with the barbeque tongs. We won in the end but we had to sign a disclaimer saying that it is not classed as weatherproof. And they did not like the idea of not having a step at the front door.”

Linked to this was the issue of resistance to change even when the solutions pose few, if any problems:

“It was a bit of a fight to get their mindset changed. There’s no difference between having a step down and a slope. Rain doesn’t go up slopes. Why wouldn’t you want access in and out of the house for all entrances?”

Nevertheless, Steve had to make adjustments to the internal entry to the garage because it was set lower than the house slab, creating a step. However, he later learned the step was not necessary:

“We did have a bit of a step down into the garage, but luckily we had this epoxy resin floor that we could build up. But it wasn’t until the slab guy came and said normally for people in wheelchairs we do it flat. So I thought oh, so it can be done, it has been done before.”

The step up into the wet areas was a cause for concern for Steve as it was with other participants. As Steve could not monitor construction on the second storey, his wife took video pictures. Steve then discovered a small step had appeared at the entrance to the ensuite bathroom. When he questioned the builders they dismissed his request as incidental:
“My poor wife would climb up ladders and video things, and they built a step into the ensuite – there was about an inch step up. So I said, what are you doing? And they said, oh that’s what we always do. They said, it’s alright, we’ll build you a little ramp. If I wanted ramps I would have just got any old house.”

With Steve’s persistence eventually level access was agreed, but at a cost. The floor had already been laid and the cost to remove and relay the floor was estimated at eight thousand dollars. The builders asked Steve to pay half, and to prevent the work from being delayed further, he agreed on the basis that as a proportion of the overall cost, four thousand dollars was not a large amount:

“[The builder said] it was going to cost eight thousand dollars, and they said would we meet them half way. Eventually we did, just because I didn’t want to hold it up, and in the scheme of things, what’s four grand over the overall cost of the house.”

Steve was perplexed by the attitude. The unanswered question for him was once the builder knew level access was required throughout, why did they think an additional ramp or small step was not an issue? Steve put it down to poor internal communication in spite of providing detailed drawings and instructions throughout the project:

“And that was the kind of thing where I thought, where did that come from? What on earth made you think – and a lot of it I think just slipped through the net, because you know even if you tell the architect, and the architect tells the builder, and they tell the tiler … “

Charging the client more than cost price for the changes may be linked to poor communication systems. Steve said the builder confessed that the additional
charges, around twenty percent, are to cover contingencies for the likely mistakes caused by tradespeople failing to follow instructions:

“So I had done as much as I possibly could but if they don’t pass it down to the ground man – that’s where it’s costing money, that’s where mistakes will happen because you will have a labourer coming in doing what he always does. They guy actually said, the reason we charge twenty percent more is if we screw up we’ll be able to re-do it.”

The only changes Steve and his wife made to kitchen design was to ensure the flooring was installed first and the kitchen cabinets placed on top. This enables easy and cost effective removal of cabinets to allow knee space under benches should it be needed in the future. The issue of designing around the different members of the household can be problematic, but most families are able to work out what is best for them:

“I don’t have open spaces under kitchen benches, because, to be quite honest I don’t cook, my wife does, so there would be no point in modifying the kitchen design for me. It has to suit her. But what we have is floorboards that go right under the benches so if we do want to pull a cupboard out, the floor is already there. Why can’t that be the case everywhere? It’s not rocket science.”

### 2.5 The Standards and Sam

Sam has a cousin Zena, who has a degenerative condition. To remain living at home she needed a house that would cater for her condition. It transpired that Sam was employed in the construction industry. This would not have been an issue except it did not become clear until the interview was well underway that Sam was working with erroneous facts and assumptions that he strenuously reiterated as correct. Nonetheless, the interview is included in this report as it
revealed a quite different perspective of creating a home suitable for a person with a disability.

Sam began his working life in the building trade and now holds a senior position in a large construction company. He and his father as owner-builders organised the construction of a new house for Zena, who uses a powered wheelchair and needs assistance with daily tasks. Her condition is expected to worsen as time passes and therefore an occupational therapist provided input into the design. At the time of construction Zena was mobile, but the design needed to accommodate the growing number of assistive equipment items as well as the circulation space for her wheelchair:

“She has equipment to help her navigate around the house, which we had allowed for but not to the nth degree – we didn’t know what to expect. Some of the equipment is awesome.”

In addition to the space required for assistive technology, they had also considered the time when a carer would need to help Zena with showering and dressing:

“We didn’t just design the bathroom for her at the time. We thought of her situation, she’s not going to get better. She is going to have someone give her a hand to have a bath and a shower, and we designed all that in.”

Sam’s misunderstanding of the public access standard and its application to private dwellings emerged at several points throughout the interview. As he believed the public access standard had application in private dwellings it caused him to take particular actions that he might not otherwise have taken.
To better understand his approach, the threads of his misunderstandings are first drawn together before progressing to other parts of the interview.

Sam felt very confident that he had sufficient knowledge to design and construct the house to suit Zena’s particular requirements. This is likely because of his previous involvement with multi unit dwellings, some of which are often required to meet the adaptable housing standard, which in turn, refers to the public access standard (AS1428.1) for circulation spaces and dimensions of public bathrooms. When I questioned him about the correctness of applying a code for multi-unit dwellings to a single dwelling home he did not differentiate between them and proceeded to provide his advice on the situation:

“Let’s say if you’ve got a block of units and the council says ten of these units have to be accessible, you’ve still got to design it to the code. So on the drawings [for your house] if you had an accessible bathroom then they would ask you to design it to the code.”

As far as I can discern, it seems that Sam thought that if he submitted construction drawings with a bathroom labelled as accessible or disabled, the council would insist on compliance with the public access standard. However, it is not clear why Sam wanted to label the bathroom as ‘disabled’ because he did not intend to use the public access standard. He planned to design the bathroom around Zena’s specific needs:

“The main thing we did was not to lodge in council the bathroom as a disabled or accessible bathroom otherwise we would have to design it to AS1428.”
I queried this statement to be sure I did not misunderstand his interpretation, but he confirmed his original statement. He then went on to say that an “accessible house” would have to be registered as such with council and therefore meet the requirements of AS1428. Sam was keen to avoid this because, as he said before, he wanted to design it for Zena:

“If you lodge it as an accessible bathroom, [council] are going to tell you, as part of their conditions, you have to design it to this code, so if you ever sell it as an accessible house, it’s designed to some sort of standard. So if we want to sell Zena’s house we can’t sell it as an accessible house because it is not designed to this standard or that standard – and we didn’t – we designed it to our standards – so it’s not an accessible house. So if you had that, council would force you to design it to some sort of standard and you wouldn’t be able to design it to suit yourself.”

Sam is using “accessible” as a regulative term rather than descriptive term. He claims that a house is only accessible provided it complies with AS1428, but of course the house is accessible as far as Zena is concerned. To be absolutely certain that we were not at cross purposes I asked if he had looked at the adaptable housing standard, which is specifically for housing whereas the public access standard is not. His response was to reiterate the issue of selling an accessible house:

“No, I didn’t [look at the adaptable standard] because we weren’t interested in selling the house – we weren’t interested in saying we were going to sell it or advertise it as an accessible house – we were doing it for ourselves to suit my cousin.”
As an owner-builder, Sam was able to control the design and building process. His comment about installing the fittings continues the theme of following the public bathroom access standard and his desire to deviate from that standard:

“I've been in the building trade for years so my father and I built it ourselves. We hired contractors to do whatever needed to be done and we installed the grab rails, toilet, showers, stuff like that – I just did it myself.”

The reason that Sam did it himself was more than just ensuring it was done to suit his Zena. It was because he thought he needed to bend the rules:

“Knowing the rules, or standards, and the parts I could bend ... I knew what I could do and what I couldn’t do.”

Again, following the theme of adherence to the code, Sam thought that he should be responsible for bending the rules rather than ask a tradesperson to do so. He thought a tradesperson would want to install the grab rail at the height and position specified in AS1428:

“Personally, if I'm on a job and someone asks me to install a grab rail at a height that didn’t comply I would be questioning it. Not knowing the background behind it I would be saying I couldn't certify this grab rail because it doesn’t comply with the [standard]. It would put me in a position where I would say to myself, hmm that’s not right. But not knowing the history behind it, you might have a person you are designing it for who wants it this way, but it doesn't comply to the standard any more.”

Sam’s experience directing trades personnel was an advantage:

“We had no difficulties explaining to people what I was after. When it came to the tiling, I told them I wanted it graded this much, I want the
tiles to be a rough surface and blah, blah, blah, and he was happy to do it,
and he understood why – he didn’t bring up any codes or any standards
– he just did as we asked based on the information myself, Zena and the
occupational therapist.”

Sam then drew on his construction industry experience and explained that most
of the time builders are just following instructions from the architect with “no
questions asked”. He thought that people generally did not worry about the
look of a unit or a house as long as it suits them in the here and now:

“In general, in units, people don’t care what they look like, or how they’ll
feel when they are old. They’re going to want them designed for what
they are now, which is young and beautiful and the rest of it, and then
you get an odd occasion where an old person who has money and says I
want to design the house myself, and that’s very, very rare. People don’t
think that far ahead.”

Towards the end of the interview Sam asked me for more information about the
study and after I mentioned project homes, he offered his insights. He went on
to explain the design of the rest of his cousin’s house and it was at this point I
became aware that other members of the family were living on the second
storey. Sam described wider doorways and seamless showers and was
surprised these were not yet standard in project homes:

“Upstairs on the second level – we’ve got a two storey house –
downstairs is designed for our cousin, and upstairs is designed for us
with good design practice, the doors are 820 wide, the hallways are 1100
wide, no steps into the bathroom – the showers are all seamless, flowing
from the floor in – I can’t believe they’re not doing it. I’ve been off the
tools for a couple of years now, but I thought they did that.”
I asked Sam if building a home for his cousin had changed his view of what he
might build in the future:

“Personally, right now, I think no. If I’m going to design a house, I’m
going to design it to suit my lifestyle today – it’s just being – you know –
personally I think I would design a house to suit myself today not what
will happen in the future.”

Although he says he would not worry about the future, his previous comment
indicates that some universal design features, such as no upstands to wet areas,
are already considered standard in his design schematic.

These stories represent individual experiences not just with design, but in
interacting with the house-building sector and form a backdrop to the rest of
the findings and discussion. As mentioned at the beginning of this chapter, the
discussion about these experiences is presented later in the main discussion
section. Personal experiences provide one set of perspectives; other viewpoints
are now presented in the next chapter which contains some of the literature,
particularly from UK and USA studies, including issues of language use and
terminology.
3 BACKGROUND TO THE ISSUES

3.1 Introduction

In discussing the lack of universal design, particularly in the built environment, blame is often placed on designers, architects and the building trade (Ostroff, 2001; Wijk, 2001, Office of the Public Advocate – Queensland, 2005). Wijk asks why the self-evident nature of human diversity is not the logical starting point of arranging and designing the environment. He asks, “Is it a lack of knowledge? Is it lack of care by the people responsible? Or is it design discipline resistance based on a desire to push forward frontiers in design?” (2001:28:2). Those who understand the basic simplicity of universal design (Imrie, 2006; Ostroff, 2001; Goldsmith, 2000; Keates et al, 2000; Dong, 2004; Coleman, 2001; Steinfeld, 2000, among others) cannot understand why others do not. They understand that it is possible to design for diversity, to design universally, and thereby eliminate design and architectural barriers to everyday activities. This chapter develops a broader view of the situation by means of introducing some of the issues in the literature.

The term ‘universal design’ evolved from the barrier-free movement of the 1970s and is largely attributed to architect Ron Mace who established the Center for Universal Design at North Carolina State University (Center for Universal Design, 2008a, 2008b). Mace envisioned a world where all products and places are useable by anyone regardless of their background, shape, culture or functional ability – hence the adoption of ‘universal’ to describe such designs.
It also means designing for one whole population, not a section or sections of the population. Such a vision requires a paradigm shift in design thinking because designers in all disciplines are taught to design either for a mythical normal population, or for specific niche groups (Imrie, 2006; Dong, 2007). Myths are not confined to design paradigms. Damaging myths and misinformation have served to maintain resistance to designing universally by product designers and the construction industry (Danford and Tauke, 2001:2; Keates et al, 2000). This may be due in part to universal design being interpreted as ‘disability design’, because as Burns (2004), Imrie (2003), and Wijk (2001) discovered, there is an assumption across industries that instruments such as disability discrimination legislation are sufficient to allay the needs of minority groups and that no more needs to be done. Against this background of resistance to change and disability discrimination the adoption of universal design concepts has become a slow and contested process.

**3.2 The importance of universal design**

Apart from the baby boom phenomenon, people are living longer in more affluent countries due to improvements in medical treatments and better nutrition, and are staying longer in long term care and drawing on the public purse for support (Bickenbach, et al, 2003). This demographic change is resulting in an increased proportion of older people within the adult population in the developed world (Clarkson, Coleman, Hosking, and Waller, 2007). A lowering of the birth rate is exacerbating the situation with less younger people contributing via the taxation system to the costs of government funded services and benefits (Bickenbach et al, 2003:294). According to the Intergenerational
Report (Commonwealth of Australia, 2010a) there will be proportionately less younger people to support older people in the foreseeable future. Clearly the ability to sustain current levels of support to an ageing population poses new challenges. Encouraging employers to retain employees of retirement age and also to recruit people with disabilities is one strategy designed to meet this challenge.

3.2.1 Access to employment

The change in population demographics requires older people and people with disabilities to be more self-sufficient and less reliant on government services. To this end, the Australian Government devised the National Mental Health and Disability Employment Strategy (2009) specifically to encourage greater workforce participation. However, even if the “outmoded community attitudes” (2009:6) towards people with disabilities and older people are overcome, without appropriately designed environments, products and technologies, both at home and in the workplace, this aim will not be achieved.

3.2.2 Ageing in place

The concept of ageing in place stems from a recognition that the ever-expanding capital costs of specialist housing and ongoing care cannot be sustained by the public purse (Brink, 2002:18). In Japan, a country projected to have a quarter of its population aged over 65 by 2014, regulations are in place for universal design in housing because of the major savings to the health and social services budget (Kose, 2008:19). Regardless, older people desire to age in their own homes (Judd, et al, 2010; Imrie, 2006; Galaxy Research, 2008). It appears,
however, that homebuyers rarely purchase for their future needs or those of future occupants (Olsberg and Winters, 2005; Office of the Public Advocate – Queensland, 2005), which means that alterations and modifications will be needed at a later stage. As Lansley et al found in the UK, modifications may be financially and theoretically feasible, but they are sometimes impossible due to the structural design of properties, particularly if mobility equipment is required (Lansley et al, 2004:481). In short, older people want to age at home, but industry is not responding in spite of readily available design solutions.

3.2.3 Home ownership

In an Australian study by Beer and Faulkner (2009), those who own their home outright or who are purchasing their own home account for seventy percent of all households where disability is present. The private rental market is generally unable to sustain such households because modifications are not permitted by landlords. Consequently, such households are forced into social housing, even if it means moving away from familiar neighbourhoods and support networks (Beer and Faulkner, 2009:25). Although modifications are more problematic in rental accommodation, home ownership does not guarantee desire or ability to either modify the current home or move to a new home. Beer and Faulkner found that a major disincentive to moving was the cost of buying and selling and this forced home owners to make modifications that were not ideally suited to the property (2009:47).

3.2.4 The number of people affected
In Australia, a survey of 2698 households carried out by Beer and Faulkner (2009) found that twenty two percent of households included at least one person with a disability. Their study highlights the importance of changing the focus from individuals to the household because all household members are affected when disability is present. In the USA, Smith, Rayer and Smith (2008) recognised this aspect and devised an economic model based on households rather than individuals. Three factors formed the basis of their analysis: the number of households with at least one resident with a disability; the average length of time a household resides in a single-family dwelling; and the average lifespan of dwellings. Using conservative estimates, the authors calculated that there is a sixty percent probability that a newly built single-family unit in the USA will house at least one resident with a disability during its expected lifetime. When visitors with a disability were included, the estimations of probability rose to ninety-one percent (2008:289). These figures do not include people with temporary disability such as a broken limb or serious illness.

The Smith et al (2008) analysis allows for a reasoning that recognises that life is not static – houses and households each have lifespans that move through time. Any household without disability present today could find changed circumstances tomorrow. Consequently, the Smith et al (2008) analysis avoids a static view of people's lives which encourages proportion arguments such as the number of houses to suit people with special requirements should equal the number of people in the population with those requirements. Such reasoning can be found in local authority planning documents (for example, NSW
Department of Infrastructure, Planning and Natural Resources, 2004), which continue to assume that disability is a static phenomenon.

### 3.2.5 Summary of the issues

The phenomenon of population ageing is well covered in academic literature and government documents. Apart from expected stresses on government services such as health services and pension payments, housing and accommodation are also important issues. Employers are being encouraged to retain older workers, as well as people with disabilities. However, the built environment needs to be free of architectural barriers to employment.

Households where disability is present represent a significant proportion of the population, and contrary to notions that such households require social housing or supported accommodation, nearly three quarters are home owners. If indeed each new home has a sixty percent probability of accommodating a household where disability is present, home design should be seriously re-thought. Some thought also needs to be directed at the way language is used in reference to people with disabilities.

### 3.3 Navigating the terminology

The differences between universal design (for everyone) and accessible design (for people with a disability) were outlined earlier, but a fuller explanation and discussion of terms is required. If the current terms are assumed to mean the same thing – “something to do with people who are disabled” (Wijk, 2001:28:4), they are likely to be used interchangeably and/or to cause confusion. In general, the terms fall into one of two main categories: those that have their
roots in legislation and disability rights, and those that focus on design outcomes and design processes rather than any specific group of people.

3.3.1 Accessible

The term accessible within the confines of the built environment is viewed as “something to do with people who are disabled” (Wijk, 2001:28.4). Disability rights legislation has captured the terms ‘accessible’ and ‘accessibility’ and because of these legislative links, they have become technical terms that refer to people with a disability and disablement, particularly in relation to public buildings and spaces (Ostroff, 2001; Goldsmith, 2000). ‘Accessible housing’ refers to purpose built new homes or adapted dwellings specifically designed for the needs of the current resident or residents (Landcom, 2008). ‘Accessible’ is also used in relation to websites, information and communications technology and some tools, implements and products. Accessible products and environments focus exclusively on accommodating physically disabling conditions and ignore benefits to other groups.

3.3.2 Visitable

‘Visitability’ relates specifically to single family dwellings and is a rights-based approach originating in the United States (Maisel, 2005). The aim of visitability is to enable people with disabilities to visit family and socialise at a neighbourhood level. In basic terms, a visitable home is one where a wheelchair user can enter the home, utilise the living area and the toilet, and perhaps stay overnight. A home designed on visitability guidelines does not, however, necessarily provide for the full needs of a wheelchair user such that
they will be able to live in the home permanently (Maisel, 2005). Part M of the Building Code for England and Wales aims for similar conditions to the visitability code in the US (Imrie, 2004).

3.3.3 Adaptable

The aim of adaptable housing is to design and construct features that facilitate easy and cost effective modification to suit the changing needs of residents (Standards Australia, 1995). Adaptable homes share similar features to accessible and visitable homes such as step-free entry and wider doorways. ‘Adaptable’ should not be confused with ‘adjustable’, which refers to fittings within a home that can be mechanically or manually adjusted for different users, such as a height-adjustable bench.

3.3.4 Usable

Usability describes how well the design of the environment enables functioning, performance and well-being, mainly from a user’s perspective (Iwarsson and Stahl 2003:60). It also describes a person-environment relationship based on a person being able to competently accomplish a task without undue effort or inconvenience. Task accomplishment includes all daily living activities, such as pouring water from a jug or making a telephone call, and participating in community activities, such as travelling on a bus and entering and moving around public buildings.

3.3.5 Universal design
Universal design does not focus on any ‘type’ or group of persons, but considers the population as a whole. Building and product features are designed for the widest number of people possible regardless of age, ability or background. Universal design therefore captures features considered accessible, visitable and adaptable. The classic and most quoted definition of universal design was devised by the Center for Universal Design at North Carolina State University: “The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (1997). ‘Inclusive design’ and ‘design-for-all’ are other terms used in the UK and Europe respectively that share the intent and purpose of universal design.

3.3.6 Disability

Because of their contextual relevance, the terms ‘disability’ and ‘disabled’ also require explanation. Goggin and Newell define disability as: “Impairment is the bodily dimension, whereas disability is what society makes of someone’s impairment” (2005:28). The World Health Organisation (WHO), however, defines disability as an “umbrella term for impairments, activity limitations and participation restrictions” (2002:2). Implicit in the WHO’s definition is the understanding that activity limitations and participation restrictions are due to environmental and contextual factors that exacerbate bodily impairments (WHO, 2001). Therefore there is general agreement that the social context and the built environment can be enabling or disabling, and that disability is not solely a personal attribute (see for example, Goldsmith, 1997, Imrie and Hall, 2001, Steinfeld and Danford, 1999).
Opinions differ as to which term to use when it comes to applying ‘disability’ to a person or persons. In the USA ‘people with disabilities’ is the preferred term as it focuses on the person rather than the disability. In Europe ‘disabled people’ is the preferred term because it suggests that disability is something thrust upon them by an inadequate environment, whereas the former term suggests that disability is something they are born to (Coleman, 2001:4.2). Australia’s preferred term, and the one I shall use, is ‘people with disabilities’ (Goggin and Newell, 2005; Physical Disability Council of NSW, 2006; Australian Human Rights and Equal Opportunity Commission, 2008).

### 3.4 Implications of language use

Architectural drawings for public buildings use terms such as ‘disabled toilet’, ‘disabled ramp’, and ‘disabled parking’. Although such toilets, ramps and parking places are fully operational, in this context ‘disabled’ has become a common usage short form for ‘items for people with a disability’. The more grammatically correct form, ‘accessible’ toilet, ramp, and parking, is not chosen over ‘disabled’. Such labelling entrenches community attitudes of separateness, and of ‘otherness’ because it is focused exclusively on the needs of people with disabilities (Goldsmith, 2000). Each time a wheelchair user diverts to a separate (disabled) ramp entry when others in his or her party use the steps, a silent yet powerful reinforcement of separateness and othering occurs.

Choosing to identify the attribute of the user (disabled) and not the product or building feature (accessible) publicly announces the existence of a separate group needing separate facilities (Goldsmith, 1997, 2000). Through common usage ‘access’ and ‘disability’ have become a twin set of associated ideas, which
has led to further associations where anything deemed to be useable by a person with a disability has become a ‘disabled’ product.

### 3.4.1 Language and perpetuation of stereotypes

As outlined earlier, one of the difficulties confronting universal design is the ability to explain its inclusionary nature without referring to those most often excluded by designs. In establishing what we mean, it is sometimes helpful to describe what it is not in order to provide a contrast for comparison. While explaining things by what they are not provides a useful reference point (Hartnack, 2005:156), it can further entrench existing stereotypes and prevailing community attitudes. The logic is thus: If universal design can only be explained by identifying who is currently excluded – people with disabilities and older people – and the process of associated ideas is applied, universal design will be interpreted as ‘disability’ design. Consequently, the concept of designs for ‘us’ and design for ‘them’ is reinforced which has resulted in a plethora of terms for the ‘other’ housing or housing for ‘them’.

### 3.4.2 Language and branding

If universal design operates from a standpoint of difference and reinforces negative stereotypes, it has become a brand that is difficult to sell. As Wylde’s (2008) market surveys discovered, older people shunned the notion of universal design in spite of being potential beneficiaries. Business surveys carried out in the UK also found a misconception that universal design was a “code-word for designing for the elderly and disabled only” (Keates, et al; 2000:3). Consequently, selling the universal design concept to both consumers
and industry looks to be a lost endeavour and maybe why other terms have emerged such as Lifetime Homes (Imrie, 2006a), and Flexihousing (Canada Mortgage and Housing Corporation. 1999). Although applying the word ‘universal’ was intended to overcome ‘disability’ negativities and stereotyping, the difficulty of explaining universal design without reference to incapacity has seen its undoing.

3.4.3 Language and invisibility

Goggin and Newell (2005) explain that the invisibility of people with disabilities is due to disadvantage being viewed as a personal attribute not an issue for society as whole. Disadvantage is a fact of life to be endured and helped where possible. It is not an issue for the economy because costs are not measured across budget portfolios: rather it is considered a social problem and therefore the responsibility of a specialised department. Consequently a separate government department labelled “disability” gives the appearance on one hand of ‘dealing with the problem’, but on the other, it allows everyone else ‘freedom’ to ignore the issues. Indeed, it is assumed that instruments such as disability discrimination legislation are sufficient to allay the needs of minority groups and that no more needs to be done (Burns, 2004; Imrie, 2003; Wijk, 2001).

3.4.4 Summary of language issues

If universal design was understood in its conceptual form as a set of principles, and people with disabilities were not stereotyped as needing specialised products, it is possible that universal design would not be interpreted as just another design type destined for a particular group of people. Universal design
has been transformed into ‘disabled design’ by the misuse of terms, association of ideas, and pinpointing who is currently excluded by design. Because disability is seen as a personal attribute, and special departments, services, and indeed, legislation are set up to ‘deal’ with this, there is a perception no more needs to be done. Consequently, the adoption of universal design concepts has become a contested process.

3.5 Theoretical considerations for universal design

In its broadest terms universal design began as a social movement (Imrie and Hall, 2001), and developed into an inclusionary design process. The paradigm shift required to design more inclusively opens the way for theory to be developed. However, universal design covers a multiplicity of disciplines and whether one abiding theory can be applied across all endeavours, or whether this is even desirable, remains unclear.

3.5.1 A theory, a paradigm or an approach?

D’souza describes universal design as “a new paradigm that aims at a holistic approach” and ranges from product design, architecture and urban design to systems of media and information technology (2004:3). Dong also reports that researchers in universal design come from various backgrounds: engineering, art and design, ergonomics, computer science, and psychology, for example, creating a trend towards cross-discipline collaboration (2007:70). Nevertheless, the development of universal design has been based on prevailing norms and values of practitioners and references to people with disabilities rather than a strong theoretical grounding (Steinfeld and Danford, 1999; Iwarsson and Stahl,
D'souza, (2004) asserts that universal design is largely atheoretical because researchers do not align themselves with a particular theory, possibly because it can sit within several. However, the main theme is that the diversity of users’ perspectives should be put at the centre of the design process (Clarkson, et al, 2007; Dong, 2007; Ostroff, 2001; Steinfeld and Danford, 1999). By examining the person-environment fit (Steinfeld and Danford, 1997; Iwarsson and Stahl, 2003), and through several iterations, designers can create goods, buildings and services that, wherever possible, no longer exclude people from their use due to the way in which they are designed (Center for Universal Design, 1997). User-centeredness is an approach rather than a theory, but it still requires a shift in thinking about disability – a shift from “unlucky and unlikely” to “inevitable and enduring”. In the absence of suitable theory Dong (2004) decided to take an action-research approach and worked directly with industrial designers at a practical level. Although D’souza suggests that researchers of universal design do not align with a particular theory, he does examine several possibilities.

D'souza claims universal design can fall under functionalism, because of its utility, pragmatism because of its instrumental nature, positivism because it strives for general principles, normative thinking because it prescribes rules, and critical theory because it gives voice to the oppressed (2004:3). D’souza supports the critical theory paradigm because universal design has the potential to free the oppressed and that universal design is itself, critical science. If, as D’souza claims, universal design follows critical theory in its conceptualisation and argues that weaker members of society are as important
as the rest then it argues for social inclusion (2004:4), social inclusion has become both a theory and a policy.

The Rudd government set up the Australian Social Inclusion Unit in 2008 to promote a social inclusion agenda (Department of Prime Minister and Cabinet, 2011). Theoretically, there are many social groupings where exclusion might occur: language, religion, gender, age, health and socio-economic status to name a few. There are also degrees of inclusion: ‘inclusion as access’ being the narrowest; ‘inclusion as participation’ views the issues more widely; whilst the widest interpretation is ‘inclusion as empowerment’ (Gidley, Hampson, Wheeler, Bereded-Samuel; 2010). Universal design has the potential for meeting all three aspects. Physical access to and within the built environment allows participation in social and economic life, and when this occurs, people are better situated to empower themselves rather than being released from oppression by others in specialist services and by specialised designs.

According to Sinclair (2009), the concept of social exclusion offers policy makers a framework for bringing together various difficult social issues, particularly those that are treated as distinct responsibilities of different division of government and policy makers. He concludes that reducing social exclusion requires intensive, flexible and long term responses, and that they “must not be standardised, centrally controlled, predetermined and rule driven...”, or insensitive to the demands of users (2009:17). Using Sinclair’s logic, universal design has the potential to bring together a range of built environment professionals, consumers and policy makers to design flexible,
long term responses with the minimum of rules and regulations, all the while keeping users in mind. The newly established non-government organisation, Livable Housing Australia, which has been set up to promote the Livable Housing Design Guidelines (McLucas, 2011), has some of the ingredients with a mix of government, industry and advocacy groups present on the board. However, it remains to be seen if the current voluntary code will result in minimal regulation, in keeping with universal design principles, or whether the code will be mandated to fit existing industry norms of practice if the code is not implemented voluntarily.

3.5.2 Attempts to mainstream universal design

As part of the team from the Engineering Design Centre at the University of Cambridge in the UK, Dong’s (2004) pragmatic approach revealed that by working directly with industrial design professionals, design problems could be solved without focusing on the detrimental effects of poor design or the problems created by societal norms. The work began with assessing the underlying industry attitudes to universal design which led to the development and trial of various instruments to help educate designers and measure design success. The Inclusive Design Toolkit (Clarkson et al, 2007) was devised as part of the strategy to promote inclusive design and the information is available in both hard copy and online (www.inclusivedesigntoolkit.com). One of the important features of the online version is the link to population demographics on capability levels such as hearing, gripping, carrying and walking abilities. It
is also noteworthy that “capability” is the preferred term used throughout rather than disability or ability.

Whilst Dong’s pragmatic approach manages to mainstream inclusive design principles in product design, mass market housing is produced by a more fragmented system, a topic discussed later. Nevertheless, the Queensland Government has attempted to address the fragmentation through mainstreaming accessibility in housing.

An attempt to normalise accessibility features in home design was initiated by the Queensland Government through its “Smart and Sustainable Homes” program (Department of Public Works, 2007). This initiative merged the three pillars of sustainability (social, economic and environmental). The project brought together industry partners to develop processes of innovation for energy conservation, affordability and accessibility in the one endeavour as their logo depicts in Figure 3.1.

From a European perspective, architect C. J. Walsh argues that we can no longer consider access issues in “splendid isolation” (2001:33.15). He believes that the
moves towards sustainability in the built environment have provided a quantum leap in design philosophy, which will direct the course of innovation in the future (33.4). However, almost a decade later his predictions and those of Coleman’s (2001) “new realism” of bringing inclusion and sustainability together have not come to fruition, largely because environmental sustainability initiatives are themselves still experiencing difficulty in gaining traction with industry and consumers (Crabtree and Hes, 2009), an aspect taken up in the discussion chapter.

3.5.3 Summary of theoretical issues

Universal design is posed as a theory in its own right based on presenting a new paradigm focused around the user and usability of the product or environment. However, the way in which universal design cuts across many disciplines makes theory development difficult and this is highlighted by the different terms used by different disciplines. The apparent simplicity and necessity for universal design as understood by some designers is not, however, shared by others. Consequently, after several years of promotion and branding, broad-scale acceptance of universal design principles is still lacking.

3.6 Summary

The literature shows that incorporating universal design principles into housing and the built environment generally is important for several reasons. Projected population statistics show that Australia will need to cater for a larger proportion of older people in terms of income support and housing. Ageing in place is would logically be the preferred option for governments when the costs
of support remain largely with the individual, rather than fall upon state
supported aged accommodation. As Judd et al (2010) found, individuals prefer
to remain at home in familiar surroundings, yet their homes may not
accommodate their needs as time passes.

Disability affects more than just the person with the impairment. Household
statistics provide a more realistic picture of the situation and the calculations by
Smith et al (2008) show that a new home built today has a sixty percent
probability of accommodating a household where disability is present within
the next fifty years. This is without accounting for temporary disability or
visitors with a disability. In Australia, there is a high percentage of home
ownership in households where disability is present, which is contrary to the
notion that separate and social housing is required in these cases.

Notions of segregation stem from language use and misuse, but they are a
reflection of community attitudes towards people with disabilities and older
people that cause stereotyping and marginalisation. The term universal design
has become another euphemism for “things to do with disability and ageing”. It
is also difficult to know whether everyone is talking about the same thing at the
same time. These two factors make it increasingly difficult to promote the
holistic and inclusive nature of its philosophy. Theories of universal design
focus on the person-centeredness nature of the design principles. To its
proponents, universal design is a simple concept – to design with the whole
population in mind – but this apparent simplicity has not gained purchase even
with attempts to mainstream the concept within sustainability initiatives.
Other literature surveyed during this study is presented in the discussion chapter and the relevance will be evaluated and applied to the findings. But first, an explanation of how the study was carried out is required, and thus the methodology and methods follow next.
4 METHODOLOGY AND METHODS

4.1 Introduction and overview

As an interpretive study seeking to answer a question of “why is this so?” my methodological approach took a subjectivist viewpoint. The methods used were a mix of techniques, with the emphasis on qualitative analyses. The data collection techniques were self-administered surveys, in-depth interviewing and document analysis. To provide a more rounded picture of industry issues, the demand side of the industry, that is consumers, was included in the study using survey questionnaires and in-depth interviews. There were two reasons for choosing both surveys and interviews at the design stage: the opportunity to triangulate results, and the opportunity to maximise data collection should one technique result in a low response rate. This chapter describes in detail the methodology and methods used in the data collection and analysis phase of the project.

4.2 Methodology – philosophical approach taken

The literature describes two distinct ontological approaches to academic research. Simply put, on one hand we have the idea that truth is formed by individuals and the way in which they experience the world (which I will call “subjectivism”), and on the other, truth is external to one’s persona and exists whether or not it has been discovered (which I will call “objectivism”). Given that subjectivism and objectivism appear as polar opposites in older literature, it is not surprising to find that researchers felt compelled to commit to one or
the other philosophical position (Lin 1998; Boeree, 1998; Lincoln and Guba, 1985; Owens, 1982). More recent literature, however, discusses the two extremes as representing opposing ends of a continuum where the divide is less distinct and ideologies can overlap (Lincoln & Guba, 2005; Mouzelis, 2000; Lin, 1998). This provides opportunities for more rounded studies (Creswell 2003; Owens, 1982) and as such, formed the basis of my approach.

A researcher’s beliefs about the nature of truth and the way knowledge is formed will underpin and inform the way in which the research questions are developed, asked, analysed and interpreted, regardless of the techniques employed. As Shulman (1998) explains, each approach has a different logic, asks and answers different questions, reveals different unanswered questions and draws different types of conclusions. Both approaches, however, require disciplined and well documented research methods that can be closely scrutinised by others in the field of inquiry (Stanley and Wise, 1993; Shulman, 1998). Whilst interpretivist approaches are well established and are of themselves no longer in need of justification as a valid means of discovering the truth or truths of the matter (Silverman, 2005), the researcher is required to show how the methods follow well recognised and established protocols for this type of research method (Shulman, 1998). This section therefore outlines the ontological approach and research methods used in the study.

4.3 Theoretical options for ontological approach
The subjectivist approach includes terms such as naturalistic, ethnographic, phenomenological, constructivist, humanistic, qualitative and interpretivist.
Putting terminological issues aside, these terms share a philosophical underpinning which says reality is created by, and contextual to, the individuals concerned, and this means there are many ‘truths’ or assumptions about reality (ontology), knowledge of that reality (epistemology) and how that knowledge is gained (methodology). My approach is therefore aimed at discovering the processes by which the social world is constructed (Denscombe, 2007:79; Owens, 1982:8).

Although a subjectivist paradigm can include a number of research techniques, it is essentially based on inductive reasoning with phenomenological views of how knowing and understanding come into being (Owens, 1982:3). Unlike objectivist studies, theory is not applied first to see if it applies; rather it is applied towards the end of the process, and as such, can lead to the evolution of new theories (Glaser and Strauss; 1995). The interaction between the investigator and the participant is an essential part of the data gathering process, and qualitative methods allow the investigator to ‘get close’ to the data thereby enabling an analysis that allows themes to emerge and interpretation to occur. The contextual nature of the data yields what Geertz calls “thick description” (Geertz 1975 cited in Owens 1982:7) where a web of interrelated factors showing not just the facts but also insights into the texture, quality and power of the situation as experienced by the participants. This largely describes my approach.

An objectivist standpoint has an ontology that is based on truth being constant and value-free, unaffected by what we think and believe, and is unaffected by, and external to, one’s persona (Bryman, 2008; McMurray, 2004; Mouzelis,
This approach includes terms such as positivist, experimental, scientific, rational, quantitative, and traditional. The underpinning philosophy is that knowledge and facts exist whether or not they are known. The objectivist (more usually termed positivist) paradigm is associated with deductive thinking and logical views of knowing and understanding (Owens, 1982:3). Objectivists claim that objectivity is achievable and that the research design, data collection and data interpretation are unaffected by the wishes and desires of the researcher. Typically, those engaged in the objectivist paradigm, test hypotheses, look for causal relationships between variables and seek to discover the laws governing patterns of behaviour among elements and people (McMurray 2004:10).

In summary, objectivist studies seek to test pre-set questions. Existing theoretical perspectives are subsequently analysed and either revised or expanded, depending on the findings. In subjectivist studies, questions of ‘why’ do not lend themselves to hypothesis testing. It is after data is gathered and analysed that either existing theory can be applied, or a new theory posed. Consequently, no hypotheses were tested and theory that might explain the findings was applied at the end of the data analysis process.

Although it was possible to take an objectivist approach to this study, there were three main reasons for choosing a subjectivist paradigm: my personal philosophy, the type of question to be asked, and my active involvement in the field of study. My personal philosophy is that there are many ‘truths’ depending on one’s experiences and understanding of the world. I wanted to find out what
people were thinking and feeling rather than trying to measure a construct or behaviour. I already knew homes were still being built as before, what I really wanted to know was why. So the counting, measuring and comparing of variables was not likely to reveal the range of participant attitudes and opinions which were of more interest to me.

Explanations of events are often much more complex than simply measuring them against a set of pre-set criteria of say, good or bad, yes or no. Many explanations have interrelated elements where feelings and motivations can be understood. From this ontological perspective, the style of research question was devised: What are the barriers to universal design features in new-build housing and why are they there?

Last, but not least, my involvement thus far with the field of inquiry meant that I could not pretend to be at arm’s length (the objectivist stance) with formulating the research questions, data collection techniques, or in the interpretation of results. Consequently the research was approached with an ontological and epistemological base of subjectivism within which phenomenological methods were used.

**4.4 Taking a phenomenological perspective**

Given my experiences and ontological beliefs a phenomenological approach to addressing the research question was the logical choice. This approach attempts to understand participants’ perspectives and views of social realities (Denscombe, 2007:77; Leedy, 1997: 161;). In other words, it is a way of trying
to see the world through participants’ eyes and interpreting what events mean
to them. Phenomenological research methods are also used when the
researcher has prior experience with the topic (Denscombe 2007:78). Such
methods also provide an opportunity for the researcher to heighten their
awareness while simultaneously looking through the eyes of participants
(Leedy, 1997:161). Along with other researchers using a subjectivist approach,
I recognised the importance of maintaining an awareness of my influence on the
design, the gathering and analyses of data, and on the final interpretations
(Silverman, 2005). It was assumed the obvious risks emanating from
researcher bias would be adequately offset by the advantages of my prior
knowledge and experience (Denscombe, 2007:81).

Self administered surveys and in-depth interviews of both industry personnel
and homeowners formed a significant part of the study. Other data were
gathered from government documents to add extra contextual information and
to assist with triangulation. All three methods, interviews, survey
questionnaires, and document analysis were analysed for meaning, and
common themes were identified. Related activities, such as continued
voluntary involvement in committees and working groups provided a small
amount of additional data, but of greater value was the opportunity to share
ideas about the topic in day to day interactions with others who are interested
in similar issues. This provided further contextual depth and assisted with the
interpretive process. A small amount of quantitative data from the surveys
provided another dimension for additional insights. Using different techniques
within a study is referred to as a mixed methods design (Creswell 2003; Owens, 1982).

### 4.5 Mixed methods strategy

At its most basic level, a mixed methods strategy uses both qualitative and quantitative methods. According to Denscombe (2007:108), treating qualitative and quantitative approaches as incompatible is neither helpful nor realistic when it comes to research activity. As mentioned earlier, subjectivist and objectivist ontologies provide different philosophical approaches to the way a study is conceived and designed, but the methods associated with each are not necessarily mutually exclusive (Owens, 1982:3). For example, where qualitative techniques can identify the presence of a theme or characteristic, a quantitative technique can then be used to measure the degree to which it is present (Denscombe, 2007). Although more time and effort are required in planning, analysing and synthesising the data in a mixed methods strategy, this is offset by the advantages, particularly for triangulating results (Denscombe, 2007). Other reasons for choosing a mixed methods strategy were a potential reduction in bias, a greater likelihood of engaging people who respond to quantitative methods, and a potential to enhance validity.

Validity, or credibility as Lincoln and Guba (1985) prefer, was addressed in the research design phase. The survey and interview questions were designed to target the overarching research question and documents were selected for their relevance. The research design also included the triangulation of three sources of data and three methods. Although participants validated the interview
transcripts by confirming they were a true representation of the conversation, the way in which I interpreted them is the issue according to Maxwell (2002:45). Every effort was therefore made to represent all participants fairly and to ensure all views were presented (Lincoln and Guba, 1985, 2005).

As participants for the interviews and surveys were selected using non-probability sampling methods, it cannot be claimed that participants were representative of any given population. Therefore, generalisation in the positivist tradition is not possible (Creswell, 2003:156). However, Lincoln and Guba (1985) argue that “transferability” to a wider group is possible. Nevertheless, as mentioned earlier, phenomenological studies using qualitative techniques aim to provide insights and explanations about a phenomenon rather than conclusions that can be applied more widely.

Interpretive studies rely on reputable procedures and reasonable decisions (Denscombe, 2007:298). To ensure transparency the next section describes the procedures, techniques and processes, as well as the use of the ontological approach discussed earlier, so that others might be in a better position to evaluate the decisions and interpretations in relation to data collection and analysis.

4.5.1 Qualitative and quantitative methods

A phenomenological research design relies on qualitative data gathering techniques that allow participants to tell their ‘story’, and to relate their thoughts and opinions about an event or situation. The researcher looks for
meanings within the narrative of the stories and seeks out themes that are shared by participants. Documents and narrative sections of survey questionnaires can also be examined for meaning and themes (Denscombe, 2007). Although the thrust of this study was conducted from a subjectivist perspective using qualitative techniques, small amounts of quantitative data were generated for the purposes of providing additional information. Demographic information formed the majority of quantitative data, but qualitative data was also translated into basic quantifiable units, such as the number of times a particular word or phrase was used (Lin, 1998). This not only helped identify themes, it also indicated the level of magnitude or importance of themes.

The methods were used simultaneously, that is, the self-administered survey, in-depth interviews and document analysis were carried out concurrently. In some mixed method studies sequencing the methods is preferable, such as seeking a small amount of data from a small sample of interviews or a focus group to gain certain insights (Denscombe, 2007:114). Given the experience and insights I brought to the study, the emphasis was placed on data triangulation rather than seeking exploratory evidence. Consequently the survey questionnaires and in-depth interviews were developed with similar themes and linked questions. Document analysis and related activities occurred as and when available, but also concurrently with survey and interview analysis. One key issue in any phenomenological study is recognising and accounting for real or possible subjective elements and how they may influence the research process. Central to this is the role of the researcher.
4.5.2 The role of the researcher

Due regard was given to structuring questions, and to interview techniques to minimise my influence on participant responses. It was not my intention to enter into the realms of action research, but I recognised an element of information and education may take place in the process of asking participants to consider certain issues. In qualitative research, the investigator becomes the instrument of data gathering and measurement where data collection and data analysis become mutually dependent (Silverman, 2005; Owens, 1982). Investigators are part of the social world they are investigating and consequently they need to be aware of making common-sense assumptions that can create blind spots in the analysis where the obvious is sometimes overlooked. Consequently, insofar as it is possible, I needed to “bracket off” or suspend my presuppositions during the research process (Denscombe, 2007:81; Boeree, 1998:8). Whether “bracketing off” one’s own thoughts and ideas is truly possible is a topic for a debate elsewhere. However, I sought to be as reflexive and transparent as possible (Lincoln and Guba, 2005).

A related issue is one of eliciting socially acceptable answers rather than any deeply held views, particularly when the topic includes discussion of a marginalised group. I was aware that some participants may have knowledge of my previous roles which might influence their responses. Also, prior knowledge of some issues may be more familiar to some participants than others, which raises the question of whether those more or less knowledgeable are more suited as participants (Silverman 2005). It should be noted therefore
that during the latter part of the data collection period a government consultation process related to the topic of universal housing design was initiated and it is possible some participants were part of the consultation process or were informed about its progress.

4.5.3 Ethical considerations

The rights of participants were considered at all stages of the research design. Research integrity, justice, beneficence and informed consent are essential elements of respect for participants. Approval from the UWS Human Research Ethics Committee was gained by utilising the web-based National Ethics Application Form (NEAF) which guides researchers through the requirements of the National Statement on Ethical Conduct in Human Research (2007). Proposed survey questionnaires and interview schedules underwent the ethics approval process, as well as completed pro-forma participant information sheets and consent forms designed by the UWS ethics department.

4.6 Participants

Participants were divided into two main groups: those working in the built environment industry (industry participants) and those who had recently built a home in a new development site (homeowner participants). Although the main aim of the study was to seek the views and attitudes of industry participants, those purchasing new homes could not be ignored. Consequently a small scale survey of homeowners, and five in-depth interviews were included in the study. The decision to include both supply and demand sides of the industry was primarily influenced by a large scale industry survey in the UK by
Imrie & Hall (2001), and research by Nicola Burns (2004), who investigated the experiences of people with a disability engaging with house builders, also in the UK. Both studies reflected underlying attitudes to people with a disability that influenced the design of dwellings. Consequently, it seemed likely that a richer contextual basis could be developed if both industry and homeowners views and experiences were sought and compared.

4.6.1 Industry participants

The built environment industry consists of several professions and disciplines, namely: planners, regulators, property developers, builders, architects, building designers, tradespeople, engineers, access consultants, and surveyors. Advocacy organisations concerned with the housing needs of people with a disability and older people were also included in this grouping. With their regular interactions with industry personnel, I considered that those advocating for universal and accessible housing design could provide additional insights into the way issues of disability, ageing and building design were perceived by the industry.

4.6.2 Homeowner participants

Individuals who had purchased house and land packages in new large-scale development sites within the past two to three years were the target of the self-administered questionnaire. Whether purchasing a house and land package or engaging the services of an architect and/or builder, significant interaction with built environment practitioners takes place. It was this interaction that was of
most interest, but I used the opportunity to also gather some basic data about home design preferences from this group.

4.7 Survey questionnaires

Inducing people to complete and return self administered questionnaires is a major difficulty, as is the chance that only people with certain characteristics are motivated to return the questionnaire, which poses a risk of response bias (Denscombe 2007:23). The best way to evaluate response bias is to check whether the level of response is similar to comparable surveys (which can be as low as 10-15%), whether reasonable measures have been taken to minimise non-responses, and whether the non-respondents differed in any systematic fashion from those who did respond (Denscombe 2007:24).

The purpose of the industry survey was to find out if personal factors such as age, gender, professional affiliation or type of business could be associated with any particular attitude or opinion about universal design in housing, and older people and people with disabilities more generally. The homeowner survey was devised as an entirely exploratory exercise and consequently included a number of questions unrelated to the topic of universal design, ageing or disability. However, the questionnaire contained items that helped ascertain whether new home purchasers considered more than just their current housing design needs.

The method of distribution via email messages to industry participants made it impossible to ascertain how many potential participants received and viewed
the questionnaire, but because of the low response rate (37 in total from approximately 1000 emails), I decided to mail hard copies with a reply paid envelope. The response rate via the mailed surveys was 27 from a total of 130 (20%). There was a 12.5% return rate for the homeowner survey (30 responses from 240 households). Distribution details are discussed in a later section.

4.7.1 Sample size

There is debate in the literature about sample sizes where some argue, for example, Lincoln and Guba (2000), that a positivistic focus on sample size is not as relevant for qualitative studies where the focus is on representativeness. Others, for example, Leech (2005) argue that sample size should not be dismissed on the basis of not seeking generalisability. Regardless, the sample sizes in this study were small and therefore a conservative approach to results was taken. Another factor contributing to a low response is the design of the questionnaire itself (Burns, 1994).

4.7.2 Design of the industry questionnaire

With both the industry and homeowner questionnaires, care was taken to start with easily answered questions. As many questions as possible were structured to have tick-box answers where the respondent was given a choice between yes and no answers or a list of options to choose from. Likert-type scales were also used where the degree of opinion (agree-disagree) was sought. The sequence of questioning was set to ensure a logical progression of ideas where the content and answers to one question would flow through to the next question.
Four academic colleagues and two professional colleagues assisted with the pre-testing of both questionnaires for structure, consistency, language, readability and the boredom factor.

In accordance with the requirements of the Human Research Ethics Committee (HREC), a Participant Information Sheet, and a Participant Consent form were devised using the online HREC pro-forma documents (see Appendix A). The questionnaire, information sheet, consent form and a reply paid envelope formed a package which will be referred to as the "Survey Package" for both the industry survey and the homeowner survey (see also Appendix B).

Formulating questions is difficult because of the underlying assumptions often unwittingly made by the researcher (Leedy, 1997). As a result they are often difficult to flush out. In addition, the questions must be sure to lead to the specific research question in mind. The survey questions were based on the sub-questions to the overarching research question. These were framed around opinions of universally designed homes, possible inhibitors and facilitators, personal attitudes towards disability and ageing, the role of legislation, and where the power and influence regarding overall house design might reside. The questions were precisely worded and set out in such a way that the responses were easily tabulated.

Tick boxes enabled a speedy progression through the instrument for the participant and easier tabulation of responses for the analysis phase. There were three key questions requiring narrative responses designed to reveal participant attitudes and opinions. Space for additional comments was provided throughout the questionnaire, for those who felt the tick-box answers
did not reflect or include their opinion or experience (Denscombe, 2007). Table 4.1 shows the issues underpinning the questions cross referenced with the items on the survey instrument. A copy of the questionnaire appears at Appendix B.

Table 4.1: Industry survey questions and instrument items

<table>
<thead>
<tr>
<th>Issues underpinning questions</th>
<th>Survey Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>What opinions are held about UD homes?</td>
<td>Item 24 and interviews</td>
</tr>
<tr>
<td>What are the inhibitors to UD?</td>
<td>Items 12, 13, 19, 20, 21, 23, 24, 25, 26, and interviews</td>
</tr>
<tr>
<td>What are the facilitators to UD?</td>
<td>Items 12, 13, 19, 20, 21, 23, 24, 25, 27 and interviews</td>
</tr>
<tr>
<td>What role does personal attitude towards disability and ageing play?</td>
<td>Item 23 Item 24 And Interviews</td>
</tr>
<tr>
<td>What role does the built environment delivery chain play?</td>
<td>Item 18 Item 25 Item 26 and interviews</td>
</tr>
<tr>
<td>What role do legislation and regulations play?</td>
<td>Item 18, 23, 26 And Interviews</td>
</tr>
<tr>
<td>What are the power relationships between stakeholders?</td>
<td>Item 27 possibly answered better by interviews</td>
</tr>
<tr>
<td>What or who has the greatest influence in housing designs?</td>
<td>Items 10-17 Item 18 Item 28 And interviews</td>
</tr>
<tr>
<td>What part do costs play – which costs, who bears them and when?</td>
<td>Item 23 Item 26 And interviews</td>
</tr>
<tr>
<td>Organisational information</td>
<td>Items 6-11</td>
</tr>
<tr>
<td>Demographics</td>
<td>Items 1-5</td>
</tr>
</tbody>
</table>

As the self administered questionnaire was to be distributed as an attachment to emails and via the regular postal service, it was formatted in a Microsoft Word document on a standard A4 page. For maximum readability consideration was given to font size (Arial 12), margin width, layout of tick boxes, and appropriate spacing between questions to avoid confusion. There were twenty-nine questions in total across eight pages. The postal version of
the instrument was photocopied double sided so that the four pages when folded would fit a standard DL size envelope.

A proprietary online survey service, SurveyMonkey, was utilised for the online version of the questionnaire. Other proprietary brands were considered by consulting “Survey of Survey Tools” published online via the Web Accessibility Centre (2008) based at Ohio State University. Accessibility\(^4\) of online questionnaires is an important factor in ensuring equal access for participants regardless of their level of physical or intellectual capacity. However, none of the proprietary products were fully accessible and consequently SurveyMonkey was chosen as being the most functional for both the participant and for data collection and analysis.

4.7.3 Design of homeowner questionnaire

The homeowner questionnaire was developed in similar fashion to the industry questionnaire using the same rationale for question development and formatting. In seeking the homeowner experience of building a new house with a volume builder, questions relating to the selection of design elements, relationship with the builder, initiating changes to original designs, and satisfaction with their new house were posed. Table 4.2 shows the issues underpinning the question and related survey items. A copy of the questionnaire is shown at Appendix B.

\(^4\) Accessibility in this instance relates to the design of computer programs such that ability of people with disabilities, including people with vision impairment, can access and operate computer programs without the need for assistance from a third party.
### Table 4.2: Homeowner survey questions and instrument items

<table>
<thead>
<tr>
<th>Issues underpinning questions</th>
<th>Survey Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>Items 1 - 6</td>
</tr>
<tr>
<td>Importance of design elements at point of purchase</td>
<td>Item 7, 8, 12, 13, 16</td>
</tr>
<tr>
<td>Relationship with the building company</td>
<td>Item 9, 11, 17, 20, 27</td>
</tr>
<tr>
<td>Negotiating changes to original display home design</td>
<td>Items 10, 11, 12, 14, 15, 20</td>
</tr>
<tr>
<td>Consideration of easy access features</td>
<td>Item 13, 18, 19</td>
</tr>
<tr>
<td>Reason for new-build</td>
<td>Item 21, 26</td>
</tr>
<tr>
<td>Reason for location</td>
<td>Item 22</td>
</tr>
<tr>
<td>Satisfaction with design</td>
<td>Item 23, 24, 25</td>
</tr>
</tbody>
</table>

The questionnaire was printed double-sided so that the four page document containing twenty seven questions could fit a standard DL size envelope. An online version of the survey instrument was developed in SurveyMonkey and a web link was included in the hard copy survey form. This was to provide an alternative method for responding to the questionnaire and a similar design rationale was used. Whilst there were no responses via this method, the questionnaire could be viewed by other parties, and the web link added authenticity to the survey.

#### 4.7.4 Recruitment for the industry survey

Dissemination of the survey questionnaire through industry associations was not as systematic or random as originally planned. Consequently, the eventual
sample of participants may not be representative of their professional group or of the built environment industry in general. Gaining access to the appropriate decision makers within an organisation was achieved in only three cases. The fall-back position was to undertake the tedious and time consuming task of trawling association websites for member names and contact details. It is unknown whether an email directed to participants from a non-association source resulted in more or less interest in completing the survey. If participants receive multiple surveys via their relevant association, there is a potential to suffer from survey fatigue, but on the other hand, it could add authenticity. Where the association agreed to distribute the survey to their membership via email, the sample can be regarded as random inasmuch as every member had the same likelihood of being chosen to participate. Where members were contacted by trawling the website membership list, not all had the same chance of being selected for two reasons. First, as a resource intensive activity, it was not possible to contact everyone on every list and second, not every list held an email address for all members – email being the preferred distribution method. Consequently a deliberate effort was made to include a sample of participants from across all regions and metropolitan areas of New South Wales from among those for whom email addresses were available. Those with specific business email addresses were favoured over those with generic addresses such as "hotmail", "bigpond" and "gmail" for example. This was particularly the case with the Master Builders Association of NSW where some members are sole practitioners. I assumed they were less likely to be constructing new homes and more likely to be involved in smaller scale work.
4.7.5 Recruitment for homeowner survey

Four large-scale development sites in outer Sydney Metropolitan areas were identified as the location of likely participants. Not all householders were targeted in a site as the aim was to include those with the most recently built homes. Questionnaires were hand delivered to household letterboxes adjacent to areas where construction activity was still taking place, and where homes were visibly inhabited, but the landscaping and fencing was absent, incomplete or newly constructed. This aim was largely achieved with almost three quarters of respondents (73.3%) having lived in their home for less than two years.

4.7.6 Distribution of industry questionnaires

A mix of paper and electronic Survey Packages were used for the dissemination process. Where industry associations approved my request to survey their members the Survey Package was distributed via their membership email system. The email contained an introductory statement, my contact details, and Internet web links to the online version of the questionnaire. Attached to the email was an electronic copy of the Survey Package should they choose to print out a hard copy and return the questionnaire using the reply paid address. They were also given the option of returning the survey by facsimile and email. Survey packages were also sent to participants who were sought by accessing association websites and manually extracting email addresses of individual members. Similarly to those circulated via associations, the email included the same introductory statement, contact details and Internet web links to the online version of the questionnaire. Emails were sent in batches over a period of three weeks and although response was slow, it indicated the emails were being received. The last batch however, indicated a glitch either with
SurveyMonkey or workplace firewalls and at this point I suspected emails were not reaching recipients. Given the risk of significant numbers of emails being assigned to “Junk Mail” folders, plus the slower than anticipated response rate, I decided it would be more productive to use the regular postal service and a reply paid envelope. Seventy Survey Packages were specifically sent to architects and builders who were easily located on the relevant association website. Table 4.3 shows the associations and method of contact.

Table 4.3: Method of participant contact utilising industry associations

<table>
<thead>
<tr>
<th>Industry Association</th>
<th>Method of Participant Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Designers Association of NSW</td>
<td>Email via association posting</td>
</tr>
<tr>
<td>NSW Home Modification and Maintenance Services State Council</td>
<td>Email via association posting</td>
</tr>
<tr>
<td>Association of Consultants in Access, Australia.</td>
<td>Email via association posting</td>
</tr>
<tr>
<td>Royal Australian Institute of Architects</td>
<td>Email and Mail to individuals</td>
</tr>
<tr>
<td>Royal Institute of Chartered Surveyors</td>
<td>Email and Mail to individuals</td>
</tr>
<tr>
<td>Master Builders Association of NSW</td>
<td>Email and Mail to individuals</td>
</tr>
<tr>
<td>Urban Development Institute of Australia</td>
<td>Email and Mail to individuals</td>
</tr>
<tr>
<td>Property Council of Australia (NSW)</td>
<td>Post to committee reps</td>
</tr>
<tr>
<td>Planning Institute of NSW</td>
<td>Post to committee reps</td>
</tr>
</tbody>
</table>

*Note: Exact numbers of association members who received the questionnaire via their association mailing is unknown, but it is estimated at 800-900.*

The most complex and time consuming part of seeking industry participants were those I considered least likely to respond. Based on my experience alone, I considered that property developers were least likely to be attracted to the survey and would likely ignore a generic email request. By searching the Property Council of Australia (NSW) website I found a list of working parties
and special interest groups. Each listed the names of their constituent members. As active members I assumed they were more likely to be involved in current issues relating to the built environment industry, including those of property development.

Details of committee members were limited to the name of the company they were representing. Consequently this required searches of company websites to match names and find contact details – a lengthy process which did not guarantee success. To encourage a worthwhile return rate, given the time taken to gather the information, forty six potential participants were sent a Survey Package by mail in an envelope addressed with their name and organisation title for a personalised approach. As the Planning Institute of NSW also has a membership containing people from a range of professional backgrounds and several working parties and committees listed on their website, I followed the same process to find a further ten potential participants. Tables 4.4a and 4.4b show the number of emailed and mailed surveys using website information, as well as the distribution rates for each group.

<table>
<thead>
<tr>
<th>Target Group</th>
<th>Number of emailed surveys</th>
<th>Number of invalid address responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects</td>
<td>80</td>
<td>Nil</td>
</tr>
<tr>
<td>Builders</td>
<td>245</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total emailed</strong></td>
<td><strong>325</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
Table 4.4b   Number of mailed surveys using website Information

<table>
<thead>
<tr>
<th>Target Group</th>
<th>Number of mailed surveys</th>
<th>Number returned address unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>Builders</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Certifiers / Surveyors</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Planners</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Members of the Property Council of Australia</td>
<td>46</td>
<td>2</td>
</tr>
<tr>
<td>Members of the Planning Institute of NSW</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Members of Urban Development Institute of Australia</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total mailed information</strong></td>
<td><strong>130</strong></td>
<td><strong>5</strong></td>
</tr>
</tbody>
</table>

4.7.7  Distribution of homeowner questionnaires

In similar fashion to the industry survey, two hundred and forty survey questionnaires, participant information sheets, consent forms and reply paid envelopes were printed, collated and folded to fit a DL size envelope (the Survey Package). Four new large-scale development sites were chosen at different locations in Western Sydney: Georges Fair (Liverpool); Ropes Crossing (Blacktown); Nelson’s Ridge (Holroyd); and Macarthur Gardens (Campbelltown). As the aim of the homeowner survey was to ascertain participant recollections of building a new home, the more recent the event, the more likely the ability to recall the experience. Consequently the newest homeowners were selected by visually identifying the most recently developed part of each site. Georges Fair and Macarthur Gardens were newer
development sites and had less new homes to target than Ropes Crossing and Nelson's Ridge. Table 4.5 shows the distribution rates for each location.

<table>
<thead>
<tr>
<th>Name of Development and Local Government Area</th>
<th>Number Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georges Fair (Liverpool)</td>
<td>40</td>
</tr>
<tr>
<td>Ropes Crossing (Blacktown)</td>
<td>80</td>
</tr>
<tr>
<td>Nelson’s Ridge (Holroyd)</td>
<td>80</td>
</tr>
<tr>
<td>Macarthur Gardens (Campbelltown)</td>
<td>40</td>
</tr>
</tbody>
</table>

4.8 In-depth interviews

In-depth interviews can be structured, semi-structured or unstructured. Structured interviews are often similar to the format of self-administered questionnaire where a sequence of questions is set out in a schedule and the interviewer progresses methodically through the questions. I used semi-structured interviews where pre-set questions guided rather than directed the interview. This was to encourage a more conversational and natural style of interaction with participants. The success of an interview not only lies with the skills of the interviewer to put the participant at ease and to listen well, but also with the way in which the questions are framed. Simple questions that clearly relate to participants’ life experiences are more likely to elicit appropriate narratives than those which address the sociological interests of the interviewer (Elliott, 2005:29-34).
4.8.1 Industry questions

The semi-structured interview guide contained questions based on, but not the same as, the key questions contained in the industry survey. They were framed sufficiently broadly to apply to each of the professional disciplines within the built environment industry. The aim of the interview process was to allow participants to express their thoughts and experiences without the constraints present in a structured questionnaire. Consequently participants had greater freedom of expression, and an opportunity to situate their opinions within a broader context than their own profession. The interview guide broadly covered questions relating to understanding of universal design, the role of regulations, influences on design, infrastructure issues, and the possible barriers and facilitators of universal design in housing (see Appendix B for the interview guide).

4.8.2 Homeowner questions

Questions for homeowner interviews varied considerably from those in the survey questionnaire and were based on a single theme: the experience of building a new home and interacting with the construction industry. Of particular interest was their relationship with industry personnel and the ease or otherwise with which they were able to maintain control over the design and construction process. The structure of these interviews was therefore looser than the industry interviews because I basically asked them to tell the story of building their new home. This meant that further questions could not be anticipated, but some possible prompting questions were formulated in
advance in order to focus the conversation if needed (see Appendix B for the questions).

Whilst this project is not claiming to be within the emancipatory research paradigm, or an example of inclusive research practice, note was made of the literature on disability studies because the homeowner interviews deliberately targeted participants living with a disability. Stone and Priestly (1996) claim that disability studies may be using methods that are not suited to revealing or contesting the oppression of people with a disability because the complexities of living with a disability cannot be easily measured with pre-set questions and quantitative statistics. Consequently the choice of unstructured interviews are a better means of giving voice to the experiences of disability (Imrie and Edwards, 2007:631), in this case, building a house.

4.8.3 Recruitment of industry participants

The recruitment of industry participants for in-depth interviews was by a mix of purposive, accidental and snowball sampling. Whilst resource constraints were partially responsible for the sampling strategy, examining a small sample in depth calls for a more targeted approach (Field, et al, 2006:567). By targeting particular individuals it ensured the participation of at least one person from each professional group. It also allowed selection of experienced personnel from different professional backgrounds all of whom were governed by the same regulatory frameworks and similar economic imperatives, and who were also likely to be knowledgeable about the issues in question (Leedy 1997:162).
Using my professional connections I was able to select three or four potential participants to commence the recruitment process. I started with people who, in my experience, were likely to provide good information and who were likely to hold a variety of views or who could recommend a potential participant. At the conclusion of each interview, participants either spontaneously referred me to another potential participant, or in some cases I requested a referral. Participants completed either the survey or an interview, but not both. The process was therefore instigated with purposive sampling and was continued through snowball sampling (Denscombe, 2007:17; Leedy, 1997:204). Whilst this method is pragmatic (Denscombe, 2007:117), it targets a very specific demographic. Therefore, the potential for skewed data in favour of a particular view is acknowledged, as is the potential to jeopardise the transferability of findings to other situations (Lincoln and Guba, 1985).

Interviews took place over a period of five months. There were sixteen industry participants. The decision to limit the number to sixteen was reached by: a) the nature of the comments showing a degree of commonality; and b) difficulty in gaining access to further interviewees. Also, towards the end of the five month data collection period, the Australian Government was making media announcements about the prospect of introducing universal housing guidelines (Commonwealth of Australia, 2010b). I decided to conclude the data collection at this point as I had not planned to include a “before and after” phenomenon. The level of commonality already emerging from both the surveys and the interviews, described as thematic saturation, or interpretive sufficiency
(Charmaz, 2005:528) added weight to this decision (see also Glaser and Strauss, 1995; Strauss and Corbin, 1998).

4.8.4 Recruitment of homeowner participants

As the homeowner survey was not guaranteed to include people with a disability, I decided to approach an advocacy group who could target members known to have recently built a house. Interviews were considered more appropriate than a survey for two reasons. First, it could not be assumed that potential participants could easily fill out a form that would require a high level of narrative response, and second, it was difficult to second-guess the types of questions that would elicit relevant information. As this part of the study was the most exploratory, a contextual feel rather than quantifiable information was sought, and this was best achieved through unstructured interviews where participants could relate their experiences, thoughts and feelings.

4.8.5 Preparation for interviews

For all interviews, initial contact was made either by email or by telephone followed by an email containing a participant information sheet and a consent form. Being introduced by a third party was most likely to elicit a positive response even if it was to pass the request to yet another member of the organisation. However, whilst no request was specifically refused, unintroduced requests were more likely to be ignored. The interviews took place at a pre-arranged time and place and the nominated timeframe for interviews was forty minutes. I was mindful that all interview participants would be taking time out of their working day to participate and forty minutes
was gauged to be sufficient time to gather useful information, but not too great to ask of people who had limited time available.

At the start of each interview I re-iterated the nature of the interview, the expected time it would take, and care for confidentiality and anonymity of the participant. Although each participant was sent an electronic copy of the participant information sheet and consent form, I presented a hard copy of each document at the beginning of the interview process to ensure the participant was in possession of the information, and that I had a consent form ready to be signed. Although agreement to make an audio recording was included in the consent form, verbal consent was confirmed before switching on the digital recording device. Generally, interviews were completed within a forty minute timeframe. However, several interviewees warmed to their topic and stretched the time to fifty minutes, and in two cases, over an hour. When adding time for introductions and pleasantries before and after the interview, the whole process for most interviews took approximately one hour.

At the end of the interviews I explained I would email a transcript to the participant which they could amend by adding or subtracting comments. After one of the early participants returned the transcript with many grammatical corrections to the verbatim transcript, I explained to those following not to concern themselves with such issues, and to focus on the content and meaning. I was also concerned that such corrections would “sanitise” the language and conceal the very attitudes and opinions I was seeking.
4.8.6 Industry interviews

Some participants seemed to assume the interview would take the form of a survey with a structured schedule of questions. In most cases I was able to encourage more conversation-like discussion, but in one particular case the participant clearly expected me to methodically proceed through prepared questions. They responded more as if they were in an examination setting, preferring not to elucidate on their answers. This interview felt more perfunctory than those that went to the other extreme where the conversation ranged far and wide on the topic. Most interviews started with the question “What does the term universal design mean to you?” But some participants did not wait to be cued into the interview and started at a point that was of interest to them. The initial question about the understanding of universal design was either asked later or their understanding emerged as the conversation unfolded. Capitalising on my experience I was able to include into the process what Owens (1982) calls member questions, such as “I’ve heard people say that...”. These referential questions allow synthesis between participant responses.

4.8.7 Homeowner interviews

Using my contacts within a disability advocacy organisation I was able to interview one person who then referred me to another four people who met the criteria of having recently built a new home. Four interviews were conducted at participants’ workplaces and one at the Urban Research Centre. Similarly to the industry interviews, I began by providing a copy of the Participant Information Sheet and a Consent Form for signing followed by an overview of the study,
reiteration of confidentiality and seeking verbal permission to record the interview. Similarly to the industry participants, homeowner participants were taking time out of their working day so the forty minute timeframe was also applied. However, two participants warmed to their topic and the interviews ran for more than one hour.

4.8.8 Transcription and verification of interviews

The digital files of the audio recordings were downloaded onto the UWS computer network and a separate backup drive. As soon as possible after each interview took place, I transcribed the interview into Microsoft Word. The majority of each interview was transcribed verbatim and included my questions and comments. Comments and asides by both parties that were unrelated to the research question were summarised in parentheses. Such editing not only facilitated easier identification of themes and important comments in the analysis phase, but also reduced the size of the transcript for the participant to verify. Final transcripts ran between four to five thousand words and were verified without subtraction to the text, apart from the participant who corrected his grammar. One participant added an extra comment for clarity.

4.9 Survey and interview analysis

Data from both industry and homeowner surveys were entered manually into a proprietary statistical software package, SPSS. Closed questions and multiple choice answer questions were coded during the design phase of the questionnaire. Coding of the open-ended questions providing qualitative data was carried out after responses were analysed for emerging themes. Once all
the data were coded, frequency tables were created and crosstabulations were performed as part of the analysis process. In addition, narrative responses from the questionnaires were analysed for emerging themes and assigned to theme categories in a Microsoft Excel spreadsheet where the content could be further analysed. This also allowed easier comparison with narrative responses in the industry interviews. Paper copy questionnaires were stored in a locked cabinet at the University of Western Sydney, and electronic analysis files stored on the University computer network system and a backup memory device.

4.9.1 In-depth interviews

Electronic versions of all transcripts, both original and corrected versions, together with the audio files were collated in one file and stored on the University's computer network, and a backup memory device. Paper versions of the transcripts were printed with one wide margin to allow for notations and stored in a lever arch file. Consent forms were stored separately in a lever arch file with due regard to the fact that they contained participant names. Care was taken to mask the identity of the participant on each transcript by assigning only interviewee initials and the date of the interview to the document header and the electronic filename. Within the transcript any names of people, places or events that might reveal the identity of the interviewee were parenthesised with a generic notation, for example, [location] and [person].

4.10 Document analysis

Documents can be a rich source of information, and according to Fairclough (2003), are best framed within ethnography in conjunction other analytical
techniques and approaches. They way in which documents are analysed can vary from taking words at face value to searching for the hidden meanings and underlying values. At the simpler level, the content of the document can be broken down into words and phrases which can then be statistically counted and measured, or analysed for themes and categories (Denscombe, 2007:236; Fairclough, 2003:14). At a more complex and theoretical level, the underlying discourses can be analysed by examining the type of language used, the context within which certain words and phrases are used and the juxtaposition of sentences and paragraphs (Chiapello and Fairclough, 2002: 198). The analysis is therefore selective: certain questions are asked of the text and not others. In this case, questions asked of the text relate to the research theme. The subjectivity of this process is evident, but not problematic according to Fairclough because there can be “no such thing as an ‘objective’ analysis of a text...” and to see what is ‘there’ is necessarily limited and partial (2003:14).

Two sets of documents were analysed: one set relating to social housing and one set relating to access to public environments. As part of the Commonwealth Government’s Economic Stimulus Package, funds were made available to build several thousand new dwellings in the social housing sector. Although largely technical in nature, the documents contained directives related to universal housing design and these documents formed the first part of the document analysis. The second part analysed the responses to the public consultation on the proposed Disability (Access to Premises-Building) Standards (hereon referred to as Access to Premises Standard), which consisted of written submissions and transcripts of public hearings held by the Parliament of
Australia. Both sets are considered valid sources of evidence as they are publicly available documents that can be accessed via the Commonwealth Government website and the New South Wales Government website.

4.10.1 Social housing – jobs stimulus package

Three documents were analysed: the Australian Government Social Housing Initiative Guidelines (2009); the call for tenders for the construction of social housing (RES466, Housing NSW, March 2009a); and the Design Requirements Version 6.2.5ip (Housing NSW, July 2009b). The call for tenders for social housing contained several pro-forma returnable schedules, which when completed by the tenderer, formed the basis of the final tender submission. Three schedules were selected from the tender package for analysis: the Statement of Requirements, Returnable Schedule 3, and Returnable Schedule 8. The emphasis of the analysis was on the consistent (or otherwise) use of terminology across the three documents. From this, inferences were drawn on the level of understanding of universal design principles and the consequential impact on housing design. With the later document Design Requirements Version 6.2.5ip, elements of othering and difference became the focus of the analysis. Finally, the documents were compared for similarities and differences, and for any changes in approach to universal housing design between March and July 2009.

After reading the documents three key steps were undertaken: identification of themes for analysis; extraction of key sections related to the themes; and
examination of the words and phrases within those key sections. Table 4.6 shows the steps in the analysis process.

**Table 4.6 Process of Document Analysis**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Select the document to be analysed which has content related to the research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Examine the document and identify items related to housing types</td>
</tr>
<tr>
<td>Step 3</td>
<td>Extract key sections related to housing types and universal housing (paragraphs, phrases, sentences, or words)</td>
</tr>
<tr>
<td>Step 4</td>
<td>Examine each key section (unit of analysis) and identify areas of confluence and contradiction</td>
</tr>
<tr>
<td>Step 5</td>
<td>Interpret the findings</td>
</tr>
</tbody>
</table>

Source: after Denscombe, 2007:237

Various computer software programs are available to analyse document content, but the relatively simple manual method described above was considered sufficient for the level of analysis required in this study.

Quantitative data such as the number of times a word or phrase appears, or the proportionate amount of space given (or not given) to a particular theme is often used in content analysis. Again, this type of quantitative analysis was considered less relevant than seeking to understand the underlying values and assumptions within the document.

Sections of both documents (units of analysis) were extracted on the basis of their connection with three themes: universal design of housing, disability, and ageing. The text content of each section was analysed for keywords and phrases relating to the three themes, and were examined from the perspectives
of difference and othering, exclusion and inclusion, and an understanding of the principles of universal design. Finally, comparisons within and between documents were made.

4.10.2 Access to Premises Standard

As mentioned earlier, the data collection stage coincided with the resurrection of negotiations regarding the Commonwealth Government’s draft public building standard. The aim of the proposed Access to Premises Standard was to marry the practical requirements of the Disability Discrimination Act (Australian Government, 1992) with the Building Code of Australia (Australian Building Codes Board, 1996) in relation to access to public buildings and facilities. The Standard, if adopted, would require changes to the Building Code of Australia (BCA), which would reinforce the rights of people with a disability to gain access to public facilities and buildings. The process involved publicly available written submissions from interested parties, and Parliamentary Committee hearings, which were recorded in the Hansard records.

I examined written submissions from built environment representatives, disability advocates and other individuals, as well as the transcripts of public hearings. Many submissions were not relevant because they focused on amendments to line by line technical details contained within the draft Standard. There were others, however, who either contested or supported the intent of the document. These were considered most relevant and are shown in Table 4.7. The submissions and hearings were analysed similarly to interview
Table 4.7 Access to Premises Standard documents analysed

<table>
<thead>
<tr>
<th>Organisation / Individual</th>
<th>Document analysed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Council of Australia</td>
<td>Written submission and transcript of hearing</td>
</tr>
<tr>
<td>Housing Industry of Australia</td>
<td>Transcript of Hearing</td>
</tr>
<tr>
<td>Master Builders Australia</td>
<td>Written submission and transcript of hearing</td>
</tr>
<tr>
<td>Australian Institute of Architects</td>
<td>Written submission</td>
</tr>
<tr>
<td>Michael Fox, Architect private practice and disability advocate</td>
<td>Transcript of hearing</td>
</tr>
<tr>
<td>Australian Institute of Building Surveyors</td>
<td>Written submission</td>
</tr>
<tr>
<td>Mr Conroy, building surveyor acting in a private capacity</td>
<td>Transcript of hearing</td>
</tr>
<tr>
<td>Disability Council of NSW</td>
<td>Transcript of hearing</td>
</tr>
<tr>
<td>Human Rights and Equal Opportunity Commission</td>
<td>Transcript of hearing</td>
</tr>
</tbody>
</table>

narratives. Support or opposition to the Standard became the main theme and these were later compared with interview themes and survey responses. The process of analysis took a similar form to the social housing documents. The responses of key industry stakeholders were identified from a listing of 146 submissions (House of Representatives Standing Committee, 2009c) and transcripts of two public hearings (ibid. 25 March and 30 March 2009). References to designing universally and support for and against the proposed Standard were identified and analysed. Table 4.8 shows the process of analysis.
Table 4.8: Process of analysis – Access to Premises Standard

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Select the document to be analysed which has content related to the research question</td>
</tr>
<tr>
<td>Step 2</td>
<td>Examine the document and identify items related to key industry stakeholders</td>
</tr>
<tr>
<td>Step 3</td>
<td>Extract key sections related to designing universally, access for people with a disability (paragraphs, phrases, sentences, or words)</td>
</tr>
<tr>
<td>Step 4</td>
<td>Examine each key section (unit of analysis) and identify areas of confluence and contradiction</td>
</tr>
<tr>
<td>Step 5</td>
<td>Interpret the findings</td>
</tr>
</tbody>
</table>

4.11 Triangulation of results

For the industry results, an Excel spreadsheet was used to tabulate themes from all three methods to check the level of triangulation present. Table 4.9 shows the three techniques and where the theme was present.

Table 4.9: Triangulation of three techniques: presence of themes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Interviews</th>
<th>Survey</th>
<th>Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanations of UD</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Design issues</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Design influencers</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Market perceptions</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Disability/Aged housing</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Legislation</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cost issues</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opinion of UD</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Attitudes towards disability</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Language issues</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Barriers to UD</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Facilitators of UD</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
4.12 Related and parallel activities

During the three years of research activity I retained active connections with two community groups: the Age-Friendly Working Group set up by Council on The Ageing (COTA) NSW, and the Australian Network for Universal Housing Design (ANUHD). Both groups contained members who were advocates for ageing and disability, but some were also built environment professionals who supported the concepts of social inclusion from a built environment perspective. These activities allowed me to maintain a dialogue with people involved in current policy debates and they also allowed me to express ideas and gain feedback which was helpful to my thinking processes. I also attended relevant conferences on housing, assistive technology and access consulting which provided opportunities for cross fertilization of ideas.

4.13 Summary

A phenomenological approach incorporating qualitative and quantitative techniques was used in this study. Two populations were selected for the application of a survey questionnaire and in-depth interviewing. The surveys and interviews were supplemented by document analysis for extra contextual insights. The three techniques also provided the basis for data triangulation.

4.13.1 Suitability of the methods

The design of both survey questionnaires resulted in the required data being generated, captured and analysed in a relatively straightforward manner. Mailed questionnaires with a reply paid envelope generally provided a higher response rate for the industry survey than dissemination by email, either
individually or via industry association mailings. The online questionnaire was most suited to those who carry out their daily work using computers (architects for example). There was less resistance to requests for interviews and this is possibly due to the respondent preferring the personal interaction. It may also be due to a perception that an interview provides a better opportunity to explain responses within a particular context. The industry interviews together with the document analysis, particularly that relating to the Access to Premises Standard, provided several insights into issues, attitudes and opinions about designing specifically for people with disabilities. However, the main aim of seeking inhibitors to universal design in housing was achieved through both the survey and interview questions.

The response rate for the homeowner survey was on the low side of acceptability (12.5%), but the thirty responses provided sufficient insights from which to contextualise industry responses. The homeowner interviews provided very personal accounts of building a house and interacting with the house-building industry. The information from both the survey and in-depth interviews also provided insights which could be helpful for further research about consumer design requirements. The verbatim transcripts from the public hearings allowed direct comparison with industry interview transcripts.

4.13.2 Issues arising from the methods

Obtaining access to industry association membership was difficult and was possibly due to the lack of interest in the topic particularly if it was viewed as an ageing and disability issue, and/or a niche market field. Some industry
associations refused to disseminate the survey on the basis that their members are regularly surveyed and there is a survey fatigue factor operating. I used the UWS pro-forma participant consent forms and information sheets, and whilst these were designed to provide efficient passage through the ethics approval process, I suspect they proved unattractive to the intended recipients. One industry questionnaire was returned with a margin comment specifically noting the ‘boring and uninteresting’ way in which the survey was introduced. Consequently, whilst the pro-forma documents may have been expedient, they may not have enhanced the response rate. With the number of market research surveys and member surveys circulating, particularly online, it is essential that the interest of respondents is captured instantly. I do not feel this was achieved with the documentation used.

In terms of document analysis the focus was on reporting and interpreting the realities of the participants rather than analysing the structural relationships of dominance and power, which is a feature of critical discourse analysis (Fairclough, 1992). Nevertheless, applying critical discourse analysis poses itself as a contender for further research and analysis. Finally, as with all financially limited studies, more interviews and survey responses would have also strengthened the project.

4.14 Conclusions - methodology and methods

The aim of the study was to identify the barriers to universal design in housing and why they exist. An interpretive ontological framework was used and the information was gathered and analysed using a phenomenological perspective.
This allowed me to investigate opinions of and attitudes to universal design, perceptions of the housing market in relation to disability and ageing, and in particular, the perceived barriers to implementing universal design in housing. Inasmuch as it is possible in a small scale study, this was achieved. The three techniques used (survey questionnaires, in-depth interviews and document analysis) provided comparable results. Quantitative data, other than demographic information, helped confirm the presence and importance of themes.

Assessing the trustworthiness or authenticity of interpretivist research is measured differently to positivist methods (Owens, 1982; Lincoln and Guba, 2005, Bryman, 2008). An interpretivist study can be credible (valid), that is, the situation is recognised by the reader as similar to their own experience; it can be dependable (reliable), that is a clear account of the research process is given; and it can be transferable (generalisable), that is, the findings fit contexts beyond the immediate study situation (Lincoln and Guba, 1985, 2005). All attempts were made to provide sufficient information in this chapter to provide evidence of dependability, and to assist with the credibility and transferability of the findings which follow in the next three chapters. First the industry results and findings are presented, followed by the findings from the document analysis, and finally the homeowner results and findings are presented.
5 INDUSTRY PERSPECTIVES

Sixty two survey responses were received and sixteen in-depth interviews were carried out. Although the response rate for the survey was relatively low, the responses largely fell into two groupings – those in favour of universal design in housing, and those not. The interview results are presented first, followed by information gained from the survey. The results of both are then discussed.

5.1 In-depth interviews

The sixteen in-depth interviews with industry participants were analysed for themes and then specific content. The main themes were: design, marketing, legislation, costs, influencers of design, and barriers and facilitators of universal design in housing. Social housing and overseas experiences were also included, but to a lesser degree. Before looking at these themes in greater depth, participants’ explanations of universal design are explored.

5.1.1 Explanations of universal design

Most participants gave two interpretations of universal design – one from their own perspective and one from an industry perspective. Some of the key words in the personal interpretation included: everybody, whole life, life cycle, flexible and adaptability. Many participants gave an explanation without using terminology specifying ageing or disability. Participants couched universal design in terms such as “used by as many people as possible”; “something you can use for all your life”; “it applies to everyone as they go through stages of
life”; “accommodate people through their full life cycle”; and “for most users with different abilities”. Overall, most participants gave a general explanation that demonstrated a fair understanding of the underlying principles of universal design. One participant admitted that it was the call for tenders by Housing NSW (2009) that brought the concept to her attention:

“I was generally interested in the social aspects of architecture... but to hear of it as a concept was when the government asked for universal housing as fifty percent of the housing provided under the Stimulus Package.”

Architect: project home builder

While participants were able to give a fair interpretation of universal design, some thought others in their organisation or industry did not understand:

“I suggest if you ask anyone else in this organisation they wouldn’t know – I don’t think it is commonly used in the industry. Professionals such as architects would know about it.”

Business Development Manager: project home builder

“The first response we get is ‘what’s that?’...obviously people start to understand... they think it is a good thing – it is hard for people to disagree with it in principle.”

Manager: land developer

“Can I say, universal design is virtually unknown in the industry. It is not something that enters into our practice ... universal design just hasn’t come into any of the proposals we deal with.”

Urban Planner: private practice

This last comment by the Urban Planner is interesting because during the interview he said he had dealt with aged housing and residential care
developments as a consultant planner. It is likely therefore that he is familiar
with the terms adaptable and accessible. Indeed his explanation of universal
design was making “the building more efficient and more easily adapted for
senior persons”. Given his regular interactions with local government planning
personnel in various localities, this could be a sign that the term is not used at
local government level and less so by his peers. This was emphasised by an
unsolicited email from a parent of a child with a disability who was seeking
information for “…families preparing for ageing/unforseen scenarios and
current living conditions and creating housing which meets a variety of needs.”
The parent had found my name through an internet search (which found
Bringolf, 2009). In her email she explained her experience with her local council
thus:

“I drew a deep breath and called Brisbane City Council. I was on the
phone for 40 minutes getting passed from contact centre to urban
planning to development departments. No one knew what universal
design was. A town planner asked me if I was talking about setbacks. No
one was interested in talking to me about how to go about
planning/preparing the properties to meet Council requirements in
relation specifically to changing/flexible housing requirements ...

Personal email communication (4 January 2010)

A few participants, who appeared to support universal design in housing,
expressed a little frustration that others did not understand the underpinning
concept or appreciate the benefits:

“We talk about universal design, or design-for-all as an added extra and
it shouldn't be... Think about how we live and how big spaces should
be....”

Architect: large property developer
“I think there is this attitude that universal housing is just for people in wheelchairs or with a disability, but of course it is not...”

Principal: design and construct firm

The level of education and understanding in the industry, and the way in which standards and regulations are applied were the source of frustration for one architect. His comment also alludes to an association between the lack of understanding in the industry and the formulation of legislation and regulations:

“[I]n the industry there is a huge stock of dwellings... we haven't got the tools, the design skills or capacity or understanding to make existing housing more useful in the long term. I think there is an attitude of, oh, people adapt to the housing as they get older, and if they struggle you put a hand rail in – and OK, then you die [laughs]. So I think that’s reflected in legislation, the BCA legislation, AS4299, 1428 – there’s no real drivers apart from that. There are very few models around to say this is what universal design looks like and this is what it costs – not understanding anything that’s required beyond the code.”

Architect A: private practice

Issues relating to the structure of the housing market and existing housing were raised in other comments. However, this is where the context of some participant’s personal interpretation of universal design deviated from inclusive to separate:

“I think industry targets their product to the target market that they are looking for... and there's probably not that many housing providers targeting new housing to people with access difficulties.”

Planner: local government
“I think we are designing enough housing which enables people to age in place. The industry’s talking about it a lot. The volume’s the baby boomers [so] obviously [that’s] where the money will continue to be made.”

Manager: industry association

The continuation of separate housing for different ages and capabilities and the continuation of housing products aimed at different market segments is clearly supported by this participant. Nonetheless, design compromises are often made to accommodate a variety of regulations:

“[My] job is to ... come up with a reasonable outcome. In my opinion, and I stress, my opinion, sometimes the universal housing needs to drop away to create better urban outcomes. I do stress this should be in the vast minority of cases, but [universal design] shouldn’t be an absolute.”

Design Manager: land developer

The last comment indicates a more holistic approach noting that the ‘absolutes’ of a universal design code may actually work against other design issues and produce less than optimal designs. The comment also reinforces one of the underpinning concepts of universal design: to apply the principles wherever possible and practical. Universal design was intended to be flexible: to include those features that are possible and to continue seeking ways of overcoming more difficult design issues.

Summary of definitions

Although many participants were able to give a reasonable definition of universal design, there was a division between those who were able to see how
it could be incorporated into everyday house design, and those who thought it should not be applied to every new dwelling. Those who supported the incorporation of universal design thought a little more design forethought was needed, while those who disagreed claimed site constraints (such as steeply sloping blocks), made universal design impossible.

Although reasonable descriptions of universal design were given, the principles did not underpin the remainder of the interview content. Discrete housing designs for particular groups and ordinances for adaptable housing were discussed interchangeably with universal design. This indicates a likelihood that almost all participants checked for an ‘official’ definition before my arrival rather than having a working knowledge of the concepts or how they could be applied at the design stage. A further indicator is the belief that colleagues would not understand universal design in the same way.

5.1.2 Issues of design

During several interviews specific designs entered into the conversation, some sketched items or showed plan drawings to emphasise a point. The issue of steep sites was raised several times, explicitly claiming that steeply sloping land and other site constraints should automatically preclude the inclusion of universal design principles:

“It’s more to do with universal housing being more appropriate on some sites that others, and the constraints of some sites have to be considered.”

Manager: land developer
“There are flat sites, and in Sydney there are a lot of steep sites, and we have to be careful not to add a lot of cost to site that might have a forty five degree slope. Some blocks just aren’t suitable.”

Business Development Manager: project home builder

Apart from site constraints, the issue of professional constraints was also raised because the role of architects is to coordinate the many specialist detailed design services to meet all necessary ordinances, as well as maintaining client satisfaction. Consequently this participant felt it was impossible to consider anything that wasn’t mandated either by regulations or the client’s desires:

“In the business of building design and architecture we have so many things to be aware of and think about and we struggle to match the client brief, their designs, council, staffing issues, checking the drawings – anything we are not forced to do either by legislation or to keep the client happy, we don’t do … smart architects and designers are organisers…”

Architect B: private practice

Architect B’s practice was largely based on aged care and retirement living projects. Based on his experience he assumed that any inclusions suited to older people and people with disabilities required the involvement of an access consultant, thereby adding unnecessary consultant costs to a house building project. The contention that architects are the coordinators of many decisions was supported by another participant who said that there are many elements to consider, and claimed there were up to 80,000 design decisions on every dwelling. Together with Architect B’s comment about the myriad of factors to consider, it appears that house design is less of a creative endeavour and more of a compliance exercise.
However, the architectural skills were seen as essential to good house design with one participant lamenting that many single dwelling homes are not designed by architects. He explained that if architects designed project homes there might be better outcomes for both functionality and energy efficiency:

“Unfortunately much of the housing stock is designed by builders or developers who don’t engage with architects. And so… immediately you compromise the design, you compromise on strategy about how a building might be used over a period of time. ... Why can’t project home builders use good young architects with good design ideas? Then you can inject some of these things.”

Architect: large property developer

Another participant also claimed poor design outcomes were partly due to lack of involvement by architects. However this was seen as an “indictment on the architecture profession and the professional building industry, not the builders.” He went on to say that Australians, unlike Europeans, are averse to having their homes looking the same as their neighbours, but the similarity between new Australian homes was greater than most home buyers suspected:

“The facades might be different and they change the colours, but actually when you look at it, it’s the same – they are all very similar.”

Design Manager, land developer

Another sub-theme emerged within the issue of design and that was the influence of legislation and how the current standards and regulations focus on disability and ageing rather than a universal approach, and perhaps even preventing such an approach:
“[With legislation] there is considerable focus on disability and no sense of just making life easier for people, say, with minor disabilities and I think this is a bit of a concern. “

Architect A: private practice

A further issue is that such standards and regulations may not be entirely suitable for general housing. However, builders and designers are introduced to AS1428.1 (public access standard) and AS4299 (adaptable housing) through local council development control plans (DCPs) and/or state planning policy (SEPP Seniors Living). From that point forward such documents are consulted even when it is not a council requirement, or even an individual wheelchair user’s requirement. This was apparent in the homeowner interview with Sam presented in the background chapter. Sam thought he had to comply with AS1428.1 and so he “didn’t lodge to council that it was a disabled bathroom”.

The suitability of public access standards and adaptable housing in all instances is not always appropriate or necessary:

"We do need circulation space and level entry, and wider doors are good, but extra wide doors to AS1428 are over the top, although it does depend on your angle of approach. Wide doors take up too much space in a room. Builders will tell you that ramps must be 1:14 but it depends on how strong you are. It’s stipulated [in AS1428] at 1:14 and that’s what you get. Not everyone needs knee space under the kitchen bench. Someone else does the cooking and some people approach the benches side-on because that is the way they operate."

Staff member: disability advocacy group
This last comment was supported by an access consultant of longstanding who has a working knowledge of how people with different capabilities utilise the space and fittings within their homes. The adaptable housing standard provides a design where the toilet is a separate room adjoining the bathroom. The instructions show that the wall between the toilet and the bathroom can be easily removed because it contains no plumbing or electrical conduits. I asked why the wall should be there in the first place – why design it to be removed in a ‘seniors dwelling’?

“That was my problem with it too. I mean it’s a pokey little alcove to come in, you’re coming straight in towards the shower area, which they assume will not have any kind of screen around it, but then these days it is not a good assumption ... they haven’t looked at how a person in a wheelchair [would manoeuvre].”

Access Consultant: private practice

The issue of the kitchen was also discussed in relation to the adaptable housing standard, and once again the issue of designing based on assumptions rather than research emerged:

“I don’t see any need to provide accessible kitchens from the word go because it’s always been my opinion, that particularly in aged care housing, that if one person acquires a disability they are not going to be the main user of the kitchen. I don’t think they need the amount of access in the kitchen that adaptable housing suggests.”

Access Consultant: private practice

The issue of kitchen design was also raised by an architect involved in social housing. A kitchen designed to the adaptable housing standard consumes additional floor space and it was realised that by avoiding a ‘C’ shaped kitchen
and using space on one wall only, the saved space could be allocated to
circulation space elsewhere. It is more cost effective to have generally
accessible kitchens with flexible circulation space than to comply with a
standard that created higher levels of accessibility than were really necessary.
The architect commented that the housing authority is “trying to get enough
built rather than over-engineer the one thing” and should the kitchen need to be
redesigned, it could be better designed around the particular tenant at the time.
However, re-fitting a kitchen is the responsibility of the maintenance section
whereas the initial build is a capital expense. This caused some conflict
between the different sections of the housing authority and the budget became
the issue rather than the actual kitchen design. The architect explained it thus:

“The adaptable kitchen has been the hardest to change. Kitchens only
have a certain life anyhow, so it is better to lose a kitchen now and again.
It was more to do with which budget the cost was assigned to – capital or
maintenance.”

Architect: social housing authority

Using just one wall for the kitchen was a design favoured by the principal of a
small design and construct firm focusing on affordable housing. They had
“sacrificed the traditional Australian kitchen to a wall kitchen” because the
space is more accessible and flexible. For example, a kitchen table can double as
a low height working space for someone sitting rather than having under-bench
knee space provided as the adaptable housing standard suggests. Again, the
opinion was that kitchens have a limited life and are replaced every ten to
fifteen years, so if a particular design is needed, it is better to design it to suit
the needs of individual occupants as and when needed.
Designing around the needs of the occupants and the real lives of people was raised by four participants. The comments ranged from spatial and structural design requirements to how design can affect the way in which people live out their lives. One participant specifically mentioned the twelve spatial and structural requirements put forward in the Landcom Guidelines (2008) as being a reasonable idea:

“...if you get the twelve spatial and structural requirements right, level access etc., I can’t understand why we can’t have that.”

Access Consultant: private practice

Another participant agreed with this and added that the context of the home, the way it is situated on the site as well as easy access to facilities such as shops and transport all need to be considered

“Instead of worrying about whether there are lever handles or round knobs, we’re taking a step back and saying what are the spaces required, what are the external facilities required - what’s the concept of the shelter rather than concentrating on the detail. The detail we can do, but if you haven’t got the space, you’ll never get the detail. It’s spatial and it’s about relationship with surrounds.

Principal: design and construct firm

The need for a shift in design thinking was raised by two architects. Designing buildings to suit people, rather than people needing to adapt to buildings particularly as they age was put this way:

“[There is] the assumption that people can adapt to environments, but I think with increasing age and illness and disability, that as you get older that’s not so easy, and I think the reverse has to happen, so now buildings will have to start adapting to humans.”

Architect A: private practice.
In one participant’s practice, ensuring the well being and the functionality of occupants is now considered part of the safety aspects. Being able to accommodate the needs of three generations in one house was also discussed. The concept of having a bedroom and full bathroom on the ground floor of a two storey home, a concept promoted by Landcom (2008), was specifically mentioned:

“I used to have a lot of migrant clients and I could see that it’s a very common occurrence for [family members] coming to stay for a couple of months, and how can elderly people manage? I have been telling the company and they took it on board slowly and now we actually have an option in the homes with a bedroom next to a full bathroom - or it could be converted to a full bathroom - on the ground floor. We looked at stairs to make sure there was enough landing space ... so you can put in a stairlift in the future. Those were things we didn't give thought to when designing before.

Architect: project home builder

This particular participant recalled the difficulties of gaining acceptance of new ideas and discussed her change strategies at length. Including greater accessibility under the banner of safety, she was able to gain the interest of senior management. She explained that the company is attempting to design homes for the future so new ideas are more likely to be considered. Nevertheless, new ideas must be presented within the framework of management’s experience otherwise they are likely to be dismissed: “If [management] are not educated on those things they automatically don’t seem important to them.”
This participant also related her personal experience: “a lot of elderly people don’t come to our place because they cannot get up the stairs, so my home is actually dictating who I socialise with.” She continued the theme by saying that with housing that is more accessible “society in general will improve because there is more interaction with the people in your life.” Such comments might be encouraging to supporters of the universal design movement, but there is still the issue of stigma to overcome in some quarters. The following comment on design epitomises the idea that universal design is ugly design:

“[T]here’s the issue of how you design things [that are] attractive enough to a purchaser now, but functionally will work for them a decade later... I’ve had [people] say the last thing a sixty-year-old retiree wants is some God-awful design in their premises. You want something to be proud of if you are still physically able. “

Manager: industry association

The implicit assumption here is that pride and ageing are, and should remain, mutually exclusive domains and that physical disablement automatically means a loss of aesthetics. The public environment with its “disabled” facilities does not, unfortunately, provide many aesthetically pleasing examples to counter this notion.

Summary of design issues

Issues with design features were unsurprisingly part of all interviews. Some were discussed in detail, such as including the ability to incorporate a full bathroom on the ground floor, and providing access on a steeply sloping site. A
common theme was the mixing of concepts – adaptable, accessible and universal, all of which had an influence on perceptions of designing universally. There was a division between those who could see the benefits and felt they could design around any difficulties, and others who felt special housing is a more appropriate response.

5.1.3 Influence of designs in the public domain

The Australian Network for Universal Housing Design (ANUHD) is an informal group of interested individuals who are keen to promote a set of universal features similar to those developed by Landcom (2008). The group has been successful in maintaining a prominent position in government circles and was invited by the Australian Government to participate in negotiations with industry players to develop a process and/or code to have all new homes universally designed by 2020 (Australian Human Rights Commission, 2009). However the particular ANUHD representatives at the universal housing negotiation table are also employees of the New South Wales Government’s Disability Council and in that role they were present at the extended negotiations for the proposed Access to Premises Standard for public buildings. (More detail about these negotiations is provided in the document analysis chapter). The dual role of these personnel not only has the potential to confuse universal housing design with disability access in the public domain, it also makes challenging industry perceptions about additional costs associated with universal design more difficult. When asked about the perception of costs of universal design, this participant related his response to the negotiations
surrounding the Access to Premises standard with particular reference to
disability advocacy groups:

“So there’s all these crazy ideas, which, um, which were impractical in
nature and hugely costly – the cost far outweighed the benefits to
society, um, for these sorts of places, so you know, the process was sort
of putting some reality check back in ... you’ve really got to look at what’s
practical ... you know, it’s a cost ... so you know, there is a reality of
defending the industry against good natured proposals from [the
disability and ageing sector].”

Manager: industry association.

This participant continued his reference to the negotiations and put the case
that too much was being demanded by disability advocates:

“The discussion, the negotiation, around some of the BCA requirements
and the disability standard, you know, these things have always
depended on bargaining exercises. So what the disability lobby pushed
for was some really crazy things to existing buildings ... [so you need] a
fair bit of reality when everyone is represented around the negotiating
table on draft regulations and things start off pretty whacky.”

Manager: industry association

Fears of cost increases engendered by concern that negotiations with disability
advocates start off “pretty whacky” are assumed in this case to apply to
everything that has a connection with disability. In the eyes of this participant,
a representative of an association of industry players, the two endeavours of
universal design and disability access merge into one.
Another participant who was also involved in the process of developing the Access to Premises Standard said:

“I think there are some in the industry, and I mean the universal housing industry, and not necessarily the development industry, who think it must be for everybody, and that’s the meaning of universal, but they rigidly stick to everything must be universal, whereas I come from the point of view that the majority of things should be universal, but not everything MUST be. I differ from them in that – universal housing people, the focus of what they are doing is always on that – universal housing.”

Design Manager: land developer

This design manager identified a separate “universal housing industry”, implying that universal design should be applied when convenient rather than in all instances. However, there are many influences on design outcomes, more than the disability and universal housing lobby groups could exert.

5.1.4 Influencers of design

There was no overall agreement about which profession or institution has primary control over design because design was influenced by a variety of factors. Consumers were mentioned most often as being influential to the extent that they choose whether or not to buy the product, rather than having any input into or influence over the design of project homes:

“All too often the customer doesn’t know what they do not know. Hence, customers keep buying the same homes and the builders are happy to keep selling them.”

Design Manager: property developer
Support for the notion reported earlier that architects are coordinators and administrators of a process came from this participant when asked who had the most influence over housing design:

[C]ertainly not the architect - in these situations it is a building designer, and to that extent it isn't the building designer ... he's more of an administrator of all these different things coming together. They're not the same as an architect in control and creating something - they are just managing a process. We select which builders come in and what homes they build. So in that sense we are influential in what homes get built on our project.”

Manager: property developer

The role of the property developer was not underplayed in this comment, and this was expressed by yet another participant who included the role of quantity surveyors as cost analysers and de facto design drivers:

“The developer – he's got the money and he pays for it. Without his influence it won't happen. [Architects] can make suggestions or recommendations. ... Quantity surveyors – they're the ones that drive the system. If [larger] doors are a bit pricey then they won't have them. They are definitely the drivers.”

Architect A: private practice

The way in which the developer creates the landscape and shapes block sizes in a large development was of particular concern to one participant who lamented the lack of understanding or lack of consideration by developers so that more sustainable features, including universal design, could be included:

“Site division, land planning, whatever you like to call it, is firmly stuck in the eighteenth century. ...people don't really 'read' land or topographical maps very well, and they certainly have no consideration for solar access
or other things. So what you end up with is the most efficient, the best deal for the land parcel you're going to get – and that's end of story. ... I'm not saying people shouldn't make a profit out of land [but they should be] more rigorous, more sustainable."

Architect: property developer

The profit motive was put more succinctly by another, reinforcing the previous view:

It's [the developer's] product, it's their money, it's their gamble, it's their risk. It's their show. [Developers] should be having a lot of say in what it's like.

Manager: industry association

According to one participant, if an architect is employed by a project home builder it is likely that their role is to add value rather than process drawings. As such, senior management will be expecting, and even demanding, new ideas. However, the way an architect presents new ideas is critical to their success in introducing changes, particularly if management is faced with entirely new concepts:

“As designers we can introduce these things which look like they are standard and show the benefits in the ways that the company wants to see - that's where our scope of control is. ... Management are looking for choices and options from professionals and we can put forward better solutions so they have better things to choose from. I think that is within our control. If [management] are not educated on those things they automatically don't seem important to them - it is about changing attitudes and educating.”

Architect: project home builder
Presenting a new idea in a way that fits the strategic aims of the company and within the frame of reference understood by senior management was obviously important. In terms of specific design features, the influence of market trends and market demand arose, but the difficulty with the diffusion method of design development is that the style may look attractive, but it may lack functionality:

“A new trend in architecture feeds through. How trends evolve, I suspect, architects at the high end of design may be designing certain features which translate into the mass housing market ... if a design is successful, others will follow. If people like it, people ask for it and we respond to that design - it is hard to know exactly where it all comes from.”

Business Development Manager: project home builder

The staff member of a disability advocacy group summed up the situation succinctly about who has, or should have, control over design:

“It should be the user or the person outlaying the money for it. The developer is concerned about ‘what money am I going to get’. The architect makes it look pretty and aesthetically pleasing, so the architect should be the one to build in the accessibility. The local council to a certain extent: they decide what is to be built and what percentages go where.”

Staff member: disability advocacy group

The role of local council planners in influencing design was raised by two other participants:

“Architects have control over design to the extent to which they can within the planning controls of a particular area. ... You need [to influence] planners because the planners in most councils write the
controls, and often they have little design skill. Sometimes they are disastrous.”

   Urban Designer: private practice

“...the next greatest influencers are law makers, being regulations and planning controls. I am a believer that government intervention should be rare and when it does occur it should be swift and achievable.”

   Design Manager: property developer

Trades personnel were included as design influencers to the extent that their training and skill might limit changes to construction processes. Of particular concern was the need for repetition – doing a task in one particular way:

“It’s always high pressure: they just want to move stuff quickly. The project home industry gets its efficiencies with standardisation and the industry practice at the moment, whatever it is. There is an order in which the trades come and do the work. This is what the construction people say, and this all adds up to extra cost over standard ... but it also means a lot of disruption to their normal practices – that’s where they are coming from. The thing is, the designers can put down everything they want but the construction department say they can’t do it because it’s going to cost money.”

   Architect: project home builder

This architect is implying that the cost is not in materials but in time taken to up-skill trades personnel and the expectations (based on experience) that mistakes will be made if the design moves outside ‘normal’ practice. Rectifying such mistakes also adds to the costs. If tasks are always done the same way then logically, this must influence the way designers work around trade
processes and skill levels. The perpetuation of old ideas is maintained and perhaps even reinforced by the training system:

“The training is all craft industry approach, which is not necessarily a bad thing, but it does entrench habitual ways of doing things... It’s all based on what is commonly known as good building practice that’s evolved over a long period of time and always been accepted. ... that’s why it’s survived for so long as a craft industry.”

Architect A: private practice

“It is more about the mindset of the builder - this is how I’ve always done it, this is how my grandfather taught me how to do it.”

Staff member: disability advocacy group

Summary of design influencers

According to the responses, architects control designs inasmuch as they must fulfil the client brief and manage a process, but they are not usually employed by project home builders who prefer to engage building designers to process drawings. Where architects are employed, they are expected to add value to the whole business rather than deal with individual designs. However, new ideas must fit within senior management’s exiting frame of reference otherwise they are likely to be dismissed. Property developers were specifically cited by three participants as having the most influence over design – “it’s their product, their risk” – and the trend is for developers to choose which builders and what designs to include in their housing developments. The way developers shape and size housing plots and the way local council planners place limits through development control plans can also influence overall design parameters. The skill levels of trade personnel were also cited as having an influence.
Consumers were most often cited as having the most influence over design by showing a preference for one design over another.

### 5.1.5 Comments about the market and marketing

Several participants blamed the lack of consumer demand for the absence of universal design. The ‘invisibility’ of people with disabilities as explained in Chapter Three may help explain this because it might not be well known that they form twenty percent of the population. As one participant said in surprise:

"Twenty percent of the population has a disability? I didn’t realise."

Architect B: private practice

It is unknown how many other participants were aware of the proportion of the population with a disability because it was not raised in any other interviews. Apart from not being aware of the figures, the way in which the selling process takes place may also have a bearing on perceived lack of demand.

Consumers choose a new home design from a row of display homes in the same way they might choose a new car from a car showroom. Cosmetic changes are offered along with optional extras such as upgrading to a designer tap or a chic front door. As far as industry is concerned, ‘off the shelf’ house products offered to consumers are largely accepted:

"Most people that buy them like them, and you can’t argue with that."

Design Manager: property developer
In speaking of the project home market, one architect claimed a consumer’s idea of value for money is the largest house for the least cost. Consequently design quality was a secondary consideration:

“[Project homes are] worse and worse quality, more and more energy use, bigger and bigger homes - why are homes bigger? I will tell you because ... people choose [the larger home] because they think they are getting better value - that’s the free market.”

Architect B: private practice

The industry claim that there is no demand for universal design is easily made when the test of consumer demand is preference buying rather than asking for particular design features:

“Not that we are not in tune, but the demand for universal housing is not there. People aren’t asking for it and therefore it doesn’t get built.”

Business Development Manager: project home builder

If consumers are to demand universal design they must first know what to ask for and one participant thought this could be achieved by constructing demonstration homes showing that they looked the same as any other home. It was expected that consumers would then create the necessary demand:

“Industry provides what the market wants so it is a matter of educating the market by demonstration and then the market will ask for it. ...The market won’t ask for it unless it is actually there.”

Manager: land developer

However, to assume the education of home buyers is the key to implementing universally designed homes is to also assume that such homes are desired by consumers. This may be the case if they see that a universally designed home
costs no more, is attractive, and looks no different to any other home. The following comments by four different participants illustrate the issue of denial of human frailty and the desire to stay removed from concepts of inability and reduced capacity:

When we did some research with people sixty five plus years on what we termed at the time ‘housing for older people’, the first thing we learned was ‘we are not older’. And they were all very active and many were still working.”

Manager: land developer

“What I have learned is that no-one is disabled – not even when you are ninety and cannot get up the stairs.” With our phone calls, any mention of disabled access is a conversation stopper – even when we are discussing accommodation for parents.”

Principal: design and construct firm

“Baby boomers are big on redefining themselves. So [they say] OK, well, I’m sixty, but sixty’s young. Probably an element of presenting a bit of a lifestyle upside and you’re invincible.”

Manager: industry association

“I think at that point of time in [the lives of young families] the concept of being restricted in access is not something that’s high in their mind. It’s not important to them at that part of their lifecycle, and they don’t really care about that – it is not something that is strong in their mind at that point of purchase.”

Planner: local government
On the assumption that universal design is a different housing type, some fear was expressed about offering what they assumed to be a different product in a competitive marketplace:

“We can provide, but cannot lose out on business if clients are not asking for it and other companies are not doing it.”

Architect: project home builder

“We are not going to do things that disadvantage us in a competitive market. As long as everyone is on the same playing field then we’re happy to play on it...”

Design Manager: property developer

As the earlier extracts show, housing was discussed throughout the interviews as a product to be placed in the marketplace in the same way as any other product. Particular market segments are targeted with specifically designed products. The long standing marketing theories of market segmentation and product development are difficult to overcome if universal design is perceived as ‘one size fits all’. The aim of the interviews was to ascertain current views within the industry so little, if any, additional information about universal design was provided unless it was specifically requested. Consequently the possibility of incorporating universal design principles into each of their products was not canvassed. Several participants were therefore keen to defend their existing position in targeting various market segments:

“You do different products, different developments for different markets... and what those markets are telling you [universal design] is not a big consideration you need to factor into developments.”

Manager: industry association
“I think industry targets their product to the target market that they are looking for. There’s probably not that many housing providers that are targeting new housing to people with access difficulties. Looking at new greenfield housing, my perception of it would be that it’s kind of geared to newly-weds and young families.”

Planner: local government

There was an implicit assumption that when one housing product ceases to be functional, a new one would be purchased, and it followed therefore that retirement living accommodation of one type or another would be chosen once consumers reached older age:

“It is probably better to move rather than alter their house to suit their changing needs. I don’t support the concept that older people with disabilities who are struggling [should stay home]. But at the same time I would like to see that older person have a viable option of a place to go that suits their needs better...”

Architect B: private practice

“One day they’ll get to the stage where they can’t run that house anymore and either need to spend more on assistance – that’s one way to do it. The other is, forget this, I’m going to go out and buy a little townhouse and have a different lifestyle – a little apartment somewhere.”

Manager: industry association

The idea of apartment living for older people was also expressed by another who said that retirement villages and resorts were not doing well because people in their fifties were too young to move into retirement villages and instead the wealthy ones are buying million dollar apartments with water views:
“The wealthy ones – that whole sixty to ninety group – are buying straight out apartments. What we need to be doing is producing more of that housing stock.”

Architect B: private practice

However, apartments are not the solution in all cases. Either the building is not fully accessible or people are unwilling or unable to move from their current home:

“Older people are moving to apartment blocks with lifts, but just because they have a lift doesn’t mean they have good access in the apartment or into the gardens”

Planner: local government

“People don’t want to move and I see it’s also linked with their social structures.”

Architect: project home builder

“They are so resistant to moving – I can’t tell you. ...When you’ve lived somewhere for thirty years you feel very safe and comfortable even though it’s not the right environment for you.”

Staff member: ageing advocacy group

Summary of market perceptions

Throughout the interviews the language of the marketing profession was used liberally. Housing is a product: that much was made very clear and prevented the concepts of universal design from being understood outside the context of aged care housing and accommodation. Product development to suit different market segments underpinned many responses and this meant that universal design could only be understood within this framework.
The emphasis was on consumers – no demand means no changes to current designs – particularly if “most people who buy them, like them”. The industry believes it is meeting market demands with its current products because consumer dissent is absent. With no apparent demand for universal design, particularly as a discreet product, the industry is not going to make a product it perceives no-one wants. The target market is largely younger people, who it is assumed are going to be physically fit and well for many years. Older people in particular are seen as a separate market which it is assumed will be satisfied by the provision of retirement villages and resorts. Those unable to participate in the private market are deemed to be the responsibility of governments and social housing programs. In short, in marketing terms, the industry provides different products for different market segments and any market research is framed from this perspective.

5.1.6 Legislation

Legislation in this context refers to the Building Code of Australia (BCA), state planning policies and local council ordinances. Many agreed legislation, in some form, was the only way to bring about any changes to the way the industry might incorporate any notions of universal design:

“So when you introduce regulatory change, it affects their business. But my argument would be as long as affects them all at the same time.”

Design Manager: property developer

“I just think a voluntary code is a waste of time. It’s going to have to be legislated to make us do anything in terms of housing.”

Architect B: private practice
“For mass markets, yes [we need regulations]. I think it’s really powerful. That’s what holds them back because, for innovative companies it doesn’t matter because they are willing to take on some risk, ... I think regulations are really important [in the context of] a level playing field.”

Architect: project home builder

The issue of legislation was not favoured by all, largely because it was felt the industry is already over-regulated or that regulations are inconsistent and sometimes contradictory:

“Designers are already over regulated ... another standard just makes the design a little bit more involved – makes it cost a little bit more and that makes the process a little more difficult.”

Planner: private practice

"We are already dealing with a lot of requirements for different councils. If there is another policy we have to design to, that’s fine. Where we get a little bit worried is when we have conflicting policies [where] it might be a disability DCP that’s asking for certain circulation spaces [and then] you have another policy that councils have which restricts the size of the building.”

Business Development Manager: project home builder

“What the legislation says and what the council accepts might be two different things.”

Planner: private practice

The last two comments raise the issue of conflicts within and between current legislation and planning policies. This was explained more fully thus:

“For a mass housing producer like us it is very difficult. I can’t emphasise that more strongly. One of the biggest problems we’ve got in our business is that what we build in one suburb we can’t build in
another. It is like being in a different car for different suburbs. It needs to be a consistent approach throughout the state, not an ad hoc approach.”

Business Development Manager: project home builder

The last part of the comment is a reflection on the power of local governments to make their own determinations at a local level, which according to one participant is subject to political interference from time to time:

“My problem with councils is when it is left to local councillors and the people they instruct, that is, their planners and building surveyors. There is absolutely no reason why any alderman or councillor should ever agree to any change, because by agreeing to any change they are creating angst. They are [concerned about] their voting base, so they have to say no to maintain their current voting base.”

Principal: design and construct firm

The last comment also raises a different but related point – the issue of certainty for the construction industry. Legislation offers certainty in most instances, but it is not always the case. One participant felt that government authorities were not well coordinated or sure how to manage some of the policies and regulations:

“On one level there’s been a continuing focus on building regulations and the need to design new buildings with certainty. There’s also government initiatives that work against the provision of this. I guess the key is not to be silly about the regulations to make sure the costs don’t outweigh the benefits”

Manager: industry association
Then there were others who thought more regulation in terms of universal
design was not the way to proceed because it can be too prescriptive and
constrain creative design responses:

“Guidelines rather than rules would be better. AS1428 is too literal, tries
to cover everybody and doesn’t meet the needs of anyone. ... What we
need are standards that protect the industry from litigation. They need
risk minimisation even if they don’t know whether it’s going to be a
problem.”

Staff member: disability advocacy group

“[Regulations] are not the best way to go. Industry provides what the
market wants... it would be better for industry to do it on their own, not
because they have to.”

Manager: land developer

The existing adaptable housing standard, which was published in 1995, was
also discussed as a useful document, but not altogether helpful and may be in
urgent need of revision:

“[The adaptable housing standard] is a fairly direct document... but it
doesn’t capture the bigger picture. [Legislation] is useful but it doesn’t
educate people – all you need to do is tick the box.”

Architect A: private practice

“Yes, absolutely the adaptable housing standard is too complicated.
When they started the revision it went on and on and then [work on]
AS1428.1 took over.”

Access consultant: private practice

“AS4299 calls up a lot of dimensional requirements from AS1428.1
which are considered suspect, but [it has brought some improvements].”

Architect: social housing authority
Summary of legislation

Several participants claimed that universal design would not happen without additional regulations and this poses a two edged sword for industry. On one hand it has the capacity to offer a measure of certainty and a level playing field, but on the other, more legislation adds to the burden of the existing and extensive regulatory controls. Apart from the burdensome aspect, a “tick-the-box” approach does little to educate the industry, and the prescriptive nature of the existing regulations related to ageing and disability prevent a bigger picture view and alternative solutions from emerging. So here we have the dilemma – legislation is required for change, but a legislated change may work against the overarching aim of greater amenity for the wider population. One of the other factors intertwined with the level playing field and legislation is the assumptions made about costs.

5.1.7 Comments on cost

There were two schools of thought about cost. Some thought the costs would be minimal and acceptable to the purchaser, while others considered any extra cost unacceptable. One of the costs cited was the extra land required for larger homes. In some cases this argument is warranted, particularly for smaller homes attempting to meet the requirements of affordable housing. However, local council regulations could be more helpful in this regard if they were to review their policies:

“The cost is in the land. Particularly when we have performance codes which say you have to have a set back here and something else there, and a bedroom on the ground floor – it takes away an extra unit [in a development]. That is the essence of where the cost is. You lose your
density in medium density ... where you have a floor space ratio and a [set] footprint. [In negotiating with councils] we need, OK, we give you a ground floor bedroom – you give us a concession on the landscaping ... that 300 square metres [of landscaping] could be translated into more ground floor bathrooms and bedrooms.”

Principal: design and construct firm

There was alternative view about the issue of larger footprints and ‘losing’ a unit in a development:

“There is talk of larger footprints, but the extra cost of materials is negligible – more a case of instead of ten units the developer can only get nine – not sure if this is a myth. The bigger places get snapped up quickly... they sell fast and money is not tied up and they can charge more.”

Staff member: disability advocacy group

Similarly to affordable housing, the designs of units in social housing schemes were also problematic in terms of cost. Introducing universal design features into social housing dwellings required an increase in the size of the units. However, this was not necessarily a negative outcome because the new design standards also needed to reflect current community norms, and to create more flexibility for the allocation of housing stock to tenants with a range of needs:

“You will notice that for a one bedroom unit it is fifty-five square metres and for universal it’s sixty. So you can see the increase in cost and size – and in the two bedroom villa we go from seventy to eighty, so we’ve added ten square metres - so it’s added a 13 or 14 percent increase... We found that smaller was actually working against us - finding it hard to allocate people.”

Architect: social housing authority
Regardless of the benefits of improved design, the property development industry in particular is focused on minimising costs and maximising returns, as would be expected:

“The industry is always thinking about costs and returns. At the end of the day they are basically seeking return on investment. They look at it from that perspective.”

Planner: local government

In discussing the issues related to the negotiations surrounding the prospective Access to Premises Standard and concern for costly “crazy ideas” coming from the disability advocacy sector, an argument was mounted that the economy was unable to sustain this level of change:

“So there’s all these crazy ideas, which were impractical and hugely costly – the cost far outweighed the benefits to society. ...if you tally that up across the economy, well, it’s quite some amount of millions of dollars [that could be spent] on some other productive thing in the economy.”

Manager: industry association

In analysing the specific responses to the question of costs, the issue was not raised as often as expected or was deemed to be either a small or acceptable extra cost:

“It carries a five percent loading but it’s virtuous, like sustainability it’s virtuous – people will wear it – happily”

Architect A: private practice

“...the overall cost was one or two percent extra on construction costs if you change existing designs and almost zero if you do it from scratch. ...with more demand the cost will drop further.”

Manager: land developer
“My company is currently doing costing exercises and I haven’t seen the results yet. But I’d be amazed if it came out too expensive. From what I know of the basic regulations it’s minor money in the scheme of things.”

Design Manager: property developer

Some of the extra cost was attributed to the way in which the industry works, particularly at the trade level, to minimise costs. It was summed up thus:

“A pitch roof is always going to be cheaper than a flat roof. Why? Because it’s easier for the builder to go and order trusses, and he knows what to do blindfolded without looking at the plans, whereas the flat roof might be a bit more complex with flashings and he will have to think about it and he will price it - the cost is probably the same in materials and time, but he is out of his comfort zone - it’s something they don’t normally do. That’s why it costs more. It costs more because he has to think more and he has to be involved in supervising more. I don’t agree that homes would need a bigger footprint. I don’t think it needs to cost more.”

Architect: property developer

“There is also the problem of stepping outside the original design – you pay through the nose for it. They charge more to cover any mistakes they might make where they have to rip it out and start again. That is where the twenty percent extra cost comes from.”

Staff member: disability advocacy group

There were two instances where actual figures were quoted. The first implied that universal design was another name for adaptable housing and put the costs at about five thousand dollars after listing the many adaptable housing features that can add significantly to the cost. For example, adjustable work surfaces in
the kitchen, double wastes so that the toilet pan can be pulled forward if required later, set-downs in the slab for wet areas, and level entries. Although this participant works for a well known project home builder, the company is also involved in multi dwelling developments and this could account for the rationale underpinning the response:

“Depends on universal housing, just a matter of circulation spaces, for instance, slightly wider hallways than what we would normally design, it’s just space you have to have which is taken away from other space to make it work. It’s door widths - costs a little bit more, not a huge amount – all little bits and pieces that all add into the cost.”

Business Development Manager: project home builder

The assessment of five thousand dollars is met by another of five hundred dollars per dwelling. This participant is a professional support worker with a social housing tenants’ group in an area designated for urban renewal. Some of the tenants discovered that in their view, the re-development plan does not include sufficient housing for older people and people with disabilities:

“Tenants are now saying we need more adaptable housing because of all these needs - one group of tenants has started to crunch the data and asked the builders here how much would it be while you are building to prepare the house as adaptable housing. And they've said it's about five hundred bucks a dwelling. Now they're looking at well, how much will it cost if that doesn't happen because if we don't adapt them now and we need to adapt them later based on somewhere about ten to twenty thousand dollars a dwelling to do it later.”

Support worker: social housing tenant group
Summary of costs

The assumption that universal design is some form of aged care or adaptable design is clouding the issues. Additional costs for universal design were largely assumed similar to those for adaptable housing. The guesswork figure of five thousand dollars included a raft of special fixtures, fittings and design features listed in the adaptable housing standard. The figure of five hundred dollars, also a guesswork figure was based on having constructed such dwellings recently. Clearly there are different experiences of building to the adaptable housing standard. Similarly, there were others who were using their experience rather than calculations to assert, that universal design features would cost little if any more. However, a small number of participants based their responses on research which supported the latter contention. The issue of land cost and dwelling footprint sizes may provide a more substantial argument for additional cost, but it is likely that more spacious units are in greater demand by all age groups, and as one participant claimed, it is virtuous and people will be willing to pay. Return on investment may not, therefore, be at so much risk after all. Citing the way in which the industry works as a factor in cost minimisation is not peculiar to the construction industry: rather it alludes to one of the barriers for bringing about change.

5.1.8 Barriers and facilitators of universal design

According to participants, senior managers, politicians, regulators and tradespeople are all likely to have a role in either supporting or restraining the implementation of universal design. It is possible, therefore, that a web of
barriers is operating rather than one or two particular sticking points. A major part of the web might exist in the built environment industry infrastructure.

**The housing delivery chain as a barrier**

One architect discussed the issues within the housing delivery chain:

“A lot of it stems from the delivery method... The build and sell [method] has got fewer feedback mechanisms in the process, so by the time you are flogging, you are not really experiencing any feedback. So that’s a real issue and it’s to do with the way our industry is structured. ... there’s a lot of blocks all the way through from the brief, the designer skills - because there’s no feedback mechanism to the builder, no feedback to sales, minimum feedback because it's a commodity - off the shelf, you walk in, you pay your money and take it away with you. ... so you are not necessarily having the same builder building for the same people so they are not picking up on better ways to build.”

Architect A: private practice

**Local government as a barrier**

Local government personnel were seen as gatekeepers to new ideas, both the politicians and staff. In particular the engineers received some criticism here, albeit in the public domain:

"If I relate universal design to accessibility and more friendly public environments then the people you have to convince are the councils and the councils are firstly the politicians, and secondly, more important than the planners are the engineers because the engineers have a far greater role in 'screwing up' the environment. I think they perpetrate some of the worst design in the public domain.”

Planner: local government

“And it didn’t matter what argument you put up... it was a cultural thing – they wouldn’t budge.”

Architect A: private practice
One participant focused on how to persuade local government engineers to new ideas which included cost saving and risk minimisation:

“When you can talk to an engineer and say this is going to look better in the environment, this is going to wear better over a hundred years, this is going to be safe for people, you are going to be sued less: it’s got to be a package of things people can relate to and people can appreciate as being a plus in the environment.”

Planner: private practice

While engineers received specific attention by three participants, the way in which councils work in general was seen as a barrier to change because the councillors and aldermen have the power to influence development decisions, and staff rigidly apply ordinances without regard for the particulars of a given situation (as experienced by homeowners Steve, Mike and George):

“Sort the councils out. Sort the councils out before you even think about [making changes]. That’s the beginning and end of our problems.”

Principal: design and construct firm

Lack of education as a barrier

Builders and tradespeople may also be gatekeepers to change, but this might be due to a lack of understanding about universal design:

“At this stage something new is difficult, but that will change. It is also the builders being used to doing things in a certain way and they see this as change. If you get willing individuals, a lot can change, but the other barrier is the confusion about what it actually is.”

Manager: land developer

“If you don’t have understanding you can’t convince people it is a good idea. If you have understanding and a good package, you are likely to get acceptance.”

Planner: private practice
**Political pressure as a barrier**

One participant cited political pressure as a barrier, particularly against a backdrop of housing affordability:

“The building industry will stir up a storm saying this is going to cost more money and this is at a time when housing affordability is a big pressure.”

Design Manager: property developer

Some ideas for overcoming the barriers were proposed: building examples of universal housing design so that people could understand it better; education of the many professions and consumers and; creating new legislation.

**Education as a facilitator**

Being able to see universal design in action was considered important so that it’s ‘normality’ could be better understood:

“I think there will be a time [when it becomes normal]. To see how a house looks has a lot more impact.”

Architect: project home builder

“Perhaps when we have more examples on the ground that show innovation, including sustainability and innovations in technology, the industry will be more motivated. ... As soon as we get more homes that showcase universal design, the sooner industry will pick up on it.”

Manager: land developer

“If they can’t find out what it is about or how to do it easily they will have no interest. There is probably a fear that they don’t know what it is about and so if they make a mistake it might lead to litigation.”

Staff member: disability advocacy group
This last comment highlights the dependence on regulation to guide the design decisions within the industry.

Legislation as a facilitator

Legislation and regulations were mentioned often in relation to forcing the industry to change as well as providing a level playing field:

“It’s got to be regulation. It’s that simple – you’re not going to get traction without it. It just means the legislation has to be right. I’m not talking about new legislation; I’m talking about additions to the BCA and the Australian Standards, things like that.”

Architect: private practice

The issue of “getting the regulation right” was echoed by another:

“It shouldn’t be regulated one hundred percent – it should be reasonable guidelines that explain to people how to do it.”

Principal: design and construct firm

Although legislation was mentioned throughout the interviews, not everyone believed this was necessarily the best way to proceed:

“They come from the DDA position of legal liability being the driver – negotiated outcomes, and I think that it might be necessary. But if you look at universal design, it’s the wrong end of the stick. It ought to be seen as some kind of sustainability issue and taken that way rather than something that’s sick or old.”

Architect A: private practice

This last comment echoes an earlier one of negotiated legislative outcomes where various vested interests bargain for the shape and detail of the legislation. The negotiated approach often maximises the outcomes for the industry, as they are usually well represented around the negotiating table (for
example, draft Access to Premises Standard discussed in Chapter 6). Industry can maximise their technical efficiencies, particularly with ambit claims about cost, which appear to be unchallenged, at the expense of evidence from what is regarded as a special interest or lobby group. Consequently, little or no data on the types of designs most beneficial for all residents is available or considered necessary in an environment of horse-trading. The following comment addresses all these issues:

“I think [legislation similar to the UK] is the only way with the industry the way it is currently structured. It’s still tick-box stuff. Legislation is a blunt tool - that’s the problem. But I think there’s a lack of models, all this stuff, downstairs toilet and so on, predicates some kind of illness, disability. It doesn’t reflect the particular benefits that anyone could have with it - there’s no way to measure it - it would be very interesting to somehow be able to score it on a survey of a hundred to a thousand dwellings - downstairs toilet had a benefit ratio of ... or something. It universalises it. ... The second thing would be training in TAFE and architecture courses, and the third thing would be establishing some kind of market for universal design – I think it would be great to have an institute to grow this thing with profile.”

Architect A: private practice

Many in the industry are involved in both public domain projects such as office blocks and shopping centres, as well as multi dwelling developments, most of which are required to provide a certain percentage of adaptable or ‘seniors’ dwellings under state government planning policies. Consequently, there are many within the industry who are familiar with the codes and design types. However, they are not transferring this knowledge to the project homes unless they are compelled to do so:
I think the basic Landcom list, plus looking for our spatial and height requirements using AS1428.1 as a minimum, will probably go together more easily because the construction industry, if they are doing any public buildings at all, have to be referring to [AS1428] Part One. And so it shouldn't be such a mystery ... they are just not joining the dots to apply it to all housing.”

Access Consultant: private practice

Mention was made of the Sydney Olympic Coordination Authority Access Committee established for the Sydney Olympic Games in 2000. Industry professionals involved in the construction of Games infrastructure were educated through the process of working with this access committee:

“... they had a very strong access committee to approve of everything that was built for the Olympics. Then you see, wow! This could really work - everything is going to be how people need it to suit everybody. It didn't work perfectly, but it worked pretty well. And I think it was a real education for the project managers because they learned a lot in the business of having to toe the line and front up with their designs and reports to the access committee. That, I think, was quite a big turning point and the thing is I don't think it's spread quite far enough yet. .... But it turned a lot of people's thinking in the right direction particularly the architects and the construction people.”

Access Consultant: private practice

Specific facilitators that were not the converse of the barriers were few and far between. Drawing on the idea of introducing environmental and ecological education in schools, this participant reasoned that children could be the key to future change and that the children of Baby Boomers are already starting to think of their parents’ ongoing needs:
“I think it will [become normal]. ... Long term I think there should be education in schools. We are going to bring forward in the next ten years a different kind of customer because they are already educated in [sustainable houses]. Baby boomers don’t think of that but their children are thinking about it and I think there will be a time [when it becomes normal]. Going to a landfill makes you think about waste and recycling. To see how [a universally designed house] looks has a lot more impact.”

Architect: project home builder

By taking a different approach to legislation and not casting blame for barriers on the system or particular professions, this participant has introduced the concept of universal and sustainable design becoming the new norm.

Normalisation as a facilitator

As discussed earlier, the nomenclature surrounding universal design is about inability, difference, non-normality, and ugly designs. Consequently universal design is no more socially acceptable as a brand than anything else labelled as ‘disabled’, ‘accessible’ or ‘adaptable’. The link with language and terminology issues is clear: how to talk about something in a way that does not conjure up negative images:

“The other issue is labelling. This stops it from being general, but I don’t know how we do it without labelling it universal housing.”

Manager: land developer

Given that most universal design features are largely hidden in the structure of the dwelling and therefore remain silent, they cannot be identified as superior features to prospective buyers without mentioning incapacity or inability. It
would be difficult to draw attention to such features without introducing notions of disability and ageing and all the associated negative connotations. Consequently, it has come to the attention of a handful of people that universal design needs to be quietly inserted into housing without any fanfare, whether this is by legislation or any other means:

“I think you just have to regulate and say nothing. When you have a show home, and someone points out the differences, that’s actually defeating the purpose isn’t it? Just call it a building regulation.”

Design Manager: property developer

This concept was put more plainly in a personal interaction with an architect who has been promoting the concepts of universal design for several years:

“Use universal design concepts to get it into the building code and then forget it.” (Personal conversation: 11 December 2009). Not drawing attention to differences that might be attributed to accommodating disabling conditions is important when discussing such issues with many older people. Generally, the older generation is averse to utilising the term ‘disability’ in describing their diminishing abilities and consequently resist assistance under that label:

“When you raise it with [members] they’re like, ‘oh, but I’m not disabled dear – I’m not disabled you know’. So they don’t want to be labelled or they’re reluctant to seek assistance if it’s called a hardship provision, or disability support, or if they extrapolate it that way. They just don’t like it. They really become present to it when they’ve had an injury or they’ve been in hospital and that’s when they realise, oh, the house really isn’t set up for that.”

Staff member: advocacy group for older persons
The theme of attitudes emerged from this comment and this was indeed another theme that became apparent in the interviews – attitudes towards industry change, people with a disability and older people and the notion of social and economic inclusion.

*Attitudinal aspects as barriers and facilitator*

I suspect some participants were a little concerned that I might be a member of a disability lobby group. Although I do not present as a person with an obvious disability, it was reasonable to assume that this was possible, particularly if it was thought that only people with a disability would be interested in the topic. Consequently, they were at pains to avoid offending me. Indeed, I noticed some participants adopting hesitant and halting speech when searching for words relating to people with disabilities and older people. Some even managed to avoid the word ‘disability’ altogether, preferring to use euphemisms such as ‘if you are in a wheelchair’ and “if you have an accident”.

In spite of concern about creating offence, there were some very revealing comments about people with a disability and older people. Being “at the back end” of their lives, or “unlucky enough” to have an accident, people with a disability and older people are not considered ‘real’ consumers. Being “unlucky” non-consumers, there is an implicit assumption they do not belong in the mainstream housing realm:

"But if you are talking about mainstream housing, not targeted at the [older]demographic, then the fact that someone has a terrible accident or gets ill or whatever, mobility reduced dramatically, well then, no, it’s not factored in. So what’s the benefit versus the cost of requiring a change in standards that add costs across the board versus, OK, if you..."
are unlucky enough to have [an accident] happen to you and you are living in housing which doesn’t suit that need then perhaps you need to find alternative housing? If you design a product around an age group which is at the back end of its life, you deliberately design [an assistive living product].”

Manager: industry association

Alternative housing for older people was echoed by an architect who was quite passionate about older people moving from a large old family home to something ‘better’. The full extract from the interview is provided to ensure the context and intent is maintained:

“I’ll be absolutely blunt... I think taking it to the home is problematic, bordering on unrealistic ... it is probably better to move rather than alter their house to suit their changing needs. I don’t support the concept that older people with disabilities who are struggling [should stay at home]. I don’t think someone of 85 should be on a 900 square metre sloping block with a 350 square metre house which is 60 years old and requires a lot of maintenance. I think it’s stupid and if that person wants to stay there - tough luck - and I am talking about myself too - you just have to be realistic as a society. I think that everyone can have their own individual rights if they can afford it. I don’t have a problem with older people - I’d like to see them out of that crumbling old home, see it demolished - I’d like to see it cut in two and see two young families in that place. But at the same time I would like to see that older person have a viable option of a place to go that suits their needs better and be treated with respect and integrated into the community. I know, in my opinion, the older person is clinging onto that crumbling old home because the alternatives are disgusting. They are institutionalised, dehumanised, treated like children. That’s why they are clinging onto their old home.

Architect B: private practice
This particular architect spoke with great passion, particularly about the conditions that some older people face in aged care facilities. His conviction underpins his architectural practice which designs different dwelling types for older people. He favours an aged housing type that is based on a hospitality model rather than a hospital model. This may be a viable and popular product, but this does not mean that older people will be able to afford such accommodation, or view it as value for money, or even have the wherewithal to move house.

**Summary of barriers and facilitators**

Rigid regulators at local government level, industry’s ability to exert political pressure on government policy makers, attributes of the housing delivery chain, and having no feedback mechanism to builders from consumers in the “build and sell” method were all cited as barriers to the introduction of universal design. Lack of education was also a barrier, but conversely was seen as a facilitator. For some, education was a better option as a facilitator than more regulations which, on the whole were favoured as the most efficient method of instituting change. However, normalising universal design, particularly introducing it without fanfare would require significant attitudinal change, not just within the industry, but more generally in society.

5.1.9 **Summary of Interviews**

Regardless of comments about cost and regulations, or the role of architects and property developers in influencing design, many participants returned to the notion that the most important factor was the role of consumers and their potential to demand universal design. Consequently some participants laid the
lack of impetus for introducing universal design features at the feet of consumers. The nature of mass market housing is to produce ‘off-the-shelf’ products (“build and sell”). This means consumers have little opportunity to influence housing design, save for ‘allowable’ cosmetic changes or upgrades of fixtures. This is similar to a purchaser selecting the body colour and upholstery style of a new car. In neither case is the consumer able to influence the underpinning tenets of the design paradigm. So this raises the question of whether consumers actually have the level of power the industry claims. Perhaps the controlling customers are investors in financial products looking for a return on investment in property development rather than families looking for a new home.

Architect B and the industry association manager displayed an interesting approach to housing older people. We have on one hand a dismissive approach to people “at the back end of their life” and on the other, one that appeared to genuinely care that older people are not treated well in aged care settings. However, both held the view that older people should be housed in a particular ‘product’. That is a separate and segregated product provided either by the private market for those who had sufficient funds, or the social housing sector.

Those who had undertaken specific costing exercises found the costs to be minimal and acceptable, yet others who had not calculated the costs assumed additional costs would not be entertained in the marketplace. Design changes are likely to have been viewed as threats to the technical efficiencies of the delivery chain and this is translated as additional costs. These costs might be
due to mistakes being made by trades personnel and the cost to rectify such mistakes. Consequently it is difficult to quantify the knock-on effects across the delivery chain, and potential costs of the change itself. However, barriers may reside not just in the technical efficiencies, but also in the attitudes towards older people, or people considered outside mainstream market segments.

Comments regarding the disability sector and people with disabilities in general, the expectation that older people should move out of their current homes regardless of their desire to do so, together with the notion that disability is a state responsibility, all indicate an argument predicated on the notion that this is a social issue, not a commercial issue therefore the industry should not be expected to change anything. The claim that consumers are not asking for universal design is used as supporting evidence for maintaining the status quo. Much of the resistance can be put down to fears of extra cost, in spite of evidence to the contrary by Landcom (2008), and attempts to maintain the status quo around market segmentation. If universal design appears to minimise market segmentation so that products for specific groups is no longer necessary, this could engender fears about reduced profitability. If consumers move house less frequently, and less age specific housing is required, it is indeed possible that there might be less market activity in the future than might be the case if the status quo remains.

Those who understood the underpinning concepts of universal design believed others just needed to be convinced of its value and therefore education across the industry was seen as a solution. However, the structure of the industry,
resistance to change and the desire to maintain a level playing field were believed so difficult to overcome that legislation was seen as the only way to facilitate universal design.

If legislation takes centre stage as a facilitator, the issue becomes the framing of that legislation. For national application, such legislation would need to be included in the BCA because each state has its own set of built environment regulations as well as those set down by each local government authority. However, compliance with legislation does not guarantee full accessibility, as examples in the public domain have shown. This is the dilemma. How any new code is formulated is the key, but who will do this, on what evidence, and how much quid pro quo will be involved in the negotiation process? It raises the possibility that the solution could be worse than the problem. Before discussing the interview results further, it is time to look at the results from the survey questionnaire.

5.2 Survey questionnaire results

Sixty-two valid questionnaires were returned either online, by email, mail or facsimile. Details regarding distribution are contained in Chapter Four (section 4.7.6) where it is explained that the number of questionnaires distributed by industry associations is unknown. It is also unknown how many were actually received by potential participants, that is, how many survived system firewalls or were deleted before reading. However, it is known that 455 questionnaires were mailed or emailed directly to individuals. Seventeen addresses were invalid bringing the total distributed directly to individuals to 438. With 27
valid returns from this method, and extrapolating to other distribution methods, the return rate was estimated at around five percent.

The key results relating to the research question are reported here and additional data is included in Appendix C. Where only one answer to a question was possible, results are reported as percentages, but where more than one response was possible, such as a list of rankings, these are reported as frequencies. In view of the low number of responses, for clarity, some items are reported as both frequencies and percentages.

The majority of respondents were male and aged over forty five years. However, neither age nor sex appeared to have any significant bearing on results and were eventually disregarded as having any explanatory value. The professional background of participants revealed more interesting results and this dimension was used in crosstabulations with other variables.

5.2.1 Demographic information

Table 5.1 shows the majority of respondents were male (82.3%). Of the eleven respondents who were female, six worked for the New South Wales Home and Community Care home modifications service as administrators or occupational therapists, three were council regulators, one an architect, one a building designer and one an urban planner. More than half the respondents had worked in the industry
for more than twenty years (58.8%) and of these, 17.5 percent had worked in the industry for more than thirty years (see Table 5.2). The age of respondents fell largely in the older age groupings with almost three quarters over the age of 46 years (73%). The majority of respondents were therefore most likely to be a male aged over 46 years with around twenty years industry experience.

### Table 5.2: Length of time worked in industry

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 yr</td>
<td>2</td>
</tr>
<tr>
<td>3-5 yr</td>
<td>2</td>
</tr>
<tr>
<td>5-10 yr</td>
<td>11</td>
</tr>
<tr>
<td>10-20 yr</td>
<td>11</td>
</tr>
<tr>
<td>20-30 yr</td>
<td>26</td>
</tr>
<tr>
<td>30+ yr</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
</tr>
</tbody>
</table>

#### 5.2.2 Professional background of participants

Participant qualifications and their job titles were many and varied and most participants showed convergence between qualifications and job title, which made the categorisation of professional background straightforward. However, where it was not clear, the current job title was used as the dominant factor. Where the job title was a generic term, such as managing director, the qualifications were used as the dominant factor in nominating professional background. Just over half the respondents were involved in design and construction (Builders 21%; Architects 19.4%; Building Designers 11.3%). The remainder were involved in planning and regulation (30.7%), state government funded home modifications (12.9%), property development (3.2%), and urban design (1.6%). The range of professions is shown in Figure 5.1.
Job Type Groupings

For simplicity of reporting, the job or profession types were rationalised into four groups as shown in Figure 5.2. The majority of respondents were either directly involved in design and construction or in the planning and regulation of buildings and developments. Another differentiating factor is that those in design and construction are more likely to have some building user contact whereas planners and regulators are less likely to have direct contact with building users. This might explain some of the group differences found in some results.
The largest group (34 respondents) consists of builders, building designers and architects (Design and Construction). The second largest group (18 respondents) consists of planners, regulators, surveyors and urban designers (Planning and Regulation). These two groups formed the basis of further analysis by job type. The Home Modifications grouping, which is made up of administrators and health professionals were not directly involved in the creation of new homes, although they have valid opinions about housing design. For this reason they were not included in the analysis of all questions, but their comments were included in the analysis of narrative responses. With only two property developer respondents who have investment interests it was not possible to merge them with either main grouping or provide a separate analysis. Consequently they were removed from the quantitative analysis but included in qualitative analysis.
Just over half the participants said they had been involved in social housing. A high proportion of these were planners and regulators (13 yes; 5 no) compared with those in design and construction (15 yes; 19 no). Seven respondents said they were involved in project homes.

5.2.3 Design drivers

The question about design drivers (item 12) was answered by seventy five percent of participants. The remainder, mostly from the Planning and Regulation grouping, opted to skip this question because they were not involved in, or had insufficient understanding of, the project home industry. The first ranked design driver was cost minimisation (20 responses) followed by functional appeal (13 responses). The second ranked design driver was lifestyle image (15 responses) followed by cost minimisation (13 responses). The third ranked design driver was functional appeal (16 responses). Technical specifications and standards were distinctly ranked last of the five groupings by 27 respondents.

Design drivers by job grouping

The Design and Construction group ranked Cost Minimisation as the main design driver, followed by Functional Appeal. The Home Modifications grouping also indicated Cost Minimisation is the main design driver of project homes. The Planning and Regulation grouping largely skipped this item.
Figures 5.3 and 5.4 show that the Design and Construction group ranked Cost Minimisation either first or second. The last ranked design driver was Technical Specifications and Standards with sixty five percent of the possible responses. The results of the fifth and last ranked design driver are shown in Figure 5.5.

In summary, Cost Minimisation featured strongly in the first two rankings with Technical Specifications and Standards taking a distinct fifth position. Lifestyle Image, Functional Appeal and Competitive Advantage fell between the first and fifth rankings.
5.2.4 Influencers of design

Participants were asked to rank from a list of eleven categories, who they thought had the most influence over home design. The top three ranked first were Consumers (19), followed by the Building Codes Board (15) and Developers (11). Architects and building designers did not feature strongly in the first ranking (5), but were ranked more strongly in second (11) and third (16) positions. If regulators and the Building Codes Board rankings are merged (because they are both concerned with setting and applying regulations), they feature strongly across all three rankings (First, 18; Second, 18; and Third, 15). Builders, planners, shareholders and large building companies did not feature strongly in the top three rankings (see Table 5.3). Contrary to technical specifications ranking a distinct last as a design driver, regulators of some of those specifications are ranked highly in the top three of design influencers.

Table 5.3: Influencers of home design, top rankings

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasers</td>
<td>19 (30%)</td>
<td>5 (8%)</td>
<td>7 (11%)</td>
<td>31</td>
</tr>
<tr>
<td>Building Codes Board/ Regulators</td>
<td>18 (28%)</td>
<td>18 (25%)</td>
<td>15 (24%)</td>
<td>51</td>
</tr>
<tr>
<td>Developers</td>
<td>11 (17%)</td>
<td>9 (14%)</td>
<td>8 (13%)</td>
<td>28</td>
</tr>
<tr>
<td>Architects/Building Designers</td>
<td>5 (8%)</td>
<td>11 (17%)</td>
<td>16 (26%)</td>
<td>32</td>
</tr>
</tbody>
</table>

5.2.5 The Housing Market

Participants were given seven options from which to choose on the topic of market perceptions. Most thought that project homes were targeted towards young couples and couples with children. Whilst some thought that they were
also targeted towards older couples, extended families and singles, they were not rated highly as a target groups (see table 5.4).

There were eleven additional comments about the target market for project homes, most of which reiterated their initial selection. However, in one case the developer was seen as the client where the target market was “dependent on the client (developer), style and location”. One respondent said the design was "based on extensive demographic research of who prospective purchasers are and designed to suit/appeal to that buyer". Another respondent singled out aged care housing as a specific market: "Aged care housing is directed to the aged care market".

### Table 5.4: Target market of project homes

<table>
<thead>
<tr>
<th>Target market of project homes</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couples with children</td>
<td>32</td>
</tr>
<tr>
<td>Young couples</td>
<td>24</td>
</tr>
<tr>
<td>No particular market/group</td>
<td>12</td>
</tr>
<tr>
<td>Older couples</td>
<td>11</td>
</tr>
<tr>
<td>Singles</td>
<td>2</td>
</tr>
<tr>
<td>Extended families</td>
<td>1</td>
</tr>
<tr>
<td>Not applicable to my organisation</td>
<td>14</td>
</tr>
</tbody>
</table>

Market Research

Two thirds of respondents said they had not carried out market research on the housing needs of older people and/or people with a disability. Overall, almost half the respondents (45.5%) thought the size of the market for older people and people with a disabilities was very large. Proportionately more respondents in the Design and Construction group thought the market was very large, compared to the Planning and Regulation group who thought it small (see
Figure 5.6). There were fourteen additional comments about the market size of older people and people with a disability and of these, six said it was a growing market. One respondent said the issue of older people and people with a disability was the “responsibility of governments”.

Three quarters of respondents (75.8%) said they had considered the needs of older people and people with a disability in the planning designing or construction of project homes or other buildings. Forty three participants gave reasons why they had considered this as shown in Figure 5.7. Ten were staff of home modifications services
and these responses related to the needs of their individual clients. Of the remaining thirty three respondents, fourteen referred to legislation as the reason for considering the needs of older people and people with a disability. Ten said it was a client requirement with eight of these being for specific clients. The Design and Construction grouping is more likely to be driven by the client brief and less by regulations than the Planning and Regulations grouping. One architect said:

“We have had a number of private clients who have a degenerative condition or illness – themselves or their children – so this has been a core part of our design and functional planning”.

A further five participants had considered issues of ageing and disability from a market or demographic perspective. An urban designer commented that:

“We believe there are project homes available for all market segments, but as a company we tend to focus on those less provided by the mainstream project home builders.”

Three respondents specifically mentioned working on, or specialising in, aged care projects. Two respondents said they had not been asked to consider issues of ageing and disability. The following section specifically targeted participants’ perceptions in relation to housing people who are ageing or have a disability.

Perceptions of the ‘disability housing’ market

Using a five point Likert scale, participants were asked in item 24 to indicate their level of agreement with eight statements. Overall, there was disagreement with the following four propositions:
that older people and people with a disability need separate or special housing (52.4%); 
that too much attention is being given to the design needs of the few who are old or disabled (65.1%); 
that there is a lot being done for the disabled so there is no need to worry about them (76.2%); and 
that there is nothing they can do to influence the way homes are designed so that they suit people of all ages and abilities (65.1%).

The proposition that designing inclusively is OK but there is no time or budget to do it, elicited a strong neutral response (28.6%). Nevertheless there was more disagreement (46%) than agreement (17.5%). The proposition that creating and selling house and land packages was the main concern, not how long people can live in the house, also elicited a strong neutral response (27%), but overall, there was more disagreement (48.1%) than agreement (27.0%). On the other hand, there was agreement with the notion that there is a need to design more inclusively because it is not just a case of selling homes, but creating new housing stock (63.5%). Each of these items were analysed by job grouping to compare trends in opinions. Analysis by job grouping is summarised in Table 5.5.

Those in the Planning and Regulation group were divided on the issue of whether older people and people with a disability need separate or special housing (44.4% agreed; 55.5% disagreed). In the Design and Construction grouping there was more disagreement (53%) than agreement (23.5%) with this notion, but there was also a high neutral response (20%). On the proposition that not enough is being done to include a wider cross section of people in designs (item 24b), both groups agreed (Planning and Regulation,
### Table 5.5: Overview of market perceptions by job grouping

<table>
<thead>
<tr>
<th>Survey Item Statements: Perceptions of the Market</th>
<th>Design and Construction</th>
<th>Planning and Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree %</td>
<td>Disagree %</td>
</tr>
<tr>
<td>1. Older people and people with a disability need separate or special housing.</td>
<td>23.5</td>
<td>52.9</td>
</tr>
<tr>
<td>2. Not enough is being done to include a wider cross section of people in building designs</td>
<td><strong>67.6</strong></td>
<td>20.6</td>
</tr>
<tr>
<td>3. Too much attention is being given to the design needs of the few who are old or disabled;</td>
<td>2.9</td>
<td><strong>79.4</strong></td>
</tr>
<tr>
<td>4. There is lot being done for the disabled so there is no need to worry about them;</td>
<td>2.9</td>
<td><strong>82.3</strong></td>
</tr>
<tr>
<td>5. We have to design more inclusively because we are not just selling homes, but creating new housing stock</td>
<td><strong>58.8</strong></td>
<td>11.8</td>
</tr>
<tr>
<td>6. There is nothing I can do to influence the way homes are designed so that they suit people of all ages and abilities</td>
<td>14.7</td>
<td><strong>73.5</strong></td>
</tr>
<tr>
<td>7. Our concern is creating and selling house and land packages, not how long people can live in the house.</td>
<td>35.4</td>
<td>32.3</td>
</tr>
<tr>
<td>8. Designing inclusively is OK but there is no time or budget to do it.</td>
<td>23.5</td>
<td><strong>47.0</strong></td>
</tr>
</tbody>
</table>

**NOTES:**
- This table shows only the highest scoring figures for each category and does not show the high neutral response recorded in items 3, 5, 7 and 8.
- 1. Agree/Strongly Agree and Disagree/Strongly Disagree were merged to Agree and Disagree respectively.

72.2%; Design and Construction (67.6%). Both groups disagreed in item 24c that too much attention is being given to the needs of the few who are older or have a Disability (Design and Construction 79.3%; Planning and Regulation 55.5%). One third remained neutral on this question.
Overall, both job groupings clearly disagreed with the proposition in item 24d that they do not have to worry because a lot is being done for people with a disability and older people (Planning and Regulation 72.2%; Design and Construction 82.3%). It is worth noting that almost one quarter of the Design and Construction grouping (23.5%) strongly disagreed with this notion.

The issue of creating housing stock, not just selling homes (item 24e) brought a high neutral response. Overall, both groups agreed with the proposition, but the Planning and Regulations grouping showed a stronger trend towards agreement than the other grouping, particularly with 22 percent strongly agreeing.

Being able to influence design (item 24f) also brought a high neutral response, particularly from the Planning and Regulation grouping (27.7%), which meant the level of disagreement was reduced overall (55.5%). Proportionately more respondents in the Design and Construction grouping (73.5%) disagreed with the proposition.

The item eliciting the most ambiguous response was the notion that the industry’s concern is to create and sell house and land packages, not how long people can live in a house (Item 24g). There was a high neutral response in both groupings (almost one third). The ambiguous response is likely due to several participants not being specifically engaged in house building. Nevertheless, those in the Planning and Regulations grouping largely disagreed with the
notion (44.4%), but those in the Design and Construction grouping were plainly divided on the matter (35.4% agree; 32.3% disagree).

There was also some ambiguity in responses surrounding the item about universal design being a good thing but there is no time or budget to do it (item 24h). Similarly to the previous item there was a high neutral response particularly from the Planning and Regulations grouping (38.9%). Overall both groups were more likely to disagree with the notion (Planning and Regulation, 44.4%; Design and Construction, 47%).

Overall, respondents believed more could be done for older people and people with disabilities, but whether the Planning and Regulations group in particular saw this as separate housing is not clear. Nevertheless, there was a sentiment that not enough is being done for a wider cross section of the community. The responses here could be subject to social acceptability bias, but the group with a closer connection to building users, the Design and Construction group, had a stronger positive response on this issue than those who are removed from direct building user contact.

Respondents were given an opportunity to provide further narrative comments, most of which re-iterated their item responses, but this section revealed additional contextual information. Again, respondents tended to fall into two camps; those who understood the role and intentions of universal design, and those who regarded ageing and disability as a separate market segment. There
was recognition that there are different types of disability that need to be catered for, not just wheelchair users:

“We should be aware that ‘wheelchair access’ is NOT the only disability people have”, and also that “it depends on what level of disability is catered for ... it is not practical to cater fully for every contingency in every dwelling.”

Regulators are only able to influence design inasmuch as they apply the relevant building codes and Australian Standards and this was perhaps reflected in the high neutral response on some survey items:

“Unfortunately in my role as certifier I can do little to change house designs outside the BCA compliance. Older people don’t need separate housing, merely accessible/adaptable.”

On the matter of housing stock the issue was summed up thus:

“Our current housing stock has been an amalgam built up over the last 100 years, using the socially accepted design norms of the period primarily for couples of child bearing/rearing age and when life expectancy was greatly less than now. New housing design and construction need to be inclusive...”

There were two comments that indicate the respondents did not fully understand the current situation or context. The first claims that stairs are the only problem for older people:

“Older People and Disabled are completely different. Older people can live anywhere, sure the stairs may become hard for them, but they can usually still manage them, whereas Disabled people can’t.”
The foregoing statement, made by a building designer, who is also a wheelchair user, seems to imply there is no common ground between the needs of older people and people with a disability. There was also a claim by an architect that universal design is already in place: “This survey seems skewed to draw a need for some special design when the market is already doing this.”

Summary of opinions about the market

Several survey items elicited a high neutral response which could be for one or more reasons: ambivalence about the proposition, the item being ambiguously worded and/or the question not relating to their experience. The latter was more likely to be the case with the Planning and Regulations grouping who neither control design concepts, budgets for design nor sell housing, yet this group was very clear that “we have to design more inclusively to because the industry is creating housing stock, not just selling homes”. The Planning and Regulations grouping disagreed with the notions of separate housing and catering to the design needs of the few, whereas the Design and Construction grouping were much clearer in disagreeing with these propositions. The social sustainability aspect of how long people can live at home was more likely to be considered by the Planning and Regulations grouping than those in the Design and Construction grouping, which was almost equally divided and/or undecided in their view on this matter.

Both groupings indicated that overall more could be done to include older people and people with a disability and that they do have some influence over designs. On the issue of having time and budget to design more inclusively
there was a high neutral response, but the results trended towards time and money not being a major issue. There was little disagreement in both groupings with the proposition that “we need to design more inclusively because we are creating new housing stock, not just selling homes”.

The target market of young families does not include notions of designs that better suit a wider cross section of occupants because designs suiting older people and people with disabilities are seen as a separate endeavour. Consequently, the Design and Construction grouping likely believed market research on this group is the province of those providing separate housing types. The Planning and Regulations grouping which indicated a measure of market research might be referring to population demographic research rather than actual research involving householders or potential home buyers. Regardless, those in the Planning and Regulations grouping were more likely to support separate or special housing than those in the Design and Construction grouping.

5.2.6 Experience in ageing and disability housing

Forty four participants (80%) said they had experience in planning, designing and/or constructing homes where age and disability were considered (Item 16). The highest percentage by job type was in Design and Construction where ninety-one percent said they had experience compared with sixty-one percent of those working the area of Planning and Regulation. See Figure 5.8 for detail.
Those who claimed experience were subsequently asked about the inclusion of particular design features (Item 18). Of the seven features listed in the questionnaire, those most likely to be included in the design were: level no step entrances (48 responses), wider than average doorways (46 responses) and larger bathrooms (46 responses). These were followed by hobless showers (42), the height of switches and handles (41), open plan living areas (37); and flexible storage space (17). Issues for vision impairment, such as luminance, glare and colour contrasts, were mentioned by seven respondents in the additional comments section (see Table 5.6). Reference to kitchen design was made by three respondents.

**Table 5.6: Design features included**

<table>
<thead>
<tr>
<th>Features included</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level, no step entrances</td>
<td>48</td>
</tr>
<tr>
<td>Wider than average doorways</td>
<td>46</td>
</tr>
<tr>
<td>Larger bathroom</td>
<td>46</td>
</tr>
<tr>
<td>Hobless showers</td>
<td>42</td>
</tr>
<tr>
<td>Height of switches and handles</td>
<td>41</td>
</tr>
<tr>
<td>Open plan living areas</td>
<td>37</td>
</tr>
<tr>
<td>Flexible storage space</td>
<td>17</td>
</tr>
<tr>
<td>Colour contrasts, luminance</td>
<td>7</td>
</tr>
</tbody>
</table>
In Item 19 participants were asked to rank in order of importance three out of six options as reasons they included these particular features and the results are shown in Table 5.7. The first ranked reason was regulations followed by client request. The second ranked reason was social sustainability/responsibility followed by market demand. Social sustainability/responsibility also ranked first in the third ranked choice. A good selling point for all purchasers and demographic trends did not feature strongly and brand enhancement did not rate a single mention as a reason for including accessibility features. Overall, regulations and council requirements, social sustainability/responsibility, market demand, and client request featured strongly across the top three rankings. In terms of job groupings both ranked regulations and council requirements first. The Design and Construction grouping ranked market demand second, and the Planning and Regulations
grouping, ranked social sustainability/responsibility second. Details of the responses are shown in Table 5.8.

Table 5.8: Reasons for including accessibility features by ranking

<table>
<thead>
<tr>
<th>Ranked First</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and Construction</td>
<td>Regulations and council requirements (46.6%)</td>
</tr>
<tr>
<td>Planning and Regulation</td>
<td>Regulations and council requirements (94%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ranked Second</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and Construction</td>
<td>Market demand (31.8%)</td>
</tr>
<tr>
<td>Planning and Regulation</td>
<td>Social sustainability/responsibility (53.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ranked Third</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and Construction</td>
<td>Social sustainability (46.6%)</td>
</tr>
<tr>
<td>Planning and Regulation</td>
<td>Demographics (22.2%)</td>
</tr>
</tbody>
</table>

**How often are needs included**

Participants indicated that the functional needs of older people and people with a disability were not generally considered in the design of project homes. In total, just over half the respondents said they were either not considered at all (17.7%) or very rarely considered (35.5%).

**Reason needs considered**

Figure 5.9 shows that those in the Planning and Regulation group were more likely to be influenced by regulatory aspects whereas the Design and Construction group were more likely to be influenced by the client brief, which
is concurrent with the previous item relating to reasons accessibility features were chosen. Those involved in state funded home modifications are guided by individual client needs where occupational therapists often prescribe the design. They are therefore excluded from the “specific client brief requirement category” and shown separately.

5.2.7 Training and advice

Thirty nine respondents (63%) said they had attended a seminar or training that included information on disability access, aged housing or universal design. An industry association was most often cited source of training (35.5%). Four respondents said they had attended training by the Independent Living Centre NSW. Other training was either carried out in house, or by peers. Proportionately more respondents (68%) in the Design and Construction grouping received training than those in the Planning and Regulation category.

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5 The Independent Living Centre NSW was running an accredited course on public access compliance requirements, adaptable housing and universal design.
(50%). The NSW Home Modifications and Maintenance State Council provides training for government funded schemes within New South Wales\(^6\).

Almost half the respondents skipped the item on seeking advice which might indicate advice was not sought about design issues for ageing and disability.

Of those who responded, more than half (59.7%) said they had sought advice, which was largely drawn from access consultants (21%), and peers and friends (12.9%). Advice was also sought in-house and from industry associations. Apart from those who nominated access consultants, each respondent named a different source of advice.

**Summary of experience and training**

The responses indicate that knowledge and experience in design for ageing and disability are present in the industry, albeit largely driven by current regulations for adaptable housing. Industry associations play a role in training and education, but advice was often sought from peers, if not sought professionally from access consultants for public domain designs. Overall, there was no indication of a central or preferred source for information, advice and training. Fewer planners and regulators said they undertook training than those involved in design and construction. As regulators are the final arbiters of designs both before the building commences and at completion of construction it is likely that other industry personnel would seek their advice to ensure their designs and their completed product, reach appropriate compliance standards. Consequently their level of training and understanding of issues could

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\(^6\) See website [www.nswhmms.org.au](http://www.nswhmms.org.au)
inadvertently influence the inclusivity or otherwise of design. This might be a factor worth further research.

5.2.8 Comments on universal design

Opinions about universal design were provided by a narrative response. The fifty eight responses were coded into seven categories and these are shown in Table 5.9.

Table 5.9: Opinions of universal design

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good idea</td>
<td>27</td>
<td>43.5</td>
</tr>
<tr>
<td>Good idea but cost implications</td>
<td>10</td>
<td>16.1</td>
</tr>
<tr>
<td>Good but there are design issues</td>
<td>10</td>
<td>16.1</td>
</tr>
<tr>
<td>Not a good idea</td>
<td>5</td>
<td>8.1</td>
</tr>
<tr>
<td>Good but regulation needed</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Good but education needed</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Good but separate housing is needed</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>No response</td>
<td>5</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Overall, most respondents (83.7%) thought that universally designed homes were a good idea and three of these said it should be mandatory. A typical comment was:

“It makes good sense, inclusion at the initial design and construction stages of a house do not add greatly to the cost.”
However, nearly half of these respondents had some reservations indicating it was a good idea in theory, but more difficult in practice, with cost and design issues being mentioned most frequently:

“Brilliant, but there needs to be a huge shift in thinking towards the possible increase of cost that may be incurred”.

There was also an indication that universal design is the responsibility of government and social housing. One respondent commented that: “It is appropriate and desirable for social housing projects”, and another that it should be “no. 1 priority for state government to provide such accommodations”.

Five respondents were specifically against the idea of incorporating universal design into new homes. One respondent from the Design and Construction grouping made the following comment:

“Sounds like a good idea but the fact that everyone should change their house for the slim chance they become disabled is silly. I’m in a wheelchair and wouldn’t wish it on my worst enemy. It would be easier to sell and rebuild.”

Analysis by job type revealed that in both groupings approximately half thought universal design was a good idea without any reservations such as cost or design issues. Figure 5.10 shows the issue of cost was mentioned more frequently by those in the Planning and Regulation group (29%) compared to the Design and Construction grouping (15.6%). Needing regulations and/or education did not feature strongly (two respondents each), and the notion of separate housing was mentioned by one respondent.
5.2.9 Perceptions of the industry and universal design

In Item 25 on the survey questionnaire participants were asked to respond to six statements related to industry perceptions of universal design using a five point Likert scale. For reporting purposes the strongly agree and agree responses were merged, as were the strongly disagree and disagree. Overall, there was agreement with three of the six statements that:

- Not all homes need to be universally designed, only a proportion (53.4% agree; 34.5% disagree);
- It makes sense to make all homes universally designed (50% agree; 39.5% disagree) and;
- I would be happy to comply with new regulations for universally designed homes (60.3% agree; 15.5% disagree; 19% neutral).

There was an almost equal divide on two items:

- It would cost more to make homes universally designed (43.1% agree; 41.3% disagree) and;
• It’s OK to have universally designed homes, but the industry is not set up for it (41.4% agree; 36.2% disagree).

There was disagreement that:

• Building regulations are a major barrier to creating more universally designed homes (60.3% disagree; 17.2% agree).

The data on each of these items were analysed by job grouping and are summarised in Table 5.10. (Detailed charts are contained in Appendix C.)

Table 5.10: Overview of perceptions of universal design by job grouping

<table>
<thead>
<tr>
<th>Survey Item Statements: The Industry and Universal Design</th>
<th>Design and Construction</th>
<th>Planning and Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree %</td>
<td>Disagree %</td>
</tr>
<tr>
<td>1. Building regulations are a major barrier to creating more universally designed homes</td>
<td>20.6</td>
<td>58.8</td>
</tr>
<tr>
<td>2. It would cost a lot more to make homes universally designed.</td>
<td>41.2</td>
<td>44.1</td>
</tr>
<tr>
<td>3. Not all homes need to be universally designed, only a proportion.</td>
<td>50.0</td>
<td>38.2</td>
</tr>
<tr>
<td>4. It makes sense to make all homes universally designed.</td>
<td>58.8</td>
<td>35.3</td>
</tr>
<tr>
<td>5. It’s OK to have universally designed homes, but the industry is not set up for it.</td>
<td>41.2</td>
<td>41.2</td>
</tr>
<tr>
<td>6. I would be happy to comply with new regulations for universally designed homes.</td>
<td>61.8</td>
<td>35.3</td>
</tr>
</tbody>
</table>

NOTE: This table shows only the highest scoring figures for each category and does not show the high neutral response recorded in items 1, 4 and 5. More detail is provided at Appendix C.
The results were similar for both groups with most concurrence on item 6 with more than sixty percent of respondents in both groupings agreeing to the proposition of new regulations. The Design and Construction grouping were equally divided on the matter of the industry being set up to deal with universal design (41.2% agreed; 41.2% disagreed). Similarly with the notion that designing universally would cost more (41.2% agree; 44.1% disagree). The Planning and Regulation grouping believed only a proportion of homes should be universally designed (61.1%) as did the Design and Construction grouping, but the magnitude of response was not as high (50%). Results diverged on the issue of all homes needing to be universally designed (item 4) with the Design and Construction group agreeing (58.8%) and the Planning and Regulation group marginally disagreeing (44.4).

Apart from agreeing with new regulations (61.8%), the most clear cut results for the Design and Construction grouping were disagreement about building regulations being a barrier (58.8%), and agreement that it makes sense to have all homes universally designed (58.8%). The Planning and Regulation grouping’s most emphatic responses were agreeing with regulations (66.7%) and that only a proportion of homes need to be universally designed (61.1%).

*Narrative comments on perceptions of universal design*

The narrative comments yielded further information about the thinking behind some of the responses. Three main factors emerged overall: regulations and the role of regulators, additional cost, and confusing universal housing design with public access requirements and seniors living projects.
Regulations and regulators were a source of frustration for those in the Design and Construction grouping, particularly the inflexible way in which regulations can actually work against more accessible designs:

“Regulators need to consider that universally designed homes require flexibility of design thought.” – Building Designer.

There were two comments about local government controls on heights and floor levels, which were considered contrary to achieving better access:

“Some Councils do require specific heights off ground levels for floor levels, which means stepped floor plans or two storey construction. I don’t consider steps as being part of a universal design.” – Builder.

“Council regulations (particularly height limits) mitigate against providing single-level housing. It is very often necessary to step the house up or down the slope in order to comply.” – Builder.

It is likely that industry’s experience with social housing, public access and the adaptable housing standard, which is used as a reference point for seniors living dwellings, was extrapolated to universally designed homes. This was clearly and concisely stated by one architect, "No need, adequate regs for accessibility already exist." Another architect considered that universal design "...fails to consider the adaptability option" and that a “targeted response and ability to adapt design would be more practical and affordable.” The existing codes and standards were already considered onerous by this respondent because “strict compliance which can be impractical do frustrate those trying to include in a design or to construct.” This respondent also believed not all homes need to be
universally designed, possibly reflecting the rule often applied to multi unit dwellings that a proportion must be adaptable or suited for seniors living. A building designer commented that the definition was not clear and that it would be unreasonable for a two storey home “it could be said to require either no stairs or a lift is provided.” Whilst a lift would not be a universal design feature as such, space for later installation of lift would be considered a universal design feature. An architect also recognised that the definition was not clear stating that the “cost would depend on how far the design is required to go.” However, a surveyor believed the cost would rise regardless: “I have found over the years these new ideas add significant cost to the average home.”

Summary of opinions of universal design in housing
The Design and Construction grouping were divided about whether the industry is set up to cater for universally designed homes and whether they would cost more. Those in the Planning and Regulations grouping were more likely to believe universally designed homes would cost more, that the industry is not set up for it, and that only a proportion of homes need to be universally designed. Building regulations were not seen as an impediment to creating universally designed homes, and there was a high level of acceptance for new regulations in both groupings. This was in spite of some narrative comments that considered regulations had the potential to defeat the purpose. The narrative responses clearly show that many consider universal design to be a version of the public access standards and/or the adaptable housing standard, both of which have been a source of frustration and extra cost in the past.
5.2.10 Barriers to universal design

The section of the questionnaire about barriers to universal design (item 26) captured opinions in narrative form and asked:

“What stops the house building industry from building homes designed to include the needs of people of all ages and abilities?”

Responses were analysed and coded into themes. Some respondents provided more than one barrier, so the results are reported as frequencies. Comments identified issues with both the supply and demand sides of the market as well as regulation and cost issues. Although extra cost was cited most often as a barrier (29 comments), purchaser demand was also seen as a key issue (17 comments). This is because as a market segment it was perceived either to be small or there was no consumer demand. There was some criticism of the industry regarding a negative attitude towards the idea of universal design (13 responses), which links with industry’s lack of education in understanding it or wanting to implement it (11 responses). Together, these four themes accounted for two thirds of all comments. The remaining comments were issues with design (9 comments); lack of legislation to drive it (5 comments); and there were four comments that universal design was not a good idea in the first place. Table 5.11 shows the breakdown.

Apart from cost, industry’s attitude to change and lack of education solicited the most comments from the Design and Construction grouping. Cost was the most oft cited barrier in the Planning and Regulation grouping, followed by market
forces/demand. Both property developer respondents disliked the idea of universal design regardless.

Table 5.11: Barriers to universal housing design

<table>
<thead>
<tr>
<th>Comments about barriers</th>
<th>Design &amp; Construction</th>
<th>Planning &amp; Regulation</th>
<th>Others*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra cost is a problem</td>
<td>15</td>
<td>13</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Market forces absent/small market</td>
<td>9</td>
<td>7</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Industry attitude towards it</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Lack education to understand /do it</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Negative purchaser perception</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Design is an issue</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>No legislation to enforce it</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Not a good idea anyway</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>30</td>
<td>15</td>
<td>104</td>
</tr>
</tbody>
</table>

*Others combines HMMS and property developer responses

Narrative comments about barriers

Some narrative responses were one or two word comments such as “cost” or “market demand”, but many provided a context to their responses. Cost was often cited as a barrier on the assumption that universal design or designing inclusively was the same as providing public access requirements and the special requirements for senior living apartments. The confusion appears to be across the professional spectrum, including those who work for the home modifications service (HMMS). A sample of comments is shown in Table 5.12.
Others, however, are likely to interpret lack of willingness to change as a lack of market drivers for change, particularly as the new home market is popular with younger purchasers:

“Younger don’t want and don’t need inclusively designed homes and they generally don’t live in one place long enough for it to be an issue.”

   Surveyor/Facility Manager

“The market drives what we supply, therefore the large percentage of housing is for younger clients and they don’t want to pay for something they don’t think they will benefit from.”

   Project Home Builder

“More younger people are buying houses and want to satisfy their need of today ... architectural design comes higher than functionality of the house and or future living.”

   Building Designer

<table>
<thead>
<tr>
<th>Costs of complying with DDA and AS1428.</th>
<th>Planner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing buildings, in many cases, do not have good access for elderly/disabled. There can be a significant cost in upgrading the buildings. Particularly if the building is on a slope or above street level.</td>
<td>Planner</td>
</tr>
<tr>
<td>Cost – benefit – not all homes need to be compliant for ages and abilities.</td>
<td>Surveyor</td>
</tr>
<tr>
<td>There are cost and design implications arising from making designs which attempt to cater for all contingencies</td>
<td>Architect</td>
</tr>
<tr>
<td>Additional cost of doors, hobless showers, vanity, and door frames to be recessed. As well as wanting to be cutting edge in look rather than cutting edge in ‘usefulness’.</td>
<td>Urban Designer</td>
</tr>
<tr>
<td>Cost and trying to justify cost to a young family</td>
<td>Builder</td>
</tr>
<tr>
<td>Overall cost to the industry</td>
<td>Builder (HMMS)</td>
</tr>
<tr>
<td>Extra costs on the final product</td>
<td>Builder (HMMS)</td>
</tr>
</tbody>
</table>
These final comments counter the criticisms about industry methods and resistance to new ideas by indicating that public policy trends and demographic information can be ignored because they are satisfying a particular target market. In a nutshell, house-builders have no need to be concerned because they are selling to younger people who don’t need it. Nonetheless, builders in the HMMS, together with architects were more likely to be critical of industry’s resistance to change than other professions (see Table 5.13).

<table>
<thead>
<tr>
<th>Comments</th>
<th>Profession</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignorance focussing upon a narrow demographic. Conservatism.</td>
<td>Architect</td>
</tr>
<tr>
<td>Ignorance and lack of vision. There are many, many shortcomings in the housing industry, this topic is just one.</td>
<td>Architect</td>
</tr>
<tr>
<td>The building industry does not willingly adapt to change, where that change involves R&amp;D and threat of reduced return on investment.</td>
<td>Architect</td>
</tr>
<tr>
<td>Backward thinking – after all they fight energy efficiency tooth and nail too – cost cutting to the bone.</td>
<td>Building Designer</td>
</tr>
<tr>
<td>Resistance to change</td>
<td>Builder (HMMS)</td>
</tr>
<tr>
<td>The existing construction ethos, driven by marketing / advertising, life style perceptions and cost,</td>
<td>Builder (HMMS)</td>
</tr>
<tr>
<td>Sydney has such a low supply and such high demand the industry can be lazy in many areas.</td>
<td>Builder (HMMS)</td>
</tr>
<tr>
<td>...fixity of ideas - they have a commercial formula &amp; are loathe to spend any money or time on what may be a marginal gain in sales. If there is no profit incentive, or govt regulation it will not happen.</td>
<td>Builder (MMS)</td>
</tr>
</tbody>
</table>

Summary of barriers to universal design

Perceived additional costs of providing universal design features, largely linked with the costs associated with the public environment and adaptable housing,
were the main barrier. Cost is also linked to an assumption that as younger people, who are the focus of the new home market, do not need such features at this point in their lives, there is no point in providing additional features and adding costs unnecessarily. Industry’s resistance to change also featured as a theme, particularly in narrative responses from those involved in design and construction.

5.2.11 Facilitators of universal design

The survey item (27) related to facilitators of universal design posed the following question:

“What might encourage the house building industry to design and build homes that include the needs of people of all ages and abilities?”

Legislation (21 comments) and industry education (17 comments) were primarily identified as facilitators, together with financial incentives for incorporating universal design (14 comments), and creating more market demand (13 responses). Together these four themes accounted for almost three quarters of the comments. The remainder of the comments related to finding a way to make universal design more cost effective (8 comments); educating the public about its efficacies (4 comments); having less regulation (3 comments); and making it ‘normal’ by just incorporating it without branding it (3 comments). A breakdown of responses is shown in Table 5:14.

In terms of comments by job grouping, the Design and Construction group identified legislation and education as the primary facilitators, followed by greater market demand. The data for the Planning Regulation grouping did not
trend towards any particular facilitator although cost issues featured proportionately more strongly than with the Design and Construction grouping.

**Narrative comments about facilitators**

Narrative comments provided additional thoughts about industry education and regulations, as well as ideas related to cost offsets through financial incentives. In terms of industry education, there were several comments relating to a lack of understanding about the issues, and about the demographics and potential market. One building designer said, “Let the project builders know the numbers of interested people”, but there was a proviso that “the design must look EXACTLY like a house, and NOTHING like a hospital or an aged care facility” (respondent’s emphasis). The last comment is an observation that the industry tends to assume universal design is the same as accessible and adaptable housing designs. As reported earlier, regulations

<table>
<thead>
<tr>
<th>Comments about facilitators</th>
<th>Design &amp; Construction</th>
<th>Planning &amp; Regulation</th>
<th>Others*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislate for it</td>
<td>14</td>
<td>5</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Industry education required</td>
<td>10</td>
<td>4</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Incentives for industry</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>More market demand needed</td>
<td>7</td>
<td>5</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Public education required</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Less regulation</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Make it normal (not branded)</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>29</td>
<td>15</td>
<td>90</td>
</tr>
</tbody>
</table>

*Others combines HMMS and property developer responses
were cited as the most likely way to achieve universal design in housing, although some would prefer no further regulation. There were three comments that mentioned the New South Wales energy efficiency regulations as a model for introducing new regulation, but others looked to the Building Code of Australia for a national rather than state-level response. One building designer put the case this way:

“As the push for energy efficiency has proven, the industry likes doing things the way they are used to. They’ll talk clients out of as much as they can just so they don’t have to change what they do. They are proven not to do anything with self regulation.”

The issue of incentives largely focused on governments providing tax and planning inducements, such as a “reduction in government and semi government charges”. From a purchaser perspective a builder said a “cash back scheme similar to the solar rebates”, was seen as helpful, and a planner offered the suggestion for “…incentives to encourage people to build homes that include needs for all ages; money talks!”

Another factor raised in this section was the issue of demonstrating in a practical way that universal design is achievable, and “readily saleable and sort [sic] after in the market place” and can be “cost competitive with ‘conventional/current’ building methods (Builder: HMMS). A planner added that it would have to be “easy, simple and cost effective and show evidence of market advantages.”
Summary of facilitators

While some facilitators were the converse of the barriers, such as finding a way to make universal design more cost effective and increasing consumer demand, many stressed other aspects, particularly legislation and education. The assumption that universal design is another term for accessible housing, public access and adaptable housing forms a consistent theme that underpins many responses. Consequently, cost was cited as a major barrier which needed to be overcome with incentives. Nonetheless there were those who thought the industry was lagging behind in embracing necessary design changes to cope with the changing demographics and that education was therefore a solution. The issue of the market is an interesting one because product development is based on consumer demand. Therefore, if consumers are not demanding a change in design then the industry is not willing to risk making changes that may not have consumer appeal. Here we come full circle to the issue of assumptions about designing more inclusively requiring “disabled” design features.

5.2.12 Survey summary

The survey provided both quantitative and qualitative data about the state of play in the industry regarding acceptance of universal design in new-build housing, and/or designing for the wider cross section of the community. The introduction of public access requirements and planning regulations for adaptable housing has been extrapolated to the universal design concept which was used as a euphemism for accessible or adaptable design in most responses. The initial cost of applying public access codes and adaptable housing codes are
clearly to the forefront of the minds of planners and regulators in particular. Nevertheless, there are some architects and building designers who have a better understanding of the conceptual basis of universal design and would be happy for other industry players to embrace the ideas. The issue of separate housing is possibly influenced by social housing building projects where state governments have provided disability/wheelchair specific housing for tenants. However, several respondents believed it was not possible to design for the lifespan and that it is inevitable that special housing should be provided as people are no longer able to live in their current home. There was also a sentiment that people with a disability and older people should be a state responsibility.

As the industry is largely driven by building codes and planning regulations, many responses featured these factors, and there was an assumption that nothing would change without the force of new regulations. The issue of maintaining a level playing field for all stakeholders was linked to regulations. Consequently education, although perceived by some as a better option, would not elicit change, at least, not without some form of incentive or compulsion. Lack of consumer demand was posed as a reason for not adopting universal design principles, placing consumers squarely in the centre of the debate. The premise of “if you don’t ask for it, we won’t supply it” was applied strongly and was used to absolve the house building industry from any responsibility for the longevity of the home for its occupants.
One inconsistency was noted. Although technical specifications and standards were ranked last as design drivers, they are cited as a primary way of changing design parameters. Legislation at any level needs to be expressed in technical standards which provide practical information to professional and trade personnel. It is possible another factor is operating, that of competitive advantage (or disadvantage). Industry interviews revealed that regulations might be needed more for the maintenance of an industry-wide level playing field than for difficulties in design change.

Planners and regulators claimed to have carried out market research on older people and people with a disability. It is not known what type of research was undertaken, but it resulted in this group believing the market segment is small. It is possible that the research consisted of analyses of population demographics. In contrast, those involved in design and construction thought the market larger than planners and regulators yet research activity on this market segment was low. This is where it is not clear whether it was an analysis of population demographics or design research activity.

In terms of knowledge and training, if the majority of those involved in design and construction have experience of building for older people and people with a disability then some technical knowledge is currently circulating. However, it is not known whether it is knowledge of the actual needs of residents or specific knowledge of adaptable and accessible housing codes. According to the results, planners and regulators received less training that those involved in design and construction. This is a little confusing because they need to know if a design
complies not only with the “deemed to satisfy” requirement in the BCA, but also “alternative solutions” (Australian Building Codes Board, 1996). Given that regulators are responsible for approving designs, they are also a source of information for designers and builders. Consequently, the level of their knowledge can have an impact across the industry.

Apart from a handful of respondents who indicated otherwise, most agreed universal design was a good idea. However, this agreement may be due to the social acceptability of the answer, particularly as there is a perception that universal design is for a marginalised group. Consequently many responses contained exceptions such as being a good idea except for the cost or the design issues. Although regulations were cited as a major facilitator there were very few responses that indicated universal design should be mandated in some way.

5.3 Summary of the industry interviews and survey

Universal design in housing was mostly interpreted as a special design type for a ‘special’ group of people by both interview and survey participants. Although interview participants were able to provide a reasonable definition of universal design in general terms, it was nevertheless discussed as housing for older people and/or people with disabilities. Most interview and survey responses were therefore framed within this perspective. Those who did understand the concept of designing universally were critical of those who did not and countered many of their proposed barriers, such as extra cost and design difficulties. Apart from consumers, property developers were considered to have a major influence over house design. Architects were perceived as having
only as much design control as they were allowed, but more to the point, mass market housing is not architect designed – this is the province of building designers.

The industry believes it is meeting market demands with its current product because no consumer dissent is detected: “most people who buy them, like them”. Older people and people with disabilities are considered a discreet market segment – “we do different products for different segments”. Consequently there appears to be little market research carried out with these groups in mind, indeed it was not clear what, if any, market research is carried out other than an analysis of population demographics. Nevertheless, there was little disagreement in the survey responses with the proposition that building designs should be more inclusive and that we should have more concern for this when creating new housing stock. This may indicate that although universal design is a “good idea”, industry is content with the status quo. It was interesting to note from the survey responses in particular that those involved in regulation and planning were more likely to believe separate housing was still the preferred solution, and it could be worth investigating their experience further to see what might be causing this view.

Training and education about universal design, accessibility and adaptable housing were not a feature of the interviews, but the survey responses revealed that industry associations and peers were seen as the most likely and reliable sources of information and training. Regardless, because public access and adaptable housing standards are currently being enacted, some knowledge of
accessible design details are already diffused through the industry. However, how accurate this knowledge is and how well it is applied is another question. The homeowner interview with Sam where he believed he could “bend the rules” to suit his house is an example of how a little knowledge can be a dangerous thing. And of course, given the way knowledge is diffused throughout the industry by reference to peers, it is likely his peer group shares the same ideas. Whether the advantages of legislation outweigh the disadvantages is not clear because it is open to interpretation and practical application may vary.

“Nothing will happen without legislation” was the catch-cry, even by those who preferred to see universal design principles the subject of education rather than new regulation. There was a general theme emerging from both the interviews and survey that the industry is set up in such a way that it is impossible to bring about change without it. However, the role of local councils was the subject of some concern either because of the political processes involved, or inflexible interpretations of policies. There were claims that planning policies and building regulations are not always well synchronised, and much depends on their interpretation by local council planners and certifiers – “what the legislation says and what the council accepts might be two different things”.

In terms of barriers, cost was raised as a major drawback and was cited many times in both the interviews and the survey – “1. Cost, 2. Cost, 3. Cost” was one participant’s response to the question of why the industry does not include the needs of people of all ages and abilities. Two dependent assumptions are made
about costs: one, the cost will increase, and two, extra cost will not be entertained by the consumer. Those participants who understood the underlying concepts of universal design and also carried out independent cost assessments believed extra costs, if any, could be borne by consumers. Regardless, costs are assumed to be a major deterrent to introducing universal design features. Citing costs as a barrier avoids the need to mention or reveal any attitudinal restraints to change “for a small proportion of the population”. However, the belief that older people and people with disabilities should be the subject of separate and special ‘products’ revealed an underlying tendency to stereotype and marginalise both groups.

Apart from perceived costs and a need for special and separate housing types, lack of consumer demand for universal design also featured strongly. Consumers choose one house design from a range of finished products in the same way they might choose a new motor vehicle. Any new design trends are therefore driven by consumer preferences for existing products rather than consumer demand. Industry interprets this behaviour as consumer demand and claims they will build what consumers want, but this demand must have generic qualities if the mass market processes are to be maintained. Consequently, it is unclear how much influence consumers have over design and in what ways such influence can be exerted.

Facilitators of universal design did not emerge as a separate theme in the interviews, but the survey specifically asked about facilitators which emerged as industry incentives and education. Regulations are not just a means by
which to implement a policy, they also help maintain a level playing field across industry. That is, no individual business is advantaged or disadvantaged because everyone makes the necessary changes at the same time, and efficiencies remain tightly coordinated across the industry.

Overall, those who did not confuse universal design with adaptable and accessible design were more likely to be in favour of its introduction, and if possible, with education and without new regulations.

The question posed at the beginning of the study was, “why doesn’t the house-building industry embrace universal design?” So far, the answer is looking complex and multi-faceted. A pattern of deflected responsibility has emerged from the interview and survey findings. Additional (and unviable) costs, lack of consumer demand, and lack of regulations, are all factors over which industry appears to have little if any control. Besides, there is a belief that either (or both) government and ageing-specific businesses are responsible for supplying ‘special’ housing. This raises the question of who, then, is responsible if there is a pressing social and economic need to accommodate an ageing population, to progress a social inclusion agenda, and to create more inclusively designed housing stock.

The negotiations for the proposed Disability (Access to Premises – Building) Standard (Australian Government, 2010) were mentioned specifically by three interview participants, and alluded to by some survey participants. As these negotiations might have a bearing on some of the responses, government
documents relating to the negotiations surrounding the Standards were reviewed along with documents relating to social housing, to see if any further insights could be gained. An analysis of the documents follows next.
6 TWO SETS OF INDUSTRY DOCUMENTS

By chance two events relating to universal housing design occurred during the data collection phase of the study, and were analysed for attitudes and opinions similarly to the survey and interviews. These events generated two sets of documents as shown in Table 6.1. One set related to tender documentation for the procurement of social housing and the other related to submissions and public hearing transcripts related to the public access standards.

Table 6.1: Documents selected for analysis

<table>
<thead>
<tr>
<th>Main Document</th>
<th>Sections Selected for Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Government Social Housing Initiative Guidelines</td>
<td>Element 1 – New Construction</td>
</tr>
<tr>
<td>Housing NSW Request for Tender RES644</td>
<td>Statement of Requirements and Returnable Schedules 3 and 8</td>
</tr>
<tr>
<td>Inquiry into the draft Disability (Access to Premises – Buildings) Standards: Submissions</td>
<td>Submission 50: Master Builders Australia</td>
</tr>
<tr>
<td></td>
<td>Submission 84: Property Council of Australia</td>
</tr>
<tr>
<td></td>
<td>Submission 97: Australian Inst. of Building Surveyors</td>
</tr>
<tr>
<td></td>
<td>Submission 135: Australian Institute of Architects</td>
</tr>
<tr>
<td>Inquiry into the draft Disability (Access to Premises – Buildings) Standards: Public Hearings</td>
<td>Public Hearing 12 March 2009:</td>
</tr>
<tr>
<td></td>
<td>- Australian Building Codes Board</td>
</tr>
<tr>
<td></td>
<td>Public Hearing 25 March 2009:</td>
</tr>
<tr>
<td></td>
<td>- Australian Human Rights Commission</td>
</tr>
<tr>
<td></td>
<td>- Mr Peter Conroy</td>
</tr>
<tr>
<td></td>
<td>- Property Council of Australia</td>
</tr>
<tr>
<td></td>
<td>- NSW Disability Council</td>
</tr>
<tr>
<td></td>
<td>Public Hearing 30 March 2009:</td>
</tr>
<tr>
<td></td>
<td>- Access Australia (Michael Fox)</td>
</tr>
</tbody>
</table>

The documents selected were analysed from the perspective of the research theme: what do the documents reveal about changes to home design so they might suit a wider cross-section of the population? Within this perspective the documents were examined for societal attitudes towards people with a disability and older people, and industry claims that financial viability was at risk if such changes were made. The housing documents are discussed first.
6.1 Economic Stimulus Package: social housing

In Australia, support for implementing universal housing design came from an unexpected source – the “Global Financial Crisis” which prompted the Australian Government to institute an economic stimulus package – known as the “Nation Building and Jobs Plan” in New South Wales (NSW Government, 2009). This plan included the construction of new homes in the social housing sector across Australia.

In the first quarter of 2009 the Commonwealth and New South Wales State Governments held joint industry briefings to provide an overview of the project. I attended one of these sessions where it was stipulated that at least fifty percent of the new dwellings should be universally designed (Housing NSW and Australian Government, March 2009). After the session I examined the industry information and tender packages and looked for interpretations of, and references to, universal design.

6.1.1 Analysis of social housing guidelines

Using universal design as the reference point, the Australian Government guidelines for social housing and sections from the Housing NSW request for tenders were selected for comparison, consistency and application. The documents selected were the Social Housing Initiative Guidelines, Statement of Requirements, and Returnable Schedules 3 and 8. A brief overview of their content is shown in Table 6.2.
Table 6.2: Overview of the documents selected for analysis

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Content of Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Housing Initiative Guidelines: Element 1 – New Construction</td>
<td>Australian Government guidelines for state and territory governments which set out arrangements for the administration and delivery of Stage 2 (new construction) which includes procurement requirements.</td>
</tr>
<tr>
<td>Statement of Requirements – Terms and Explanations</td>
<td>This thirteen page document introduces prospective tenderers to the process and the scope of the projects.</td>
</tr>
<tr>
<td>Returnable Schedule 3 – Summary of Project</td>
<td>A one page section of the tender package with a table which, when completed, will summarise the completed tender document. It includes the type of land, progress of development applications and types of dwellings to be built.</td>
</tr>
<tr>
<td>Returnable Schedule 8 – Project Supplement</td>
<td>Consisting sixteen pages, this section contains specific information about construction and site works, fixtures, fittings and finishes, and inspections and certifications.</td>
</tr>
</tbody>
</table>

6.1.2 Social Housing Initiative Guidelines

The Social Housing Initiative Guidelines mention universal design in the list of “Key Requirements and Timelines” and provide specific information about universal design in “Attachment B, Selection Criteria”. Although “Attachment C, Reporting Framework” also contained references to universal design it was not used for analysis because it was mostly a reiteration of the Key Requirements and Timelines. The items selected for examination are shown in Table 6.3.

Universal design is first mentioned in the section headed “Key Requirements and Timelines” on page 5. It is listed among items such as allocation of housing to people with the highest needs, transition of homeless persons, and
environmental sustainability. It states that proposals will be assessed against seven criteria. The fifth is:

“(e) adhere to universal design principles that facilitate better access for persons with disability and older persons”.

Table 6.3 Units for analysis in Social Housing Initiative Guidelines

<table>
<thead>
<tr>
<th>Page No.</th>
<th>Item for Analysis</th>
<th>Context of Item for Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Key Requirements and Timelines</td>
<td>The principles of universal design are one of seven items against which proposals for Commonwealth funding will be assessed.</td>
</tr>
<tr>
<td>23</td>
<td>Attachment B: Selection Criteria 3) Meet universal design standards</td>
<td>This section on meeting universal design standards takes up almost one A4 page. It provides an explanation of universal design and lists six minimum universal design elements.</td>
</tr>
</tbody>
</table>

The association of universal design with disability and ageing now sets the scene for all that follows, including an attempt at a fuller explanation in “Attachment B: Selection Criteria”. In this attachment there is a section with a sub-heading “Meet universal design standards”, although there are no formally recognised universal design standards per se in Australia. What follows under this heading reinforces the notion of ageing and disability – “proposals will be assessed against universal design principles that facilitate better access for persons with disability and older persons”.

In spite of the emphasis on access for persons with a disability and older persons, the document attempts to explain that universal design is not just for people with disabilities, but is for everyone:
“Universal design is a relatively new concept that emerged from “barrier-free” or “accessible design” and “assistive technology”. Barrier free design and assistive technology provide a level of accessibility for people with disability but they also often result in separate and discriminating solutions, for example, a ramp that leads to a different entry to a building than a main stairway. Universal design strives to be a broad spectrum solution that helps everyone, not just people with disabilities.”

Finding this explanation perplexing because it unnecessarily and incorrectly introduces assistive technology, I was curious to know the origin of this definition. I discovered the definition originated in Wikipedia (17 March 2009), which is not usually regarded as an authoritative source of information. Regardless of how this definition came about, it was reproduced by what would be perceived as reputable source. As such, it has the potential to undermine the original intent of universal design in dwellings.

The assertion in the explanation that universal design is for everyone is correct, but it focuses on a group of people who are most obviously excluded by poor architectural design – an aspect of universal design acknowledged as problematic in the introductory chapter. So in spite of efforts to show that universal design is for everyone, the explanation signals strong connections with disability and ageing.

The timeframes set by the Nation Building Economic Stimulus Plan were short: briefings in February and March and submissions were due early April (Australian Government, 2009). The speed at which the tender process was
taking place quite likely created a focus on material matters of land acquisition and housing procurement and it is quite likely there was no time to digest new concepts. However, it might indicate a measure of apathy and/or ambivalence towards universal design, and by inference, people with disabilities and older people. If universal design and the potential benefits it can bring had been better understood, perhaps issues of time and procurement would have been viewed differently. It was also likely that the focus was on constructing as much social housing as possible within the least amount of time. This is punctuated by the sentence that follows the statement that all submissions will be assessed against universal design principles, but:

“The overarching and priority objective of the initiative is to quickly commence construction activity.”

Although universal design principles are negated by a time factor, the document lists specific of universal design features under the sub-heading “Requirements”. The list is introduced using the original explanation which associates universal design entirely with disability and ageing:

“...where possible incorporate the following minimum universal design elements to make properties more accessible to people who are ageing or live with disabilities.”

Six features are listed: installation of grab rails, hobless showers, minimum door and corridor widths, kitchen bench features, door handles and location of light switches. While one of the most important features, a level access into the home is omitted, great detail about kitchen benches and placement of cook tops is provided. If the person cannot enter or exit the dwelling, what is the point of
such kitchen design features? It gives the impression therefore that these features were selected in an ad hoc manner. The section ends with a paragraph that reiterates the earlier statement that universal design is a highly desirable but not a necessary condition:

“Dwellings may be exempt from meeting these requirements where incorporation of these features would result in excessive delay to the delivery of projects.”

If, perhaps, there had been a better understanding of universal design principles, the issue of speed might have been more easily resolved. The Landcom Universal Design Guidelines (2008) and information available from the Center for Universal Design (2008b) among others, indicate that designing universally is a thinking process at the design stage – it is not a construction stage issue.

6.1.3 Housing NSW – Request for Tender

Responsibility for implementing the social housing initiative fell to individual state and territory governments using this Commonwealth Government policy document. The New South Wales housing authority, Housing NSW, released a request for tender consisting of various schedules and related information (Housing NSW, 2009). The sections chosen for analysis were the Statement of Requirements, Returnable Schedule 3 and Returnable Schedule 8. Table 6.4 gives an overview of the documents and the items used for analysis.
Table 6.4  Items selected from Housing NSW RES466

<table>
<thead>
<tr>
<th>Item for Analysis</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page 3, Definitions and Abbreviations from the Statement of Requirements</td>
<td>The Statement of Requirements is a 13 page document providing the program objectives, scope of proposals, explanation of the schedules and a timetables for tenders and completion of projects.</td>
</tr>
<tr>
<td>Returnable Schedule 3 – Summary of Project</td>
<td>A one page pro-forma schedule to be filled out by the tenderer.</td>
</tr>
<tr>
<td>Returnable Schedule 8 – Project Supplement</td>
<td>A 16 page pro-forma schedule detailing finishes, appliances, fittings, site works and other building specifications.</td>
</tr>
</tbody>
</table>

6.1.4 Statement of Requirements: Definitions and Abbreviations

The “Statement of Requirements” introduces prospective tenderers to the tender requirements. The document commences with a list of definitions and abbreviations and lists six types of housing: “adaptable housing, disabled (fully accessible), general housing, pensioner housing, universal design principles, and visitable”. Table 6.5 reproduces the housing types as they appear in the “Statement of Requirements: terms and explanations” (page 1).

Most obvious in Table 6.5 is the number of housing categories based on categories of persons (disabled, pensioner and general) and planning policies (adaptable and visitable) which also indicate categories of persons (older people and people with a disability). The explanation column shows references to statutory documents rather than an explanation or description. Apart from General Housing and Universal Design Principles, all other categories are
Table 6.5: Housing NSW: terms and explanations

<table>
<thead>
<tr>
<th>Term</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptable Housing</td>
<td>A housing unit meeting performance requirements of AS 4299, with circulation and floor space to AS1428.1, including floor area allowances for accessible bathroom and kitchen, however fitted out with standard fixtures and fittings.</td>
</tr>
<tr>
<td>Disabled (Fully Accessible)</td>
<td>A Housing unit complying with floor space requirements of AS 1428.1 and designed and fitted out for people with disability to meet user specific requirements.</td>
</tr>
<tr>
<td>General Housing</td>
<td>All housing other than SEPP – Housing for seniors or people with a disability.</td>
</tr>
<tr>
<td>Pensioner Housing</td>
<td>SEPP – Housing for seniors or people with a disability.</td>
</tr>
<tr>
<td>Visitable</td>
<td>A Housing unit (as per AS4299) that has at least one wheelchair accessible path of travel to the living area and to toilet that is either accessible or visitable.</td>
</tr>
</tbody>
</table>

Source: Housing NSW, Request for Tender, land and multi-unit development, RES466, Statement of Requirements, March 2009a (page 1).

Note 1: SEPP (State Environmental Planning Policy)
Note 2: AS 1428.1 (Australian Standard, “Design for access and mobility”)
Note 3: AS 4299 (Australian Standard, “Adaptable Housing”)

connected with disability and/or ageing. Universal Design Principles are given one reference – the Landcom "Universal Housing Design Guidelines" (2008). So, there is one type of general housing and four types of ‘other’ housing. Without lengthy explanations about the detail of each of the statutory documents and how many features of adaptable, disabled and pensioner overlap and could have been merged into universal design principles, suffice to say, if universal design principles had been used as the baseline for all housing, including general housing, the need for so many categories and references would have been minimised. If design time is extended at all, it is the need for tenderers to
refer to various reference documents. Regardless, tenderers are left to make their own interpretations and it looks like an either or choice – either it is about disability and ageing or it is not. Nevertheless, the returnable schedules (as pro-forma documents) are used to assess tenderers, and meeting these criteria are essential regardless of explanations and references.

6.1.5 Returnable Schedule 3

Returnable Schedule 3 invites the tenderer to list the number and type of units they propose to build and introduces more terminology. ‘Seniors Living’ appears to replace ‘Pensioner Housing’, universal housing has disappeared from the options, and ‘disabled’ units are to comply with a standard for public access (AS1428.1). Table 6.6 shows the table of housing types as presented in the Returnable Schedule 3.

Table 6.6: Housing NSW: Returnable Schedule 3 – Summary of Project

<table>
<thead>
<tr>
<th>Type of units to be built:</th>
<th>Type of Unit</th>
<th>Number of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Seniors Living</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ General living</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Disabled Units (compliant to AS 1428.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Adaptable Units (compliant to AS 4299)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Visitable Units (compliant to relevant provisions of AS 1428.1 and AS 4299)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Housing NSW, Request for Tender, land and multi-unit development, RES466, Returnable Schedules, March 2009b (page 5).
Schedule 8 also ignored universal design as a concept, preferring instead to continue the segregating language of disabled and non-disabled dwelling types.

6.1.6 Returnable Schedule 8

The sixteen-page Returnable Schedule 8 – Project Supplement, provides prescriptive detail of the design and construction elements required to meet each housing type listed in Schedule 3. This is where it becomes increasingly complex with application of further terms. Table 6.7 shows the various terms, albeit used inconsistently, throughout Returnable Schedule 8. The punctuation and italics are replicated as shown in the tender document, but some extra bullet points were added here for reader clarity.

Table 6.7: Terminology used in Returnable Schedule 8

| • Adaptable dwellings       |
| • All dwellings designated as “adaptable” |
| • Disabled dwellings        |
| • Disabled Dwellings        |
| • Disabled dwelling/units   |
| • “disabled dwellings” (i.e. for people with disabilities) |
| • Dwellings for the disabled |
| • Dwellings for disabled    |
| • Modified Dwellings for the disabled |
| • General housing           |
| • General housing           |
| • Seniors’ Living SEPP      |
| • Seniors Living SEPP – Housing for Older People and People with Disability |
| • Seniors Living SEPP or Disabled |
| • Seniors Living SEPP dwellings designated as “disabled” |
| • Seniors Living SEPP that are not “disabled” |
| • Aged and disabled dwellings |
| • Seniors Living SEPP visitable dwellings |
As Table 6.7 shows, the term “disabled” is mentioned often and is applied as both an adjective and a noun. To bring some of the terminology together for easier comparison, Table 6.8 draws together the terms used in the three sections of the tender: the Statement of Requirements, Returnable Schedule 3 and Returnable Schedule 8 and aligns the categories.

Table 6.8: Comparison of terms used in three different sections of Housing NSW tender document

<table>
<thead>
<tr>
<th>Statement of Requirements</th>
<th>Returnable Schedule 3</th>
<th>Returnable Schedule 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptable Housing</td>
<td>Adaptable Units</td>
<td>• Adaptable dwellings</td>
</tr>
<tr>
<td></td>
<td>(compliant to AS 2499)</td>
<td>• All dwellings designated as “adaptable”</td>
</tr>
<tr>
<td>Disabled (Fully Accessible)</td>
<td>Disabled Units</td>
<td>• Disabled dwellings</td>
</tr>
<tr>
<td></td>
<td>(compliant to AS 1428.1)</td>
<td>• Disabled dwelling/units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ”disabled dwellings” (i.e. for people with disabilities)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dwellings for the disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dwellings for disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Modified Dwellings for the disabled</td>
</tr>
<tr>
<td>General Housing</td>
<td>General Living</td>
<td>• General housing</td>
</tr>
<tr>
<td>Pensioner Housing</td>
<td>Seniors Living</td>
<td>• Seniors’ Living SEPP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Seniors Living SEPP – Housing for Older People and People with Disability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Seniors Living SEPP or Disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Seniors Living SEPP dwellings designated as “disabled”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Seniors Living SEPP that are not “disabled”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Aged and disabled dwellings</td>
</tr>
<tr>
<td>Universal Design Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitable</td>
<td>Visible Units</td>
<td>• Seniors Living SEPP visitable dwellings</td>
</tr>
<tr>
<td></td>
<td>(compliant to relevant provisions of AS 1428.1 and AS 4299)</td>
<td></td>
</tr>
</tbody>
</table>
As Table 6.8 shows, Universal Design Principles did not appear in either Schedule 3 or Schedule 8 – the schedules most related to the design of dwellings. The absence of universal design is particularly obvious in Schedule 8 which provides detailed design instructions. The absence can be attributed to all references focusing on existing ordinances and standards relating to age and disability specific housing. There is an implicit assumption that universal design principles are incorporated into the design specifications for all but general housing because of meeting either or both ageing and disability requirements. In spite of good intent, the concept of universality has been lost here.

6.1.7 Summary of Department of Housing documents

Political will is a necessary condition for policy change, but policy change is not always a sufficient condition for a change in practice. The then Parliamentary Secretary for Disabilities, The Hon Bill Shorten, made broad statements in the media at the time of the Jobs Stimulus Package announcement that most of the new housing will have universal design principles, and on the popular ABC Television show, Q & A, he urged property developers to embrace the idea:

“...when you're building your new housing estates - sooner or later we're all going to get old - I mean, that's the plan - and we're going need to have universal access.”

(Bill Shorten, Australian Broadcasting Corporation, 2009).

However, the intent to show leadership in the housing sector on issues of universal design was compromised by the speed at which the program was rolled out, and interchangeable use of terminology throughout the
Terminology was particularly confusing in the Housing NSW documentation. As a consequence, universal design became an isolated and disconnected notion except where it could be translated into the language of ageing and disability. Designing for ageing and disability is not the core issue here – there are more occupants with disabilities in social housing than private housing (Australian Government, April 2009). The main point is that this is another example of the misuse and misinterpretation of the term universal design. The failure to comprehend the intention and processes of universal design has the potential to further entrench notions of segregated housing, and at the same time, render invisible the inclusive and beneficial intentions of universal design. Although this was a good opportunity to introduce the universal design concept to industry, particularly in a time of fierce competition for business, it was not introduced in a way that industry could understand. As a consequence universal design in housing remains an abstract concept and its common usage name, universal housing design, has become an umbrella name for any housing related to ageing and disability.

The second set of documents do not relate specifically to housing or universal design: they relate to notions of inclusion of people with disabilities within the architectural design of the public domain. As such, they reveal a range of attitudes towards the issues involved.

6.2 Disability (Access to Premises- Buildings) Standard

During the data collection phase ageing and disability issues received greater prominence across the built environment industry due to the final review of the
draft *Disability (Access to Premises – Buildings) Standards* for public buildings (Australian Government, 2010). Whilst the Access to Premises Standard excludes residential housing, the process of the review is included in the analysis for two reasons. First, many large property development and building companies operate in both public and residential markets. A heightened awareness of public building issues may have impacted on survey and interview responses about housing. Consequently, this is an important part of the background against which the responses might be understood and interpreted. Second, the additional detail in the documents can be compared with survey and interview responses and thereby add robustness to the results. The documents selected are shown in Table 6.9.

**Table 6.9: Inquiry into the draft *Disability (Access to Premises – Buildings) Standards***

<table>
<thead>
<tr>
<th>Items Selected for Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Written Submissions</strong></td>
</tr>
<tr>
<td>No. 48: Housing Industry Association</td>
</tr>
<tr>
<td>No. 50: Master Builders Australia</td>
</tr>
<tr>
<td>No. 84: Property Council of Australia</td>
</tr>
<tr>
<td>No. 97: Australian Inst. of Building Surveyors</td>
</tr>
<tr>
<td>No. 135: Australian Institute of Architects</td>
</tr>
<tr>
<td><strong>Public Hearing Transcripts</strong></td>
</tr>
<tr>
<td>25 March 2009:</td>
</tr>
<tr>
<td>30 March 2009:</td>
</tr>
<tr>
<td>- Australian Building Codes Board</td>
</tr>
<tr>
<td>- Australian Human Rights Commission</td>
</tr>
<tr>
<td>- Mr Peter Conroy</td>
</tr>
<tr>
<td>- Property Council of Australia</td>
</tr>
<tr>
<td>- NSW Disability Council</td>
</tr>
<tr>
<td>- Access Australia (Michael Fox)</td>
</tr>
</tbody>
</table>

**6.2.1 Background**

In the late 1990s a new building standard was proposed that would bring about two benefits: one that people with disabilities would have greater access to the
public domain, and two, that the construction industry would have more certainty that buildings would comply with both the DDA and the BCA. However, the passage of the proposed Standard was heavily contested and the consultation process eventually stalled at the latter end of the Howard Government term. In 2007 the newly elected Rudd Government signed the UN Convention on the Rights of Persons with a Disability (United Nations, 2007), and as a consequence, resurrected the consultation process in early 2009.

The Australian House of Representatives Standing Committee on Legal and Constitutional Affairs (2009c) received 147 submissions in response to the draft Standards. Submissions were received from industry associations, interested individuals, representatives from the disability and ageing sector, and government instrumentalities. Public hearings were subsequently conducted in most major capital cities. The process of developing the draft Standards document was informed by key industry players and professional bodies which distributed drafts and updates within their organisations. After more than ten years in development and a report by the Parliamentary Standing Committee the Standards finally passed through the House of Representatives in May 2010 for application in May 2011.

Whilst the Standards specifically exclude private housing and focus on those premises covered by the Disability Discrimination Act 1992, that is, public buildings, it helps explain some of the confusion about the nature of universal design, universal access, and universal housing revealed in the survey responses and interviews with industry personnel. Some of the issues raised
through the Standing Committee’s consultation process were similar to those found in the survey responses and interviews, particularly in relation to regulatory certainty and additional cost. The written submissions and transcripts of the hearings also reveal similar attitudes about accommodating what the industry considers as a small group people on the basis of extra cost.

6.2.2 Purpose of the Standards

Although the DDA has required public building owners and managers to provide access for people with disabilities since 1992, many buildings still remain inaccessible or accessible by stigmatising means such as a goods entrance or back door. The legislation is not policed because it is a complaint-based mechanism. This means that if a building is not accessible to an individual, that individual needs to make a complaint to the Australian Human Rights Commission. One of the confounding factors is that while all the requirements of the BCA may have been met in regard to disability access, on a practical level, access is not always achieved such that it meets the DDA. For example, the building may have an accessible public toilet and an accessible entry, both of which comply with the BCA, but the toilet is atop a step, so it fails meet the DDA requirements because in practical terms the toilet is inaccessible.

6.2.3 Regulations, certainty and the cost

Several industry representatives raised the issue of certainty, indeed, for many this was the primary driver of the Standards. The Australian Institute of Architects however, went a step further than the need to codify the requirements of the DDA to provide certainty to the building sector. On page
three of their submission they included the social aspects of the Standards, which they believed must be enacted as soon as possible:

“A significant proportion of the population will experience a period of disability, whether permanent or temporary, at some stage of their lives. Physical and non-physical barriers within the built environment can have substantial impact on freedom of movement and therefore freedom of choice especially for people with disabilities, limited mobility or older people.”

House of Representatives Standing Committee, 2009b.

The Property Council of Australia was not as liberal in their response as the Institute of Architects. In their submission, they claimed to support the new Standards, but with several conditions, many of them technical, but all aimed at minimising the scope of the Standard. They recommended on page five that the Standards be “absolute regulatory standards” where both minimum and maximum regulatory requirements be stipulated. They reiterated their concern in the public hearing that local and state governments could increase the scope of disability access as they have in the past, particularly in multi unit residential developments. The Property Council claimed the introduction of additional requirements by local governments “are not costed” and there is “no attempt to determine the cost benefit, and there is no attempt to determine whether it is an appropriate change”, arguing that this undermines regulatory certainty:

“We understand that there are certain councils that have pursued additional features in relation to, for example, housing. Some councils are prescribing universal housing in certain areas which are not necessarily covered by the standards.”

House of Representatives Standing Committee (25 March 2009:58)
However, housing is not covered by the draft Standards except in multi unit dwellings where the public areas should be accessible. Nevertheless, the Chair of the Standing Committee asked the Property Council representatives if they had any evidence that “enhanced standards have harmed the development industry in any way” (House of Representative Standing Committee, 25 March 2009:58). The Property Council said they had no evidence to hand, but they could “try to find some case studies if need be” (25 March 2009:59).

The Housing Industry Association and Master Builders Australia echoed the need for certainty. The Master Builders Australia submission added that certainty for manufacturers, builders, and design professions has “created significant economies of scale and benefits to both the industry and the community” (House of Representatives Standing Committee, 2009e:7). They further claimed the BCA has “brought benefits such as lower insurance cover, reduced investment risks and more affordable buildings”. Master Builders Australia also claimed that this allows for greater productivity such that Australia’s building and construction industry is admired overseas and “judged to be one of the most productive in the world” (2009e:7). This last comment indicates how the priority given to technical efficiencies can be used to deflect industry change and innovation.

The Australian Institute of Building Surveyors commended the draft standards in terms of certainty. They add, in their covering letter to the Standing Committee, that risk minimisation practices encourage designers to add only features that are cost saving or cost neutral:
“We agree that for a long time, designers have been reluctant to include potential cost increases into designs if they are not forced to do so, certainly building owners don’t want to spend money on the non essential items – “if you don’t have to why bother” attitude is still apparent.”

House of Representative Standing Committee (2009a:1)

Industry submissions also focused on additional (and assumed unaffordable) costs resulting from changes, or at least, too many changes.

6.2.4 The cost, and cost effectiveness

The Property Council of Australia submission claims to support the Standards but only “so long as the costs entailed in providing access are reasonably commensurate with the benefits, where both are measured objectively” (2009f:3).

Because the proposed standards will become part of the BCA, which covers all new work, it will also apply to major building refurbishments. It is possible therefore that additional costs could be incurred during a refurbishment of an existing building, particularly where additional space is required to accommodate, say an accessible toilet. However, the magnitude of these possible costs would not apply to buildings yet to be constructed because such features can be more easily integrated into an original design. Throughout the industry submissions and hearing transcripts the issue of cost was often blurred across the two domains of existing buildings and new buildings. This issue was tackled by the Standing Committee during the hearing with the Property Council who responded to the cost questions thus:
“We wanted to achieve a balance between massively improving universal access to buildings and the practicality of upgrading the existing stock. ... When it comes to universal access in new buildings, it is the same as with environmental standards: ... there are increases in costs but we can manage our way through that. That is effectively a done deal. The problem has always been with the existing stock.”

House of Representatives Standing Committee (25 March 2009:56)

However, during the hearings when asked about actual costs in dollar terms, the Property Council was unable to supply such information. Nevertheless, they conceded that new buildings were not the real issue, whereas the cost of upgrading existing buildings was of great concern.

The Standing Committee asked the Property Council to explain in simple terms the methods for calculating the costs. The Property Council was again unable to supply a method or list what items would be included in such costs, and their reply focused on the costs of retrofitting existing premises. The Committee once again questioned the Property Council about evidence of actual costings particularly in relation to expanding the disability access requirements. The Property Council cited increased spatial dimensions required for lifts and sanitary facilities, but did not translate space into a dollar cost. Eventually in response to the challenge to their claims about costs the Property Council said, “We are not going to challenge on new buildings at all” (House of Representatives, 25 March 2009:60). In this context the statement infers that while there is no intent to challenge the Standards in relation to new buildings they will continue to challenge the Standards in relation to existing buildings.
However, because the BCA does not differentiate between new buildings and refurbishments to existing buildings, by seeking concessions for existing buildings, the Property Council is, by default, seeking concessions to new buildings.

Not all industry players were focused on cost-benefit ratios and return on investment. The convenience of building users and changing community standards were acknowledged by others. For example, the Australian Institute of Architects’ submission acknowledged that “almost all important social change involves cost to at least some sections of the community” (House of Representatives Standing Committee. 2009b:2).

6.2.5 Terminology

While the analysis so far has focused on costs, the use of the term “universal access” by industry representatives (Property Council, Housing Industry Association and Master Builders, for example) indicates how the term universal design and universal housing design could be caught up in the process of developing these Standards. However confusion and merging of terms is not the only issue of language and terminology. Michael Fox, an architect and a national and international disability rights advocate entreated the Standing Committee to include the appropriate language in the document:

“Fourthly is the issue of terminology. I heard it again this morning, in the earlier presentation. I think it is important that the hearing and the panel and the documentation clearly state the correct terminology. The UN Convention article 9 is simply called ‘Accessibility’. We would always use terms like ‘equitable access’ or ‘accessible environments’ and we would
typically not use the term ‘disabled access’. We talk about an ‘accessible parking space’ rather than a ‘disabled parking space’. I think it is very important that, as an organisation, we make a clear statement about appropriate terminology.”

Michael Fox argues that the terminology stigmatises people with a disability and that a change in terminology might have a positive effect in how they are viewed and that benefits flow to all. By using terms such as accessible instead of disabled, it allows scope for a better understanding that accessible designs are good for everyone, and useable by everyone (with the exception of accessible parking places) not just people with a disability.

6.2.6 Access for everyone

Mr Conroy, a building surveyor acting in a private capacity, was asked by the Standing Committee to explain his argument that the process of developing the Standards is focused on people with a disability when universal access has benefits for many people:

“Door design: there are special requirements for widths, handle design and glass-viewing panels. That could also go into the code and be beneficial to the whole community. Children have great difficulty using a knob handle. .... Signage: again, signage for public buildings is very poor. Where are the facilities? Where are the escalators? Where are the lifts? It is very poorly handled. If many of the things that are now in the draft standard were brought over into the mainstream building code they would have incredible benefits for the whole community.”

House of Representatives Standing Committee, (25 March 2009:49)
Nevertheless, there are still those, such as the Australian Institute of Building Surveyors, who believe the perceived additional costs are not warranted “given the low annual number of complaints” (House of Representatives Standing Committee, 2009a: Attachment A). It is not clear whether they mean general complaints from the public or official complaints lodged with the Human Rights Commission. Regardless, most people with disabilities utilise all their time and energies just living day to day, with little remaining for prosecuting complaints. However, the New South Wales Chapter of the Institute showed a little more forethought in claiming it “should be remembered that benefits from these provisions are likely to flow to all at some time.” They concluded that the Standards should be adopted as soon as possible because “further delays are not in the public interest” (House of Representatives Standing Committee, 2009a: Attachment D).

In spite of the universality of accessible environments espoused by many, there are those who can only see one small group of people benefiting from any change. Australia’s Disability Discrimination Commissioner, Graeme Innes, had this to say about small numbers:

“\textquote{It is a nonsense to suggest you should not do it because it only benefits a small group of people. Much of building law in fact does this. We do not argue about putting in a fire stair because it has not been used for 10 years or has not been used for the life of the building. [Increased access space] provides amenity for a whole lot of other users of the building by allowing for larger space requirements. In fact, building designers know that, because most buildings are built bigger than the building law requires them to be because they know users of the building want that amenity.}”

House of Representatives Standing Committee, (25 March 2009:34)
Building law is not only set out in the BCA, it also relies on supplementary documentation, such as Australian Standards, which provide prescriptive and practical information.

6.2.7 Lack of research into design criteria

When Australian Standards are “called up” by the BCA they become part of building law. Australian Standards are developed by committees made up of the relevant industry representatives. For example, the standard on lifts and elevators is developed by lift manufacturers. During the hearing, architect and disability rights campaigner Michael Fox had a pertinent point to raise about the process of developing AS 1428 (the public access standard) and how it was devised by committee consensus rather than evidence:

“I was the chair of the AS 1428 committee from 1974 to 1984 and I have been involved in access for about 30 years. Throughout all that time, to me the biggest single problem in this whole area has been the lack of research. In 1975, when I was chair of the 1428 committee, we managed to get some federal government research, and that was in fact the foundation of 1428. Further research was done in South Australia in 1988, and the ABCB initiated a research program a couple of years ago but, as of now, that has not been publicly released. ... I have been involved in many of the access committee meetings—and a lot of the dimensions in the standard are really dimensions by consensus not by hard research. It bothers me fundamentally that, in all the effort that we are going to on this premises standard, on the UN Convention, we do not really have a solid research base. That does concern me.”

House of Representatives Standing Committee (30 March 2009:15)
Australian Standards are developed under the control of an autonomous body which consults with interested parties when forming and reviewing standards (Standards Australia: 2008). Although drafts of AS 1428, as with any draft standard, are circulated for comment beyond committee members, feedback is in the form of practical experience rather than researched input and the control of the details of the final document remain with the relevant committee and Standards Australia. This leaves the process open to vested interests and contested outcomes.

6.2.8 Including housing in the Standard

There were several submissions, particularly from the disability sector, which called for apartment blocks to be included in the Standard as these buildings have common public areas such as lifts and corridors. Debate about excluding such buildings was highly contested by disability advocacy groups, particularly as other types of residential buildings are captured by the legislation, namely those in tourism and hospitality settings. Mr Perrett of the Standing Committee made the point at one of the public hearings that everything would be simpler if the proposed Standard included private residential housing and then the arguments about boarding houses, serviced apartments, rental properties, and others would be simplified. His comment was dismissed by a representative of the Australian Building Codes Board on the basis that the DDA does not cover private housing. However Mr Perrett made an important connection between public and private domains: “But those people in the public building have to go home somewhere eventually.” (House of Representatives Standing Committee,
25 March 2009:9). Mr Perrett’s was not the only voice raising concern about the links between the public and private domains.

The Executive Officer of the NSW State Government’s Disability Council referred to Part M of the building code for England and Wales and argued during the hearing that if the United Kingdom could require all new houses to:

“be built to barrier-free standards, which it has done for the last 10 years, then it ought to be possible to do the same in Australia. …There has been growth in the building industry in the UK in the last 10 years. It is just a straightforward furphy that doom and gloom follows access. It is not true”

House of Representatives Standing Committee (25 March 2009:70).

He extended his argument to counter the cost claims put forward by industry:

“We are spending money on keeping people in segregated communities and environments and we spend a large amount of tax dollars through departments of ageing, disability, home care, community services, health and others to cater for the disabled in a way that does not have them engaging in a modern and contemporary way. That is costing us money; we are all paying for it.”

House of Representatives Standing Committee (25 March 2009:76)

Regardless of the strength of the arguments about residential settings from various organisations, the Standards were deemed to cover only those conditions covered by the DDA, and there the matter was fixed. However, this served to emphasise a later point by the Executive Officer of the Disability Council of NSW who argued that industry, through its actions, demonstrated a
patronising attitude to people with a disability. “[T]here is a sense in which some people think they are doing the poor helpless cripples a favour, and we are all way past that” (25 March 2009:77). From a building user’s perspective, industry arguments particularly about cost benefits are demeaning, because they indicate people with a disability (and anyone else) are not worth the cost.

6.2.9 Summary of Access to Premises documents

Many of the submissions focused on technical aspects of the legislation, the intricacies of local government regulations and building law. Nevertheless, submissions and hearings also revealed aspects of othering and deservedness on one hand, and an acceptance that societal expectations are moving towards more social inclusiveness on the other.

Including greater amenity and accessibility for users in future building design was countered by cost, especially when the perceived number of beneficiaries was considered low. The Property Council’s comment that no objective cost benefit analysis has been carried out was an attempt to substitute the value of equal access and social inclusion with the implied higher value of economic arguments. However, they were unable to substantiate how such arguments might be constructed.

By seeking to merge the cost issues of new and existing buildings, the Property Council attempted to gain concessions across both areas as the Building Code of Australia does not differentiate new buildings from the refurbishment of old buildings. When tested, however, the Property Council was unable to provide
any information about costs or how they might be calculated. In addition, they were unable to show how providing access features above the minimum standard was detrimental to the industry. However, as Master Builders Australia clearly argued, cost is about challenges to economies of scale and improved productivity rather than a ‘dollars per brick’ calculation. Indeed the Master Builders Association boasted that the Australian building system was admired overseas because of its technical efficiency, inferring that changes would challenge such technical efficiency.

Another focus of the submissions was the perceived benefits of legislative certainty for industry. Providing certainty that designs comply with both the BCA and the DDA minimises the likelihood of litigation, a risk present under current legislative arrangements. Outlining the benefits to the public who use the streets and buildings was largely the subject of submissions by advocates for people with disabilities. As Michael Fox pointed out, the benefits for many are often lost in the language because of the focus on disability, and for this reason he argued for a change in terminology from “disabled” to “accessible”.

The need for the proposed Access to Premises Standard is summed up by the phrase used by the Australian Institute of Building Surveyors, “if you don’t have to, why bother?” indicating that industry was unlikely to change its practices voluntarily. The need to make universally designed housing a condition of funding under the Jobs Stimulus Package also recognised that voluntary change is also highly unlikely.
6.3 Summary of all documents

There are several themes arising from both sets of documents. Industry reluctance, indeed refusal, to change without the application of legislative instruments, the loose way in which terms are used and how language continues to stereotype and marginalise. Nevertheless, both policy moves are intended to shift the ground towards greater amenity and equity of access.

The social housing documents aimed to facilitate change in housing – an area hitherto untouched by disability discrimination legislation. In this sense it was a significant policy achievement, albeit a one-off event. Overall, the instructing documents were confusing, and it is likely that the industry utilised the documents that gave certainty: the BCA and related Australian Standards, neither of which mention universal design. Consequently, the way in which industry was to implement the social housing program was by making the best of their existing information rather than referring to unfamiliar information contained in the Landcom (2008) guidelines.

The public access documents showed that not all in the industry thought that designing for the wider population was an onerous task. However, support was not on the basis of social inclusion, but on minimising the risk of a complaint under the DDA, particularly for the property industry representatives. Whether the Property Council, or any other peak body, represents all their members’ interests or opinions is another matter and perhaps an issue for further study.
Terminology was a major issue for the social housing documents, as there was lack of clarity about the meaning and application of universal design, but terminology issues were less apparent in the public access documents, although “universal access” was used occasionally. The issue of terms is less problematic in the public sphere because existing legislation has utilised the term ‘accessible’ to mean disability access and this has provided consistent if not appropriate labelling. Michael Fox in particular argued that the term ‘disabled access’ along with other conditions labelled as ‘disabled’, continues to stereotype and marginalise and renders invisible the benefits to people other than people with disabilities. When thinking about cost benefit analyses, such benefits would also need to be costed. However, that would be a hypothetical exercise because the intent of the legislation is to provide equity of access for people with disabilities with cost being a less important issue, contrary to the wishes of some industry players.

Although the focus of the proposed Access to Premises Standards was to provide legislative certainty to industry, it should also provide certainty to building users – certainty that they can enter a building and move around without being impeded by architectural barriers. While the same cannot be said about private dwellings, the Economic Stimulus Package put the notion of universally designed housing on the agenda, and Housing NSW has since re-drafted its Housing Design Requirements (2009b) to fall in with the general principles of universal design.
The main reason for including these documents in the study was the possibility that they formed a backdrop to some of the interview and survey responses. Nevertheless, they have also shown some convergence with interview and survey findings, and the next section attempts to draw them together.

6.4 Industry summary and conclusions

The industry survey, interviews and documents provide a range of views about creating a built environment that encompass the needs of a diverse population. The industry consists of various professions and trades, all of which have their own professional ethics, norms and codes of practice. Each plays its role in bringing new housing from bare ground to the finished product for the consumer. It is a whole system, yet at the same time it is fragmented: a well coordinated system of individual parts which provides high levels of efficiency throughout. To round up the findings across the three sets of information, the key themes of design, marketing, legislation, cost, language and finally, barriers and facilitators are used to organise the material for comparison.

6.4.1 Design issues

Design concerns were focused on how much they might cost, rather than being unachievable, except perhaps where steeply sloping blocks were involved. In the survey those in favour of universal design said they could design around difficulties, and in the social housing documents, tenderers were given specific information about design criteria. The interviews revealed that those who had conducted their own research found that incorporating universal design
features was possible and at little, if any, extra cost. Influencers of design were another matter.

The majority of survey participants believed that consumers had the most influence over home design in mass market housing. As discussed earlier, this is largely based on their ability to choose between the products offered rather than controlling designs from the outset. Several interview participants also believed consumers were a major influence. Consumers aside, the Australian Building Codes Board (ABCB) is perceived as having significant influence. However, this does not marry well with technical specifications being distinctly chosen in the survey as the least influential design driver with lifestyle image and cost minimisation chosen as the primary drivers. Survey participants thought developers had more influence than architects and building designers, and the interview results supported this, adding that building designers are processors of documents and regardless, architects rarely become involved with project homes. The stance of the Property Council of Australia to the proposed Access to Premises Standard was one of fierce resistance as they attempted to maintain the status quo. It was only close questioning by the Committee that unravelled their arguments. Other comments from the interviews, such as, it being the developer’s risk and investment and that “they should have a big say over what is produced”, as well as developers choosing which builders to invite into a development, all point to a good measure of control over design parameters.

6.4.2 Perceptions of additional cost

Cost issues and legislation emerged as the two most dominant themes. Much of the discussion and explanation within the survey, the interviews, and the public
access documents, included cost as part of the response. It affected responses about design, legislation, and marketing. Cost was therefore raised as a major barrier to implementing design change. However those who understood the generality of universal design, and not the specificity of design for disability access, believed cost was not an issue, and this held across all three sets of information. Whilst additional costs were not substantiated it is likely public building refurbishments that require a larger lift or toilet will minimise existing income-producing floor space. Nevertheless, posing extra cost can be an effective first measure for maintaining the status quo. If it can be established that extra cost would result in undue hardship then all other arguments become redundant. However, the public hearings on the Access to Premises Standard put to rest some of the cost arguments along with the research by Landcom (2008).

### 6.4.3 Market perceptions and marketing

Evidence of market research activity did not emerge from any the results so it is unclear how the industry receives feedback about its products. The way the industry is structured, claimed one interviewee, prevents product feedback mechanisms from operating, and this aspect is explored in more detail in the final discussion. The term ‘product’ was used throughout the survey responses and interviews. ‘Product’ is part of marketing language which includes market segmentation, product development, consumer behaviour and product promotion (Dickson, 1997). Cost minimisation is a feature of marketing practice along with product packaging, which in this case is the promotion of a
positive lifestyle image. Throughout the surveys and interviews, responses referred to market segmentation, that is, the existence of separate markets for people of different age groups and ‘lifestyles’. In some responses, ageing and disability ‘segments’ are considered a government responsibility rather than the private sector issue. People who are “unlucky enough to have an accident”, or who are “at the back end of their lives” are considered outside market mechanisms and as a result can have no influence on general designs, only special and separate designs. It was interesting to note from the survey that planners and regulators are more in favour of separate housing than those from other professions, but there was no apparent reason for this from the responses.

6.4.4 Language and terminology

Issues of language and terminology were most apparent in the social housing documents. Several different housing types emerged, particularly those relating to ageing and disability. Although the Landcom Guidelines for Universal Housing Design (2008) were listed as a reference, policy makers preferred to construct the tender schedules around more familiar documents such as the adaptable housing standard and other state ordinances. Although interviewees were able to give a reasonable definition of universal design at the beginning of the interview they defaulted to a framework of accessible and ‘disabled’ buildings and facilities and adaptable housing for the remainder of the conversation. Many of the survey responses were predicated on disability access and adaptable housing codes as well.
6.4.5  Legislation

Legislation emerged as a major feature in all sources of information. Both narrative and quantitative sections of the survey cited legislation, regulations and regulators as a major influencer of design, particularly for bringing about design changes. This was in spite of some respondents believing more regulations were not the appropriate answer for implementing universal design. The same held for the interviews where one participant cited legislation as a ‘blunt tool’ that did little to educate the industry. There was a measure of resignation and ambivalence about legislation and the survey revealed a high level of willingness to embrace new regulations. Universal design, albeit in adaptable housing form, in the new social housing program was not brought about by voluntary action, and neither was the Access to Premises Standard, which has taken more than ten years to finalise. The phrase that continues to resound is “nothing will happen without legislation”.

6.4.6  Barriers and facilitators

Barriers are emerging as a web of many factors intertwined within a house-building delivery system that is tightly controlled but as the same time fragmented. Additional cost was cited most often as a major barrier in survey responses, interviews, and the Access to Premises documents. In the social housing sector, the Economic Stimulus Package ensured a measure of new stock was built with notions of improved accessibility and useability for tenants. However, the concept of universal design being a general design was lost in the language, application of terminology, and defaulting to disability and ageing
ordinances that best matched the perceived requirements. Defaulting to such standards was also common in the interviews and survey. As such, language and misapplication of terms has become a major barrier to promoting universal design as a design-for-all concept. Resistance to change was most apparent in the Access to Premises Standard documents, particularly from the Property Council, but this view was not shared by others in the industry, most notably the Australian Institute of Architects and the Institute of Building Surveyors. The survey and interviews revealed a similar division in views – comments about industry’s resistance to change only being overcome by legislation regardless of whether this was the preferred or most suitable option for universal design principles.

Legislation for change was the key facilitator and this was evident in all sources of information. Survey participants also identified overcoming resistance to change with increased industry and consumer education and overcoming extra costs with incentives as facilitators. The interview participants cited others in the industry as the source of the problems and that education might convince industry players of the need for universal design. However, maintaining a level playing field was a major requirement and this is achieved through legislation. The Economic Stimulus Package provided an impetus to demand housing meeting universal design ‘standards’ and it appears industry was willing to comply. However, it is not clear whether these ‘standards’ will have any trickle-down effect to other housing because it was framed as aged and disability housing. Indeed, it may have further entrenched universal design as a special
design. As social housing it is therefore unlikely to be interpreted as a new trend in consumer demand.

Consumers are held responsible for influencing design and in this sense they are both a barrier and a facilitator. Because consumers are not asking for universal design industry considers it too risky to start supplying it – a "don’t ask, don’t get" response. However, it is not clear whether industry will hear consumers demanding a change. If the Access to Premises Standard documents are taken into account, demands by disability lobby groups were resisted by some and treated as something of an aberration. However, consumer demand in private housing is another matter and it is this group to which we now turn for a brief look at their experiences. In the first section the homeowner results recap the experiences of the interviewees detailed in the background chapter, and the second section provides the most relevant results from the survey.
7 HOMEOWNER PERSPECTIVES

7.1 Homeowner interviews

Due to the small scale of the homeowner survey the likelihood of capturing participants with a disability was considered low. To ensure the inclusion of people with a disability, five targeted interviews were undertaken to supplement the survey information. The interview questions were not based on the survey, rather they were unstructured and exploratory with a focus on personal experiences of building a home and interacting with the house building industry. The purpose of the interviews was to provide additional context within which the results of industry interviews and survey could be placed.

7.1.1 Mike's Summary: It's just a really nice house

Because Mike felt the number of changes to a standard project home were too great as well as a lack of confidence that these could be carried out satisfactorily, he chose an architect to design his home. Mike is a physically active person who expects to have the same level of independent functioning at home as any other person in society. His home is a reflection of this desire: it looks like any other home yet also accommodates a wheelchair user. He was clearly pleased that his friends were complementary about the design and they realised the convenience of items such as drawers instead of cupboards in the kitchen.
Mike described a difficult time with the architect who tried to impose his ideas, and a local government regulator who was methodically applying a policy without fully understanding the situation. He identified an industry “mindset” of resistance to change and an architect and council engineer who “couldn’t kinda get it”. However, he found a hands-on builder who was prepared to rise to the challenges and solve problems as they arose.

7.1.2 Tomas’ Summary: Collaborative success story

Tomas and Lisa are both wheelchair users and have gained considerable experience in house design – they know it is possible to combine functionality and aesthetics. Tomas’ experiences in Europe provided an interesting contrast. On the one hand, government assistance provides functional accommodation for wheelchair users, but on the other, it tends to be institutional in its design which he finds aesthetically unpleasant. Similarly to Mike, being able to design a home that eliminates institutional features is the preferred option for Tomas and Lisa.

In the absence of architects and builders with training or experience in accessible house design, it has been Tomas and Lisa’s role to provide the education. They were fortunate in having personal contacts in the house building industry who were willing to collaborate with them in a genuine team effort and this resulted in a relatively less stressful process than that experienced by other participants. However, the example of no access to the pool’s skimmer box highlights how much attention to detail is needed to ensure that accessibility is considered at all times and in all places.
7.1.3  George's Summary: A fight to the end

George's story is one of unfulfilled promises, something that Mike feared with a project home builder. They chose a project home builder who initially agreed to make minor changes to the standard house design, but ultimately it was George who compromised, particularly when he could see a way to solve the problem himself, for example utilising decking and flooring to create level access throughout. However, on the issue of garage entry and garage size, he was not willing to compromise as it required structural change that he could not overcome with his own solutions. This then became more than just a design issue, it became one of equity and discrimination. George’s exasperation was exacerbated because he knew more than the average purchaser about home construction techniques and the design solutions available. The one thing he would like to see changed in project homes is level access to wet areas as standard, and more flexibility in creating level access for all outdoor areas.

George’s story is an example of the presence of overt disability discrimination in the way he was initially treated as a client by sales staff, and covert discrimination in the way his home entry requirements were dismissed as being unreasonable. Because of his treatment, George resorted to using public access parking requirements to assert his (disability) rights whereas he would have preferred to assert himself as a ‘regular’ client. The concept of home (“it’s my home”) appeared not to register with the builder. George's experience with council, similarly to Mike, was the lack of willingness to consider any solution
outside the strict application of policies. Throughout the interview George's exasperation was clear – he felt he had to fight for everything.

7.1.4 Steve’s Summary: Unfulfilled promises

As he was happy with standard features, Steve thought building a project home would be fairly straightforward. Steve found that most of the project homes were spatially suitable and only needed small changes to design details to improve accessibility and functionality. The way in which the family functions determined the design of the kitchen rather than the requirements of one particular family member. However, provision was made for future adaptations should they be required. Although standard materials were used throughout, any changes to standard construction practices caused significant problems. These were largely due to communication issues within the chain of command. His requests, complete with detailed drawings, were not reaching the trades personnel, or if they were, they were being ignored. However, when he was able to communicate directly with the plumber, for example, he explained how a small change in the plumbing arrangements could significantly improve the function of the shower for him.

The issue of a twenty percent surcharge on any changes to the standard design appears to be a risk management strategy for dealing with the cost of rectifying mistakes that are likely to be caused by poor communication and tradespeople failing to check for and follow any new instructions. Similarly to George, Steve experienced difficulties with the garage floor level and the need to make compromises at his own expense.
7.1.5 Sam’s Summary: Bending the rules

Sam and his father owner-built a two storey home for a family member with a degenerative condition, who occupies the ground floor while other members of the household occupy the upper floor. Sam mistakenly believed that designing a private dwelling for a person with a disability required application of the public access standard and this underpinned all his responses. It is likely that in his professional life Sam is very much dependent on rules, codes and standards to guide his actions, and this approach was carried into the interview. Consequently almost every question about design and building process was met with a reference to the public access standard and how he thought he had avoided alerting the local council to his bending of the rules. The rules therefore acted as a barrier to a more in depth understanding: indeed, his approach, experiences and attitudes were all defined by and confined by the rules. Nevertheless, Sam did provide insights into what he believed was good building practice such as level access into bathrooms and showers and wider doorways and corridors, which he considered just good design. Although Sam, in spite of his family experience, was clear that any new house would be for his current lifestyle with no consideration for the future, he was basing this on existing ‘good design’. Sam may not, for example, include grab rails, but he may include wider doorways, and level entry showers and bathrooms. However, he believed that consumers choose designs for the here and now because people “don’t think that far ahead”.

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Although this was not strictly speaking a homeowner interview, the way in which this participant was recruited demonstrates that construction industry personnel have the same chance of having a person with a disability in their family as any other member of the population. More importantly, it also revealed that industry personnel can be misled by an incomplete understanding or misinterpretation of the rules and regulations.

7.2 Summary of Interviews

Persons who identified as having a disability were the participants in this part of the study. Each had recently built a home to suit their capabilities and their family situation. Those who sought the services of individual architects and builders appeared to be in greater control of the process than those who chose a project home builder. Nevertheless, difficulties in communicating with industry personnel remained a feature throughout. Three themes emerge from the interviews: the importance of design aesthetics, the difficulties in achieving level access throughout; and the impact of council regulations. The interviews are discussed in the context of these three themes and the industry attitudes underlying them.

7.2.1 Importance of design aesthetics

“...do whatever you can so that it doesn’t look like a rehab facility.”

Mike, Tomas, George and Steve each emphasised their desire to have a house that was well designed and which did not look as if it catered specifically for a wheelchair user. Having a home that looked ‘normal’ was important. Other people (architects and occupational therapists) assumed that certain features,
such as grab rails in the bathroom, were needed (see Figure 7.1 for an example). Mike, Tomas and George described design ‘overkill’ and the need to scale back items they did not need. The issue was more about empowerment and self esteem than resale value of the house. The concept of home is important to everyone, and as Steve explained, when a person has a catastrophic injury its importance becomes all the greater. Every day, people with a disability are confronted with architectural barriers that remind them of their incapacity, as well as the specially designed architectural solutions that remind them of their ‘otherness’. At home they do not want to see symbols of incapacity or otherness: they want to see the same things as anyone else – a comfortable and pleasant place to relax and live out their private lives. However architects and builders were slow to recognise this factor and some may have failed to grasp it altogether.

7.2.2 Achieving level access

“Flat means flat, not flat-ish”

Achieving continuous level access into and throughout the home seemed an elusive quest particularly for George and Steve, who eventually made alternative arrangements or had parts of the house redone in order to achieve level access. Although Mike eventually achieved level access throughout, this
was not without continued insistence. Whilst Sam believed the fifteen – thirty millimetre step into the wet areas was a thing of the past, it is clearly still in vogue with project home builders (see Figure 7.2).

After his slab was laid, Steve discovered concreters know how to form a set-down in the slab for level access for wet areas (see Figure 7.3). The method, of course, was developed for dwellings meeting the adaptable housing standard, and is not therefore a new idea or technically difficult. A continuous level path of travel to and throughout the home was requested by everyone, but builders still thought that just one level entry was sufficient, even if this meant entering by the back door, and access to outdoor areas as shown in Figure 7.4 was an optional extra.

The key point is that in all cases the client was a wheelchair user, but this seemed to be forgotten, particularly at the tradesperson level. The notion that a step here and there is acceptable assumes that wheelchair users should not
expect unfettered access to all parts of their house and property – equity is not a consideration. Sam has included level access even in areas of the house that his cousin is not expected to access. However, while Zena cannot go upstairs, other members of the family can access downstairs. This division may be acceptable in this circumstance, but how Zena feels about this is unknown.

7.2.3 Impact of council regulations

“It’s very difficult to bend them a bit.”

Mike and George had similar experiences with local government regulators and found them difficult to deal with due to the inflexible way they responded to their requests. Local government regulators are the guardians of all codes, rules and regulations in relation to buildings. The role of building inspectors and local government regulators is to ensure compliance with the codes and it is their professional integrity that is at stake if they are seen to bend the rules and a fault is later found with the building. They have to ensure the building meets regulations regardless of who the current owner is. The passing comment by Tomas that perhaps his wife’s high community profile was a factor in the plans passing smoothly through council, leaves open the possibility that council regulators have more flexibility on issues than they are prepared to exercise.
Certainly there was some flexibility for Mike and George, but only after they made personal representations.

Sam approached the issue of local government regulators from an entirely different perspective. He presumed difficulties with council staff would occur, possibly due to his professional experience, and pre-empted these by working around what he assumed would be the difficulties. Although his fears were probably groundless, he demonstrated how it is possible to side-step regulations by either not declaring certain aspects or presenting them in a way that is known to be acceptable. Herein lays the difficulties with regulations and regulators. On the one hand we have a group of professionals sticking doggedly to the letter of the law, and on the other we have a builder who is doing his best to avoid them. In this case it was for valid and altruistic reasons.

### 7.2.4 Behaviour of architects and builders

“Oh, it’s what we always do.”

Similarly to survey participants, George and Steve found project home builders difficult to deal with, particularly with promises to incorporate changes before the contracts were signed and then failing to meet those promises once construction was underway. Being treated indifferently only added to their frustrations. Engaging an architect was not all plain sailing for either Mike or Tomas. Consequently they both decided to dispense with their architect in favour of a builder who would take instructions and problem-solve the issues as they arose. In Tomas’ case, he approached the issues from an educative perspective, understanding that patience was needed. Mike was unfortunate in
selecting an architect who displayed a measure of arrogance in trying to impose his ideas on his client. As George discovered, having family members in the building industry is also no guarantee that appropriate and aesthetically pleasing outcomes will be achieved either.

All participants, for various reasons, were expecting some difficulties and endeavoured to offset them. Mike thought engaging an experienced architect would eliminate problems; Tomas re-engaged his previous architect and builder because of their prior experience; George thought his building experience would be sufficient to overcome any misunderstandings; and Steve drew up many drawings and instructions assuming these would be read and observed. Getting heard and getting what they wanted required patience and determination which was not always rewarded. Mike, Tomas and Steve all found the process easier and more productive when they could communicate directly with either the hands-on builder or the tradespeople.

“Oh, it's not for you.”

Mike’s architect not only tried to tell him what he needed, but he also deliberately designed an inaccessible powder room and defended his action by claiming, “Oh, it’s not for you”. Mike was dumbfounded that the architect could consider such a feature after going to great lengths to explain his meaning of accessibility. George had a similar experience with his father in his capacity as the builder of his home. When his father protested that it was “only one little step” George was astonished and was all the more so because he felt his father should have understood completely. The builders of his new house thought that
as long as one entry was accessible that was sufficient without realising the
discriminatory nature of this notion. Steve's experience with the second storey
ensuite bathroom continues in the same vein. Similarly to Mike, Steve put much
effort into explaining his requirements only to have them ignored. His
complaints were seen as inconsequential because a ramp to overcome the
upstand at the entry to the ensuite was easy to install. These examples
demonstrate insensitive and tactless behaviour, but it is more than this, such
behaviours stem from stereotyping beliefs, and in this case beliefs that people
with disabilities should be satisfied with ‘near enough is good enough’.

7.2.5 Near enough is not good enough

Mike's architect had initially created an architectural division in Mike's home
and by doing so, fractured the wholeness of his home and therefore his sense of
home (see Imrie, 2004, for more on the meaning of home). Although the
architect claimed to have “disability experience”, this did not translate to a
deeper understanding of the everyday lives of individuals with a disability.
Mike's architect was, at least, willing to go back to the drawing board, which is
more than can be said for the project home builders engaged by Steve and
George. In all three cases, the lack of understanding and appreciation for the
aspirations of people with a disability caused design mistakes. To assume that
people with a disability have lower or different aspirations and expectations to
non-disabled people, is an assumption seated in notions of difference and
otherness (Goldsmith, 2000). Aesthetics are more than just pleasant looks: they
are linked to functionality, to empowerment and to the meaning of home.
People who have sustained a catastrophic injury do not want to live in a house
that emulates that catastrophic event. Neither do people who have any kind of
disability, no matter how it was acquired. The message to the house building
industry is: never assume you know more than your client; assume all parts of
the house must be accessible; and do not design or build anything that fractures
the wholeness of the sense of home. People with a disability also have lifestyle
aspirations.

7.3 Survey analysis

7.3.1 Introduction

Two hundred and forty questionnaires were distributed and thirty were
returned (response rate of 12.5%). The survey questionnaire was constructed
around two themes: the way in which building companies treat their clients,
particularly if they wish to make changes to the standard design, and whether
new home buyers consider accessible design features based on the probability
that a family member or visitors would need such features. As this was an
exploratory survey, several questions were included where responses showed
no relationship to these themes and are not therefore reported here (see the
appendices for more information). The findings begin with demographic
information and because of the low number of respondents (thirty) some items
are reported as both frequencies and percentages, or frequencies only.

7.3.2 Demographics

Just over half the respondents (17) were under the age of 45 years (56.6%). Of
the thirteen respondents aged over 45 years, five were aged over 60 years
(16.7%). The majority of respondents were female (73%). Just over half the respondents (53%) had lived in their home less than one year, and more than half the households contained two people (57%). There was an even distribution between one and two storey homes with one respondent reporting a split level home. Demographic details are shown in Table 7.1.

### Table 7.1 Demographic information

<table>
<thead>
<tr>
<th>Sex of respondent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>22</td>
<td>73.3</td>
</tr>
<tr>
<td>male</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age of respondent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 years</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>31-45 yrs</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>46-60 yrs</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>61+ yrs</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of occupants in the house</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>23.3</td>
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<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of time in the house</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>less one yr</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td>one-two years</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>two or more years</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

#### 7.3.3 Relationship with builder

Table 7.2 shows that most respondents thought that being able to choose the builder was important (43.3% very important; 46.7% somewhat important).
Over one third of respondents said the builder treated them well (10% excellent; 26.7% very good), and approximately one quarter felt they were treated less well (16.7% less than satisfactory; 6.7% poorly). Table 7.3 shows the breakdown.

Although two thirds of respondents would build again, one third would use the same builder (see Table 7.4). Fifteen respondents added narrative comments that were grouped as follows: poor communication and customer service (5); too slow with the project (4); difficulty getting what they wanted (3) and post-occupancy issues (2).

In terms of getting what they wanted, one respondent said there were a “few arguments about the plans and changes that were made” and another said they...
had to “coerce the builder to make a number of changes”. One respondent had a positive comment: “the builder was happy and obliging to iron out any problems which arose”, but another had to chase their builder “every step of the way”.

7.3.4 Changes wanted

Nearly three quarters of respondents (73.3%) wanted changes to the standard house package. When asked if the building company was happy to make these changes, the builder was mostly cooperative in half the cases, and in the other half, the builder reluctantly agreed. Reasons builders gave for refusing changes were: structural issues, the Building Code of Australia, and council not allowing the change (4 respondents). Others reported that changes were not refused provided they were prepared to pay a lot more (3 respondents). Three respondents wanted changes to improve accessibility. Additional detail is provided at Appendix D which also explores satisfaction with the home, reason for building a new house and the reason for the location.

7.3.5 Inclusion of features for accessibility

Apart from furniture and stroller access, approximately three quarters of respondents said they had not considered accessibility features. While four respondents thought about wheelchair access, and seven considered elderly visitors, ten respondents thought about getting older or sick and needing help with things like showering. Furniture access was considered by twenty-three respondents, and stroller access by thirteen respondents. The results are shown in Table 7.3.
Table 7.5: Consideration of accessibility features.

Responses to the question: When choosing your new home and its design, did you ever think about incorporating design features for:

<table>
<thead>
<tr>
<th>Elderly relatives who need to use a walking frame or wheelchair</th>
<th>Being able to easily move furniture in and through the house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>yes</td>
<td>7</td>
</tr>
<tr>
<td>no</td>
<td>23</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Getting old and frail, or sick and needing help with things like showering</th>
<th>Being able to push a baby stroller or shopping trolley in and out the front door</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>yes</td>
<td>10</td>
</tr>
<tr>
<td>no</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A family member or visitor with poor eyesight</th>
<th>Being able to reach switches and controls if you can't bend over or are in a wheelchair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>yes</td>
<td>3</td>
</tr>
<tr>
<td>no</td>
<td>27</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A family member having an accident and needing to use crutches or a wheelchair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
7.3.6 Comments about builders and the house building process

At the end of the questionnaire, respondents were invited to make final comments about the design of their home and their experience with the building company. Fifteen respondents answered this question and some provided comments in more than one theme. Most expressed negative comments and frustration with complaints about slow response times, poor customer service, overcharging and extra costs, and generally poor administration.

Poor customer service from construction staff were illustrated in comments such as “builders can be rude and abrupt and don’t listen” and they “don’t treat you with respect or as a person ... the customer is a nuisance”. However, office staff were most often cited as poor providers of customer service and brought forth comments such as, office staff were “useless” and “loathe to communicate”. In total, there were six comments about poor customer service.

Builder incompetence elicited four comments. One respondent said they were “fed up with things wrecked, broken or needing repairing due to carelessness”. Another said that tradesmen “have no respect for previous work – don’t care if they damage something.” One respondent claimed the builder “made a few mistakes” and was very disorganised and tried to blame the local council for holding up the development application, which turned out not to be the case. Another claim was that it was necessary to be diligent in reading and keeping all paperwork because the builder “tried to get out of contract items”. 
Taking too long to complete the project and too slow to complete post occupancy problems were raised. One respondent claimed it took two years to get the job done properly and another was still waiting for warranty items to be fixed after seven months. Another said everything was fine until the handover of the keys but they were “slack when it came to the three month inspection”. Unexpected extra costs were also an issue for five respondents. All these factors lead to a stressful experience for several respondents and helps explain why the majority of respondents would not use the same builder if they built again.

7.3.7 Comments about accessibility

There were three comments that related to accessibility and ageing. One respondent raised the issue of diminishing block sizes commenting, “People being forced to build upper levels, this then requires moving when old age sets in.” Another respondent explained their priority for rearranging the floor plan and adding an alfresco because of being “very aware of my ageing”. The one respondent who was happy with the builder reported that:

“Location and design of our new house has changed our friends minds about growing old in their own homes. They think we have chosen well and everybody who comes to visit likes it very much – especially because the building company was very good to us and we did not have big problems.”
As there were only three respondents raising accessibility issues, their information is provided in more detail to provide a comparison with the interview information.

Respondent A is a 61 year-old female living in a two person household. A single storey home was very important and she requested an internal door between the garage and the house “for safety as I am 61” and to “access the house with shopping”. The builder was happy to add the internal garage entry, but she thought the cost of one door was too much at “$900 plus steps”. She did not think about elderly visitors, wheelchair access, vision impairment, stroller access or easier living design. However, she did think about manoeuvring furniture in and out of the house, the height and location of switches and controls and getting older and needing help. The land price and being close to employment were the drivers for choosing this particular location. She is very satisfied with the design of the house, in particular she likes the alfresco and open plan living, but in hindsight she would add a sliding door to the ensuite for privacy in the toilet. It is unlikely she will build again and would not use the same builder because “it took two years to get the maintenance done”, particularly poor drainage in the back yard.

A single storey home was very important for Respondent B, a married male aged over sixty years. In “planning for old age” the changes sought were level entry to the home, the wet areas, and the garage. He thought the builder was

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7 Analysis of new home designs shows a ‘fashion’ for eliminating the door to the ensuite bathroom from the bedroom, as well as to the walk-in robe.
not very helpful with the changes and not happy to incorporate some changes but agreed anyway. The BCA rules were cited as reasons why some things could not be done. Respondent B thought all the changes cost too much but he went ahead with them anyway. In selecting the design, he thought about many of the access features. This respondent is mostly satisfied with the design because there is plenty of natural light and it is easy to manage. In hindsight he would “build lower to the ground”, which indicates the house might sit higher on the land than was necessary or desired. The reason for building a new home was to have a more compact house and a smaller yard to manage. Being close to amenities and transport were the main reasons for choosing the location. Overall, this respondent thought the building company was satisfactory, but he would not build again and would not use the builder again.

Respondent C is a married male and in the 46-60 year old age group. In this case it was not important whether it was a one or two storey home, and a two storey design was chosen. Several changes to the standard design were requested and the builder was happy to include most. With a family member who is a wheelchair user, many of the changes were with this in mind: level entry and a ramp to the side door with decking, a larger alfresco and pantry, changing “a downstairs powder room into a wheelchair access bathroom”. However, the changes did not all go to plan. The decking was not done because it was labelled as landscaping and “we now have an unusable door.” The “change to upstairs balcony was done wrong” and he was “quoted incorrectly and overcharged a second time”. This respondent thought that some of the changes cost too much and did not go ahead with all of them. In making the
requested changes, he thought the builder was very helpful. Respondent C considered elderly visitors, stroller access, the location of switches and controls and getting older and needing help. Whilst this respondent was considering a design that “would meet our specific needs” they were also considering investment in the future and having a home that needed little maintenance because “we are not good at that”. The location was chosen to be near family and friends, local amenities and employment. Respondent C is mostly satisfied with the design because of the look and finish of the house and being close to facilities. In hindsight he would buy a flat block and include a “downstairs bedroom for a disabled family member”. Overall he was less than satisfied with the builder who he thought had good sales staff, but construction staff failed to follow through: “after-sales and site manager's treatment and service was most of the time appalling.” He might build again, but would not use the same builder because he was:

“Disappointed with the quality of subcontractors used by the builder and fed up with things wrecked, broken or needing repair due to carelessness. Had to be diligent in reading and keeping all paperwork – builder tried to get out of contract items – stressful.”

7.4 Summary of survey

It is acknowledged that this small sample survey may have brought forth only responses from people who experienced a high level of customer dissatisfaction, and would therefore be more motivated to complete and post the questionnaire. Although the results should be treated with a high degree of caution, they provide an insight into some of the difficulties faced by people
dealing with house-builders. Although the results revealed little about accessibility features, other than their lack of importance, it provides an insight into the environment in which consumers relate to building companies when purchasing a house and land package. While a few builders are helpful, others are more likely to agree to changes without delivering on their promises, and if challenged, they pose difficulties for the purchaser, putting barriers in the way particularly citing building codes or planning regulations. It leaves open the question about the likelihood of the builder delivering on accessibility promises, assuming they know what to deliver. The second question it raises is, do purchasers wishing for greater accessibility know what to ask for? The example of Respondent C wishing he had included a downstairs bedroom after the house was built illustrates the point.

Whilst it is not possible to draw firm conclusions from a sample of thirty, the results offer an indication that purchasers of new-build homes, regardless of age, are unlikely to think about features for accessibility unless they have a current need for this. Accessibility was more likely to be considered in terms of furniture and baby stroller access. The three respondents who chose a new home because they were considering their own ageing provided a brief insight into the features they considered important and the difficulties they faced with the builders. In a nutshell, survey respondents were not thinking ahead and even if they were, it is not clear if builders are likely to encourage changes that challenge the technical and project management status quo. The lack of encouragement is more likely to come from the construction team than the
sales team and this is why difficulties arose once the contract was signed and construction was underway.

### 7.5 Summary of homeowner information

A common theme for homeowners was problems interacting with house-building personnel, both administrative and construction staff. Even if builders agree to accommodate special requests there is no guarantee they will be carried out. Both George and Steve made compromises after promises were broken and found themselves correcting mistakes at their own expense for the sake of expediency. This was also the case for Respondent C in the survey. Tomas and Mike found greater success outside the project home industry by contracting local builders who were prepared to solve design issues in a spirit of cooperation. Steve had a similar experience when he could talk directly to trade personnel.

Attitudes towards ageing and disability were expressed overtly to George in the sales office, but the covert discrimination was evident throughout the homeowner experiences where greater access was requested. Creating rear entries, steps into garages, and assumptions that not all parts of the house need be accessible all indicate an attitude of ‘make-do’ that would not be tolerated by other clients. Indeed, the publicity material (see Figures 7.6 and 7.7) produced by project home builders focuses on selling lifestyle images to potential purchasers, but people with disabilities are assumed to lack lifestyle aspirations.
With the scene set with both the homeowner and the industry perspectives documented and summarised, I can now discuss the material, relate the findings to theories, and where possible, draw some conclusions in the next chapter.
8 DISCUSSION

The emphasis for this study was on understanding the house building industry’s apparent reticence to embrace universal design principles in new homes, particularly in mass market housing. The industry survey, interviews and document analysis indicated two overarching themes. The first theme is the continued stereotyping and othering of people with disabilities and older people, which maintains notions of segregated and special housing types and the language of “disabled people need disabled things”. The second theme is the role played by tightly structured technical efficiencies in the delivery chain of mass market housing where it is treated as a product that consumers purchase off the shelf in the same way as any other manufactured item. If financial risks are perceived to be minimised through such technical efficiencies then regardless of a supportive sentiment towards universal design, implementation is likely to be stalled until an industry-wide change agent emerges.

The relatively low response rate of the homeowner survey might indicate that only those with complaints returned the questionnaire resulting in skewed data on the satisfaction level of project home builders. There were many complaints about poor customer service, and lack of follow through with requested design changes. Complaints aside, the consideration of future needs of occupants or other family members was largely absent. The homeowner interviews revealed a similar dissatisfaction with industry personnel, but due to their experiences,
participants were more concerned about their future housing needs and those of family and friends than survey respondents.

As explained in the methods chapter, in keeping with interpretivist methodology, theory is now canvassed in an attempt to provide some explanation for the findings. Several theories can be posited to explain the situation from an industry perspective. Within the scope of systems theory, business theories such as marketing, laws of supply and demand, change management, innovation, and network theory might apply. Nevertheless, any or all of these theories should be examined against a backdrop of broader social theories that explain marginalisation and exclusion, othering and difference. But first, a review of the key information is required to set the scene for discussion.

### 8.1 Review of key information

From the industry perspective there was a division between those who understood the benefits of universal design and felt they could work around the difficulties (those in favour), and those who felt the policy push for more accessible housing largely out of proportion to the need, particularly if extra cost was involved (those not in favour). A second dimension was revealed in the industry survey where differences of opinion between those involved in planning and regulation (the policy perspective), and those involved in design and construction (the practice perspective) emerged. In terms of public buildings, documents relating to the proposed Access to Premises Standard also showed similar themes to the industry surveys and interviews with a division
between those for and those against design changes. The vexed question of language and terminology, which was discussed in detail in Chapter Three, was particularly evident in the documentation for social housing, and also emerged in the interviews and survey responses.

Cost minimisation was a major feature arising from all the analyses, either as responses to direct questions in the survey or arising during the course of the interviews. It also featured strongly in documents related to the proposed Access to Premises Standard. In terms of influencers of design, consumers were considered a driving force, but as it transpired, only insofar as they had the capacity to choose between proffered designs. Apart from consumers, the survey and the interview results indicated that property developers and building regulations had the most influence on design. Architects were not seen as primary influencers of design, and regardless, they are not usually involved in the design of project homes. Indeed the absence of architects in this sphere of design could be a factor worthy of further examination.

Both survey and interview participants felt that project homes are targeted towards a market segment of young families rather than the broader population. The interviews provided more depth to this issue and revealed that private housing is viewed as a range of products each with its own design template targeted at particular market segments.

As mentioned by one interview participant, it is difficult to argue that universal design is a flawed concept. Consequently there was much support for the
concept as it stands. However, many industry participants qualified this response with assumed extra cost and concern for related design issues. As a result, cost and design issues were cited as the major barrier by those not in favour of universal design. It follows therefore that facilitators included ways of minimising the cost or providing compensatory incentives. Those in favour of universal design cited poor industry understanding and resistance to change as the major barriers. Therefore education and well thought out legislation were considered facilitators. Regardless of its undesirability, the majority of participants thought the only way to implement universal design in housing is to create a new building regulation.

From the homeowner perspective the survey revealed a focus on dwelling size and the latest fashions in fixtures and fittings. There was little evidence of planning for their “future selves” (Coleman, 2001) and more of a focus on the here and now. While new home sizes are larger than ten years ago (Australian Bureau of Statistics, 2010) and circulation space has become less of an issue, details such as small steps up to tiled wet areas remain an issue. As expected, wheelchair users planned and oversaw every design detail, but this did not guarantee success because of builder incompetence or unwillingness. Consequently, it is unclear whether anyone planning for their future selves would find project home builders truly willing to assist. A shadow of doubt therefore falls over the notion that “if consumers asked for it, builders would build it”.
8.2 Barriers to universal design

The simple answer to the overarching research question is: the house-building industry doesn’t embrace universal design because a complex mix of social and institutional barriers stands in the way. Barriers to universal design are not discrete phenomena. Rather they are a complex mix of systemic issues relating to perceptions of ageing and disability, marketing practices, and the structure of the built environment industry. Upon reflection, these themes were inherently present in the homeowner interviews in Chapter Two: the way in which industry personnel treated them as clients; specific ideas about what design types were needed; and inability or unwillingness to change existing practices.

The surveys, interviews and documents revealed many similar findings to the work of Imrie and Hall (2001), Burns (2004), Imrie (2004; 2007), Keates et al (2000), Dong (2004), Clarkson et al (2007), and Crabtree and Hes (2009). Although the surveys and interviews demonstrated a large measure of goodwill towards the concept of universal design, many barriers stand in the way of its implementation, not least of which is resistance to change and innovation. Keates et al (2000), Dong (2004), and Clarkson et al (2007) all found a similar response in the manufacturing industry in the UK when seeking to introduce more inclusively designed household items. Similarly to the survey findings of Imrie and Hall (2001) in the UK, some industry stakeholders are not convinced that Australia has a looming accommodation problem for an ageing population, or if it does exist, they have no part to play in alleviating it. In Burns’ (2004) study of wheelchair users building a new home, she found a prevalence of ingrained discriminatory attitudes towards people with disabilities. This was
also found by Imrie (2004; 2007) who writes that until the societal elements are tackled in any policy change, attitudes will remain the same. The introduction of any type of universal design principles requires a transformation “in the social relations of the development and design process” (Imrie, 2004:283). Once the cost and design issues raised by those against the notion of universal design are set to one side, the social relations causing a divide between “the disabled” and “non-disabled” come into sharper focus. This is why those in favour of universal design say it is a matter of education, better understanding and overcoming resistance to change rather than cost and design difficulty. It also helps explain my comment in the preamble that fundamentally, nothing seemed to change in spite of regulations being in place for several years.

There is also an attitude that change for a small group of people is too much to ask, and besides, they can either purchase or enter special housing, move elsewhere or modify their existing home. Either way, viewed as a non-mainstream group, it is not considered a market issue, rather it is a personal one which if not solved becomes the problem of the state. However, the ramifications of relying on the state are already causing policy concern (see Judd, et al, 2010a, 2010b; Bridge et al, 2010), as the proportion of older people increases annually (Commonwealth of Australia, 2010a). Governments now want the market mechanisms to play a role in providing solutions, for example, the Australian Government’s Livable Housing Design Guidelines (2010b), and Landcom (2008) guidelines. It is likely that those already providing adaptable housing units feel this is the solution, and in part they are correct. However, the adaptable housing code includes features that are in excess of those considered
as universal design, such as special kitchen features, which can add significant costs to a dwelling. Regardless, there are three provisos to the notion that there is sufficient housing available now to suit the older age group.

### 8.2.1 A perception there is enough now

A handful of industry players felt there is already sufficient seniors housing available, and if not, more can be easily created. It is not clear whether they consider this supported accommodation or private housing. The first issue is whether there are indeed enough adaptable housing units, and if so, how does a purchaser find out where they are located. The first purchaser is usually required to be aged over fifty five years, although how well this is policed is not clear (NSW Department of Infrastructure, Planning and Natural Resources, 2004a). Even if records were kept of the location of such dwellings, there is no guarantee that one would be available when it was needed. This is why the argument that only a proportion of homes need to be universally designed is not logical. A related issue is the location of the dwelling – is the dwelling in the right place at the right time?

*Is it in the right place?*

An article in The Weekend Australian newspaper (Legge, 22-23 May 2010) about the former Prime Minister Gough Whitlam and his wife Margaret illustrates a case of undesirable location. Although Gough continues to work from his office regularly, when he could no longer be accommodated in the family home due to mobility restrictions, he and Margaret looked at living in a retirement village. However, this meant moving away from their social life and all that is familiar. Consequently, Margaret continues to live in the family home.
and Gough lives nearby in an aged care facility. They had to choose between living together in a new community and living apart in familiar territory. Being forced to choose between a rock and a hard place is really no choice at all, and is a dilemma faced by many older couples when the home no longer suits one of the partners.

Are people really willing to move?
The premise that people are always willing to move is a false one. A dwelling unit is more than just a shelter: it is a home and has more meaning than being just a property (Imrie, 2004b). As Judd, et al (2010a) found, memories are created in a home and familiar surroundings are therefore treasured. Familiar places and habits are also relied upon to maintain independence as memory capacity and cognitive executive functioning diminish (Quinn, et al, 2009, 114). People become embedded in the street, the neighbourhood and the community. Often family and friends are nearby. If people move, they mostly wish to stay in their current locality (Judd, et al, 2010a), and this was a common theme in the homeowner survey responses. Younger seniors are probably more likely to move house than older seniors (Quinn, et al, 2009) who are not only less willing to move from all that is familiar, but find the physical and emotional exertion too onerous (Jones, et al, 2008). Besides, most people only realise their home is unsuitable after a health crisis and this is not the best time to embark on seeking a new home and moving house – a point made in one of the interviews – even if cost and availability was not an issue (Oram, Jung, Millikan and Bridge, 2008). This is the point at which the government funded home modifications scheme is called upon to provide a safer and more functional home.
environment as this is considered more cost effective than providing institutional care. However, even if some people were willing to move, would it be affordable?

*Can people afford to move?*

The argument of moving to more suitable accommodation assumes the occupants are home owners and their current home will return sufficient value to pay for a more suitable home. Although some older home owners can move to a smaller dwelling, this is area-dependent because the value of their current property may be no match for a newer and more suitable property, which might also require modification (Quinn, et al, 2009; Jones, et al, 2008).

*Mathematical fallacy*

Even if one was to take a mathematical approach and say that twenty percent of the population is ageing and/or has a disability and that therefore twenty percent of housing needs to be adaptable, this does not mean it will be available, when and where it is needed, that everyone can afford it, and that everyone wants to give up the familiarity and security of their current surroundings, particularly for those in the oldest age group who would likely need it most. Although adaptable housing is scattered across newer developments and looks to be integrated into the mainstream, the policy approach remains one of separateness.

**8.2.2 A perception that separate is normal**

The perception that people with disabilities have received sufficient attention and reparation (see Burns, 2004, Imrie, 2003, and Wijk, 2001 for example) only
serves to establish segregation and othering as a valid condition. This patronising attitude was emphasised by the Disability Council of NSW in the public hearing that “some people think they are doing the poor helpless cripples a favour” (House of Representatives Standing Committee, 25 March 2009:77). Including people with a disability specifically (rather than universally) is perceived as the majority giving something away to a minority group – ‘us’ giving to ‘them’ (Bringolf and Schraner, 2009). The former Parliamentary Secretary for Disabilities, Bill Shorten, said at an industry conference that “it is time that we revisit some of our attitudes to people with disability and we invite them in rather than keeping them out” (Shorten, 2010). Contextually his words were meant to challenge the status quo, but they also ring with a tone of ‘us and them’ by referring to people with disabilities as ‘them’ being “invited in”.

Burns (2004) found that wheelchair users can be cast more as annoying customers than experts in their own design needs, a theme echoed in the homeowner interviews. The value of particular designs to the individual were not appreciated by builders and therefore dismissed or ‘re-modified’ if in fact, they were agreed upon (2004:773). Burns also found some property developer concern that the presence of disabled people might have a derogatory effect on the neighbourhood and consequently their ability to sell a lifestyle. One of the difficulties with legislation discussed by Burns is the tendency for the industry to believe that once regulations are in place, these are sufficient to satisfy all people with disabilities. However, it should be noted that universal design, whether in the form of Livable Housing Design, or that proposed by Landcom, is only a base point from which people can add extra fittings and make
adaptations to suit their individual needs. The basic features promoted by universal housing advocates are a starting point, not a finishing point. As Burns argues, there is a danger that even if people with disabilities are seen to be legally accommodated, there is no guarantee they will be physically accommodated (2004: 777). The disability discourse includes legislation that is meant to emancipate, but it can also serve to oppress if community attitudes fail to embrace the legislative intent. Until people with disabilities are re-constructed as consumers and lifted from the dominant discourses of disability, little will change, a point pressed by Imrie (2003).

When rights are not given willingly and are taken by statutory force (such as anti-discrimination legislation and the Access to Premises Standard), little is achieved in terms of attitude change. Indeed, Imrie (2004) and Burns (2004) found evidence of a backlash effect where house builders said no more should be done than the letter of the law. Some also argued that their rights to build as they wished were now compromised by the new building code which demands greater accessibility. With attitudes such as this, and in spite of existing anti-discrimination legislation, each new item of supportive legislation for people with disabilities is introduced and fought for as if nothing has changed. The proposed National Disability Insurance Scheme (PricewaterhouseCoopers, 2009), and the Access to Premises Standard, are both cases in point. By maintaining an assumption that segregation is normal, economic arguments gain footholds with protestations that accessibility and universal design “will cost too much”.

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8.2.3 Concerns for the cost

As the executive director of the Disability Council NSW clearly articulated in the public hearing, the costs of supporting people through the public purse is still a cost: “[It] is costing us money; we are all paying for it” (House of Representatives Standing Committee, 25 March 2009:76). The Parliamentary Secretary for Disabilities also tried a little economic reason with local government officials:

“I put to you a proposition which views the person with the disability not as a cost, but as a consumer. I’ve never seen a business that profits by restricting the number of customers you want to have.”

The Hon Bill Shorten, MP
National General Assembly of Local Government
Canberra, 16 June 2010

Costs to the community, including the costs of government funded home modifications, are not costs borne by industry. The perceived potential for increased profit alluded to by Bill Shorten is apparently insufficient to offset the greater fear of lost profit when seeking to serve what is regarded a small section of the market.

The Property Council eventually conceded during the public hearing that the cost for new buildings was manageable. Although they claimed future refurbishments to existing buildings would cost unreasonably more, they were unable to substantiate this. Imrie and Hall (2001) found a similar phenomenon. The UK construction industry claimed the costs of providing greater accessibility in new housing would be exorbitant and more than the market
could bear, yet they were also unable to provide costings to support their statements. Estimations by industry associations of an extra £400 per dwelling ultimately turned out to be £100 and this cost was offset by the extra selling point of having a downstairs toilet – a convenience for everyone (Imrie and Hall, 2001).

In the same way that the Property Council attempted to confuse the cost issue across both new and existing buildings, one of the industry association representatives extrapolated perceived costs across the whole economy. During the interview he claimed that the costs far outweighed the benefits to society and tallied up it would amount to millions of dollars that could be spent on “some other productive thing in the economy”. Meanwhile, proponents of universal design are challenged to prove cost effectiveness while the cost effectiveness of exclusionary design remains unquestioned (de Jonge and Schraner, 2009). The validity of the “inclusion costs too much” argument is likely to remain unchallenged, and the cost of NOT “inviting them in” will therefore remain uncalculated.

A lack of cost accounting by the Property Council was not perceived as problematic, yet they claimed local government planners failed to provide cost benefit analyses for requiring accessibility. In this instance they were referring to multi-unit dwellings. It is not clear what is actually meant here by cost benefit analysis. Cost to whom and benefit to whom? As Bridge et al (2010:2) claim, the cost to the community of supporting a person at home in the community is less than one quarter of the cost of keeping a person in a residential setting. Studies by Hill PDA (1999) and Landcom (2008) also
support the notion that costs to the community are reduced if more accessible and adaptable environments are created, but these studies appear to be largely ignored. Although cost was raised more often as a barrier than any other factor, it was raised in the context of an *a priori* assumption rather than reasoned calculations. Perhaps the costs were not so much a matter of “dollar per brick” calculations as the costs of innovation and change.

### 8.2.4 Resistance to change and innovation

The industry’s resistance to change emerged from both industry and homeowner surveys and interviews. Andersen, Cook and Marceau (2004) in their case study analysis of innovation diffusion in the building and construction industry identified traditions and established practices which are often difficult to change for any single actor within the delivery chain – a finding congruent with Crabtree and Hes (2009) and Imrie and Hall (2001) among others. Figure 8.1 is an attempt at a graphic depiction of the industry showing its fragmented yet connected nature, and how the risk of movement by one player poses a risk to the whole group, such that they all might fall.

The risk-averse nature of the industry means that no-one wants to take a lead in innovation. The aversion to

![Figure 8-1: A connected but fragmented industry](image)
risk is partially due to the fragmented nature of the industry and the practice of transferring risk down the supply chain until it can go no further (Pinnegar et al, 2008). Again, Figure 8.1 shows that the last domino, providing it falls away from the line, will fall alone. Also, there is little, if any, competitive advantage in the built environment industry in being a ‘first-mover’. Consequently, while innovations in product manufacture can be captured and patented by the innovator, this is less possible with housing design because any innovation requires the collaboration of other stakeholders (Andersen et al, 2004:353).

Outright ownership of innovation in the built environment industry is limited because it can be quickly and easily imitated by others who bear no risk and few development costs (Pinnegar et al, 2008). Innovation versus imitation strategies are well documented in marketing texts (Dickson, 1997) and businesses often choose between these strategies when deciding where to pitch their place within a competitive marketplace. Imitation strategies are also more likely to occur in situations where traditional craft based coordination methods keep the network of building and construction professionals together (Pinnegar, et al, 2008). That is, the building companies can rely upon all plumbers and carpenters, for example, to carry out each of the tasks in the same way every time. Hence, any change to established practice is avoided wherever possible. This helps explain why some homeowner participants found they were either persuaded not to proceed with the request (using building code excuses, for example) or charged a significant premium. Even where changes were agreed and included in the contract, they were not always carried out. This highlights the influence of trade skills in the building process.
8.2.5 The influence of trade skill levels

An important issue raised by Andersen et al (2004) relates to possible cost increases or over-runs if the architects fail to work to the current skill and knowledge of the trades. Their case study, which involved several firms in one housing consortium, produced the following quote from a representative who was explaining the need to translate architecturally designed homes into standardised designs the project home industry could work with:

“Once you introduce architectural features, you’ve got a whole series of labour forces out there that really don’t know how to relate to an architecturally designed home. So [our partner’s] role was to simplify the trade and decrease the time you need to spend on it.” (Andersen et al, 2004:355).

This might partially account for the absence of architects in mass market housing, but as one interview participant claimed, trade training is a barrier to change and innovation. Technical colleges have a syllabus where experienced hands pass on established methods to new recruits. Designers and project managers are required to work to this established level of competency with little ability to increase it. Consequently, if they ask trades personnel to do things a different way, they run the risk of costly errors occurring. The Andersen et al (2009) case study shows that architects are willing to embrace new ideas, but they are compromised by their reliance on those who handle the tools.

Of all the professional groups surveyed and interviewed, architects were the most likely to support design changes to incorporate principles of universal
design. This was also evident in the submission from the Australian Institute of Architects on the draft Access to Premises Standards. However, the sentiment is not uniform across the profession. Personal discussions with architects outside of this study reveal disbelief in being able to design universally ("you’ve got to have a step to stop the rain coming in"), as well as a belief that people will just "get a new house when the old one doesn’t suit any more".

The absence of architects from project home design in Australia is perhaps, as one participant claimed, an indictment on architects rather than the industry as a whole. Regardless, inclusion of architects in the design and construction of project homes is a factor that warrants further investigation. The Andersen et al (2009) study shows that with architect influence and time to re-think processes, new practices can be instituted and perhaps by innovation diffusion, the methods can trickle through to trade training. Nevertheless, the entrenched practices of trade personnel are a reminder that a strategy is only as good as its implementation.

8.2.6 Lack of consumer demand

Several industry participants believed consumers had significant control over home design. This control is largely exercised through selecting one design over others. Less popular designs are eventually dropped from the product range as is the case with any other manufactured item. However, their reference to lack of consumer demand was based on consumers not specifically asking for universally designed homes – ‘they don’t ask for it so we don’t provide it’ response. Lack of demand, however, is largely due to the product not
being available in the first place and therefore it cannot be chosen (see Crabtree and Hes, 2009). The homeowner interviews and three survey responses showed that even when specific accessibility features were requested, these were not easily or willingly provided in project homes. In addition, such requests are considered outside the mainstream and discounted as consumer demand.

Along with some other stakeholders, architects considered that any extra costs incurred by introducing universal design would be acceptable to consumers, particularly if the outcome was a superior product. However, in the development of project home design there is no direct contact between the user and the building company and their designers (Andersen et al, 2004:353). This was highlighted by one interviewee who identified the lack of a feedback mechanism between the home builder and the purchaser. In addition, if users are unaware of the drawbacks and benefits of a new feature or technology, the demand is likely to be low.

8.2.7 Systemic barriers

As Pinnegar, et al (2008) and others have argued, the structure of the built environment industry is a barrier to change, and perhaps more of a barrier than attitudes that continue to marginalise people with disabilities. The relatively person-neutral objectives of energy efficiency are suffering the same fate as universal design due to the same institutional practices within the construction industry. This helps to explain why some survey and interview participants who are in favour of change believe the only route available is via regulations.
Again, this is congruent with the findings of Crabtree (2005) and Crabtree and Hes (2009). As described earlier, even if individuals within the house building system support change, they are bound by the system’s codes, norms and practices to maintain conformity. Systems theory helps explain this process. Katz and Kahn’s (1978) work focuses on the social and institutional processes within organisations. According to their systems theory, the underpinning factor that shapes an organisation and the way it operates is its size and age: as both increase, the organisation or system is more likely to become closed to external influences. In response to external threats a closed organisation is more likely to focus on internal rigid controls to maintain its equilibrium. In short, it becomes mechanistically driven and impervious to outside influence. Katz and Kahn develop the theory further and identify ten characteristics, two of which have the most relevance here: the role of authority and responsibility, and the way in which external feedback is received.

Large organisations have a hierarchical system of authority and responsibility. While the house-building system behaves as one whole entity, it is as the same time fragmented. Although it works in a mechanistic way, it lacks the hierarchical governance that single organisations possess. As a networked system rather than a hierarchical system it is not possible to identify a point at which authority or responsibility can be found, because power is dispersed throughout the system. Consequently there is no single point at which to make an appeal for wholesale design changes. Any appeal to individuals within the system, say to architects and designers, is unlikely to succeed because of the closed nature of the system.
Mechanistic organisations have less capacity for receiving feedback from the outside world unless it is simplified or coded into a language that fits the existing norms, codes and practices. All other information is regarded as “error variance” or a one-off abnormal event if the information does not fit the organisation’s existing modus operandi (Katz and Kahn, 1978). Here we come full circle to the issue of communicating thoughts and the way in which language is used. The house building industry codes universal design as ‘disabled design’ because this it is the language it understands. It is a language embedded in regulations and rules and explains why eighty-five percent of participants said that nothing will happen without new regulations.

Because change is not easily effected from inside the organisational machine, the house building industry needs someone or something outside the machine to make the changes – an appeal to an external arbitrator, in this case building regulators. New regulations allow the whole industry machine to start producing houses to new standards in a coordinated way because the rules apply to everyone. The system therefore retains its cherished machine-like stability, and profit margins are presumed to be protected. In addition, everyone in the sector must make the changes at the same time and this means no competitive advantage or disadvantage is experienced by individual companies. However, judging by the public hearings, the property industry seems to believe that the status quo remains the preferred option.
To summarise thus far, if systems theory has a predictive value for the house building industry, focusing on housing design details will require the imposition of a new set of regulations even if they are contested. Such regulations will likely be based on a mix of existing codes because this is the language with which the industry is most familiar. However, regulation of universal design is a contradiction in terms. The concept of universal design is to iteratively strive for new and better design solutions over time. This is not possible with regulations that lock designs and dimensions into a particular point in time. So the question then arises as to whether regulations, voluntary or mandatory, would actually bring about the outcomes and benefits proponents seek.

8.2.8 Language

The issue of terminology was discussed in the background chapter as a means of introducing the terms and also to show the differences in meanings, albeit some of them subtle. However, even the less subtle aspects have failed to reach a level of common usage across the industry. The documents relating to social housing contained evidence of confusion through an entanglement of definitions and an assortment of special housing terms. Agreement is required on whether so many different types of housing are needed, especially when one might be sufficient; and if more than one is needed, what they should be. This confusion is not only preventing the explicit notions of universal design from emerging, it stymies academic debate and research.

Terminology clarification is essential for theory building (Iwarsson and Stahl, 2003; Steinfeld and Danford, 1999). When actors within and between
disciplines discuss basic concepts and use them to frame official documents and reports there is a tendency to assume that the various actors apply the same meanings to the words. The first step in theory development is the positioning and definition of concepts – something the ICF emphasises (WHO, 2001). In practice, theory is hidden while norms and codes of practice take precedence and guide decision making and action (Iwarsson and Stahl; 2003:58). Steinfeld and Danford (1999) agree and highlight that without well-developed theory, community norms and industry codes of practice will guide not only research, but also the approach to and biases within research. Quinn, et al (2009) agree that there is “confusion and disagreement within government, the industry and advocacy sectors about the design paradigms (and terminology) for supporting ageing in place” (Quinn et al, 2009:135). In seeking to establish the costs and benefits of adaptable and universal housing design, they added accessible, flexible and visitable to the list thereby rendering the definitions more complex than necessary. This was particularly pronounced when the authors focused on where and when the terms should be expressed as proper nouns or common nouns (see Bringolf, 2010 for more discussion). Consequently societal norms remain unchallenged from a research perspective as well as an industry perspective. This makes overcoming barriers all the more difficult.

8.2.9 Attempts to overcome barriers

A more recent attempt has been made to work around the language with the creation of yet another term, “Livable Housing Design” (Commonwealth of Australia, 2010a). This new ‘brand’ was launched as Livable Housing Design Guidelines, which are largely based on the Landcom Universal Housing Design
Guidelines. The purpose of the brand is to encourage industry to include more universal design concepts into general housing. However, this new ‘brand’ was launched by the Parliamentary Secretary for Disabilities in a retirement village. The venue choice raises the question about how well the generality and universality of the Guidelines was understood. The subsequent television coverage of the launch showed images of a dwelling designed to the adaptable housing code with features such as a toilet pan set forward further than usual and a grab rail (Figure 8.2). As an attendee at the launch of the Livable Housing Design Guidelines, I met with a sales representative for the retirement village complex who was keen to point out the adaptable features. However, when questioned he was not able to give a reason why the toilet pan had to be set forward creating an unattractive feature at the rear. His reply was, “It is all done to the Standard”. Although the Guidelines do not propose toilet pans to be set forward, or installation of grab rails as standard, the image is one of ‘disabled design’ and in this sense, nothing has changed. However, at least industry has been formally introduced to the
concepts and it remains to be seen if they voluntarily embrace the code. As Maisel (2005) found with the visitability code in the USA, industry is not likely to adopt a voluntary code. Only when the concept of visitability was captured by local ordinances did this code become manifest (Maisel, Smith, and Steinfeld, 2008).

If Australia is to invest its energies in the market mechanism to bring about change there should be some consideration given to assisting the process. Incentives were mentioned by several participants, but how these might be implemented was not clear. The existing first home buyers grant could contain a proviso that the home be designed to the Livable Housing Design Guidelines. However, this would require the project home builder and the consumer to understand what this means and to avoid promoting it (wittingly or otherwise) as ‘disabled’ design. Consequently, this idea might maintain the problems rather than provide a solution.

**8.2.10 Power and conflict**

This discussion is not complete without briefly mentioning power and power relations. Whilst people with disabilities and older people have their champions in the form of advocacy groups, and to some degree, protection through legislation, they remain at a power disadvantage. They are disempowered by all three types of power—authoritarian, networked and routinised power (see Allen, 2004; Lukes, 2005; and Hudson, 2006 for more on this topic). However, the construction industry is also subject to similar power relations.
People with disabilities and older people are subject to authoritarian power through institutions such as state-based income support, aids and equipment schemes, and medical care. The built environment industry is also subject to authoritarian power in the form of statutory instruments and those who administer them. Authoritarian power is observable and exercised to achieve specific goals. Networked power is more nebulous because it is diffused and may be covertly exercised by setting agendas behind the scenes. According to Hudson, power is generated to achieve outcomes and mobilise resources towards desired goals (2006:160). Decisions in committees, such as Standards Australia and industry association working groups are set up specifically to achieve goals, and in the process they can either highlight or suppress issues. Indeed topics chosen for academic research are also subject to such power relations through committee processes.

Routinised power is also nebulous, but is more pervasive than networked power. It is exercised by shaping preferences and beliefs and as Allen says, “it acts like a normalizing force that works it sway through people's lives” (2004:22). With no directly observable constraints or prohibitions, routinised power provides no easy foothold upon which to take up a fight for change. For example, there is no law to say that a wheelchair user cannot use steps – they just cannot. Where the location of authoritarian power is more visible in its laws, policies and the people responsible for their enactment, the location of routinised power is cloaked under societal norms and practices. Hudson explains that this type of power is more fluid: “It is a series of strategies,
techniques and practices” where behaviours are moulded and have an unquestioned existence (2006:160). Not only are they difficult to detect and locate, they lack a point of responsibility (of power) from which to make changes. Authoritarian power systems, therefore, may be changed through appeals to the political processes, but networked and routinised power relations require other methods.

Academic research also holds particular values and routinised behaviours and is therefore not above reproach, a subject discussed by Stone and Priestly (1996), and Imrie and Edwards, (2007:629), and in this case, evidenced by the studies into the housing needs of older people conceptualised as a separate and homogenous group.

If systems theory holds, all three forms of power are present in the built environment industry. Authoritarian power is vested in the individual organisations and their hierarchies; networked power is exercised in the way the organisations work together through day to day practices and committee processes; and routinised power is present in the norms and practices set down over time. Such norms and practices have maintained notions of design exclusion and separateness for people with disabilities and older people. Consequently, those within the industry feel ‘powerless’ to bring about change, but would support change in a legislated (authoritarian) form.
8.3 Norway shows another way

It was largely the application of systems theory that brought the Norwegian experience into sharper and more pertinent focus than any other previous attempts at introducing industry change. In contrast to the Australian approach of endeavouring to manipulate the market mechanisms and hope that industry will eventually be persuaded to universal design, the Norwegian government faced the issue holistically, determinedly and systematically by integrating universal design concepts into various aspects of national planning policy. By so doing, it tackled the inherent normative and structural issues head on. The story of its establishment and progress is provided by Olav Bringa in two documents (2001, 2007) and a potted version follows.

Norwegian terminology surrounding universal design is the first clue to their approach. They have captured notions of accessibility whilst stressing other aspects that relate to universality such as safety, sustainability, aesthetics, and financial viability (Bringa, 2007:98). The use of phrases such as ‘universal design perspectives’ and ‘universal design strategies’ clearly aligns the Norwegian approach with processes rather than products, and it is indeed processes that universal design seeks to emphasise. The process involved applying universal design principles (see Appendix E) to statutory instruments, codes and policies as a measure of quality assurance.

To find out why accessibility objectives were previously absent in most municipalities, they first sought the opinions of planners and advocacy groups. A lack of understanding of the issues and an “inability to understand that
accessibility for people with disabilities is relevant to their work and discipline”
was identified by Bringa (2001:29.11). Educational institutions were given
additional funding to devise innovative methods of teaching universal design
across a range of disciplines. More than fifty percent of eligible institutions
joined the project and programs were developed that proved popular with
students and raised their level of interest (Bringa, 2001).

As a result of various pilot projects over a period of more than four years, the
Norwegian Planning Act now includes the principle of universal design in the
objects clause, and this will bring it to the same level of importance as
sustainability and heritage protection (Bringa, 2007:111). The most significant
change to processes, according to Bringa, is that community participation will
be required at the early stage of all developments (2007:112).

The Norwegian experience demonstrates that broadly applying universal
design principles to planning concepts rather than design details has much to
offer in reaching the goal of architectural and therefore social inclusion. Bringa
claims that applying universal design at the higher level of planning sidesteps
the political processes previously encountered by social service departments
attempting to bring it onto the planning agenda (Bringa, 2001, 2007). The main
issue with applying universal design so broadly is the legal aspect because
universal design implies it has virtually no limits, which would be difficult to
achieve (Bringa, 2007:113).
Regardless whether Norway has a different planning and regulatory system to Australia, both countries face similar issues of normative approaches towards people with disabilities and older people, and entrenched industry practices. Norway appears to have found a successful means by which to legislate for universal design. Part of the success is attributed to shifting the focus from detailed design regulations to the concepts applied at the planning and development stage. The success is also due to the whole of government approach bringing it into the mainstream agenda and not leaving it to the social services department to raise accessibility as a policy issue. In addition, universal design meshes with environmental and economic sustainability, and as such, “creates a framework for human rights, equity and democratization” (Bringa, 2007:113).

If systems theory has predictive value in terms of large organisations being closed and rigid, a way needs to be found to make the organisation or system more open and flexible. By turning the universal design paradigm of user centeredness on its head, the Norwegian Government found a way to bring such openness and flexibility. Instead of just examining building designs for user accessibility, they examined their policy documents. By casting the seven principles of universal design over all their planning and zoning policies it made universal design in housing a whole of government responsibility. No longer was it viewed as a segregated endeavour. This process overcame the vexed issue of who to make responsible, because everyone was responsible, it created a new culture with inclusive norms and values, and therefore a new way to use (or not use) the existing language, and by including people with disabilities in
the planning processes, also overcame the closed feedback mechanism which caused the perception of “error variance”.

This chapter has discussed the findings in relation to the key research question about reticence to embrace universal design in housing. It has addressed the sub questions about industry perceptions of universal design, barriers to implementation, influential agents, and finally the issue of how the barriers might be overcome. The final chapter which follows next reviews the main points, discusses limitations to the study, and the contribution of this thesis.
9 CONCLUSIONS

The question posed at the beginning of the study was:

“Why doesn’t the house-building industry embrace universal design?”

Three sources of data and three methods of data collection were used in seeking answers to these questions. The answer is complex and multi-faceted, and at the risk of oversimplification, two key themes emerged: normative approaches to ageing and disability and structural issues inherent in the built environment industry. If the Landcom (2008) costing exercise is correct, cost does not appear to be the significant barrier, and it does not take account of the willingness of consumers to pay for improved design. On the matter of design, it was assumed the design would necessarily be unattractive and therefore limit sales resulting in shaved profit margins. The issue of profit links with the issue of competitive advantage and an industry-wide level playing field. Unless the house-building company does not see any competitive advantage it will only change if every other company changes. If they believe the product will cost more and sell less, only consumer demand or regulations will underpin change. In terms of consumer demand, universal design is still considered a product for a small group of people, and not sufficiently large to warrant attention except in one-off situations with specific clients.

The four sub questions identified were:

“What are industry opinions of universal design in housing?”

“What are the barriers to and facilitators of universal design?”
“Are any particular stakeholder groups more influential than others?

“How might barriers to the implementation of universal design be overcome?”

9.1.1 Opinions of universal design in housing

On the basis that universal design is a ‘good thing’ it is difficult to argue against it. The surveys indicated 80 percent support for the notion, but an almost equal number said it could only be implemented by regulations. Those who believed that design issues were a matter of creative flair and that cost was not as great as many proclaimed, expressed some frustration that they were held captive by industry norms and codes of practice that prevented them from introducing what they believed was ‘good design’.

9.1.2 Barriers and facilitators of universal design

Perceived increases in cost without a compensatory increase in sales could only be justified by such costs being applied across the industry to maintain the competitive status quo. Regulation was the means by which to achieve this and consequently this became a facilitator. A smaller group identified a lack of understanding of universal design and consequently the answer lay in education. The absence of consumer demand was not considered a barrier, more a facilitator yet to occur. This was offered as the simple solution to overcoming cost in particular, and installing what many considered to be unattractive ‘disability’ features.

9.1.3 Influence of particular stakeholder groups on design
Within the industry survey findings, the top ranked influencers of design were consumers, regulatory authorities, developers, and designers. Although consumers were upheld as the key influencer of design, the way housing products are mass produced precludes their specific input. Consumers influence design by purchase popularity. The designs that sell the most often are the ones that are sustained. Unpopular products are gradually removed from the product line. Apart from consumers, the Australian Building Codes Board and regulatory bodies were considered major influencers of design and is perhaps, an indicator of the level to which the industry is driven, or perceived to be driven, by rules and regulations. Developers were viewed as having greater design control than architects and building designers, and this is contrary to the common sense notion that house designers would have the greatest control over design.

9.1.4 Overcoming barriers to implementation

This study set out to gather information about industry’s attitudes and opinions of universal design in housing. By so doing, it was expected that a way forward would be revealed. Given the complexity of the inter-relationship between the barriers, there is no simple solution to offer. A multi-faceted problem needs a solution that will address the many issues in a coordinated way. As Landcom has found, addressing cost issues alone has been insufficient to persuade industry to change practices. Guidelines for design (Landcom and Livable Housing) are yet to gain widespread attention. Moreover, addressing cost and design problems do not confront the underpinning social attitudes which marginalise and stereotype older people and people with disabilities – the
perceived consumers of universal design. Until the social inclusion agenda begins to underpin the collective imagination, universal design along with other inclusive practices will have difficulty fulfilling their potential.

There are three possible ways forward: a regulatory approach, a voluntary approach, and/or an educatory approach. The regulatory approach is counter to the concept of universal design as an iterative design process. The voluntary approach is a form of self regulation using information diffusion, but this can lead to piecemeal application and little control over quality. The educative approach is more problematic in terms of who is responsible and how can it be implemented. The most effective way forward is to bring together regulation, both mandated and regulatory together with education. In effect this sums up the Norwegian solution.

9.2 Summary of findings

In the Australian context, this study has shown similar findings to Imrie and Hall's (2001) study of the house-building industry, Burns (2004) study of consumers with a disability, Dong et al (2004) study of industrial design, all in the UK, and Crabtree and Hes' (2009) Australian study of barriers to the uptake of sustainable design in housing. Resistance to change is based on stereotyping of disability, assumptions that the market is small and therefore little if any profit can be made from it, and a reticence, and perhaps inability, to change an efficient and tightly controlled system. Consequently, industry looks to others for the creation of problems, and also for solving them. Either way, they absolve themselves from responsibility. This is easily achieved in this case because
responsibility and power are dispersed throughout the system making it impossible to lay the blame at the feet of any particular stakeholder and therefore identifying a stakeholder who could be responsible for introducing changes. This is possibly the reason why property developers, who are at the front end of the system, are seen as having most control over design. As the instigators of projects they set the scene and are therefore perceived as having the most control over many aspects of the industry.

Technical expertise for inclusivity is already being enacted in the public domain and adaptable housing, so lack of available expertise poses no barrier to implementation. However, those who are willing and able to make the paradigm shift to inclusiveness will meet a final stumbling block – resistance to innovation within the housing delivery chain. A simple, yet effective argument has been assembled by industry which protects the status quo: the people who would benefit most from universal design are cast as people who demand too much at too high a price, and besides, mainstream consumers are not asking for universal design. Clearly, market mechanisms are failing to bring about the changes needed to provide housing that will meet the functional needs of people over their lifespan. State intervention is therefore required in the form of supportive planning policies and building regulations, but not just another new set of regulations.

Although moves are afoot to introduce universal housing through a voluntary code with a new name (Livable Housing), old ideas are not easy to change and common usage language will be slow to adapt. This remains apparent in the
Livable Housing Design Guidelines where reference is made to disability access standards and other instruments relating to disability. Whilst overall this is a positive move, many of the underpinning beliefs that live on in such documents will likely contaminate the process. We have seen how the attempt to implement universal housing design through the Economic Stimulus Package created confusion rather than clarity. The Norwegian experience is therefore worthy of further investigation to ascertain any aspects that might be applicable in the Australian context.

Although a comparison between Australian and Norwegian systems are outside the scope of this study, the Norwegian model has shown a way forward. It has addressed the key factor in addressing social inclusion – drawing together key stakeholders from all departmental portfolios for ‘joined up thinking’. By so doing, they have tackled one of the key barriers to universal design: the systemic nature of the issues and the inability to place responsibility in the hands of any particular stakeholder or group. Everyone became responsible and accountable. Authoritative power was used to institute the new process; committees were formed with the purpose of finding workable outcomes, which included a range of education programs. A network of people became responsible and new norms and values emerged from the process. Addressing deep seated segregationist attitudes began. In analysing existing policies and procedures for compliance with universal design principals, all officers, regardless of their personal views, were required to work to the values of universal design. The Norwegian approach also side-stepped the issue of market demand – consumers were presented with the finished product thereby
avoiding the need to educate consumers as well as industry stakeholders. However, the success of every strategy is in the implementation and consequently the success of the project also rested on appropriate educational programs and regular evaluations of progress. This was made possible by sustained government commitment over several years, which was also a key contributor to the success of the Cambridge Engineering Design Centre initiative. The critical factor is to allow sufficient time for stakeholder organisations to pass through the various stages of the change process - from initial resistance to challenging existing schemas and then to eventual acceptance of change.

9.3 Limitations of the study

One of the most obvious limitations of the study was the low response rate to the industry survey and inability to access a larger number of industry interviewees. The results, particularly the survey data should be treated cautiously and as an indicative measure. The low response rate to the survey can be partially attributed to the inability to successfully contact industry professionals via their relevant associations. Lack of interest in the study may be indicative of the topic itself or of a lack of motivation to complete surveys that regularly appear on email listings. However, these factors are largely out of the control of a researcher. One factor that is within the control of the researcher is the wording and presentation of material that introduces the study. Although the University’s pro-forma participant information sheet meets all ethical consideration and is written in plain English, it is a perfunctory document (see Appendix A). There is little opportunity within this pro forma to
“sell” the study and the questionnaire to potential participants. Consequently, I would not use this pro-forma again. I would rather use it as a reference and construct a more appealing information sheet to introduce the study and have the University’s ethics committee make comments or corrections. Of course, a larger number of industry interviewees would have added weight to responses and provided greater assurance of applicability across the industry, but this was not possible with the resources available for this study.

The homeowner aspect of the study was intended as an exploratory exercise without any specific intent other than to gather a brief consumer perspective that might lay the foundation to further research. The survey was devised to find out what was important to new home purchasers and whether they considered more than their current needs and desires when choosing a home. The interviews were devised to document personal stories of dealing with the house-building industry. To this end, thirty survey returns and interviews with five homeowners with a disability served the purpose. Although it is likely that greater numbers of homeowner participants would have revealed additional information, given the limited resources available it was decided from the outset to place the emphasis on industry perspectives.

9.4 Insider view: advantages and disadvantages

As discussed in Chapter Four, one of the reasons a phenomenological approach was taken was my prior involvement with the topic. Being an “insider” has both advantages and disadvantages. The major advantage was in conducting industry interviews. My ability to speak the language of the professionals, to
know the acronyms so often used, to converse fluently, to sound knowledgeable about issues, and to phrase appropriate prompts to questions helped create rapport quickly. It also helped to present the study as worthy and credible. To a lesser degree, this was also the case with the homeowner interviews. Insider knowledge also helped sidestep the undercurrent of antagonism between industry and disability groups, which the processes surrounding the Access to Premises Standard exacerbated. Overcoming any suspicions that I might be a disability advocate helped gain more honest responses to the questions posed than might have been the case if I had not been familiar with the topic.

Interpreting the information is, however, another matter.

Upon reflection, my interpretation of the information may have a consumer advocacy bias. I came to this study with a longstanding desire to see improvements in housing design and wanted to know why change appeared so difficult. Nevertheless, as with all phenomenological studies, the very design of the study contains inherent biases because a particular viewpoint is being investigated.

### 9.5 Contribution

While separate studies have been carried out in the UK by Rob Imrie and Nicola Burns, this study places the issues in an Australian context. It also brings together industry and consumers in one study. Other studies in Australia, for example, Bruce Judd, Joanne Quinn, and Diana Olsberg, have focused specifically on older people as a separate group, and Simon Pinnegar, Louise Crabtree and Dominique Hes have each identified structural issues causing barriers to
innovation. This study has attempted to form a story that encapsulates a broader landscape and to drill deeper than identifying issues – it has attempted to explain why the issues exist. By casting the study across a diverse range of industry players as well as homeowners, an account has been provided that encompasses both sides of the market. In contrast to other studies, it has not attempted to construct yet another convincing argument for change: rather it has looked for indicators of ways in which change might be instituted. The need for consistent and appropriate terminology, a factor often neglected, yet important in academic theory development, has also been highlighted. By linking housing issues with marketing practices, another dimension for further investigation has been revealed. The study has also challenged the prevailing universal design paradigm – that design details must focus on users. Casting the principles of universal design across the planning polices instead of individual designs creates an environment for holistic thinking so that inclusiveness, as well as safety and energy conservation, can be integrated from the outset and not sidelined as a design afterthought. This study therefore lays the groundwork for further investigations into ways in which the Norwegian experience might be applied in Australia to overcome resistance to innovation within the built environment industry, whether for social, economic or ecological reasons.
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APPENDIX A

PARTICIPANT INFORMATION

Participant Information Sheet (Survey)
Participant Information Sheet (Interview)
Participant Consent Form
Participant Information Sheet

You are invited to participate in this study which aims to find out why we don’t have more universally designed housing in Australia.

Project Title
Inhibitors and facilitators of universal design in the built environment with emphasis on new-build dwellings: social, political and economic implications

Who is carrying out the study?
Jane Bringolf, PhD candidate is carrying out the study. The research will form the basis of Doctor of Philosophy at the University of Western Sydney under the supervision of Professor Peter Phibbs from the Urban Research Centre and Dr Ingrid Schraner from the School of Economics and Finance.

What is the study about?
The purpose is to investigate why we don't have more housing designed to suit the changing needs of occupants so that if and when they have a disability or experience declining abilities as they age, they don't have to move into care or organise major modifications to their home. The study will seek the opinions of construction industry personnel and home owners about the issues involved in creating and building homes that better suit occupants' changing abilities and lifestyles.

What does the study involve?
The study involves answering a series of questions about the time when you chose your new home and had it built. You will be asked about your experiences with the building company and their response to any special design request you may have made.

How much time with the study take?
It is estimated that it will take ten to fifteen minutes to complete the questions.

Will the study benefit me?
It is not expected that the study will provide direct benefit to you, but it is expected to provide information that will assist the home building industry to design houses that better suit occupants throughout the different stage of life.

Will the study involve any discomfort for me?
There might be a slight possibility that when answering the questions you may recall some unpleasant memories. If you experience discomfort from this, you can choose to withdraw from the study.

How is this study being paid for?
This study is being sponsored by the University of Western Sydney as part of a PhD Scholarship Program.
Will anyone else know the results? How will the results be disseminated?
All aspects of the study, including results, will be confidential and only the chief investigator and supervisors will have access to information on participants. A report of the study may be submitted for publication, but individual participants will not be identified in the report. Survey participants can request information about the findings of the research.

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and if you do participate, you can withdraw at any time without giving any reason and without any adverse consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by providing them with the chief investigator's contact details. They can contact the chief investigator to discuss their participation in the research project and obtain an information sheet.

What if I require further information?
If after reading this information sheet you would like more information, contact Jane Bringolf: ph: 0417 231 349; email: j.bringolf@uws.edu.au
If you would like to know more, please feel free to contact the project supervisors:
Prof Peter Phibbs: ph: 02 8833 5902; email: p.phibbs@uws.edu.au
Dr Ingrid Schraner: ph: 0437 206 012; email: i.schraner@uws.edu.au

What if I have a complaint?
This study has been approved by the University of Western Sydney Human Ethics Committee: Approval Number H6886. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel 02-4736 0083 Fax 02-4736 0013 or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Consent to participate
If you agree to participate in this study, you will be asked to sign a Participant Consent Form. If you are participating by accessing the survey on-line via the Urban Research Centre website, your return of the survey is considered as consent to participate.
You are invited to participate in this study which aims to find out why we don’t have more universally designed housing in Australia.

**Project Title**

Inhibitors and facilitators of universal design in the built environment with emphasis on new-build dwellings: social, political and economic implications

**Who is carrying out the study?**

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**What is the study about?**

The purpose is to investigate why we don't have more housing designed to suit the changing needs of occupants so that if and when they have a disability or experience declining abilities as they age, they don't have to move into care or organise major modifications to their home. The study will seek the opinions of construction industry personnel and home owners about the issues involved in creating and building homes that better suit occupants' changing abilities and lifestyles.

**What does the study involve?**

The study involves answering a series of questions about the time when you chose your new home and had it built. You will be asked about your experiences with the building company and their response to any special design request you may have made.

**How much time with the study take?**

It is estimated that it will take ten to fifteen minutes to complete the questions.

**Will the study benefit me?**

It is not expected that the study will provide direct benefit to you, but it is expected to provide information that will assist the home building industry to design houses that better suit occupants throughout the different stage of life.

**Will the study involve any discomfort for me?**

There might be a slight possibility that when answering the questions you may recall some unpleasant memories. If you experience discomfort from this, you can choose to withdraw from the study.

**How is this study being paid for?**

This study is being sponsored by the University of Western Sydney as part of a PhD Scholarship Program.
Will anyone else know the results? How will the results be disseminated?
All aspects of the study, including results, will be confidential and only the chief investigator and supervisors will have access to information on participants. A report of the study may be submitted for publication, but individual participants will not be identified in the report. Survey participants can request information about the findings of the research.

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and if you do participate, you can withdraw at any time without giving any reason and without any adverse consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by providing them with the chief investigator's contact details. They can contact the chief investigator to discuss their participation in the research project and obtain an information sheet.

What if I require further information?
If after reading this information sheet you would like more information, contact Jane Bringolf: ph: 0417 231 349; email: j.bringolf@uws.edu.au
If you would like to know more, please feel free to contact the project supervisors: Prof Peter Phibbs: ph: 02 8833 5902; email: p.phibbs@uws.edu.au Dr Ingrid Schraner: ph: 0437 206 012; email: i.schraner@uws.edu.au

What if I have a complaint?
This study has been approved by the University of Western Sydney Human Ethics Committee: Approval Number H6886. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel 02-4736 0083 Fax 02-4736 0013 or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Consent to participate
If you agree to participate in this study, you will be asked to sign a Participant Consent Form. If you are participating by accessing the survey on-line via the Urban Research Centre website, your return of the survey is considered as consent to participate.
Participant Consent Form

Project Title:
Inhibitors and facilitators of universal design in the built environment with emphasis on new-build dwellings: social, political and economic implications

I, ............................................................ consent to participate in the research project titled: "Inhibitors and facilitators of universal design in the built environment with emphasis on new-build dwellings: social, political and economic implications".

I acknowledge that:

I have read the participant information sheet and have been given the opportunity to discuss the information and my involvement in the project with the researcher.

The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

I consent to being interviewed and I agree to having the discussion audio taped.

I understand that my involvement is confidential and that the information gained during the study may be published, but no information about me will be used in any way that reveals my identity.

I understand that I can withdraw from the study at any time, without affecting my relationship with the researcher now or in the future.

Signed: ..............................................................

Name: ..............................................................

Date: ..............................................................
APPENDIX B

DATA COLLECTION INSTRUMENTS

Industry Survey Questionnaire
Homeowner Survey Questionnaire
Industry Interview Guide
Homeowner Interview Guide
New Homeowner Survey

Thank you for agreeing to participate in this study. Your answers are confidential and no identifying information will be published or passed to another person. Your participation will help us find out what sorts of things people are looking for in a new home. This survey has University of Western Sydney ethics approval (reference H6886). You can contact Jane Bringolf if you have any questions about the study (Mobile: 0417 231 349) or email j.bringolf@uws.edu.au.

Please answer the questions marking the tick boxes ☐ or the spaces provided. Any extra comments can be added in the spaces provided and at the end of the form. Please see the accompanying Information Sheet for more details. The survey will take 10-15 minutes.

Project Title: Inhibitors and facilitators of universal design in the built environment industry with emphasis on new-build dwellings: social, political and economic implications

1. Are you Female ☐ Male ☐

2. To which age group do you belong?
   18-30 years ☐ 31-45 years ☐ 46-60 years ☐ 61+ years ☐

3. How long have you lived in your new house? …… years …… months

4. How many people live in your house? ………

5. What is their relationship to you?
   (e.g. are they your wife, son, mother, lodger.)
   ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………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7. When you were deciding on your new home, what building features were you looking for?

*Please indicate on the chart the level of importance for each feature.*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Not Very Important</th>
<th>Not at all Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>7a Number of Bedrooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7b Number of bathrooms / toilets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7c Size of living rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7d Size of garden space</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7e Number of garages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7f One storey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7g Two storeys</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Other – *please specify* …………………………………………………………………

8. When you were deciding on your new home, what design features were you looking for?

*Please indicate on the chart the level of importance for each feature.*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Not Very Important</th>
<th>Not at all Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>8a Open plan living</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8b Lots of natural light</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8c Energy and water saving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8d Style of kitchen fixtures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8e  Style of bathroom fixtures and fittings
     [________] [________] [________] [________]

8f  Outdoor living space - alfresco / patio / veranda
    [________] [________] [________] [________]

8g  Lots of storage space
    [________] [________] [________] [________]

8h  Modern look externally and internally
    [________] [________] [________] [________]

Other – please specify………………………………………………………………………………………………………………………………………………

The following questions are about your relationship with the building company and how they treated you as a client.

9. Did it matter to you who the builder was?
   Very important □
   Somewhat important □
   Not very important □
   Not important at all □

10. When choosing your new home, did you ask for changes to the floor plan?
    Yes □
    No □ Go to question 17

11. Was the building company happy to make these changes?
    Happy to include all □
    Happy to include most □
    Not happy but included all or most anyway □
    Would only include some □
    Would not include any □

12. What changes did you want?
    ………………………………………………………………………………………………………………………………………………………………………
    ………………………………………………………………………………………………………………………………………………………………………
    ………………………………………………………………………………………………………………………………………………………………………
13. Why did you want these changes?

-------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------

14. If some or all of your changes were refused, what reason were you given?

-------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------

15. Did you think the building company wanted too much money for any of your changes?

Yes, I thought they wanted too much for one or more changes  □
No, I thought the charges were reasonable for all my changes  □
They wanted a lot more for some but the others were reasonable  □

What changes seemed to cost too much?

-------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------

16. Did you go ahead with these changes in spite of the cost?

All of them  □
None of them  □
Some of them  □
Cost not an issue  □

17. Overall, how would you rate the way the building company treated you as a client?

Excellent  □
Very good  □
Satisfactory  □
Less than satisfactory  □
Poorly  □

Comment………………………………………………………………………………………………………………
The following questions ask you about things you may not have considered before.

18. When choosing your new home and its design, did you ever think about incorporating design features for:

18a. Elderly relatives who need to use a walking frame or wheelchair  
[ ] Yes  [ ] No

18b. A family member having an accident and needing to use crutches or a wheelchair  
[ ] Yes  [ ] No

18c. A family member or visitor with poor eyesight  
[ ] Yes  [ ] No

18d. Being able to push a baby stroller or shopping trolley in and out the front door  
[ ] Yes  [ ] No

18e. Being able to easily move furniture in and through the house  
[ ] Yes  [ ] No

18f. Being able to reach switches and controls if you can’t bend over or are in a wheelchair  
[ ] Yes  [ ] No

18g. Getting old and frail, or chronically sick and needing help with things like showering  
[ ] Yes  [ ] No

19. Did you try to incorporate any design features to help make life easier for people who are ageing or have a disability?  
[ ] Yes  [ ] No  go to question 21

20. If yes, was the builder happy to help you with the design features?  
[ ] Very helpful  [ ] Somewhat helpful  [ ] Not very helpful  [ ] Very unhelpful  [ ] Told me to ask someone else

Comments……………………………………………………………………………………………………………………………

21. Why did you decide to build a new house and not move to an existing house?
…………………………………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………………………………
22. Why did you choose this location to build your new home?
   - Close to family and friends □
   - Land price □
   - Close to amenities - schools
     - shops, public facilities □
   - Close to place of work □
   - Close to public transport □
   - Other – please specify ………………………………………………………………
     ……………………………………………………………………………………………

23. Overall, are you happy with the design and fit out of your new home?
   - Very satisfied □
   - Mostly satisfied □
   - Generally satisfied □
   - Less than satisfied □
   - Not satisfied at all □

24. What do you like most about your new home?
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………

25. In hindsight, what would you change about the design of your new home?
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………

26. Would you build a new home again?
   - Yes □
   - No □
   - Maybe □
27. Would you use the same building company again?

Yes □
No □
Maybe □

Please add any other comments about the design of your home and your experience with the building company.

……………………………………………………………………………………………..
……………………………………………………………………………………………..
……………………………………………………………………………………………..
……………………………………………………………………………………………..
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……………………………………………………………………………………………..

Thank you for completing the survey.

If you have any questions about the survey or the findings, please contact Jane Bringolf by email j.bringolf@uws.edu.au or by mobile phone on 0417 231 349.

Returning this form

You can return this form by Fax to 02 9891 5899

OR

Put in an envelope and post via Australia Post (no stamp required).

Ms Jane Bringolf
Reply Paid 70475
University of Western Sydney
Locked Bag 1797
Penrith South DC NSW 1797
Industry Survey Questionnaire

Thank you for agreeing to participate in this study. Your responses will be confidential and no identifying information will be published or passed to a third party. This survey has University of Western Sydney Human Research Ethics Committee approval (Reference H6886). Questions can be directed to Jane Bringolf (Mobile: 0417 231 349) or email jbringolf@uws.edu.au.

Please answer the questions marking the tick boxes □ or the spaces provided. Any extra comments can be added in the spaces provided and at the end of the form. Participation is voluntary and return of the survey form will be regarded as consent to participate. Please see the accompanying Information Sheet for more details. The survey will take 10-15 minutes.

Project Title: Inhibitors and facilitators of universal design in the built environment industry with emphasis on new-build dwellings: social, political and economic implications

1. What is your position in the organisation?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

2. What qualifications do you hold?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

3. How long have you worked in the built environment industry? …………years.

4. Are you Female □ Male □

5. To which age group do you belong?

18-30 □ 31-45 □ 46-60 □ 60+ □

6. Is the organisation you work for

International □
National □
Statewide □
Regional □
Local □

7. Is your organisation part of a larger group or organisation?

Yes □
No □
Other □ Please specify……………………………………………………………………………………………………………………
8. What are your organisation’s principle activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public and community buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House-building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and industrial buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home modifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other – please specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Has your organisation been involved with public or social housing?
   Yes □  No □

10. Is your organisation involved with constructing project homes?
    Yes □
    No □

11. How many homes did your organisation build / design /approve /develop /modify in 2008?

<table>
<thead>
<tr>
<th>Range</th>
<th></th>
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<tbody>
<tr>
<td>1 – 50</td>
<td></td>
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<tr>
<td>51 – 100</td>
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<tr>
<td>101 – 500</td>
<td></td>
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<tr>
<td>500 or more</td>
<td></td>
</tr>
</tbody>
</table>

12. In your experience, what is the main driver in the design of project homes in new development sites? *(Rank 1 – 5 in order of importance)*

<table>
<thead>
<tr>
<th>Driver</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle image</td>
<td></td>
</tr>
<tr>
<td>Cost minimisation</td>
<td></td>
</tr>
<tr>
<td>Competitive advantage</td>
<td></td>
</tr>
<tr>
<td>Functional appeal to purchasers</td>
<td></td>
</tr>
<tr>
<td>Technical specifications and standards</td>
<td></td>
</tr>
<tr>
<td>Other – please specify</td>
<td></td>
</tr>
</tbody>
</table>

Other comments

......................................................................................................................................
......................................................................................................................................
......................................................................................................................................
13. In your opinion, are project homes designed with a particular market or target group in mind? (Tick all that apply)

- Singles □
- Young couples □
- Couples with children □
- Extended families □
- Older couples □
- No particular market/target group □
- Not applicable to my organisation □

Comments ..............................................................................................................

14. Have you or your organisation ever done market research on the housing needs of older people and/or people with a disability?

- Yes □
- No □
- Don’t know □

Why is this? ..........................................................................................................

15. Do you consider the market for older people and people with a disability

- Very large □
- Not very large □
- Small □
- Insignificant □
- Other - please specify...................................................................................

16. Have you had any experience in planning, designing or constructing a home where age and disability were considered?

- Yes □
- No □ Go to question 18

17. If yes, what sorts of things were included in the design? Tick all that apply.

- Level, no step entrances □
- Wider than average doorways □
- Open plan living areas □
- Larger bathroom □
- Flexible storage space □
- Hobless showers □
- Height of switches and handles □

Other – please specify..........................................................................................
18. What were the main reasons? *Rank 1 - 3 in order of importance.*

- Regulations or council requirements
- Market demand
- Demographic trends
- Individual client request
- Good selling points for all purchasers
- Brand enhancement
- Social sustainability/responsibility
- Other – please specify ……………………………………………………

19. In your experience, are the functional needs of older people and people with a disability ever considered in the design of project homes and house and land packages?

- Yes, all the time
- Yes, some of the time
- Yes, by special request
- Very rarely
- No, not at all

20. Have you ever attended a seminar or training that included information on disability access, aged housing or universal design?

- Yes
- No

19a. If yes, who provided the session or training?

………………………………………………………………..

19b. If no, are you interested in attending training on disability access or universal design?

- Yes
- Possibly
- No

21. Have you ever sought advice on including in a building the needs of older people and people with a disability?

- Yes
- No

22. If yes, who did you seek advice from?

……………………………………………………………………………………
23. The concept of universally designed housing is to provide homes that cater for people of all ages and abilities. This means that people can live comfortably and safely at home as they get older, or if they or a family member becomes disabled or chronically ill. What is your opinion of this concept?

Comments ………………………………………………………………………………………………..

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Please indicate on the chart your level of agreement with the following statements:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>24a</td>
<td>Older people and people with a disability need separate or special housing.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24b</td>
<td>Not enough is being done to include a wider cross section of people in building designs.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24c</td>
<td>Too much attention is given to the design needs of the few who are old or disabled.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24d</td>
<td>There is a lot being done for the disabled so I don’t have to worry about them.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24e</td>
<td>We have to design more inclusively because we are not just selling homes, but creating new housing stock.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24f</td>
<td>There is nothing I can do to influence the way homes are designed so that they suit people of all ages and abilities.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24g</td>
<td>Our concern is creating and selling house and land packages, not how long people can live in the house.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>24h</td>
<td>Designing inclusively is OK but we don’t have the time and budget to do it.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>
The following statements are about your perceptions of the industry and universal design. Please indicate on the chart your level of agreement with the following:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>25a</td>
<td>Building regulations are a major barrier to creating more universally designed homes</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25b</td>
<td>It would cost a lot more to make homes universally designed.</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25c</td>
<td>Not all homes need to be universally designed, only a proportion.</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25d</td>
<td>It makes sense to make all homes universally designed.</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25e</td>
<td>It’s OK to have universally designed homes, but the industry is not set up for it.</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25f</td>
<td>I would be happy to comply with new regulations for universally designed homes.</td>
<td>[ ] [ ] [ ] [ ] [ ]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: ........................................................................................................
........................................................................................................
........................................................................................................

26. What stops the house building industry from building homes designed to include the needs of people of all ages and abilities?

Your comments: ........................................................................................................
........................................................................................................
........................................................................................................
27. What might encourage the house building industry to design and build homes that include the needs of people of all ages and abilities?

Your comments……………………………………………………………………..

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

28. Who has the greatest influence over the design of homes?

Rank 1-3 in order of importance.

Architects and building designers     □
Property developers                  □
Urban planners                       □
Australian Building Codes Board      □
Building contractors                □
Home purchasers                      □
Local government regulators          □
Large national/ international companies □
Financial institutions               □
Shareholders                         □
Building supply industry             □
Other – please specify …………………

Please add any extra comments about who or what has overall influence on home designs

………………………………………………………………………………………

………………………………………………………………………………………

29. Please provide any other comments or observations you have about universal design and the built environment industry.

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………
Thank you for completing the survey. If you have any questions about the survey or the findings, please contact Jane Bringolf by email j.bringolf@uws.edu.au or by mobile phone on 0417 231 349.

**Returning this form**

You can return this form by fax or reply paid via Australia Post.

**Fax** to 02 9891 5899 or send to Jane Bringolf
- Reply Paid 70475
- University of Western Sydney
- Locked Bag 1797
- Penrith South DC NSW 1797
Interview Guide – Professionals

Knowledge of UD questions

What does the term universal design mean to you?

Do you think that the housing industry should consider the needs of older people and people with a disability in the design of new-build dwellings?

Do you have any experience of working on buildings or dwellings where the needs of older people and people with a disability were considered?

Have you ever attended a training course or seminar on designing to include people with a disability or older people?

Where would you go to find out more about designing to include people with a disability or older people?

Regulations questions

In the UK the housing industry has been forced to include some accessibility standards in their home designs, known as Part M of the building code in England and Wales. These are things like a step free entrance, wider doorways and a downstairs toilet. What do you think about such regulations being introduced in Australia?

Delivery chain / infrastructure questions

In the last five or six years I’ve talked with builders and building designers about concepts of universal design and many of them are in favour of designing more inclusively. They indicate that while they are in favour, the housing industry is not geared up for it – that the built environment delivery chain is too hard to shift. What are your thoughts on this?

Influencers of design questions

People outside the industry would probably think that architects and building designers have the greatest control on the design of a house. In your experience, who do you think has the greatest control or influence on how a house is designed?

Cost questions

On the issue of costs of creating universally designed homes, how much extra do you think it would be?

Summing up questions

Overall, what would you say was the greatest barrier to implementing universal design in housing?
Overall, what would encourage the housing industry to design more inclusively for people with a disability and older people?

Any other comments?

**Demographic information**
Gender
Age group
Professional status
Qualifications
Job title
Organisation/business type
Interview Guide Homeowners with a Disability

Did you have your home purpose built or did you choose a project home from a display village and make modifications to the design?

What was your experience like with the building company?

Did anyone help you or the builder/designer with the design and layout of your home?

What things did you have to have specially designed or modified?

You had some features designed specially for your situation. Which of these would you like to see in all new houses? Why?

Demographic Information

Female
Male
Age

How many people live in your house? ........

What is your relationship to them (for example, mother, son, cousin)?

Is your house
Single storey
Two storey
Three storey
Split level

Do you have any other comments or observations about building a home and working with the construction industry?
APPENDIX C

ADDITIONAL INDUSTRY SURVEY RESULTS

Supplementary information

Professional background of respondents
Age of respondents by job grouping
Main activity of respondents
Whether carried out market research
Inclusion of older people and people with disabilities
Respondents attending training
Responses to statements posed in item 24
Responses to statements posed in Item 25
1.1 Professional background of respondents

Just over half the respondents were involved in design and construction (Builders 21%; Architects 19.4%; Building Designers 11.3%). The remainder were involved in planning and regulation (30.7%), state government funded home modifications (12.9%), property development (3.2%), and urban design (1.6%). The range of professions is shown in Table C.1.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Builder</td>
<td>13</td>
<td>21.0</td>
</tr>
<tr>
<td>Architect</td>
<td>12</td>
<td>19.4</td>
</tr>
<tr>
<td>Regulator</td>
<td>10</td>
<td>16.1</td>
</tr>
<tr>
<td>Health &amp; Welfare</td>
<td>8</td>
<td>12.9</td>
</tr>
<tr>
<td>Building Designer</td>
<td>7</td>
<td>11.3</td>
</tr>
<tr>
<td>Surveyor</td>
<td>5</td>
<td>8.1</td>
</tr>
<tr>
<td>Planner</td>
<td>4</td>
<td>6.5</td>
</tr>
<tr>
<td>Developer</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Urban Designer</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

1.2 Age of respondents by job grouping

An analysis of age by job type shows that the largest number of older respondents worked in the Design and Construction grouping. In this grouping five of the twelve architects were over the age of 60 years, and nine of the thirteen builders were aged between 46 and 60 years. However, initial data analysis by age did not...
reveal significant findings and was disregarded as an influencing factor. The results of age by job type are shown in Figure C.1.

### 1.3 Main activity of respondents

Nine respondents (14.5%) said that house building was their main activity, while a third (33.8%) said they were involved in a range of building types. Other respondents were involved in land development or as regulators. Nearly one third of respondents (32.3%) were involved in home modifications.

### 1.4 Whether carried out market research

Two thirds of respondents said they had not carried out market research on the housing needs of older people and/or people with a disability. Proportionately more respondents in the Planning and Regulation grouping claimed to have carried out market research as Figure 5.6. Overall, almost half the respondents (45.5%) thought the size of the market for older people and people with a disability was very large. Proportionately more respondents in the Design and Construction group thought the market was very large, compared to the Planning and Regulation group who thought it small (see Figure C.2).

![Figure C.2: Have you done market research?](image)
1.5 Inclusion of older people and people with disabilities

Figure C.3 shows that overall, respondents thought the needs of older people and people with disabilities were not included (22 respondents) or very rarely included (11 respondents). Six respondents thought they were included some of the time and one all the time.

1.6 Respondents attending training

Thirty nine respondents (63%) said they had attended a seminar or training that included information on disability access, aged housing or universal design. Proportionately more respondents in the Design and Construction grouping attended training.
1.7 Responses to statements posed in Item 24.

The following charts show the responses to statements posed in item 24 and relate to Table in the main document.

24a. Older people and people with a disability need separate or special housing:

24b. Not enough is being done to include a wider cross section of people in building designs:

24c. Too much attention is being given to the design needs of the few who are old or disabled:
24d. There is a lot being done for the disabled so there is no need to worry about them:

![Chart](image1)

24e. We have to design more inclusively because we are not just selling homes, but creating new housing stock:

![Chart](image2)

24f. There is nothing I can do to influence the way homes are designed so that they suit people of all ages and abilities:

![Chart](image3)
24g. Our concern is creating and selling house and land packages, not how long people can live in the house:

24h. Designing inclusively is OK but there is no time or budget to do it:

1.8 Responses to statements in item 25

The following charts show responses to the statements posed in item 25 and relate to Table 5:10 in the main document.
25a. Building regulations are a major barrier to creating more universally designed homes:

25b. It would cost a lot more to make homes universally designed:

25c. Not all homes need to be universally designed, only a proportion:
25d. It makes sense to make all homes universally designed:

![Chart: Should build all UD]

25e. It's OK to have universally designed homes, but the industry is not set up for it:

![Chart: Industry not set up]

25f. I would be happy to comply with new regulations for universally designed homes:

![Chart: Happy to comply]
APPENDIX D

ADDITIONAL HOMEOWNER SURVEY RESULTS

Supplementary Information

Homeowner Demographics
Changes wanted to house design
Satisfaction with new home
Reason for building a new house
Reason for choosing the location
Importance of building features
Importance of design features
1.1 Homeowner Demographics

Just over half the respondents (17) were under the age of 45 years (56.6%). Of the thirteen respondents aged over 45 years, five were aged over 60 years (16.7%). The majority of respondents were female (73%). Just over half the respondents (53%) had lived in their home less than one year, and more than half the households contained two people (57%). Demographic information is shown in Tables D.1 to D.4.

<table>
<thead>
<tr>
<th>Table D.1: Age of respondent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30 years</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>31-45 yrs</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>46-60 yrs</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>61+ yrs</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table D.2: Sex of respondent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>22</td>
<td>73.3</td>
</tr>
<tr>
<td>male</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table D.3: Length of time in the house</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>less one yr</td>
<td>16</td>
<td>53.3</td>
</tr>
<tr>
<td>one-two years</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>two or more years</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table D.4: Number of occupants in the house</th>
<th>Persons</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>
1.2 Changes wanted to house design

Nearly three quarters of respondents (73.3%) wanted changes to the standard house package. When asked if the building company was happy to make these changes half (11 respondents) said the builder was happy to include all the changes, and one third (8 respondents) said the builder was happy to include most. Three respondents said the builder was not happy but included all or most changes anyway. Eleven respondents said they thought all the changes cost too much, two respondents felt some of the changes cost too much, and seven respondents said the cost was reasonable (see Table D.5).

<table>
<thead>
<tr>
<th>Cost of changes</th>
<th>No of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>All cost too much</td>
<td>11</td>
</tr>
<tr>
<td>Some cost too much</td>
<td>2</td>
</tr>
<tr>
<td>Cost was reasonable</td>
<td>7</td>
</tr>
</tbody>
</table>

The types of items reported as costing too much were: installation of additional features such as an underground water tank, changes to the hot water system, and being charged double for extra lighting. The cost of adding one or two metres to the size of the house and requiring extra concreting was also cause for complaint. There were two reports of being overcharged and one of being charged for extra paperwork to process the changes. Twelve respondents went ahead with the changes in spite of the cost, and nine went ahead with some of the changes. One respondent did not continue with any of the changes.

Reasons builders gave for refusing changes were: structural issues, the Building Code of Australia, and council not allowing the change (4 respondents). Others reported that changes were not refused provided they were prepared to pay a lot more (3 respondents). One respondent reported that nothing was refused because they were persistent, and another said they were told it was not possible structurally, but they persisted and eventually proved the builder wrong. The changes respondents wanted were mostly to the floor plan (14 responses), and adding items (9 responses). Three respondents wanted changes to improve accessibility and one wanted to improve energy efficiency.
The changes were to better suit their lifestyle (12); to provide a better look (3); to improve accessibility (3); to improve energy efficiency (3) and to add more storage space (2).

1.3 Satisfaction with new home

Table D.26 shows the majority of respondents were happy with the design of their new home (36.7% very satisfied; 50% mostly satisfied), with one respondent less than satisfied with the design.

In terms of what respondents liked most about their new home, a sense of spaciousness (14 respondents) and modern and new looking (12 respondents) emerged as common themes from the narrative comments. Other themes were: easy care maintenance (4); location (4) and energy saving items (3).

Respondents were asked to comment on what they wanted to change after the house was built and the themes emerging were largely floor plan rearrangements (13 respondents). Other changes wanted were: improving environmental aspects (5); installing extra utility points (3); making the house bigger (3); incorporating more storage (3); and improving accessibility (3).

<table>
<thead>
<tr>
<th>Level of satisfaction with design</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>Mostly satisfied</td>
<td>15</td>
<td>50.0</td>
</tr>
<tr>
<td>Generally satisfied</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>less than satisfied</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Sense of spaciousness            | 14        |
| Modern and new looking           | 12        |
| Easy care/maintenance            | 4         |
| Location                         | 4         |
| Energy saving items              | 3         |

| Rearrange floor plan/design      | 13        |
| Improve environmental aspects    | 5         |
| Extra utility points             | 3         |
| Make house bigger                | 3         |
| Have more storage                | 3         |
| Improve accessibility            | 3         |
1.4 **Reason for building a new house**

Seventeen respondents gave reasons for building a new house and these were themed as follows: easier maintenance and a smaller backyard (4); being cheaper to build a new home than move to an existing house (2), the preferred location (3); having always wanted to own a new house (3); and having a customised design to suit specific needs (3). Two respondents indicated investment reasons. Comments related to these reasons are shown in Tables D.7 and D.8.

**Table D.7: Comments on easier maintenance**

- More compact for old age, less yard to manage
- Because our home was needing too much maintenance
- Brand new house have less problem
- The other house had a big backyard that we were no longer happy with

**Table D.8: Comments on customised design**

- To customise a design that would allow private area for each family member.
- Nice to own my own home designed around my requirements, not a family.
- Knew what I wanted as I am getting older and don’t want to live in an apartment

1.5 **Reason for choosing the location**

Table D.9 shows the two main reasons for choosing the location are being close to family and friends and the price of land. Being close to amenities, employment and transport were also important. Five additional comments shown in Table D.10 focused on the look of the new development, and four comments were about familiarity with the area. Reasons for choosing the location were mostly related to the newness of the suburb and a family friendly environment.

**Table D.9: Reason for choosing the location**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close to family and friends</td>
<td>18</td>
</tr>
<tr>
<td>Land price</td>
<td>16</td>
</tr>
<tr>
<td>Close to amenities</td>
<td>14</td>
</tr>
<tr>
<td>Close to place of work</td>
<td>13</td>
</tr>
<tr>
<td>Close to public transport</td>
<td>10</td>
</tr>
<tr>
<td>Like the area</td>
<td>9</td>
</tr>
</tbody>
</table>

**Table D.10: Comments about the location**

- Brand new suburb with specific building codes
- New area and friendly family environment
- New area, brand new homes in price range
- New area, clean, maintained, with other young families
- New suburb close to friends
1.6 Importance of building features

There were an equal number of respondents represented in one and two storey homes, but the number of storeys did not appear to be a deciding factor as there was a high neutral and low importance rating in both cases. However, having one storey was either important or very important to eleven respondents (36.7%), whereas having two storeys was important or very important to seven respondents (23.3%). The number of neutral responses was the same in both cases (8 responses; 26.7%). The results for one storey are shown in Figure D.1 and for two storeys in Figure D.2.
1.7 Importance of particular design features

Similarly to the question on building features, participants were asked to rank the level of importance they gave to a list of eight design features using a five point Likert-scale ranging from very important to not important at all. The top four features were: having lots of natural light; energy saving features, kitchen fixtures and fittings, and having an outdoor living area (all at 86%). These were followed by a modern look (80%); amount of storage (76.7%); bathroom fixtures and fittings (76.7%) and open plan living (70%). The results are shown in Figures D.3 to D.10.

Figure D 2: Importance of having lots of natural light

Figure D 3: Importance of energy and water saving features
Figure D 4: Style of kitchen fixtures and fittings

Figure D 5: Outdoor living space / alfresco / patio / veranda

Figure 6: Modern look internally and externally
Figure D 7: Lots of storage space

Figure D 8: Style of bathroom fixtures and fittings

Figure 9: Open plan living
APPENDIX E

THE SEVEN PRINCIPLES OF UNIVERSAL DESIGN
THE PRINCIPLES OF UNIVERSAL DESIGN

Version 2.0 - 4/1/97

Compiled by advocates of universal design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden

Major funding provided by: The National Institute on Disability and Rehabilitation Research, U.S. Department of Education

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UNIVERSAL DESIGN:

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

The authors, a working group of architects, product designers, engineers and environmental design researchers, collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

The Principles of Universal Design are presented here, in the following format: name of the principle, intended to be a concise and easily remembered statement of the key concept embodied in the principle; definition of the principle, a brief description of the principle's primary directive for design; and guidelines, a list of the key elements that should be present in a design which adheres to the principle. (Note: all guidelines may not be relevant to all designs.)
PRINCIPLE ONE: Equitable Use
The design is useful and marketable to people with diverse abilities.

Guidelines:
1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
1b. Avoid segregating or stigmatizing any users.
1c. Provisions for privacy, security, and safety should be equally available to all users.
1d. Make the design appealing to all users.

PRINCIPLE TWO: Flexibility in Use
The design accommodates a wide range of individual preferences and abilities.

Guidelines:
2a. Provide choice in methods of use.
2b. Accommodate right- or left-handed access and use.
2c. Facilitate the user's accuracy and precision.
2d. Provide adaptability to the user's pace.

PRINCIPLE THREE: Simple and Intuitive Use
Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.

Guidelines:
3a. Eliminate unnecessary complexity.
3b. Be consistent with user expectations and intuition.
3c. Accommodate a wide range of literacy and language skills.
3d. Arrange information consistent with its importance.
3e. Provide effective prompting and feedback during and after task completion.
PRINCIPLE FOUR: Perceptible Information
The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:
4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
4b. Provide adequate contrast between essential information and its surroundings.
4c. Maximize "legibility" of essential information.
4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

PRINCIPLE FIVE: Tolerance for Error
The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:
5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
5b. Provide warnings of hazards and errors.
5c. Provide fail safe features.
5d. Discourage unconscious action in tasks that require vigilance.

PRINCIPLE SIX: Low Physical Effort
The design can be used efficiently and comfortably and with a minimum of fatigue.
Guidelines:

6a. Allow user to maintain a neutral body position.
6b. Use reasonable operating forces.
6c. Minimize repetitive actions.
6d. Minimize sustained physical effort.

PRINCIPLE SEVEN: Size and Space for Approach and Use
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

7a. Provide a clear line of sight to important elements for any seated or standing user.
7b. Make reach to all components comfortable for any seated or standing user.
7c. Accommodate variations in hand and grip size.
7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations such as economic, engineering, cultural, gender, and environmental concerns in their design processes. These Principles offer designers guidance to better integrate features that meet the needs of as many users as possible.

The Principles of Universal Design were conceived and developed by The Center for Universal Design at North Carolina State University. Use or application of the Principles in any form by an individual or organization is separate and distinct from the Principles and does not constitute or imply acceptance or endorsement by The Center for Universal Design of the use or application.

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