

Report on the Survey

on the provision of

Livable housing design:

the costs and benefits to Australian society

Australian Network for Universal Housing Design

April 2018

Contents

Tables

Figures

Executive Summary

Australian Network for Universal Housing Design (ANUHD) ran an online survey from October 2017 to February 2018 to offer individuals the opportunity to share their opinions on how the Council of Australian Governments (COAG) should meet their commitment in the 2010-2020 National Disability Strategy to support the National agreement that all new homes will be of agreed universal design standards by 2020. The survey attracted 1,329 participants. The sample predominantly reflected the voice of home owners and people who needed livable housing for themselves, their family or friends to live in or to visit.

As ANUHD has been a strong advocate for regulation for access in all new housing construction and has been instrumental in persuading COAG to call for a Regulatory Impact Assessment (RIA), they contracted researchers from The Hopkins Centre, Menzies Health Institute Queensland, Griffith University to analyse the data. This report, therefore, has two authors: ANUHD members constructed and implemented the survey, and wrote the background, discussion, and conclusions; Griffith University researchers provided the chapter on the results separately.

Most participants supported regulation as the strategy for COAG to ensure the 2020 target is met. They also indicated that an education and awareness strategy should go hand in hand with regulation so that all stakeholders understood its purpose and relevance. Participants acknowledged the challenges of change for the private housing industry; however, some conflicting results suggest that strong moral leadership from the Australian Government will be required.

To understand the costs and benefits of regulation, it will be necessary to consider the impacts far beyond the immediate private housing market. The reliable provision of livable housing will have a major impact on government policies and financial investments in programs to keep people socially and economically included and participating in family and community life now and in the future.

In summary, this report supports ANUHD's position that the Australian Government [must] regulate minimum access features in the National Construction Code for all new and extensively modified housing. This should be supported by education and training for the housing industry.

Acknowledgements

The Australian Network for Universal Housing Design sincerely thanks:

- **Dr Courtney Wright** and **Dr Jacinta Colley,** and The Hopkins Centre, Menzies Health Institute Queensland, Griffith University for their generous contribution by analysing the survey data;
- The **Australian Building Codes Board** for posting information about the survey on their website; and
- The many other organisations and individuals that forwarded the survey to individuals in their networks.

Abbreviations

ABCB	Australian Building Codes Board
ANUHD	Australian Network for Universal Housing Design
COAG	Council of Australian Governments
HIA	Housing Industry Association
NCC	National Construction Code
RIA	Regulatory Impact Assessment
RI Australia	Rights and Inclusion Australia
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities

The Authors

Australian Network for Universal Housing Design (ANUHD) is a national network of designers, builders, researchers and home occupants who believe that housing is a vital infrastructure which should respond to the Australians' current and future needs. ANUHD was an original member of the National Dialogue.

ANUHD contracted **Dr Courtney Wright** (PhD BPsych Hons) and **Dr Jacinta Colley** (PhD, BPsych Hons), Research Fellows from The Hopkins Centre, Menzies Health Institute Queensland, Griffith University to analyse the survey data.

ANUHD acknowledges its bias in this report; it has been a strong advocate for regulation for access in all new housing construction since 2002 and was instrumental in persuading COAG to call for a Regulatory Impact Assessment (RIA). ANUHD contracted The Hopkins Centre, Menzies Health Institute Queensland, Griffith University to analyse the data independently. The report, therefore, required two authors: ANUHD constructed and implemented the survey, and wrote the background, discussion and conclusions; Griffith University researchers provided the chapter on the results.

The Purpose of the Survey

ANUHD developed the survey to identify the key issues for individuals, including their perceived costs and benefits of the implementation of Livable Housing Design in all new housing by 2020 as a commitment within COAGs 2010-2020 National Disability Strategy (COAG, 2011).

Background

Agreement to an Industry-led Voluntary Approach

In 2009, the Australian Government called together housing industry leaders, community leaders and others to address the lack of inclusive housing in Australia. Called the National Dialogue on Universal Housing Design (National Dialogue), this high-level group argued for an industry-led voluntary approach over 10 years, a national guideline and a strategic plan with the aspirational goal that "*all new homes will be of an agreed Universal Housing Design standard by 2020 with interim targets to be set within that 10-year period" (NDUHD, 2010).* For the purposes of this report, the national Dialogue's strategic plan and guideline is called the Livable Housing Design Agreement.

ANUHD found that the housing industry had failed to show signs of voluntary systemic transformation and the current voluntary approach was unlikely to achieve 5% of the 2020 target

A year later, the Council of Australian Governments' (COAG's) 2010-2020 National Disability Strategy included a commitment by all three levels of government to work with the National Dialogue towards meeting their 2020 target (COAG, 2011).

The Livable Housing Design Agreement included a commitment to a series of ongoing reviews at two to three-year intervals across the 10-year period from 2010-2020 to measure progress. Livable Housing Australia was established in 2012 to implement the strategic plan and the first of these reviews was planned for 2013 (for more information on the National Dialogue, see Appendix 1).

Failure of the Livable Housing Design Agreement

By 2014, the Agreement had failed. The first interim targets were not met, no reviews had been conducted, and the strategic plan as agreed by the National Dialogue was abandoned. In 2014, ANUHD, as an original member of the National Dialogue, assessed as best they could, the progress of the Livable Housing Design Agreement. With the assistance of RI Australia, it found that the housing industry had failed to show signs of

voluntary systemic transformation and the current voluntary approach was unlikely to achieve 5% of the 2020 target (ANUHD & RI Australia, 2015).

By the end of 2014, Livable Housing Australia was unable to maintain its staff-based activities and modified its purpose to "*assist Australians to design and certify their current or future home for a lifetime of living*" (Livable Housing Australia, 2018).

ANUHD's Response

On evidence of the failure of the voluntary approach, ANUHD confirmed their call for:

- regulation for accessibility in the National Construction Code for all new housing construction; and
- Livable Housing Design Gold Level (Livable Housing Australia, 2017) to be the minimum standard.

Over the next three years, ANUHD with RI Australia, advocated for this position to COAG and its Building Ministers' Forum.

COAG's Response

The Building Ministers Forum (BMF) in April 2017 advised COAG that:

> *a national Regulatory Impact Assessment (RIA) [should] be undertaken as soon as possible to consider applying a minimum accessibility standard for private dwellings in Australia (Building Ministers Forum, 2017).*

With COAG's endorsement, the BMF, in consultation with Disability Ministers:

> *[would] undertake a national Regulatory Impact Assessment (RIA) regarding accessible housing for private residences. The RIA will examine the silver and gold performance levels as options for a minimum accessible standard; use a sensitivity approach; and be informed by appropriate case studies.*

It is understood that the Australian Building Codes Board (ABCB) will be undertaking the RIA. Any agreed changes to the National Construction Code (NCC) would be included in the 2022 edition.

Four Narratives

Throughout their advocacy, ANUHD has been aware of four separate narratives on this issue.

The first narrative is by the housing industry, with a variety of suppliers, the majority of whom are small family businesses that provide single-family dwellings. The private housing industry is driven by the short-term outcome of maximised profit at the point-of-sale. In the main, the industry has handed over the responsibility for any long-term outcomes regarding residential environments to government planners and regulators (Dalton, Chhetri, Corcoran, Groenhart, & Horne, 2011, p. 24).

The second narrative is by government, which has been marked by the absence of a consistent national housing strategy and lack of vision about the long-term benefits of affordable housing. Over the last two decades, the social housing system has been neglected, with governments gradually shifting responsibility for housing vulnerable people to the private housing market. An additional factor has been the lack of co-operation by a market-driven housing industry, leading to sporadic initiatives to stimulate activity from time to time (Troy, 2012).

At the same time, the Australian Government has embraced a rhetoric of social inclusion (Australian Government, 2010b, 2012). It signed the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2007), developed a strategic response in the form of the 2010-2020 National Disability Strategy (COAG, 2011), and made an unprecedented investment into the National Disability Insurance Scheme (NDIS) and Aged Care reforms.

At the heart of these policy changes is the goal of realising personal potential, and maximising people's social and economic participation. The Australian Government

relied on the Livable Housing Design Agreement to provide inclusive residential environments in the future to support these policy changes (COAG, 2011, pp. 32-34; Major Cities Unit, 2012, p. 223; Productivity Commission, 2011a, p. 213; 2011b, p. 275).

The third narrative of buyers of housing indicates that home-ownership continues to be a widely-held aspiration in Australia providing security of tenure and long-term social and economic benefits, despite increasing financial risk (AIHW, 2013, 2017). Individual buyers typically baulk at paying extra on features for the 'common good' (in this case, paying extra for accessible features) particularly if they see no immediate, personal benefit for them (Crabtree & Hes, 2009; Karol, 2008; Spanbroek & Karol, 2006).

The fourth narrative is from people whose needs are not met through the current mainstream housing system. At the time of the Livable Housing Design Agreement, Beer and Faulkner (2009) identified that "the level of housing need amongst persons with a disability and their families is enormous" (p. 12) and that current government and industry strategies are unlikely to meet the needs of this group.

ANUHD ran this survey to:

- identify the key issues for individuals from all four groups, including their perception of the costs and benefits to Australian society regarding the implementation of Livable Housing Design in all new housing; and
- inform ANUHD's response to the Discussion Paper and the RIA.

Method

ANUHD implemented an online survey as it is the most cost-effective method to reach as many individual participants as possible, with a wide range of abilities and backgrounds.

The Survey

The survey comprised eight main questions. The first question asked participants to describe themselves and their role regarding housing (e.g. identify whether they are a person who needs livable housing; a home owner; a housing provider etc.). The remaining seven questions incorporated multiple-choice responses that aimed to understand participants' views on Livable Housing standards. Six of these seven questions also included an opportunity for participants to provide a qualitative response to explain, clarify, or elaborate on their multiple-choice answer. The survey prefaced the questions with the following description of the terms used and some background to assist the participants (see Appendix 2).

Participant Recruitment

ANUHD opened the online survey on 21 November 2017 and closed it on 28 February 2018. The survey was therefore available for completion over a three-month period. Convenience and snowball strategies were used to recruit participants. First, ANUHD contacted its affiliate partners and invited them to forward the URL link to the survey through their networks. Second, the ABCB uploaded the URL link to the survey with an explanation of the purpose of the survey on their website for their members. All participants were encouraged to forward the URL link to the survey through their personal and professional networks to increase participation in this research.

Data Collection

The survey attracted 1,329 participants. The sample predominantly reflected the voice of home owners and people who needed livable housing for themselves, their family or friends to live in or to visit. Since some participants did not respond to all survey questions, the number of participant responses per question is reported in the results chapter.

Data Analysis

On the 1st of March 2018, ANUHD sent the online survey report with participants' responses to Dr Courtney Wright and Dr Jacinta Colley from The Hopkins Centre, Menzies Health Institute Queensland, Griffith University, for analysis.

All eight survey questions included a multiple-choice response. The quantitative data obtained through the multiple-choice element was analysed according to frequency counts and the percentage of participants who endorsed each possible response.

Six survey questions provided an opportunity for participants to explain, clarify, or elaborate on their corresponding multiple-choice answer. The qualitative data obtained from participants' open-ended responses were thematically analysed using a text analysis software package, Leximancer (Version 4.5, 2016), to identify a full list of emerging concepts. The Leximancer program provided an objective method for reviewing the complex blocks of text given its demonstrated face validity, stability, and reproducibility (Smith & Humphreys, 2006). The program produced a two-dimensional concept map that enabled the researchers to develop grouped themes characterized by connected concepts (Fossey, Harvey, McDermott, & Davidson, 2002). Following the software-supported text analysis, a manual thematic analysis was completed by the two researchers to develop overarching themes and limit interpretation bias. The analysts then manually calculated the number and percentage of participants who spoke to each concept within each theme. Qualitative rigor was obtained through auditability (i.e., the ability to trace the line of argument from raw data and replicate findings) and investigator triangulation (i.e., comparing and cross-checking for consistency across data by two independent researchers) (Flick, 1998; Fossey et al., 2002; Guion, Diehl, & McDonald, 2011).

Although qualitative data were collected from six open-ended survey questions, a total of five thematic analyses were conducted (see **Table 1**). Most respondents to Question Seven and Question Eight discussed both the costs and benefits in their answers (rather than describing costs and benefits to Australian society separately). Participant responses to Question Seven and Question Eight were therefore combined for analysis.

Table 1. ***Overview of thematic analyses conducted***

Thematic Analysis	Corresponding Survey Question	
#1	Question 2:	"Do you, your family or friends need livable housing either to live in or to visit?"
#2	Question 4:	"If yes, how difficult is it?"
#3	Question 5:	"The 2010-2020 National Disability Strategy has a goal that all new housing will be to an agreed livable standard by 2020. Given that it is now 2017-2018, what would be the most reliable way to reach the 2020 goal?"
#4	Question 6:	"What features should be in all livable homes?"
#5	Question 7: Question 8:	"If all new housing were to be livable, what would be the cost to Australian society? (The "cost" might be social, economic or to human-rights)"

	"If all new housing were to be livable, what would be the benefit to Australian society? (The "benefit" might be social, economic or to human rights)"

Limitations

The findings of this research must be contextualised in relation to its limitations. First, given the nature of an online survey, there was insufficient information made available to the researchers to conduct a responders analysis to determine any potential bias between responders and non-responders. Second, although this research aimed to identify key housing issues for individuals from all four narrative groups (i.e., individuals from the housing industry, government, buyers of housing, and people whose needs are not met through the current mainstream housing system), the participant sample predominantly reflected the voice of home owners and people who needed livable housing for themselves, their family or friends to live in or to visit. Although the survey was made available through the ABCB, fewer individuals from the housing industry and government participated in this research. The findings must therefore be interpreted in relation to the participant sample. Future investigations could pursue greater representation from these two narrative groups. Third, broader participant demographics (e.g., gender, age, level of education, employment status, income) were not collected and it was not possible to connect participant demographics to responses. The generalisability of the findings must therefore be interpreted with caution.

Results

The findings from the eight survey questions are reported below.

Question One: *How do you describe yourself?*

How do you describe yourself? (You may have more than one role) (Multiple-choice)

Overview of results:

In total, 1,329 participants responded to the question asking them to indicate their role regarding housing. Participants responded to this multiple-choice question by selecting as many responses that were applicable to them. **Table 2** provides a summary of these results.

Table 2. ***Reported participant roles***

Description*	No. of Participants (N=1,329)	Percentage of Participants
Home owner	643	48.38%
Your family or friends need livable housing to live in or to visit other people	498	37.47%
Person who needs livable housing to live in or to visit other people	346	26.03%
Advocate	295	22.18%
Renter	246	18.51%
Service provider	166	12.49%
Service user	115	8.65%
Housing provider	77	5.79%
Other	2	0.15%

**Note. Participants could select more than one response.*

Question Two: *Do you, your family or friends need livable housing*

Do you, your family or friends need livable housing either to live in or to visit? (Yes/No response).

Overview of results

Participants were asked to indicate if they themselves or their family or friends needed livable housing either to live in or to visit. Most participants (*n*=1,046; 79%) indicated that livable housing was required for themselves, their family or their friends (see *Figure 1*).

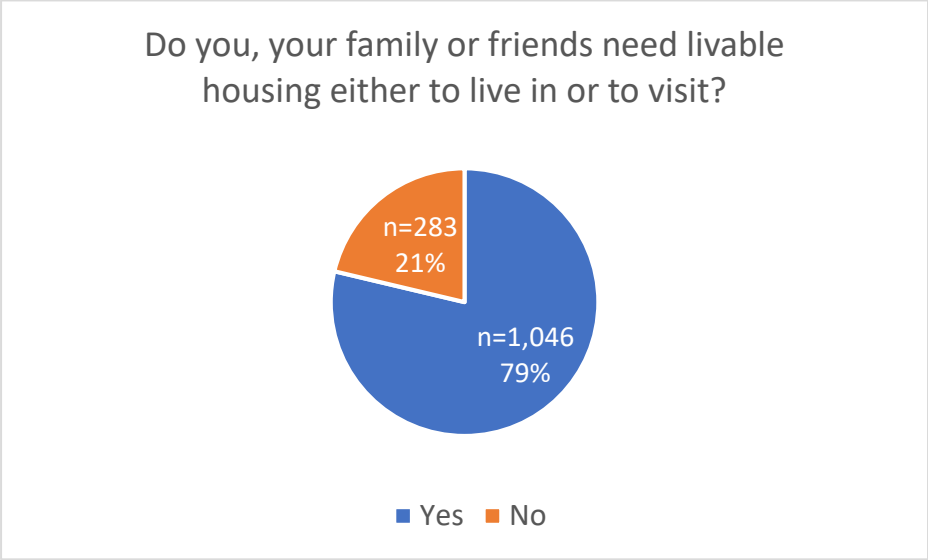

Figure 1. **Need for Livable Housing**

Participants were also asked to explain why livable housing was required (or not required). Thematic analysis of responses to this open-ended question (*n*=958 unique responses) indicated four broad themes. Together, these themes described the interconnectedness of people and the built environment, highlighting the importance of livable housing and how the places in which people live shape quality of life. The themes included:

1. Varying accessibility requirements as an ordinary part of life that needed to be supported by housing;
2. The impact of housing on psychosocial health;
3. Independence and choice impacted by the built environment; and
4. The need for a safe housing environment.

It is important to note that of the 958 unique responses, 419 (44%) responses described the

Each theme described the interconnectedness of people and the built environment, highlighting the importance of livable housing and how the places in which people live shape quality of life.

person's (or their relative, friend, or client's) condition, degree of functionality, and/or the type of equipment they commonly used as reason/s why they needed livable housing either to live in or visit. Since these 419 participants did not elaborate further on their answer, the smaller number of participants and percentages noted for the majority of concepts reported on (throughout Theme 1 – Theme 4) represents a *minimum* response (i.e., experiences reported by 539 [56%] of the participant sample).

Theme 1 Varying accessibility requirements as an ordinary part of life that needed to be supported by housing

The first theme described *varying accessibility requirements as an ordinary part of life that needed to be supported by housing*. Participants outlined their own personal circumstances or those of their family, friends, or clients and how a range of different skills, needs, or conditions affected their interactions with a predominantly inflexible housing environment. These stories highlighted that disability (congenital or acquired), injury (with short-term, long term or life-long impact), varying states of health, having children and aging, and the associated needs of these diverse ways of being, are a part of life that demand greater consideration in housing design. For example,

> *A range of health issues amongst family and friends from lower level mobility issues, to older family members who are wheelchair users and require regular personal support. Also, safety and mobility considerations for very young children; so things like high stairs, slopes and areas for potential falls are an issue" (Response 139).*
>
> *Access requirements affect a wide range of people." (Response 278)*
>
> *I have many friends through the chronic illness community who have the same and other issues, as well as elderly grandparents with limited mobility" (Response 299).*
>
> *Everyone has friends and family who would benefit from livable housing due to being born with a disability or acquiring one via accident or ageing" (Response 623).*
>
> *Livable housing benefits everyone at some stage in their life" (Response 858).*
>
> *With a rapidly ageing population ALL new residential accommodation and indeed, retail and commercial premises MUST be designed to the [Livable Housing Australia] Gold Standard as the bare minimum for residential and [universal] design if we are to create truly liveable communities and cities accessible to all" (Response 212).*

Accordingly, most participants argued that livable housing was required to meet the needs of individuals with a range of mobility, sensory, cognitive and intellectual impairments, and accommodate equipment commonly used (e.g., wheelchairs; prams) (*n*=615; 64%). Many participants (*n*=204; 21%) also described numerous difficulties or

discomforts they experienced in everyday life resulting from or exacerbated by housing that was not optimally accessible or did not meet livable housing standards.

Some participants (*n*=55; 6%) described building or modifying their home, or a desire to do so, to secure a suitable place to live. Other participants felt that building, buying or modifying a suitable house was unaffordable (*n*=27; 3%) or had had trouble finding appropriate housing (*n*=76; 8%), and suggested that livable housing needed to be adopted more broadly within the housing industry. This was considered important not only for those with current needs, but also to support people's long term needs as they aged, and the potential needs of people who may reside in the dwelling in the future (*n*=83; 9%), as described below:

> *So frustrating seeing newly built homes designed with no thought that occupants might either be temporarily or permanently incapacitated at some point, or that they will not have anyone in their lives who has a physical disability or that the next owners might" (Response 224).*
>
> *…we all will progressively become older, the need for livable housing becomes greater with age" (Response 272).*

Participants viewed livable housing as particularly important given the encouragement for people to 'age in place' rather than move into care facilities. Livable housing design was therefore viewed by participants as being flexible to their needs (*n*=41; 4%). That is, the livable housing concept represented design that could be adapted as required to suit changing circumstances or needs over time.

Participants viewed livable housing as particularly important given the encouragement for people to 'age in place' rather than move into care facilities.

A small number of participants (*n*=12; 1%) wanted further clarification around the meaning of livable housing, or felt that livable housing was not necessary. For example,

> *I find the definition of livable housing to be a general undefined statement. No-one wants to live in an unlivable (sic) home, whatever that general statement means" (Response 044).*
>
> *They are all housed, either in rental, Office of Housing/Ministry Housing, or purchasing/own home. Most of my friends are older, educated and working adults, as opposed to more vulnerable members of the community" (Response 087).*

All participants who stated that they (or their family or friends) did not require livable housing commented in relation to the person's current (rather than future) needs.

Theme 2: The impact of housing on psychosocial health

The second theme illustrated *the impact of housing on psychosocial health*. Specifically, participants described a desire and need for livable housing features that would enable them to host visitors in their own home or visit friends and family in their own homes (*n*=110; 12%). In this way, suitable, livable housing that "keeps [people] socially connected" (Response 016) was considered supportive of individuals' psychosocial health and wellbeing. The reported need for livable housing features stemmed from participants' current experiences as described below:

Participants described a desire and need for livable housing features that would enable them to host visitors in their own home or visit friends and family in their own homes.

> *Aging relatives or friends with disability cannot come to visit my home; we can't even host a family function (e.g. Christmas dinner) because our house has steps to the front door and the toilet is up a flight of stairs inside" (Response 711).*

> *"Since acquiring further mobility disabilities after surgery, I am unable to visit the home of any of my friends. I am therefore unable to attend dinner parties and barbeques. These events were the centre of my social life before as my friends love entertaining" (Response 064).*

While difficulties in entering a building were highlighted by participants (*n*=66; 7%), many also described how their social visits often needed to be cut short due to difficulty in utilising facilities within a home (e.g., difficulty accessing a toilet or shower facilities) (*n*=22; 2%). These collective experiences reportedly resulted in "social isolation and a lack of community inclusion" (Response 636), and negatively impacted on people's health and wellbeing:

> *"It is virtually impossible to be able to share family or friends home environments and so much that occurs within a home is denied to a person requiring livability. This leads to isolation, depression and avoiding many aspects of living and or visiting that most people take for granted" (Response 931).*

> *"We have family and friends with a disability who are either institutionalised to some extent or who simply consider that they have to accept the restrictions placed on them by the community as the fight to get recognition of their needs is too tough and the mental strain is too great. Inclusion is vital for a disabled person's well-being, that includes the way, where and how they live being CHOICES made by them. Barriers and restrictions need to be removed to allow a quality of life for these people…." (Response 614).*

By providing a space that is accessible by all, livable housing was considered an important factor in enabling people to maintain their social relationships and lifestyles

more broadly. A lack of livable housing was subsequently viewed by participants (*n*=28; 3%) as perpetuating social isolation and poor mental health.

Theme 3: Independence and choice impacted by the built environment

The third theme highlighted that a person's *independence and choice was impacted by the built environment.* Gaining or maintaining independence was an important aim for many participants (*n*=64; 7%). However, some participants (*n*=16; 2%) reported that they (or their relative, friend, or client) were unable to become or remain independent due to the inadequate design and/or location of their home:

> *"…my daughter cannot learn to cook as our kitchen is not accessible" (Response 002).*

> *"My aging mother requires a more livable home to be in. At 80 she is still spritely and likes to care for herself independently; however, her home, which is coming up to 30 years old now, does create barriers for her in doing this" (Response 096).*

> *"We live in a rural town and have to travel long distances to get to services and social activities" (Response 458).*

In relation to location, participants (*n*=29; 3%) argued that suitable, livable housing with ease of access to services and facilities in the community would promote a person's independence by enabling individuals to navigate their community without (or with minimal) support. Participants (*n*=41; 4%) also commented that livable housing features would enable them to adapt the design of their home to support their changing needs over time, thereby allowing them to age in place. Indeed, several participants (*n*=58; 6%) alluded to independent living as "very important" (Response 465) that "respects each person and their dignity and right to equity" (Response 243).

Gaining or maintaining independence was an important aim for many participants

In addition, the potential impact of the built environment on a person's degree of independence was described as having flow-on effects that also impacted the person's family and broader health system:

> *"[I'm an] ageing mother/carer. Independence – I want to have my own life" (Response 221).*

> *"…physically accessible homes are a necessity for [my daughter's] quality of life. Because of her intellectual disability, homes that are physically accessible provide her with more confidence in her ability to navigate her environment. As a result, her overall lifestyle improves and this actually equals a better outcome in her life which in turn means that there is less stress on her family with flow on benefits into the health system as a whole" (Response 334).*

Housing that lacked livable design features to support physical access reportedly restricted a person's independence and increased their reliance on informal support by family members or paid support by service providers (*n*=35; 4%). In many instances, participants (*n*=26; 3%) reported having to relocate (or could foresee a need to relocate) because their current housing did not meet their needs. This was viewed by participants as unnecessary and preventable by way of housing design:

> *"…why should I have to move away from friends and family just to be independent?" (Response 248).*

> *"The designs are not suitable to allow someone to be cared for in their own home long-term which means they quite often need to move because the accommodation no longer suits their needs" (Response 005)*

Participants described these relocations (including foreseeable relocations) as "*fracturing family and supporter units*" (Response 182).

Further, relocation (including foreseeable relocations) into residential aged care due to inaccessible housing design was described by participants (*n*=15; 2%). These participants suggested that their (or their relative, friend, or client's) move into residential aged care could be delayed if livable design features were incorporated into housing design. Three of these 15 participants (20%) also believed that building more accessible, livable homes would result in more cost-effective housing solutions for Australia's aging population by reducing the number of people who required residential aged care:

> *"All home designs should plan for the long-term, so people don't have to move [in]to nursing homes because they can't get to their front door" (Response 069).*

> *"I see changing building standards a bit like changing evolution of clothing sizes. People get bigger, clothes get bigger - people get older, frailer, in a larger demographic pod for the next 50 years [or] so, so it makes sense that buildings built into the future take into account need for easy access combined with good accessible transport options to take [this] country into the future. In the long run, it should save money without so much demand for entrance to nursing homes by enabling people to stay in their own homes, by enabling people to continue to utilise good public transport into their aged [years]…" (Response 450).*

Collectively, participants (*n*=13; 1%) suggested that "livable housing would enable [people] to live independently in the community for a longer period" (Response 106) and provide people greater choice over where with whom they lived. Despite these findings, a small number of participants (*n*=6; 1%) commented that they (or their relatives or friends) did not need livable housing features to be independent or that their family member "will never be able to live independently" (Response 069) even though the person used a mobility device and required physically accessible spaces.

Theme 4: The need for a safe housing environment

The final theme highlighted participants' *need for a safe housing environment.* A number of participants (*n*=54; 6%) perceived physically accessible design features as promoting safety within their home. This included keeping themselves and their visitors (including support staff) safe. Indeed, physically accessible design features were described by participants (*n*=27; 3%) as meeting the safety needs of a diverse range of people:

> *"All people of all ages and of all versions of physical ability need their homes and those of people they visit to be livable. More specifically, I find many areas of a home (e.g. stairs, changing levels, baths, showers, uneven pathways etc.) dangerous for me, for children, for ageing friends and relatives. Greater attention needs to be paid to ensuring these are safe for everyone" (Response 070).*
>
> *"Easy access is a no brainer and it does no harm to anyone who does not have disabilities" (Response 293).*

Physically accessible design features were described by participants as meeting the safety needs of a diverse range of people

Participants also described physically accessible design features as promoting a person's independence for a longer period and reducing the number of injuries sustained at home. The reported need for livable design features stemmed from participants' experiences of their (or their relative, friend, or client's) inaccessible property that either posed a high safety risk or actually resulted in injuries:

> *"Severe spatial awareness problems and vision problems makes judging walls, door frames, corners of walls, benches hard to judge. Constantly knocking and bumping into these resulting in bruises to broken bones" (Response 412).*
>
> *"Our daughter has intractable epilepsy and has frequent seizures. Sharp corners, protruding handles, hard surfaces and crowded areas all present problems during seizures and cause many unnecessary injuries to her" (Response 917).*
>
> *"Livable housing reduces accidents (and ensuing medical expenses) through simple measures such as contrast bench-tops, ample lighting, easy-opening doors, walk-in showers, grab-rails, and no steps" (Response 014).*

In addition to physically accessible internal spaces, several participants noted that safety ought to be considered in relation to the environmental quality of housing (i.e., air quality; fresh air; free from mould) (*n*=11; 1%), physically accessible outdoor spaces (*n*=27; 3%), and the person's neighbourhood more broadly (i.e., living in a perceived safe neighbourhood) (*n*=15; 2%). Participants therefore viewed livable housing as a holistic concept when responding to Question Two and subsequent survey questions.

Question Three: *Have you experienced any difficulty in finding livable housing?*

Have you experienced any difficulty in finding livable housing for you, your family or your friends? (Yes/No response)

Overview of results

Participants were asked to report if they had experienced any difficulty in finding livable housing for themselves, their family, or their friends (yes/ no response). Of the 1,329 responses received for Question Three, over half of the participants (*n*=910, 68.47%) indicated that they had had trouble in finding livable housing. Those who reported having trouble were then asked to indicate the degree of difficulty they experienced on a four-point scale (mildly difficult to extremely difficult). These results are summarised in *Figure 2*.

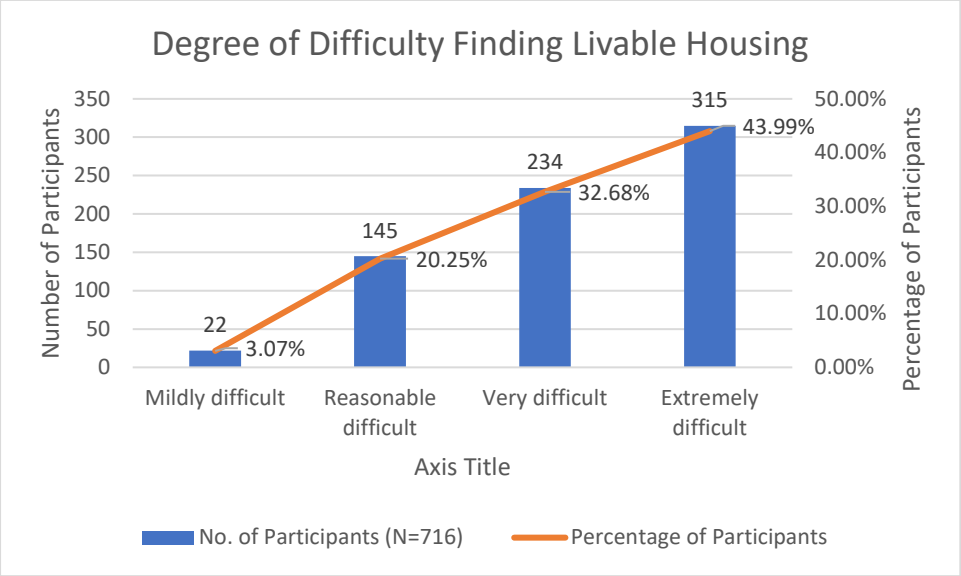

Figure 2. **Degree of difficulty participants faced in finding livable housing**

Question Four: *If "yes", how difficult is it?*

If "yes", how difficult is it? (Checkbox response.)
Can you please tell us why? (Open-ended question.)

Overview of results

Participants who reported difficulty in finding livable housing were then asked to explain their perceptions on why they had experienced this difficulty (open response question). Qualitative analysis of 647 unique responses that described participants' reasons for having trouble in finding livable housing identified three main themes:

1. Difficulty finding livable housing that meets diverse needs;
2. Difficulty finding livable housing that is affordable; and
3. Difficulty finding livable housing that is in a suitable location.

However, the analysis also revealed that these three themes were interrelated. The interconnectedness of these themes highlighted the contextual difficulties participants faced in finding livable housing, as illustrated in the participant response below:

> *"We had a heritage home in [an] area that we wanted to live in, which was an important feature for our son to independently access the town services; however, the cost to adapt the house to be livable, was prohibitive. Therefore, we sold and bought a newer house in the suburbs, which is open plan and was much easier to make livable. However, this comes with the downfall of being 6km from the centre of town where my son works, the bus network does not have wheelchair accessible buses at the peak times suitable for getting to work, the community transport has a long waiting list for access and my son is not able to drive" (Response 297).*

Participants also consistently emphasised that multiple physical access features within the home were required so that people were enabled to fully utilise internal spaces rather than simply enter a space.

The results therefore showed that while each theme represented a distinct challenge faced by participants, all three themes ought to be considered simultaneously to provide a more realistic (contextual) understanding of the difficulties experienced by participants in finding livable housing.

[The survey] highlighted the contextual difficulties participants faced in finding livable housing.

Theme 1: Difficulty finding livable housing that meets diverse needs

The first theme described the difficulties participants had experienced in *finding livable housing that met their needs*. According to

participants (*n*=117; 18%), features that supported people to physically access their home, such as level entries or ramps, were important for livable housing. However, participants also consistently emphasised that multiple physical access features within the home were required so that people were enabled to fully utilise internal spaces rather than simply enter a space (*n*=128; 20%). Almost half of the participant sample (*n*=260; 40%) reported a difficulty in finding private housing to rent or buy that met all their physical access needs, as described below:

> *"Most houses are NOT accessible. Even if they are flat access, they are not wide enough for a wheelchair, and the bathroom and kitchen are not easy / able to be used. I cannot visit most of my friends or family" (Response 600).*

> *"A lot of places may have one or two "universal" features, however have several other features which cancel out the positive features (e.g. may have a large bathroom with room for wheelchair/commode [chair], however door widths not suitable for moving wheelchair through house independently)" (Response 159).*

> *"When you do find something which has an accessible entry, invariably there's another stumbling block internally, like a separate toilet three stairs down in the laundry, or a bathroom with a gap between the shower and vanity basin too small to fit through to access the toilet" (Response 626).*

> *"…it is not acceptable for a member of a family to only be able to access 50% of a home" (Response 049).*

Finding a place to rent or buy (private sector) that enabled them to use all areas of the dwelling, complete important daily activities, and live comfortably was virtually impossible.

Although physical accessibility for people who used a mobility device was a concern for people who reported a need for livable housing (*n*=92; 14%), some participants (*n*=22; 3%) noted that livable housing design needed to cater to people with diverse characteristics:

> *"…there are never tactile markings on fixtures because no-one considers the needs of a blind purchaser or renter when designing housing" (Response 129).*

> *"Needs to be wheelchair accessible but also take in account some challenging behaviour issues and complex bathroom needs" (Response 312).*

> *"Supervision, security, support worker area while still able to supervise is necessary and often design does not lend itself to this" (Response 541).*

These additional features were considered to add to the challenge of finding suitable, livable housing:

> *"Housing that is built to provide access for wheelchairs and bathroom/toileting needs is sparse enough. But when you add other sensory needs like*

temperature control, noise, light and smell there is only rural living. But that, of course reduces access to medical needs. So, what's to be done?" (Response 571).

For several participants (*n*=71; 11%), finding a place to rent or buy (private sector) that enabled them to use all areas of the dwelling, complete important daily activities, and live comfortably was virtually impossible without investing in significant renovations. Several participants (*n*=54; 8%) described difficulty in modifying their homes to meet their needs. Reasons for this included the cost of modifications (*n*=38; 6%) and owners of rental properties not permitting modifications (*n*=17; 3%).

[There is] a lack of awareness and understanding by the public, building industry, and Government regarding the importance or need for livable housing as contributing to the supply shortage.

In addition, participants (*n*=22; 3%) commented that their difficulty in finding livable housing (for themselves, their relative, friend, or client) was compounded by a lack of clarity and knowledge about physical access design features by the real estate industry. For example, nine participants (1%) described challenges in identifying suitable, livable properties because what had been advertised as 'accessible' was not the case in reality:

"Trying to screen out inaccessible housing when searching online is impossible" (Response 115).

"It took us 5 months to find a home that we were able to adapt to my needs at a huge extra cost. Real Estate Agents couldn't understand that although the house was really great inside, if I couldn't get up the front or back stairs for the view what was the use of showing us that house. Very frustrating" (Response 015).

Others (*n*=43; 7%) perceived a lack of awareness and understanding by the public, building industry, and Government regarding the importance or need for livable housing as contributing to the supply shortage. Participants believed there was a reluctance from individuals to think about their future housing needs and thus incorporate livable design features into their homes:

"Building practices have not changed over generations, so we keep building what we have always built. Dwellings continue to be built without thought about future requirements of residents. Building tradespeople are reluctant or unaware how to build in Livable features. Government legislation and policy on inclusion of Livable features is lagging existing needs, meeting needs of future generations. The broader public, builders, designers, homebuyers, investors, etc. are unaware of the benefits of Livable housing" (Response 007).

"Developers constantly claim 'the market' does not want Livable or accessible units. However, the constant pleas from providers and potential residents

appear to be that the much needed housing is just not available. … It would appear developers are either not marketing to the significant proportion of 'the market' who really wants/needs this housing, and/or they are just neglecting to build it" (Response 411).

"[Landlords] lack knowledge about [universal design] and therefore do not see the potential benefits of providing [universal design] housing. Universal design is not understood and landlord[s] think that their properties would look too 'medical' and limit the market for future tenants" (Response 526).

The cost of retrofitting their home was prohibitively expensive, resulting in them having to "make do".

Participants felt that there was a demand for livable housing, but that further information and encouragement to build housing to a livable standard was needed to address the challenges participants faced in finding suitable housing.

Theme 2: Difficulty finding livable housing that is affordable

The second theme highlighted the difficulty participants faced in finding livable housing that is affordable. For example, several participants noted the already high cost of private housing to rent or buy (*n*=159; 25%), and the added cost associated with finding livable housing "in metro areas with services [nearby]" (Response 175) or "*making modifications and adjustments to existing dwellings which is costly and often less than ideal*" (Response 051). For some people (*n*=12; 2%), the cost of retrofitting their home was prohibitively expensive, resulting in them having to "*make do*" (Response 520). Others (*n*=20; 3%) reported having to build their own home because they were unable to find suitable, livable housing. The reported high costs associated with obtaining livable housing was a concern for people on low incomes, including a disability, carers', or aged pension (*n*=41; 6%):

"Finding actual accommodation that is wide and comfortable is actually surprisingly difficult unless you have a lot of money and unfortunately people living with a disability as well as their family more often [than] not fall into lower socio-economic brackets because we can't pursue the same sorts of careers due to our needs…" (Response 216).

"Financial implications also impact [access to livable housing], as relying on Disability Support etc. for income doesn't provide enough of a financial income to either cover the cost of suitably designed housing either in the rental market or to purchase and own privately" (Response 209).

Several participants (*n*=183; 28%) suggested that the cost of obtaining livable housing was high due to competition in both the private and public housing markets, with a lack of supply to meet demand:

Participants faced [difficulty] in finding livable housing that is affordable.

> *"Some housing (existing and proposed) design and stock lend themselves to being a little more accessible but they are often in high demand because they suit everyone better (bigger spaces, fewer levels, easier to find and fit furniture and other characteristics). It's not always just the actual dwelling but where it is and how convenient it is to local transport, facilities, shopping, entertainment etc. Terrain is also a factor and when you get all those things together the likelihood is the place is in high demand…" (Response 625).*
>
> *"…it is extremely difficult to find adequate Assisted Living housing ... the Australian Government just can't supply enough to keep up with demand" (Response 235).*
>
> *"I was on the NSW [Department] of Housing Waiting List for fifteen years and then was told that the Department didn't have any accessible housing, but if I could find suitable housing they would subsidise the rental cost for me. Where would I find an accessible rental property? In my dreams" (Response 268).*

Participants therefore noted that more accessible private properties were often beyond their means and long waiting lists for public housing (considered more affordable than the private housing market) prevented them from obtaining a suitable property, of which few housing developments were considered physically accessible by participants.

Theme 3: Difficulty finding livable housing in a suitable location

The third and final theme described participants' difficulty in *finding livable housing in a suitable location.* As emphasised below, a person's home ought to promote ease of access to transport, health services, family, friends, employment, shops and recreational activities (*n*=62; 10%), as described below:

> *"Hard to find affordable housing that is suitable, in a safe area, has access to public transport, close to services" (Response 346).*
>
> *"Livable housing needs to be close to public transport. It also needs to be near traffic lights so that major roads can be crossed safely" (Response 543).*
>
> *"People want to try and remain in an area they are familiar [with] and closer to their support networks. Moving away from networks, family, [and] friends can create another issue (i.e. additional transportation cost to travel to maintain family connections as well as additional travel cost for employment etc.)" (Response 558).*
>
> *"…she is a young adult who likes to go out to the shops, movies, library and so the housing has to be near a good transport hub and not away out from these facilities (which makes the housing option more like a prison because she can't go anywhere easily)" (Response 014).*

Housing location was described by participants as being an equally important consideration for livable housing, especially for people with reduced mobility and people who rely on public transport.

Housing location was described by participants as being an equally important consideration (in relation to housing design) for livable housing, especially for people with reduced mobility and people who rely on public transport. Further, participants (*n*=39; 6%) reported that challenges in finding livable housing in a suitable location were often exacerbated by issues related to affordability and the types of dwelling typically built in specific locations. For example,

> *"…finding private rental accommodation that is reasonably accessible and navigable, while also being affordable to someone who is reliant on a pension income, AND is also well-located relative to public transport, shops etc., is near-impossible. It needs to be realised that all these factors, and others, combine to disadvantage many people with disability and other pensioners" (Response 622).*
>
> *"I'm currently in a unit (and it was luckily not too difficult to renovate) but I'm now looking to get a house with a yard that is ideally within 5km of the city. Forget about ones with wheelchair access, even homes with the *potential* for wheelchair access don't exist in that radius. Most are split-level or multi-storey or with an unworkable floorplan for motorised wheelchair access" (Response 115).*
>
> *"There is a dearth of choice available when looking for new housing, especially in certain areas. Most accessible housing seems concentrated in similar neighbourhoods, with very little on offer at the top end of the market" (Response 402).*

A person's need or preference for livable housing was therefore thought to restrict their options regarding where they lived.

Question Five: *What would be the most reliable way to reach the 2020 goal?*

The 2010-2020 National Disability Strategy has a goal that all new housing will be to an agreed livable standard by 2020. Given that it is now 2017-2018, what would be the most reliable way to reach the 2020 goal?

(Multiple-choice; one response only).
'Other, please specify'. (Open-ended question.)

A combination of strategies would be the most effective method to meet this target, with several stating that no single strategy alone would be sufficient.

Overview of results

Participants were asked to select from multiple options one strategy that they believed would be the most reliable way to meet the 2010-2020 National Disability Strategy goal for all housing to be an agreed livable standard by 2020. In total, 1,054 responses were received, with government regulation being the most commonly endorsed response (See **Table 3**).

Table 3. ***Participants' preferred strategy to reach the 2020 goal***

Preferred Strategy (in order of preference)	No. of Participants (n= 1,054)	Percentage of Participants
Regulate: Make accessibility mandatory in the National Building Code	739	70.11%
Educate the housing industry to provide new housing to a minimum accessible standard	117	11.10%
Other	71	6.74%
Give money to the housing industry to provide new housing to a minimum accessible standard	61	5.79%
Give money to buyers to ask for new housing to a minimum accessible standard	41	3.89%
Educate buyers to ask for new housing to a minimum accessible standard	25	2.37%

Participants who responded "other" to this question were asked to specify an alternative strategy. Thematic analysis of the 70 unique responses to this open-ended question identified a single overarching theme that highlighted *the need for an integrated, multiple strategy approach*. More than half of the participants (*n*=38, 54%) suggested that a combination of strategies would be the most effective method to meet

this target, with several stating that no single strategy alone would be sufficient. For example, one participant stated that achievement of this goal would require a:

> *"Combination of [regulation, providing money to the housing industry and buyers, and education of the housing industry and buyers]. Regulation is needed as a foundation - however if we rely overwhelmingly on that we would see low compliance and push back that draws away from building support across the whole community. I suggest introducing regulations with incentives, with prohibitions kicking in over time. Say 5 years - backed by a very positive and strong education, advocacy program supported by all levels of government, community interests and industry sectors." (Response 13)*

Overall, participant responses highlighted the complexity of changing established approaches to housing design and development. In doing so, participants emphasised the need for multiple, integrated strategies to gain support for livable housing across all levels of government, industry stakeholders, and the public and make livable housing financially feasible.

Within this overarching theme, three categories of specific strategies (subthemes) were identified. These subthemes included:

1. the need for government regulation, incentives, and support;
2. the need for a broad educational strategy; and
3. the need for community involvement.

Each subtheme is described in further detail below.

Subtheme 1 The potential of government regulation, incentives, and support

The first subtheme highlighted *the potential of government regulation, incentives, and support* across National, State, and Local levels to meet the 2010-2020 National Disability Strategy goal for all housing to be an agreed livable standard by 2020 (*n*=56; 80%). Almost half of the participants (*n*=32; 46%) were in favour of government regulation (which was a possible response to the multiple-choice question) and enforcement of livable housing standards, with some participants (*n*=5; 7%) suggesting that voluntary adherence to livable housing would not be effective. For instance, one person stated,

> *"I support regulation. We must remember that the housing industry across Australia has had at least the last five years to voluntarily move towards Livable Housing. They have not. It is time that the housing industry is required to align themselves with future housing requirements" (Response 01).*

Almost half of the participants were in favour of government regulation and enforcement of livable housing standards.

However, ten participants (14%) did not support government regulation as a strategy to reach the livable housing goal. Reasons for this included concerns that the costs of livable housing features would negatively impact

the affordability of houses, that regulation would be impractical or insufficient to achieve the 2020 livable housing goal, and that it restricted buyers' rights to choose:

> *"We don't all want to live in standardised housing and the extra costs that will undoubtedly involve. By all means develop guidelines for those who want to choose that type of building but don't force everyone into 'vanilla' housing. If individuals find because of some disability, they need that type of housing offer some government assistance" (Response 09).*

Several participants (*n*=29; 41%) supported government incentives instead of, or as well as, regulation. Participant suggestions included incentives for buyers, builders, designers, and developers such as a reduction in taxes, rebates, subsidies, low or no interest loans, and grants (providing money to the housing industry or buyers were also two separate responses to the multiple-choice question). However, some participants (*n*=4, 6%) warned that money must be used strategically to ensure the benefits were received by the people in need, or suggested that giving people or the housing industry money was not a suitable solution. For example, one participant stated that,

Participants perceived the government to play a major role in achieving the 2010-2020 National Disability Strategy goal for all housing to be an agreed livable standard by 2020.

> *"Giving money is not the cure all. This creates greed and has no effect on outcomes." (Response 64)*

Indeed, participants (*n*=8; 11%) also described the need for government support to fund and build more social housing to a livable standard, as described below:

> *"Government should provide more accessible social/affordable housing." (Response 30)*
>
> *"I believe we should regulate, but also insist the State Government meet its responsibilities with funding for enough suitable housing for the disabled." (Response 42)*

Thus, participants perceived the government to play a major role in achieving the 2010-2020 National Disability Strategy goal for all housing to be an agreed livable standard by 2020.

Participants alleged that a broad educational strategy might encourage greater acceptance of, and adherence to, livable housing standards.

Subtheme 2 The potential of a broad educational strategy

The second subtheme described *the potential of a broad educational strategy* to increase awareness of the need for, and benefits of, livable housing in order to meet the 2020 goal (*n*=26; 37%). Although education of the housing industry or buyers were

separate options within the multiple-choice section, several participants suggested that educational strategies should target multiple groups including the housing industry (*n*=17; 24%), buyers (*n*=17; 24%), the public (*n*=2, 3%) and the government (*n*=2, 3%). Participants alleged that a broad educational strategy might encourage greater acceptance of, and adherence to, livable housing standards. Notably, 18 (26%) participants believed that education should be combined with government regulation:

> *"You need a combination of minimum standard regulation (because lots of people don't think about this stuff, and the current housing shortages mean that they often don't have a choice) and a way to make it easy for buyers and renters to check on the standards to which the building has been designed and constructed. That way, people have a greater ability to make an informed choice, which will hopefully drive better standard." (Response 66)*

This multifaceted (rather than singular) educational approach was thought to increase the likelihood of the 2010-2020 National Disability Strategy goal for all housing to be of an agreed livable standard by 2020 being met.

Subtheme 3: The potential of community involvement and support

The third subtheme identified *the potential of community involvement and support* to reach the National Disability Strategy goal for livable housing (*n*=10, 14%). Participants suggested that people who needed livable housing such as people with disabilities (*n*=3) or relevant community-based organisations (*n*=2) should be involved and represented throughout the process of implementing livable housing standards. For example, participants reported that it was important to:

> *"Ask people with disabilities for advice NOT [bureaucrats]" (Response 39)*

and:

> *"Communicate, listen to and put into action information given by areas such as [not-for profit organisations] and those grass root workers as to what is suitable instead of building first and then finding out buildings are not adequate" (Response 63).*

Support from the broader community (*n*=5; 7%) was also considered important to achieve livable housing targets.

Question Six: *What features should be in all livable homes?*

What features should be in all livable homes? (Multiple-choice; one response only).

Overview of results

From a predetermined list of 12 housing features inspired by the Livable Housing Design Guidelines-gold level (Livable Housing Australia, 2017), participants were asked to indicate which of the listed features they believed should be in all livable homes (multiple-choice response). Each of the livable housing features provided were endorsed by more than half of the participants (see **Table 4**), with accessible paths from the street or parking area to the dwelling receiving the greatest support from participants.

Table 4. ***Features participants believed should be in all livable homes***

Livable housing features*	No. of Participants (n=1,054)	% of Participant Responses
Accessible path from the street or parking area to the dwelling entrance	963	91.37%
A bathroom that contains a step-free shower recess	953	90.42%
At least one level entrance into the dwelling, preferably the front door	944	89.56%
A toilet on the entry level that provides easy access	939	89.09%
Internal doors and corridors that allow unimpeded movement between rooms	910	86.34%
Reinforcement in the walls around the toilet, shower and bath for grabrails if needed at a later date	897	85.10%
Kitchen and laundry space that allows for ease of movement	887	84.16%
Light switches and power points that are easy to reach	874	82.92%
Door handles and taps that are easy to use	853	80.92%
Step-free access to decks and verandahs	843	79.98%
A space on the entry level that could be used as a bedroom	783	74.28%
Stairways that reduce the chance of injury, and enable future adaptation	647	61.38%

**Note. Participants could select more than one response.*

Participants were also prompted to describe additional features they believed should be included in livable housing. In total, 350 open-ended responses were provided in which participants either described additional features considered important for inclusion in all livable homes or clarified their views on livable housing design features. The qualitative responses were analysed individually, and a list of housing features extracted.

Many participants (*n*=69; 19.71%) used this open-ended response question to confirm their agreement with the 12 predetermined housing features listed in the multiple-choice section. Most participants (*n*=285; 81.43%) suggested additional features related to a range of housing considerations, including a person's ease to reach or operate features and fittings (including from a seated position), automated/smart home technology, and support for everyday living, comfort, and maintenance (see **Table 5** and **Table 6**).

Table 5. ***Number and percentage of participants who indicated support in their open-ended response for the 12 predetermined housing features***

Predetermined housing features	No. (%) participants who indicated support
1. Internal doors and corridors that allow unimpeded movement between rooms	44 (12.57%)
2. Accessible path from the street or parking area to the dwelling entrance	27 (7.71%)
3. A bathroom that contains a step-free shower recess	21 (6.00%)
4. Stairways that reduce the chance of injury, and enable future adaptation	21 (6.00%)
5. Reinforcement in the walls around the toilet, shower, and bath for grabrails if needed at a later date	20 (5.71%)
6. A toilet on the entry level that provides easy access	19 (5.43%)
7. A space on the entry level that could be used as a bedroom	19 (5.43%)
8. Kitchen and laundry space that allows for ease of movement	19 (5.43%)
9. At least one level entrance into the dwelling, preferably the front door	18 (5.14%)
10. Door handles and taps that are easy to use	18 (5.14%)
11. Light switches and power points that are easy to reach	17 (4.86%)
12. Step-free access to decks and verandahs	16 (4.57%)

Table 6. ***Additional housing features in all livable homes as reported by participants***

Housing consideration	No. (%) of Participants	Example housing features reported by participants

Ease to reach or operate features and fittings, including from a seated position	54 (15.43%)	Kitchen benches, cupboards and appliances; windows, drawers; handheld shower heads
Safety, security, and alarm features	45 (12.86%)	Alarms with lights for Deaf and hard of hearing people; home security systems; security screens on doors and windows; free from mould or toxins
Sufficient room size	42 (12.00%)	Sufficient room for mobility device circulation; sufficient room to navigate around furniture using a mobility device; sufficient garage space to fit a wheelchair accessible vehicle; sufficient space to store equipment within dwelling.
Outdoor spaces	37 (10.57%)	Accessible gardens; courtyards; outdoor seating; accessible path to outside areas including letterbox, garbage bins and clothesline
Features to support access in dwelling with two or more levels	23 (6.57%)	Lift; stair lift; space to install a lift in the future
Automated / smart home technology features	22 (6.29%)	Automated doors, lights, and kitchen stoves; allow easy installation of automated or smart home technology features in the future
Temperature control	17 (4.86%)	Heating; insulation; air-conditioning; cross ventilation
Good lighting	17 (4.86%)	Natural light; windows; no glare; internal and external lights
No stairs	16 (4.57%)	No stairs; single level dwelling
Additional requirements for entrance/exit points	14 (4.00%)	Two accessible exits (to facilitate choice and promote safety in case of fire); all exits level (not just one)
Ease of access into, and movement within, internal spaces of the home	14 (4.00%)	Accessible living areas; accessible storage area; ceiling hoist
Adjustable / adaptable spaces, features, furnishings and fittings	12 (3.43%)	Moveable walls; adaptable bench heights; easy to renovate; support

		multiple furniture/equipment configurations
Cost-effectiveness / environmentally sustainable	12 (3.43%)	Solar panels; water tanks; energy-efficient features; windows to reduce need for air-conditioning
Bathroom access	12 (3.43%)	A full bathroom on entry level
Airflow and air quality	11 (3.14%)	Windows; cross ventilation
Contrasting and non-patterned features and furniture to enhance visibility and prevent falls	10 (2.86%)	Light switches; toilets; basins; flooring; walls
Privacy	9 (2.57%)	Private bathroom and toilet; privacy between houses; visitor spaces in shared accommodation
Can accommodate live-in carers and staff	8 (2.29%)	Spare room for informal / formal carers to stay in; semi-detached home for carers
Suitable flooring	7 (2.00%)	Non-slip bathroom flooring; hard flooring suitable for wheelchairs and other mobility devices
Noise reduction features	6 (1.71%)	Insulation; solid doors
Street / neighbourhood features	6 (1.71%)	Good proximity to shops and services; near public transport; accessible road crossings
Shower size	6 (1.71%)	Shower has sufficient space to accommodate a mobility device or chair
Low maintenance / easy to clean	6 (1.71%)	Easy to clean bathroom and kitchen; gardens easy to water and maintain
Layout specifications	5 (1.43%)	Separate toilet and bathroom; open plan; bathroom located near kitchen and living spaces
Grab rail installed	4 (1.14%)	Grab rails in shower and toilet
Weather-proof	4 (1.14%)	Covered entrance; safe in cyclone or floods
Communal room	3 (0.86%)	Communal spaces in shared accommodation
Room to add physical access features in the future	3 (0.86%)	Space for ramps; reinforced ceiling for hoists

Visual connection to spaces / objects	3 (0.86%)	Clear line of sight to toilet, equipment, and street
Additional power points	2 (0.57%)	More power points for equipment
Multiple car parking spaces	1 (0.29%)	Two car parking spaces
Wayfinding cues	1 (0.29%)	Pictures; colour-coded signs
Internet access	1 (0.29%)	Internet connection available within house

In addition to describing other features considered important for inclusion in all livable homes, some participants used the open-ended response section to clarify their views on livable housing design features. For example, six participants (1.71%) suggested that features required for livable housing would differ depending on the skills, needs and preferences of an individual and should be designed to suit individual needs. One participant stated:

> *"[A person] may need all or most of the [livable housing features listed]; depends on the individual's disability." (Response 143)*

Another cited financial savings as a benefit of matching the house to the individual's needs:

> *"[The] actual home [should] suit the needs of disabled people. Don't spend money on what is not required." (Response 134)*

A further eight participants (2.29%) suggested that features for livable housing should not be required, but rather should remain optional, suggesting that this would infringe on an individual's right to make choices about their own home when designing and building. For instance, one participant stated that the features included in a house should be:

> *"…those which the current purchaser thinks are reasonable and may be a re-selling feature in future years. Non-mandatory options." (Response 230)*

The participants who used this open-ended response section to clarify their views on livable housing design features therefore emphasised that housing should be responsive to the individual.

Question Seven: *What would be the cost to Australian society?*

If all new housing were to be livable, what would be the cost to Australian society? The 'cost' might be social, economic or to human-rights. (Checkbox response.)

Question Eight: *What would be the benefit to Australian society?*

If all new housing were to be livable, what would be the cost to Australian society? The 'cost' might be social, economic or to human-rights. (Checkbox response.)

Overview of results

In two separate multiple-choice questions, participants were asked to indicate how costly and beneficial they believed it would be to Australian society to ensure all new housing was a livable design standard. The responses were recorded on a five-point scale (i.e., no cost to massive cost; no benefit to massive benefit). Results are provided in *Figure 3*and *Figure 4* for the perceived costs and benefits respectively.

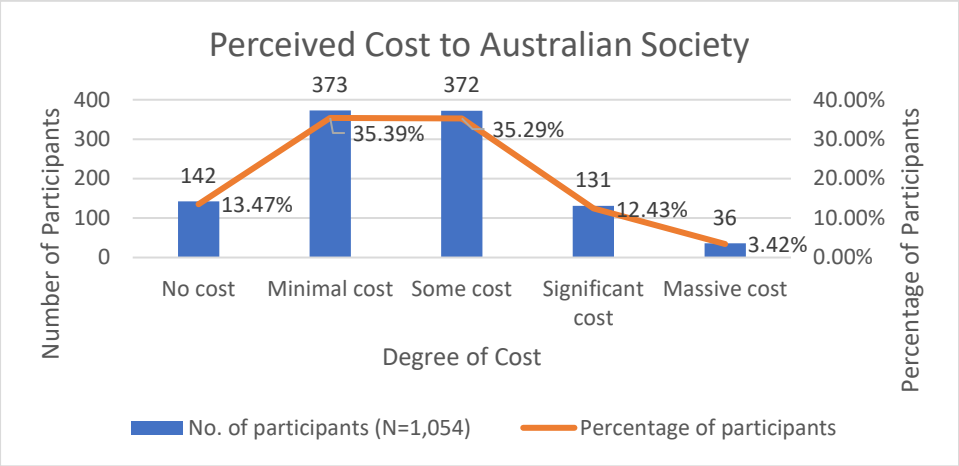

***Figure 3*. Participants' perceived costs to society if all new housing were to be livable**

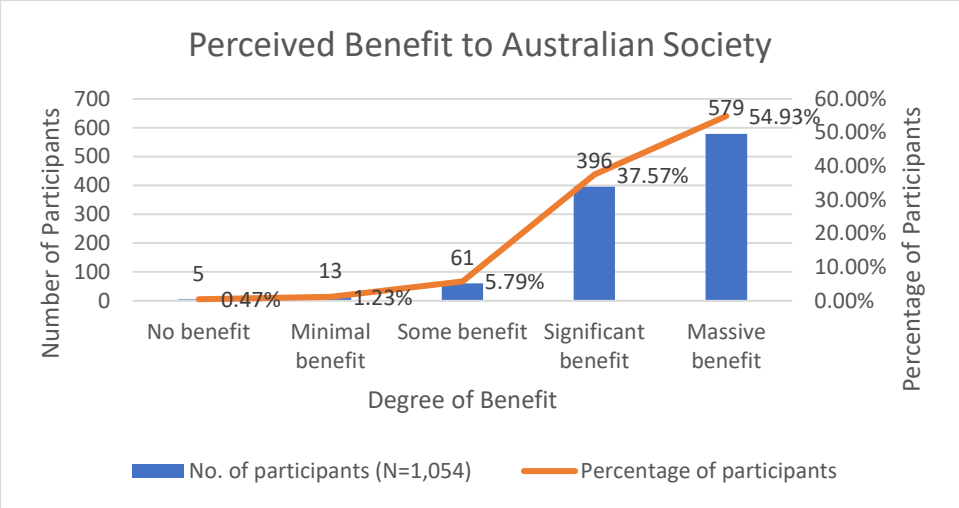

***Figure 4*. Participants' perceived benefit to society if all new housing were to be livable**

Participants were also asked to explain their reasons for their multiple-choice response, and identify the costs and benefits from their perspective. Since most participants discussed both the costs and benefits in their qualitative response to Question Seven and Question Eight (rather than describing costs and benefits to Australian society separately), participants' qualitative responses to Question Seven and Question Eight were combined for analysis.

In total, 1,508 unique responses from at least 767 participants were thematically analysed (741 responses to Question Seven on the costs to Australian society and 767 responses to Question Eight on the benefits to Australian society). Due to the combined analysis, it was not possible to know the total number of participants who responded to these open-ended questions since these questions were not a required field and individuals could respond to one or both questions. From the thematic analysis, two main themes were identified:

1. Right to participation and autonomy; and
2. Perceived financial impact of change.

Theme 1: Right to participation and autonomy

The first theme discussed the perceived social costs and benefits of mandating livable housing design for all new builds in relation to a person's *right to participation and autonomy*. A smaller number of responses suggested that mandating livable design standards would infringe on their right and the rights of others to choose their own housing design and features. These participants asserted that a change in the law was "unnecessarily restrictive" (Response 0549) and may result in all residential properties losing their individuality:

> *"Restrictions on people's design preferences and reduced flexibility to cater for specific tastes and needs" (Response 0453).*

> *"Socially boring!!! ... Lack of human-rights for individuals to choose to live in the built environment they prefer" (Response 0036).*

Some participants with this view suggested that the Government should provide funding for people in need of physical access features so that the person can "adapt their existing spaces" (Response 0084) to meet their needs. They believed that Government funding would enable a person with mobility limitations to live in suitable housing while also providing themselves the "freedom to design and build homes" (Response 0429) to suit their preferences. These participants therefore viewed Government funding to people requiring modifications as a means to satisfy everyone's rights. Other participants suggested that "[building] more accessible housing, not all" (Response 0246) would be a reasonable, and somewhat realistic, compromise.

The majority of participants however, were in favour of mandating livable housing design standards for all new builds as "there would be many benefits right across the

spectrum" (Response 0907) and "[the] social cost of not doing this is massive" (Response 0482). Livable housing design was considered to be a human right, based on equality and anti-discrimination principles. Participants strongly suggested that mandating livable housing would:

1. foster a person's independence over the life course;
2. encourage more inclusive communities;
3. enable all people to participate in society as equals;
4. increase housing choice for many Australians;
5. enable a person to age in place in their familiar neighbourhood if they choose;
6. allow individuals to maintain relationships with friends and family; and
7. reduce the likelihood of negative experiences associated with unsuitable housing (e.g., injury, hospitalisation, forced relocations into residential aged care [especially for young people], and social exclusion).

Participants said:

> *"Increasing the number of homes with visitable, accessible and adaptable features means increasing peoples' capacity, regardless of their age or ability" (Response 0733).*
>
> *"…experiencing the inconvenience and sometimes embarrassment of not feeling accepted by society (which is the general message inaccessibility sends – that they aren't important enough to accommodate for or consider)…. If you ask the question how would you feel if you went to your best friend's house and then they said sorry, but we can't get you in the house? And then to imagine this wasn't just a once off thing but happened every day - I think the response would be enough to elicit a strong enough voice to campaign for appropriate national standards" (Response 0830).*
>
> *"Liveable Housing creates not only equality of opportunity for people with disabilities, but also full and effective participation and inclusion in society" (Response 0942).*
>
> *"More housing choices and options for people with disabilities, the elderly and families" (Response 1217).*
>
> *"There are benefits [to all new housing being built to a livable design standard] that cannot be measured in monetary value, such as the social benefit to stay in your own home and not moving to an institution or to an unfamiliar suburb away from family and friends" (Response 0475).*
>
> *"People could stay in their homes longer with minimal adaption, be more independent and maintain a level of quality of life for much longer. People could visit each other anywhere without barriers and join in life the activities in this environment" (Response 1430).*
>
> *"Ensuring accessible, livable housing would prevent the need for people to relocate or spend money on refurbs. For older people, it could prevent the need*

> *to move into residential care. It can also promote independence and reduce disability and injuries such as falls" (Response 0836).*

Participants believed that mandating livable housing design in all new builds would ultimately promote the physical, psychosocial, and emotional health and quality of life of individuals and families. These benefits were perceived to relate to all Australians (either now or in the future) since "we are all ageing as well as vulnerable to illness, accidents or injuries which could lead to incapacity of varying degrees at any age or stage of life" (Response 0324). Participants therefore suggested that mandating livable housing design features would prepare individuals well for when (rather than 'if') their circumstances or needs change.

In addition, participants noted previous societal resistance to change regarding housing, transport, and community issues that had subsequently been overcome. For example, building repairs to comply with heritage requirements, environmental issues were "too hard" (Response 0105), changes to fire alarm legislation, the introduction of accessible public buildings and tactile ground surface indicators around neighbourhoods for people who are blind or have a visual impairment, and the cessation of outhouses (outdoor toilets):

> *"…if all housing has to meet the same standards, then those standards rapidly become the new norm. For example, in Canada, all houses must have double-glazing; because ALL houses must have it, houses with double-glazing don't cost any more to build nor to buy. The standard has become the norm. We didn't see the automobile industry crash and stop when centrally mounted brake lights were introduced in the US and Canada in 1986, in Australia and New Zealand in 1990, and in Europe in 1998. Nor will we see the construction industry crash and stop with the introduction of accessible building standards." (Response 0457)*

> *"There was a time when we didn't have water available in every home, it hasn't actually been that long since we had toilets in every home and up until recently it would have been thought outrageous to have a toilet inside!" (Response 1486).*

Participants suggested that the same would happen in relation to mandating livable housing. That is, livable housing would become the norm in Australian society:

> *"…just like we have gotten used to other regulations, people will get used to this" (Response 0622).*

Theme 2: Perceived financial impact of change

The second theme discussed the *perceived financial impact* if all new housing were to be built to a livable design standard. Several participants believed that implementing livable design features into new housing developments following regulation would cost little or no more than current housing options since changes would be made during the design stage and it was thought that less materials would be used during construction:

> *"…if [livable housing design] was regulated and implemented in the design then costs would be minimised." (Response 0162)*
>
> *"Good design need cost no more than poor design - for example, placement of light switches, house orientation, window design, and contrast benchtops." (Response 0517.*
>
> *"If the building is built to be accessible, there is less material used. I have spoken to builders who do build accessible homes and the material costing department say no recognizable cost[s] are [incurred]." (Response 0609)*

Others believed that the implementation of livable design features would cost a lot more than current housing designs. These participants suggested that livable design features would impact the housing footprint and could require more (rather than less) building materials. For example, livable housing design could potentially reduce the number of bedrooms in a house or unit to accommodate physical access, require lift access to apartments, or reduce the size of a person's yard because a larger slab may be required to accommodate wider doorways, hallways, and room sizes. Homes may therefore need to be larger with an increase in land size. As one person suggested, more space is needed regardless, and "space costs money" (Response 0369).

Further, participants perceived it costly to implement livable housing design in regional/rural areas of Australia and in areas that have steep or sloping blocks of land:

> *"Some financial cost may be associated with new buildings, particularly on steeper blocks or in rural areas where it is more costly/difficult to make housing accessible." (Response 0081)*
>
> *"Other land may be steeply sloping, such as in the Dandenong Ranges. It is not possible for the driveway to extend to the house level in every case. Since this type of land is cheaper to buy, [undertaking earth works to ensure level access] would add greatly to the cost for those who have purchased it and who may not be able to afford it." (Response 0416)*

Participants believed that an increase in overall costs would be passed on to buyers, making already expensive housing in Australia even more unaffordable. However, most participants believed that mandating livable housing design would come with an initial cost, but that the cost would be outweighed by the vast social benefits outlined in Theme 1 and/or recovered over time.

Participants implied that the initial cost would relate to a transition phase. It was suggested that this transition phase ought to include education to consumers/the public and the building industry regarding the benefits of livable housing design, education/training to designers, architects, and builders on how to design and build livable housing design features, and the revision of current design templates, as described below:

> *"Cost in educating that this is a positive change…" (Response 0038)*

and

> *"The initial cost of changing from current designs and learning how to do things differently." (Response 0674)*

Participants believed that this initial cost would be outweighed by numerous social benefits to Australian society and/or recovered over time from the:

1. scale of economics and mass production of fittings and materials;
2. reduction in need for home modifications as retrofitting an existing property can be expensive; and
3. significant cost savings to the health system by enabling individuals to remain in their own home (and out of nursing homes, hospitals, and rehabilitation facilities), increasing their independence thereby reducing their need for informal and/or paid support, and ensuring less falls/injuries occur at home:

> *"Once livable housing features become regulation, production costs for 'unusual' fittings or sizes of fittings/ materials will reduce as they become mass-produced and become the new norm. Whilst there might be extra costs in some areas there will be savings in others and so a balance will be achieved yielding minimal net increase." (Response 0060)*

> *"[Mandating livable housing design] would be of economic benefit to society - in the mid to long term. It would save money on expensive retrofitting. It would save on potential injuries caused by inappropriate housing. It would reduce the cost associated to people who have mobility issues having to stay in hospital due to having no accessible home to which to return." (Response 1344)*

> *"The benefits of people aging in their own homes and not having accidents caused by access issues would mean less need for expensive aged care facilities and extra care (e.g. an accessible bathroom can mean someone does not need assistance to bathe and toilet, is able to look after their basic hygiene)." (Response 0041)*

Most participants therefore considered mandating livable housing design in all new builds as a cost-effective venture for Australia's housing future.

Discussion

This section explores some of the themes identified in the survey analysis. Most participants endorsed ANUHD's call for regulation. Their comments pointed to the need for a comprehensive RIA, which reaches beyond the immediate housing market to the public interest and government investment in a more inclusive Australian society.

Responses to the Survey

The sample predominantly reflected the voice of home owners and people who needed livable housing for either themselves or their family and friends. This is not surprising given Australia's current demographics regarding housing. Australia follows other first-world countries with 18.5% of the population identifying with a disability (40% of this cohort are over 65 years old). Most people live in households in the community with less than 1% living in some form of specialist housing. Over a third of households have a person with disability (old or young) living within them (Australian Bureau of Statistics, 2010).

Over a third of households have a person with disability (old or young) living within them.

There are 3.3 million older people in Australia with around 1.7million having a disability and this figure is expected to increase as the population ages (Australian Bureau of Statistics, 2012).

Around 2.7 million people (or 12% of the population) are carers (providing informal support to older people and young people with disability), with 770,000 people (or 3.4% of the population) as primary carers. Most carers are female and were likely to be partners or parents of the person requiring support. Almost 75,000 carers are less than 15 years old. Around one third of primary carers have a disability themselves with around 18,600 male and 43,300 female primary carers themselves having a profound or severe core activity limitation (Australian Bureau of Statistics, 2012 Carers-key findings).

Ninety-three percent of Australian households use private housing; with the majority (67%) being home owners and purchasers. Twenty-two percent rent privately, with a small percentage of alternative private-tenure types (6%). The rest (4.7%) use social housing (AIHW, 2012, 2014, 2017).

Reflections on the Four Narratives

In this section, ANUHD considers the results of the survey through the four narratives outlined on p. 7.

Housing Industry

Housing industry leaders traditionally have not supported regulation for universal design in housing. They argue that accessibility in housing should not be imposed; rather, it should be market-driven (Housing Industry Association, 2010, 2011) and their principle solution to increasing community and government concern has been the Livable Housing Design Agreement (NDUHD, 2010). Research suggests that the Livable Housing Design Agreement's failure was due to three unfounded assumptions. The first is that designers in the housing industry would typically consider the needs of occupants and visitors of the dwelling throughout its lifetime. The second is that, because Livable Housing Design is doable and reasonable and would give them a 'market-edge', they would voluntarily change their current design and construction practices. The third assumption is that housing industry will do the 'right thing' (in this case contribute to social inclusion) voluntarily before being directed through regulation to do so (Ward, Franz, & Adkins, 2014).

Researchers explain their reluctance; the housing industry primarily consists of risk-averse, interdependent and highly competitive businesses unwilling to take a lead in innovation. Changes that bring possible additional cost or time delays are typically rejected. Overcoming this tradition is unlikely to be a simple case of devising a new design policy or even bringing in new building regulation without significant preparation (Bringolf, 2011; Dalton, Wakefield, & Horne, 2011).

Government

The strong comments on rights and inclusion from participants are likely to be a result of the bold rights and inclusion rhetoric of the United Nations and the Australian Government in the last decade. In 2007, The Convention on the Rights of People with Disabilities (United Nations, 2007) brought to focus the broadly accepted right to social inclusion by promoting the right for people with disability to access all aspects of the physical and social environment, including housing, on an equal basis with others. The Convention not only directs signatories on how housing assistance should be offered; (that is, people have the right "to choose their place of residence and where and with whom they live on an equal basis with others" (Article 19), but it also directs how housing should be designed; ("the design of . . . environments, . . . [should] be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design") (Article 4).

COAG's response is the 2010-2020 National Disability Strategy (COAG, 2011) in which it outlines the problem in Australia:

> *[One's home] is a prerequisite for a happy and stable life. There is evidence that people with disability experience substantial barriers in finding a place to live, especially in the private market. Barriers are often presented by designs which do not allow the building structure of the home to change without significant expense, to meet the needs of a person who is ageing or who has a disability. (p. 32)*

Its policy direction is "Improved provision of accessible and well-designed housing with choice for people with disability about where they live" with a specific commitment to support the Livable Housing Design Agreement to reach the 2020 target.

This begs the question why COAG did so little in the meantime. Some analysts suggest that the Australian Government was unwilling to lock into conflict with the housing industry, and agreement to a voluntary approach satisfied them that regulation was off the agenda for the foreseeable future. Despite its imminent failure, the Livable Housing Design Agreement resolved two issues for the Australian Government. First, it was seen to take tangible action within its commitment to the UNCRPD as seen in its interim report (COAG, 2014), and it convinced key economic policy advisors at the time, such as the Productivity Commission (Productivity Commission, 2011a, p. 213; 2011b, p. 275), that more accessible housing would be supplied with little cost or political fallout to government (Ward & Jacobs, 2016).

Home Buyers

At the time of the Livable Housing Design Agreement, the HIA considered the success of the Agreement lay with home buyers: "Builders already offer these features to consumers who choose to ask for them, and a really important part of the message is to get consumers to ask for them" (ABC Radio interview, 2010).

There are well-documented limitations in relying on market forces when it comes to home-buyers to drive change. Home buyers, especially buyers of single residences, are infrequent buyers and so did not build up experience of the housing market. They are often ill-informed about the building process, and their requests are less predictable than those of investors or housing managers (Productivity Commission, 2004, pp. 30-31).

Those people who buy new housing are unlikely to ask for Livable Housing Design and those who need it are not buying new housing.

It is also useful to understand just who we mean by home buyers when it comes to Livable Housing Design. Noted earlier, the preferences of potential home-buyers, regarding "sustainable features" suggest that this group may accept access features, so long as they are not sold as something special or different, or as an added cost item. This group are found to support socially responsible design initiatives, however, tend to express disinterest in paying extra for some unknown beneficiary or worthy cause ('the common good'), or an unanticipated need in the future (Crabtree & Hes, 2009).

One would assume that households with older people and people with disability would be the front-runners in demanding livable housing. A study of the housing needs of older people aged over seventy-five years in Australia (Judd, Liu, Easthope, Davy, & Bridge,

2014) observed that many in this group tend not to move and consider their wellbeing is contingent on staying in the community they know and near their networks of support. They typically consider their current housing to be suitable until a member of the household needs assistance, at which time many prefer to modify their existing home rather than to move.

One would expect households with a younger person with disability to demand access features in new housing as their need is anticipated to be long-term. Studies have found that these households have complex lives exacerbated by the fact that they typically earn less, own less, and have greater difficulty maintaining the tenure of their home. Housing is not their only issue. These households also must co-ordinate access to support services, transport and employment which are difficult to obtain (Beer & Faulkner, 2008; Chenoweth & Stehlik, 2004; Wiesel & Habibis, 2015). It follows that once these households have a suitable dwelling and all these elements to maintain their lifestyle are in place, they rarely change their housing location.

The responses which do not support the 2020 target or regulation are more likely to be from the housing industry, and the supportive responses are more likely to come from people whose needs are currently not being met through their practice.

On the other hand, many imminent retirees or "baby-boomers" consider their housing as an investment rather than a stable family base and are anticipated to change their housing several times after they retire (Beer & Faulkner, 2009). This group also indicate they want to stay in the community, live well and participate long after they have retired (Salt & Mikklesen, 2009) (Salt & Mikklesen, 2009). While this group are likely to require livable housing in the near future, many are not showing signs of planning for the realities of old age, caring for an aging or ill partner, or securing accessible housing (Judd et al., 2014; Spanbroek & Karol, 2006). In summary, those people who buy new housing are unlikely to ask for Livable Housing Design and those who need it are not buying new housing.

People whose needs are not met through the current housing market

Regardless, affordable and accessible housing remain a top priority for organisations representing vulnerable groups (ACOSS, 2017; AIHW, 2017; NACA, 2018; SGS Economics & Planning, 2016). Their advocacy places the responsibility with the government rather than the housing market.

These four narratives point to the diverse range of responses in the survey, some in direct conflict with others. Given these narratives, the responses which do not support the 2020 target or COAG's direction to prepare a RIA are more likely to be from members of the housing industry, and the supportive responses are more likely to come

from people whose needs are currently not being met through Government programs or the private housing industry's design and construction practices.

Costs and Benefits

This survey did not attempt to quantify the costs and benefits of Livable Housing Design. Rather, it considered some key issues that participants raised. Of course, the participants were not all of the same opinion and these points of conflict require particular attention.

Whose rights take priority?

Regarding personal rights, some participants contested whose rights took priority. Most participants' comments reflected the rights as outlined in the UNCRPD; that is, the right to the same choices as others on where and with whom they lived (and visited), and the right to non-discriminatory built environments. A minority of participants contended that they should be able to design their home as they wish, including making it inaccessible. This raises the question whether there is a public interest in the accessibility of private housing. In the case of livable housing, it has been strongly argued (Malloy, 2011) that there is a strong public interest. Malloy argues that:

- excluding and marginalising people denies communities of their social and economic participation;
- the lack of accessible private housing directly increases the demand for government housing assistance, in the form of public housing, and home modifications assistance; and
- short-term private individual design preferences create potentially negative long-term implications for future users and health and support services.

The exterior design of housing has long been limited by covenants within local developments, and the internal design for resident health and safety reasons. The provision of livable housing is supported by projections, which point to 60% of housing built now will have a resident (91% when including visitors) with mobility limitations within its life (Smith, Rayer, & Smith, 2008). This makes universal design in housing not only a human rights and social issue, but also a pragmatic economic one.

A possible solution for those who are intent on having an inaccessible dwelling is for an industry-funded home modifications program to remove Livable Housing Design features.

A possible solution for those who consider it is their right to have an inaccessible dwelling is for an industry-funded home modifications program to remove Livable Housing Design features.

Costs of changing mainstream practice

A small number of participants raised concerns about the added cost of Livable Housing Design. This should be considered in two parts: the inherent added cost of the features and the cost of changing current design and construction practices.

To date, Hill PDA (1999); Victorian Government (2010) have done the most comprehensive costings of universal design in housing. The figures are reasonable and both studies concluded the inclusion of basic access features at construction as a sensible economic measure, given the benefits. An updated costing is warranted given the following:

- Australian housing industry now builds the biggest Class 1 dwellings, on average, in the world (Dalton, Wakefield, et al., 2011), so in many cases, the basic footprint should not be an issue;
- Class 2 dwellings already have access requirements in common areas mandated in the NCC through the adoption of the Access to Premises Standard (Australian Government, 2010a);
- Many features are already included as preferred mainstream practice. These include open plan design, step-free showers, direct access to the living area from an internal garage and large entry doors (Ward & Franz, 2015).

Livable Housing Design is not a discreet expensive addition; rather, it requires a change of design and construction practice, which impacts on everyone, until it becomes the norm.

ANUHD acknowledges the cost of changing current design and construction practices may not have been considered as thoroughly as it could have been in the past. HIA's (2010) contention that the actual cost is far greater than studies imply appears to be based on the cost of change, as well as the inherent cost of the features. The author's correspondence with the HIA (King, 2011) confirmed this. King argued, at the time, that the [Victorian proposal for] accessibility regulations would lead to additional costs of building due to the need for new and amended home designs, construction of some building elements, and increased costs of supervision to ensure dwellings are built as designed.

Recent research supports this. Small businesses dominate the Australian housing industry, and they typically operate locally within one state. They are often connected with building material manufacturers, finance intermediaries and land developers, forming a complex interdependent network (Dalton, Chhetri, et al., 2011, p. 39). When one element changes, there is a 'domino effect' impact on the others (Bringolf, 2011). Livable design is not a discreet expensive addition; rather, it requires a basic change in thinking about design and

construction practices. This impacts on everyone, until it becomes the standard way of doing things.

This supports the survey findings (see) regarding the preferred strategy to meet the 2020 target; regulation with multiple, integrated strategies to gain support for livable housing. ANUHD cautions that regulation will be needed to grab the attention of individual businesses, intent on maintaining the *status quo*. Then these businesses should get all the help that they need to change their practices efficiently and in time, and to understand why the change is necessary.

Measuring broader systemic costs and benefits

Most of the participants' comments on cost related to the immediate costs of designing and building to Livable Housing Design. In contrast, participants' comments on the benefits of Livable Housing Design focused on more global benefits; how residents throughout the life of the dwelling would benefit, the benefits to allied health and support services, and the normalising of vulnerable people living safely and well in their own homes.

ANUHD acknowledges that costs and benefits are difficult to quantify, and attempts often are limited to immediate and tangible impacts. Participants' comments point to the importance of a much broader analysis, regardless how difficult that may be. ANUHD suggests analysis at four levels:

Primary level.	the costs and benefits for buyers of new homes and builders
Secondary level:	The costs and benefits for residents throughout the life of the dwelling and the industry providing home modifications
Tertiary level:	The costs and benefits for allied support services, including avoidable hospital stays, extra support due to poor access in the home, and the need for alternative specialist residential care.
Systemic level	The costs and benefits for society in normalising the presence of a wider range of people being included and participating in family and community life.

Conclusion

The survey results confirmed ANUHD's position that "the Australian Government should regulate minimum access features in the National Construction Code for all new and extensively modified housing" (ANUHD, 2013). The survey results indicated that the Regularity Impact Assessment should to consider the four distinct yet connected stakeholder narratives. The findings also indicated that any cost-benefit exercise must go beyond the immediate impacts on the housing industry and the housing market, to consider the public interest in Australia's housing infrastructure in the long term, and the

significant Government investment to assist people to be socially and economically included and to participate in family and community life.

Finally, the results highlighted the perceived need for a comprehensive education and awareness strategy to accompany regulation, so that all stakeholders understand why the regulation of Livable Housing Design is important for them, their businesses and for a more inclusive Australian society.

Appendices

Appendix 1. National Dialogue on Universal Housing Design

The National Dialogue was established by the Australian Government in 2009 following Australia's ratification of the Convention on the Rights of People with Disabilities. This ratification requires the Australian Government to promote the right for people with disability to access all aspects of the physical and social environment on an equal basis with others.

The ratification of the CRPD requires the Australian Government to promote the right for people with disability to access all aspects of the physical and social environment on an equal basis with others.

The Convention not only directs how housing assistance is offered (that is, people have the right "to choose their place of residence and where and with whom they live on an equal basis with others" (United Nations, 2007 Article 19)), but it also challenges how housing is currently designed ("the design of . . . environments, . . . [should] be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design" (United Nations, 2007 Article 4)).

The Australian Government brought together representatives from all levels of government, and key stakeholder groups from the ageing, disability and community support sectors and the residential building and property industry "to improve the availability of Livable Housing and get industry and disability groups working together to promote it" (Shorten, 2010). The members of the National Dialogue in 2010 were:

The National Dialogue acknowledged that most homes have not been designed or built to include universal design principles to facilitate access by all.

- Australian Human Rights Commission
- Australian Institute of Architects
- Australian Local Government Association
- Australian Network for Universal Housing Design
- COTA Australia
- Grocon
- Housing Industry Association
- Lend Lease
- Master Builders Australia

- National People with Disabilities and Carers Council
- Office of the Disability Council of NSW
- Property Council of Australia
- Real Estate Institute of Australia
- Stockland

The National Dialogue acknowledged that most homes have not been designed or built to include universal design principles to facilitate access by all. They agreed to a national guideline and strategic plan with the aspirational goal that ***all new homes will be of an agreed Universal Housing Design standard by 2020 with interim targets to be set within that 10-year period*** (National Dialogue, 2010). The National Dialogue set interim targets for the adoption of the guidelines to gauge the uptake and improvement in awareness of Universal Housing Design over that period of 10 years. The agreed interim targets for uptake by the general community were:

> ***"All new homes will be of an agreed Universal Housing Design standard by 2020 with interim targets to be set within that 10-year period."***
> **(National Dialogue, 2010)**

- 25 per cent to Silver level by 2013
- 50 per cent to Silver level by 2015
- 75 per cent to Silver level by 2018
- 100 per cent to Silver level by 2020

The targets for the uptake of the Guidelines by the Commonwealth and the States and Territories were:

- 100 per cent to Silver level by 2011
- 50 per cent to Gold level by 2014
- 75 per cent to Gold level by 2017
- 100 per cent to Gold level by 2019

In June 2011, Dialogue members agreed to establish a not-for-profit company, Livable Housing Australia (LHA), to drive the strategic directions set down by the National Dialogue and to champion the Livable Housing Design (LHD) Guidelines across Australia to meet these targets (Livable Housing Australia, 2012a).

Appendix 2. Terms and background for the survey

The following message accompanied the on-line survey:

Please complete this survey. Your opinion is important to us. It will take only 5 minutes!

*In this survey, we use the term "**livable**" to describe a home that is easy to live in and visit. (The terms "**universal**" or "**inclusive**" are used in other circumstances to describe the same thing.)*

A livable home is designed and built to meet the changing needs of occupants and visitors across their lifetime and the life of the home.

Livable homes include key easy living features that make them easier and safer to use for occupants and visitors including: people with disability, ageing Australians, people with temporary injuries, their carers and families with young children.

Background:

COAG's 2010-2020 National Disability Strategy committed to support the National Dialogue for Universal Housing Design's goal that all new homes will be of an agreed livable design standard by 2020.

At the direction of the Building Ministers Forum, the Australian Building Codes Board is assessing the need to regulate for livability in all new housing in the National Construction Code.

This survey will help to identify:

- *the difficulties (if any) in finding livable housing*
- *the cost and benefit to Australian Society in providing livable features in all new housing; and*
- *the features that should be in a livable standard for all new housing.*

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