



Final Report

**Supporting the design and
construction sector to transition
to minimum accessible standards
in new homes: A qualitative study**

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Please note that these are preliminary findings and are correct at the time of publication. Full findings will be published following completion of the project.

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Executive summary

About the research

This study sought to understand the perspectives of practising design and construction professionals in delivering new housing in Australia to integrate accessible design standards.

Research participants were involved in in-depth one-to-one interviews to understand their perspectives. Research participants had from 12 to 40 years experience in the industry, and included 6 builders, 5 registered architects, 2 building developers and 3 access consultants.

This research provides new evidence about what the design and construction sector needs to successfully implement mandatory accessibility standards as outlined in the 2022 National Construction Code (NCC) at a Livable Housing Australia Design Silver Standard.¹

Why is this research important?

- This research provides critical insights into what the sector designing and building new housing needs from their industry bodies and government to successfully implement accessibility standards.
- This research is directly informed by professionals in the design and construction sector about what is required to make this happen.
- Most states and territories across Australia have agreed to implement the 2022 National Construction Code mandatory accessible housing design Silver Standards. Western Australia and New South Wales are yet to sign up; however, both the Disability Royal Commission and the NDIS Review recommended they do so immediately.²
- Accessible housing is a mainstream issue and crucial for meeting the needs of Australians with mobility impairments, including older people and people with disability. Nearly 3 million older Australians live with a mobility limitation, and by 2060 it is estimated this number will grow to 5.75 million due to a rapidly ageing population.³

¹ LHA (2020) *Livable housing design guidelines: Silver level*. Livable Housing Australia.

<https://livablehousingaustralia.org.au/lha-silver/>

² Commonwealth of Australia (2023). *Final report*. Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability. <https://disability.royalcommission.gov.au/system/files/2022-03/Issues%20paper%20-%20Group%20homes.pdf>; Commonwealth of Australia (2023). *Working together to deliver the NDIS – Independent review into the National Disability Insurance Scheme: Final report*.

<https://www.ndisreview.gov.au/sites/default/files/resource/download/working-together-ndis-review-final-report.pdf>

³ CIE (2021). *Proposal to include minimum accessibility standards for housing in the National Construction Code: Decision regulation impact statement*. Centre for International Economics.

<https://www.abcb.gov.au/resource/regulation-impact-statements/proposal-include-minimum-accessibility-standards-housing-ncc>

Key findings from the research

There is building momentum for change

- Design and construction professionals reported the foundational work undertaken over many years means there is increased awareness of the importance of accessible design.
- Participants also spoke about how terminology is evolving in the sector with a shift towards accessible design as relevant for people at all stages of life and not just an issue for people with disability.
- The design and construction sector say accessible building design is achievable:
“I think builders, if they realise it’s not that hard, and they can get a really great outcome for their clients, I think they’ll be on board with it.” (ARCH01)
“Reputable designers and developers know that there are solutions to these problems.” (BDEV01)
- The research also found there were some challenges the industry is currently facing, which will need to be supported by governments and their professional bodies to ensure the mandatory standards are well implemented. This includes:

Supporting the industry who are facing competing demands

- Assisting them with the demands for compliance which could cause regulation fatigue.
- Without good support, there is potential overwhelm of the industry, impacting on their ability to implement mandatory accessible guidelines.

Assisting the sector who are navigating practice in an uncertain environment

- There is a need to educate clients and other stakeholders about the benefits of accessible design and fit-for-purpose housing across the lifespan.
- Capacity building is needed for the building and design sector, including smaller companies and those self-employed.
- There is currently insufficient guidance and information to support the implementation of accessible design and a lack of consistency across information sources, and this should be addressed.

What sustainable and practical solutions did professionals say are needed to assist the design and construction sector?

Whole of government and industry responsibility for the oversight of the implementation of minimum accessible design by:

- Coordinated implementation across all stakeholders such as architects, builders, suppliers and professionals working in the sector
- Engagement by all stakeholders to ensure industry relevance
- An industry-specific approach to education and training of relevant stakeholders
- Mainstream marketing of, and education on, accessible design across the broader community to raise awareness

Developing and disseminating consistent, practical and accessible resources containing industry-relevant information, including:

- Lists of compliant products and suppliers
- Case study exemplars of accessible design, including drawings and templates (e.g. CAD blocks)
- Workshops, professional development opportunities, and 'how to' materials

What's next

- Informed by this research, governments and industry bodies need to work to support the design and construction industry to implement the mandatory accessibility requirements for new homes, with a strong preference from the design and building sector for this to be a cross-industry approach.
- All Australian governments commit to:
 - National adoption of the standards, through Western Australia and New South Wales signing up to the NCC
 - Measuring the impact of the reforms on the supply of accessible housing and the benefits for consumers

Introduction

On 30 April 2021, building ministers from Australia's federal, state and territory governments decided to include minimum accessibility standards in the National Construction Code 2022 (NCC).⁴ Aimed at making all new housing more accessible, the decision saw a long-standing voluntary approach replaced by a regulatory one. In May 2023 the NCC was adopted, with a transition period before full implementation as of 1 May 2024, when these standards will mandate a minimum level of accessibility. While there are some exemptions, all new private residences will need to include 7 accessible design features, including a step-free entrance to the home and a toilet on the ground floor.

This significant change to Australia's building regulations reflects the fact that demand for more accessible mainstream housing is growing, and that the current undersupply needs to be addressed.

Adequate housing is universally viewed as one of the most basic human needs,⁵ since a person's home and living arrangements have a great influence on their quality of life.⁶ Housing that incorporates accessible design is crucial for meeting the needs of those with mobility impairments, including the elderly and people with disability. Nearly 3 million Australians currently live with a mobility limitation, and by 2060 it is estimated this number will grow to 5.75 million due to a rapidly ageing population.⁷

While many elderly Australians may eventually move into residential aged care, a recent survey found that more than 75 per cent of people aged over 65 wanted to remain in their current dwelling and 'age in place'.⁸ As the Aged Care Royal Commission noted, preventing early and 'inappropriate admission' to aged care is important.⁹ However, supporting the elderly 'to remain in their own homes for as long as possible'¹⁰ will partly depend on housing accessibility.

In addition to the growing needs of the elderly, the housing needs of people with disability is significant, as the Productivity Commission has noted.¹¹ The Council of Australian Governments (COAG) established the National Disability Strategy 2010-2020, which underscored the urgent need for inclusive and accessible housing.¹² Although this strategy advocated for independent living in mainstream housing for people with high and complex needs, there is limited availability of accessible housing stock.¹³ The Disability Strategy 2021-2031 also lists accessible housing as an ongoing policy priority for the federal government.

⁴ Commonwealth of Australia (2021). *Building ministers' meeting: Communique April 2021*. <https://www.industry.gov.au/news/building-ministers-meeting-communique-april-2021>

⁵ UN Habitat (2009). *The right to adequate housing*. (Fact sheet No. 21/Rev. 1). http://www.ohchr.org/Documents/Publications/FS21_rev_1_Housing_en.pdf

⁶ NDIA (2018). *A home for living: Specialist Disability Accommodation innovation plan*. (Report No. DA0426). National Disability Insurance Agency. <https://www.ndis.gov.au/providers/housing-and-living-supports-and-services/housing/specialist-disability-accommodation/sda-innovation-plan>

⁷ CIE (2021). *Proposal to include minimum accessibility standards for housing in the National Construction Code: Decision regulation impact statement*. Centre for International Economics. <https://www.abcb.gov.au/resource/regulation-impact-statements/proposal-include-minimum-accessibility-standards-housing-ncc>

⁸ James, A., Rowley, S., Stone, W., Parkinson, S. Spinney, A. & Reynolds, M. (2019). *Older Australians and the housing aspirations gap*. (AHURI Final Report 317). Australian Housing and Urban Research Institute. <https://www.ahuri.edu.au/research/final-reports/317>

⁹ Commonwealth of Australia (2021). *Royal Commission into Aged Care Quality and Safety: Final report*. p. 100. https://agedcare.royalcommission.gov.au/sites/default/files/2021-03/final-report-volume-1_0.pdf

¹⁰ Commonwealth of Australia (2021). *Royal Commission into Aged Care Quality and Safety: Final report*. p. 35. https://agedcare.royalcommission.gov.au/sites/default/files/2021-03/final-report-volume-1_0.pdf

¹¹ Commonwealth of Australia (2011). *Disability care and support*. Productivity Commission. <https://www.pc.gov.au/inquiries/completed/disability-support/report>

¹² Commonwealth of Australia (2011). *National Disability Strategy 2010-2020*. Department of Social Services. <https://www.dss.gov.au/our-responsibilities/disability-and-carers/publications-articles/policy-research/national-disability-strategy-2010-2020>

¹³ Zeeman, H., Wright, C. J., & Hellyer, T. (2016). Developing design guidelines for inclusive housing: A multi-stakeholder approach using a Delphi method. *Journal of Housing and the Built Environment*, 31, 761-772. <https://doi.org/10.1007/s10901-016-9499-0>

The strategy stipulates that ‘accessible and well-designed housing supports independence and social and economic participation’. Therefore, there is a need to increase the availability of housing stock based on ‘universal design principles [to] support people regardless of age or disability to live in their home through all stages of their lives’.¹⁴

More recently, the Royal Commission into Violence, Abuse, Neglect and Exploitation (Disability Royal Commission, DRC) and the NDIS Review recommended increasing the supply of liveable and accessible housing for all Australians, including people with disability.¹⁵

The growing demand for accessible housing in Australia may be clear; however, the best way of addressing this supply gap has been contested. Some argue that voluntary guidelines are sufficient for increasing the stock of accessible housing, while others maintain a regulatory approach is needed.¹⁶

A review of Australia’s compliance with the Convention on the Rights of Persons with Disabilities (CRPD), conducted by the United Nations, noted the lack of accessible housing and highlighted the need for ‘mandated national access requirements for housing’, recommending the inclusion of minimum accessibility standards in the NCC.¹⁷ The DRC and the NDIS Review recommended all states and territories immediately adopt the mandatory Australian Building Codes Board (ABCB) Livable Housing Design Silver Standard for all new dwellings.¹⁸

Additionally, the NDIS Review recommended the states that have yet to adopt the standards (New South Wales and Western Australia), immediately sign up to the NCC with its Livable Housing Australia Design Silver Standards. The DRC recommended states and territories develop a plan for the full implementation of the Silver standard, including timeframes and outcomes measures, and both reviews recommended adopting the voluntary ABCB Livable Housing Design Gold Standard for all new social housing construction.

In contrast, groups such as the Housing Industry Association (HIA), Master Builders Australia (MBA), and the Property Council of Australia (PCA) have stated their preference for an ongoing voluntary approach, citing that the costs of a regulatory approach would outweigh the benefits.¹⁹

¹⁴ Commonwealth of Australia (2021). *Australia’s Disability Strategy 2021-2031*. Department of Social Services. <https://www.disabilitygateway.gov.au/document/3106>

¹⁵ Commonwealth of Australia (2023). *Final report*. Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability. <https://disability.royalcommission.gov.au/system/files/2022-03/Issues%20paper%20-%20Group%20homes.pdf>; Commonwealth of Australia (2023). *Working together to deliver the NDIS – Independent review into the National Disability Insurance Scheme: Final report*. <https://www.ndisreview.gov.au/sites/default/files/resource/download/working-together-ndis-review-final-report.pdf>

¹⁶ Ward, M., and Jacobs, K. (2017). “Policies that fail – words that succeed”: The politics of accessible housing in Australia. *Australian Journal of Public Administration* 76 (1): 80–92. <https://doi.org/10.1111/1467-8500.12208>

¹⁷ UN (2019). *Concluding observations on the combined second and third periodic reports of Australia*. <http://docstore.ohchr.org/SelfServices/FilesHandler.ashx?enc=6QkG1d%2FPPRiCAqhKb7yhsnzSGoIKOaUX8SsM2PfxU7sdcBNJQCwIRF9xTca9TaCwjM5OlnhspoVv2oxnsujKTREtaVWFxhEZM%2F0OdVJz1UEyF5leK6Ycmqrn8yzTHQCn>

¹⁸ Commonwealth of Australia (2023). *Final report*. Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability. Recommendation 7.35 <https://disability.royalcommission.gov.au/system/files/2022-03/Issues%20paper%20-%20Group%20homes.pdf>; Commonwealth of Australia (2023). *Working together to deliver the NDIS – Independent review into the National Disability Insurance Scheme: Final report*. Recommendation 9, Action 9.11. <https://www.ndisreview.gov.au/sites/default/files/resource/download/working-together-ndis-review-final-report.pdf>


¹⁹ Master Builders Australia (2020). *Submission: Proposal to include minimum accessibility standards for housing in the National Construction Code*. <https://www.masterbuilders.com.au/getmedia/e9ec3081-b7ea-46e2-9d38-ecfa463a11b8/MBA-Accessible-Housing-RIS-Response-FINAL.pdf>; Housing Industry Association (2020). *Submission: Proposal to include minimum accessibility standards for housing in the National Construction Code*. https://consultation.abcb.gov.au/engagement/consult-ris-accessible-housing/consultation/view_respondent?show_all_questions=0&sort=submitted&order=ascending&q__text=HIA&uuld=73101462; Property Council of Australia (2020). *Submission: Proposal to include minimum accessibility standards for housing in the National Construction Code*. https://consultation.abcb.gov.au/engagement/consult-ris-accessible-housing/consultation/view_respondent?show_all_questions=0&sort=submitted&order=ascending&q__text=Property+Council&uuld=1011167013

Voicing similar concerns, the governments of New South Wales and Western Australia have indicated that they will opt-out of the accessibility provisions in the updated NCC and retain the current voluntary approach.²⁰


Therefore, despite the inclusion of the accessibility standards in the NCC, this is a significant change process for the building sector. Rigorous evidence is needed to support the implementation and transition to national adoption of accessible design standards.


Accessibility standards: From voluntary guidelines to NCC provisions


The shortage of accessible housing has long been documented by groups such as the Australian Housing and Urban Research Institute (AHURI)²¹ and the Australian Network for Universal Housing Design (ANUHD), which since 2002 has called for a regulatory approach that would see accessible design features included in state and territory building regulations.²² A summary of the key dates in the journey from voluntary to mandatory guidelines is in the following diagram.


2009  Australian Government convenes the National Dialogue on Universal Housing Design and agrees all new homes should include accessible features, but this should be voluntary not regulated.


Target set after National Dialogue on Universal Housing Design that new residential housing would be '100 per cent silver level by 2020'

2015  Modelling shows only 5 per cent of new homes would meet accessibility targets by 2020

2017  Building Ministers' Forum directed the Australian Building Codes Board to analyse the possible impact of including minimum accessibility standards in the National Construction Code (NCC)

2021  Australia's building ministers agreed to go beyond the voluntary guidelines and include accessibility standards in the NCC at a Livable Housing Design Guidelines (LHDG) silver level

2022  Mandatory LHDG silver level accessibility standards incorporated into the NCC

2023  All states and territories except WA and NSW sign up to the new standards

National implementation of mandatory LHDG silver level accessibility standards begins

²⁰ Convery, S. (2021). Accessible housing: Disabled people left behind by "shameful" building code stance in NSW, WA and SA. *The Guardian*. <https://www.theguardian.com/australia-news/2021/nov/26/accessible-housing-disabled-people-left-behind-by-shameful-buildin-g-code-stance-in-nsw-wa-and-sa>

²¹ Beer, A., and Faulkner, D. (2009). *21st century housing careers and Australia's housing future*. Australian Housing and Urban Research Institute. <https://www.ahuri.edu.au/research/final-reports/128>

²² Ward, M., and Jacobs, K. (2017). "Policies that fail – words that succeed": The politics of accessible housing in Australia. *Australian Journal of Public Administration* 76 (1): 80–92. <https://doi.org/10.1111/1467-8500.12208>

Recognising the undersupply of accessible housing, in 2009 the federal government convened the National Dialogue on Universal Housing Design – a gathering of stakeholders across government, the building industry, and disability and seniors’ organisations. Led by Parliamentary Secretary for Disabilities and Children Services, Bill Shorten, the group agreed that in the context of an ageing population, Australia needed to increase its stock of accessible housing to ‘easily accommodate the changing needs of households over their lifetime.’²³

The National Dialogue agreed that all new homes in Australia should incorporate accessible features, but opted for a voluntary rather than regulatory approach. These accessibility standards were released in the Livable Housing Design Guidelines (LHDG), and were grouped into 3 levels of accreditation: silver, gold and platinum.²⁴ These levels reflected increasing degrees of accessibility across 15 design features, including hobless showers, the width of doors and corridors, and the height of light switches and powerpoints.

A benchmark target was set that new residential housing would be ‘100 per cent silver level by 2020’. The National Dialogue agreed to this target since millions of Australians would benefit, including families with young children, people with temporary or permanent injuries, ‘ageing baby boomers’ and people with disability.²⁵ Despite these targets, modelling in 2015 by ANUHD projected that only 5 per cent of new homes would meet accessibility targets by 2020.²⁶ Some argued that the fact the targets were part of a voluntary industry agreement rather than mandated contributed to them not being met.²⁷

In response to the lagging take-up of universal design principles and the scarcity of accessible housing, in 2017, the Building Ministers’ Forum (BMF) directed the ABCB to analyse the possible impact of including minimum accessibility standards in the NCC. If included in the NCC (and state and territory legislation), these standards would become mandatory, rather than voluntary. On behalf of the ABCB, the Centre for International Economics (CIE) developed a Regulation Impact Statement, which presented several options to the BMF to consider.²⁸ These ranged from a continuation of the status quo and existing voluntary guidelines through to the inclusion of minimum accessibility standards in the NCC, either at a LHDG silver or gold level.

After extensive consultation, the CIE concluded that the high costs of including minimum accessibility standards in the NCC for all new houses and apartments did not ‘outweigh the benefits’.²⁹ However, the Building Better Homes campaign funded an economic analysis of the CIE cost benefit analysis and a supplementary report.³⁰

²³ Commonwealth Government. (2010). *National dialogue on universal housing design: Strategic plan*. Department of Social Services. https://www.dss.gov.au/sites/default/files/documents/05_2012/national_dialogue_strategic_plan.pdf

²⁴ LHA (2017). *Livable housing design guidelines*. Livable Housing Australia. https://livablehousingaustralia.org.au/wp-content/uploads/2021/02/SLLHA_GuidelinesJuly2017FINAL4.pdf

²⁵ Commonwealth Government. (2010). *National dialogue on universal housing design: Strategic plan*. Department of Social Services. https://www.dss.gov.au/sites/default/files/documents/05_2012/national_dialogue_strategic_plan.pdf

²⁶ ANUHD (2015). *Report on the progress of the national dialogue on universal housing design 2010–2014*. Australian Network for Universal Housing Design. <https://aduhdblog.files.wordpress.com/2020/03/anuhd-report-on-progress-of-lhd-jan15.accessible.pdf>

²⁷ Ward, M., and Jacobs, K. (2017). “Policies that fail – words that succeed”: The politics of accessible housing in Australia. *Australian Journal of Public Administration* 76 (1): 80–92. <https://doi.org/10.1111/1467-8500.12208>

²⁸ CIE (2021). *Decision RIS: Proposal to include minimum accessibility standards for housing in the NCC*. Centre for International Economics. https://www.abcb.gov.au/sites/default/files/resources/2021/Final%20Decision%20RIS%20accessible%20housing_PDF.pdf

²⁹ Ibid.

³⁰ Dalton, A., & Carter, R. (2020). Economic advice prepared to assist with responses to the Consultation Regulation Impact Statement on minimum accessibility standards for housing in the National Construction Code. Melbourne, Australia: The Melbourne Disability Institute, University of Melbourne, Summer Foundation. <https://apo.org.au/node/315068>

Two timely reports provided new evidence on the benefits of minimal accessible standards.³¹ At the same time, new evidence showed how readily the standards could be incorporated into new housing.³²

On 30 April 2021 Australia's building ministers agreed to go beyond the voluntary guidelines and include accessibility standards in the NCC at a LHDG silver level.³³ The amended NCC was adopted in September 2022 and a transition period exists until 1 May 2024. However, the governments of New South Wales and Western Australia have yet to sign up to the accessibility provisions.³⁴

LHDG silver level accessible design features³⁵

- A safe continuous and step-free path of travel from the street entrance and/or parking area to a dwelling entrance that is level.
- At least one, level (step-free) entrance into the dwelling.
- Internal doors and corridors that facilitate comfortable and unimpeded movement between spaces.
- A toilet on the ground (or entry) level that provides easy access.
- A bathroom that contains a hobless shower recess.
- Reinforced walls around the toilet, shower and bath to support the safe installation of grab rails at a later date.
- Stairways designed to reduce the likelihood of injury and also enable future adaptation.

³¹ Wiesel, I. (2020). Lived experience and social, health and economic impacts of inaccessible housing. Melbourne, Australia: The University of Melbourne, School of Geography.
https://disability.unimelb.edu.au/__data/assets/pdf_file/0011/3492686/RIA-Report-Survey-Findings.pdf; Winkler, D., Harvey, C., Davis, E., Goodwin, I., Wellecke, C., Douglas, J., & Mulherin, P. (2021). Incorporating minimum accessibility standards in new housing: A survey of access consultants and architects. Summer Foundation.
https://assets.summerfoundation.org.au/app/uploads/2022/12/16152133/Study_1_Survey_of_Consultants_and_Architects-web.pdf

³² Wellecke, C., D'Cruz, K., Winkler, D., Douglas, J., Goodwin, I., Davis, E., & Mulherin, P. (2022). Accessible design features and home modifications to improve housing accessibility: A mixed-methods survey of occupational therapists. *Disability and Health Journal*.
<https://www.sciencedirect.com/science/article/pii/S1936657422000140>; Winkler, D., Martel, A., Chen, Y., & Greaves, T. (Feb 2021). Audit of accessible features in new build house plans. Summer Foundation.
<https://assets.summerfoundation.org.au/app/uploads/2022/12/16153402/Audit-of-accessible-features-in-new-build-house-plans-Feb-2021-web.pdf>

³³ Commonwealth Government (2021). *Building ministers' meeting: Communique April 2021*.
<https://www.industry.gov.au/news/building-ministers-meeting-communique-april-2021>

³⁴ Convery, S. (2021). Accessible housing: Disabled people left behind by "shameful" building code stance in NSW, WA and SA. *The Guardian*.
<https://www.theguardian.com/australia-news/2021/nov/26/accessible-housing-disabled-people-left-behind-by-shameful-buildin-g-code-stance-in-nsw-wa-and-sa>

³⁵ ABCB (2022). *Livable Housing Design Standard*. Australian Building Codes Board.
<https://ncc.abcb.gov.au/sites/default/files/resources/2023/livable-housing-design-20230406.pdf>

Research aims

New research is needed to help facilitate the uptake of accessibility standards. This requires an understanding of current challenges, the contemporary regulatory environment, market and consumer factors, and ways in which these challenges may be overcome. A more inclusive approach to housing is needed where research engages with design and construction sectors, and individuals with lived experience of disability. This approach would aim to facilitate an effective transition to integrating minimum accessible design standards and define how this transition might be supported.

To date there has been a lack of research examining the uptake of accessible design standards within residential construction in Australia. Larkin and colleagues examined the perspectives of key stakeholders, such as occupational therapists, architects and others, regarding the uptake of universal design for Australian built environments.³⁶ This study found that a shift in focus was required with regard to how accessible design is marketed, and that a 'tick the box' approach to universal design, where compliance takes precedence over potentially adding market value was common.³⁷

Other research has concluded that voluntary codes will be unsuccessful in achieving the targets of accessible housing stock in Australia.³⁸ Two recent studies conducted in the context of the revised NCC highlight the highest priority design features according to occupational therapists³⁹ and people with mobility impairments⁴⁰ include a step-free access to the dwelling, large step-free showers, and bathroom and bedroom space on the ground floor to improve housing accessibility.

Furthermore, in the international context, a review of literature on stakeholder perspectives on the UK's regulatory tools for accessible housing found that cost, quality of standards, lack of communication and knowledge, enforcement, and perceptions of the accessible housing market were significant factors impacting regulation on accessible housing.⁴¹

Notwithstanding existing studies on accessible design, the shift in September 2021 from voluntary guidelines to accessibility standards in the NCC means there is a need for new research. This study explored the ways the design and construction sectors might be supported to transition to widespread implementation of minimum accessibility standards in new homes.

³⁶ Larkin, H., Hitch, D., Watchorn, V., & Ang, S. (2015). Working with policy and regulatory factors to implement universal design in the built environment: The Australian experience. *International Journal of Environmental Research and Public Health*, 12, 8157-8171. <https://doi.org/10.3390/ijerph120708157>

³⁷ Larkin, H., Hitch, D., Watchorn, V., & Ang, S. (2015). Working with policy and regulatory factors to implement universal design in the built environment: The Australian experience. *International Journal of Environmental Research and Public Health*, 12, 8157-8171. <https://doi.org/10.3390/ijerph120708157>

³⁸ Ward, M., and Jacobs, K. (2017). "Policies that fail – words that succeed": The politics of accessible housing in Australia. *Australian Journal of Public Administration* 76 (1): 80–92. <https://doi.org/10.1111/1467-8500.12208>

³⁹ Wellecke, C., D'Cruz, K., Winkler, D., Douglas, J., Goodwin, I., Davis, E., Mulherin, P. (2022). Accessible design features and home modifications to improve housing accessibility: A mixed-methods survey of occupational therapists. *Disability and Health Journal*. <https://www.sciencedirect.com/science/article/pii/S1936657422000140>

⁴⁰ Goodwin, I., Davis, E., Winkler, D., Douglas, J., Wellecke, C., D'Cruz, K., Mulherin, P., Liddicoat, S. (2022). Making homes more accessible for people with mobility impairment: A lived experience perspective. *Australian Journal of Social Issues*. <https://onlinelibrary.wiley.com/doi/full/10.1002/ajs4.214>

⁴¹ Vaughan, K., Terashima, M., Clark, K., & Deturbide, K. (2021). Exploring stakeholder perspectives on the UK's regulatory tools for accessible housing: Lessons for Canada. *Journal of Aging and Environment*, 1-22. <https://doi.org/10.1080/26892618.2021.1877861>

Method

This study explored the perspectives of practicing design and construction professionals engaged in designing and delivering housing in Australia. In particular it sought to explore the contemporary issues surrounding integration of accessible design standards within the design and construction sector. Given the focus on understanding the experiences of individuals working within this sector, qualitative methods were considered most appropriate.⁴²

This project received ethics approval from the La Trobe University Human Research Ethics Committee (Ref: HEC21353). Semi-structured interviews were the primary method of data collection. Eligible participants included architects and design practitioners, developers and representatives from the building and construction sector who are currently engaged in the design and construction of residential dwellings in Australia.

For each participant, one-on-one interviews were held lasting approximately 45 minutes. They followed a semi-structured interview guide, and were conducted via telephone or video-conferencing (such as Zoom). Interviews were conducted by the second author, who is a graduate of architecture and has experience interviewing architects and design professionals for research purposes.

Interviews were conducted in 2 phases. The first phase consisted of 14 interviews, with participants as described in Table 1. The semi-structured interview guide for this phase explored these key areas: Challenges experienced by practitioners when engaging with minimum accessible design standards; potential reticence in the sector; impacts on products and costs and potential solutions to support the sector. Drawing on the methods of constructivist grounded theory,⁴³ analysis of interview data followed a process of data-driven coding and identification of emergent themes. Potential solutions and/or suggestions to support the transition of the design and construction sector to adopting minimum accessible design standards, as suggested by participants, were identified and collated.

After analysis of interview data from the first 14 participants, areas for further inquiry were identified. In line with constructivist grounded theory methodology, a revised interview guide was developed for use in this second phase of interviews. The revised interview guide extended key areas of inquiry from the first phase of interviews, further probing findings and reflections, with a focus on better understanding the implementation experience. For example: Challenges and potential solutions to educating the sector; experience of compliance as enacted in practice; conducting accessible design/construction in practice including relational aspects as enacted by the practitioner; and implications for campaigning and/or supporting the sector.

Reflections and identification of emergent themes from the second phase of interviews were utilised to iterate and refine the findings from the phase 1 interview analysis. Participants were also invited to bring a 'case study' of a livable housing silver-level equivalent project they had been involved in, to prompt further exploration of the experience of implementing accessible design. This second phase consisted of 4 interviews, with participants as described in Table 2. Two participants (1 architect and 1 builder) were interviewed in both Phase 1 and Phase 2. Interview guides used in both phases can be found in Appendix A.

⁴² Liamputtong, P., & Ezzy, D. (2005). *Qualitative research methods*. (2nd ed.). Oxford University Press.

⁴³ Charmaz, K. (2014). *Constructing grounded theory*. (2nd ed.). SAGE.

Participants had a range of experience from 12-40 years. Participants' (sometimes dual) tertiary qualifications included construction, architecture, occupational therapy, urban and regional planning, design and sustainability. Participants' registrations included being a registered builder, architect, and occupational therapist.

Table 1 – Participants: Phase 1 interviews

Participant group	<i>n</i>
Builders	6*
Registered architects	5
Building developers	2
Access consultants	1**
Total	14

**1 builder was also a building designer*

***1 access consultant was also a builder*

Table 2 – Participants: Phase 2 interviews

Participant group	<i>n</i>
Builders	1
Registered architects	1
Access consultants	2
Total	4

Results

Analysis of qualitative data informed the development of 3 themes and associated sub-themes. Theme 1: Building momentum for change; Theme 2: Competing demands of the building industry; and Theme 3: Navigating practice in an uncertain environment . As suggested in the first theme, the industry stakeholders consulted in this study indicated that there is a readiness and momentum for change. However, as suggested in the second theme, they also cited competing demands in the building industry as factors negatively impacting the adoption of minimum accessible standards. These 2 opposing enabling and constraining forces together create uncertainty as currently experienced by practitioners in the sector.

Potential sustainable and pragmatic solutions were identified to support the implementation of accessible design standards. Each theme and sub-theme is described below.

Theme 1: Building momentum for change

This theme represents the first step in the transition to accessible design standards. This theme encapsulates the participants' recognition of foundational work achieved so far in relation to accessible design. This foundational work is conceptualised as enabling the transition to minimum accessible standards and contributing to a more receptive climate for change.

Participants reflected on the campaigning undertaken over many years to support accessible design. Participants acknowledged an increased awareness of accessible design because of this earlier foundational work and a preparedness for the sector to move to mandatory minimum accessibility standards in all new builds.

"I've kind of lived and breathed this whole debate, which has incorporated all legislating a level of minimum accessibility to the Building Code across those 30 years. So, to get where we've got to now is a big achievement, but I'm really glad you're undertaking this project, because the challenge now is getting the industry to embrace what the Building Code says." (BUIL04).

Participants also spoke about how terminology is evolving, with a shift towards seeing accessible design as relevant for people at all stages of life, and not solely an issue for people with disability. As captured by 1 participant:

"Well, actually this stuff [accessible design] is really to do with, you know, when you've got the pram. Or when you've got, you know, suitcases or when you've done your knee at football." (ARCH02).

This shift in perspective to valuing accessible design for all people was welcomed by each of the participants in this study, describing it as 'the future' of the design and building industry. Some participants spoke passionately about the relationship between accessible design and equitable access to housing, seeing the potential impact of the inclusion of mandatory minimum accessible standards across all new builds, for increased equity in accessibility.

Accessible design was aligned with good design practice, with participants recognising the opportunity for accessibility challenges to be addressed by creative and innovative design practices. Furthermore, this shift toward a more inclusive understanding of accessible design for everyone was suggested to be particularly important to influence Australian states that remain resistant to adopting accessible design standards.

“So it would be nice to get some national consistency here, because I don’t see why a person in Canberra should be availed of more accessible built form than someone in Darwin or Adelaide or Perth or Sydney or Melbourne, for that matter.” (BDEV01)

The design and construction sector also said accessible building design is achievable.

“I think builders, if they realise it’s not that hard, and they can get a really great outcome for their clients, I think they’ll be on board with it.” (ARCH01)

“Reputable designers and developers know that there are solutions to these problems.” (BDEV01)

Theme 2: Competing demands of the building industry

This theme captures the pressure enacted on practitioners from various competing demands within the building industry at this time. This theme is conceptualised as constraining factors - features of the practice environment impacting the transition to minimum accessible standards.

Participants discussed the increasing demands and complexities of compliance, placing a significant burden on them as practitioners. They described some confusion about which regulations applied when and an overwhelming sense of ‘regulation fatigue’. One participant shared:

“Things to comply with all the time. All the time, all the time. So I think people are a bit, yeah, regulation fatigued.” (ARCH02)

Participants also reflected on their more recent experiences of the building industry during the Covid-19 pandemic. They discussed the pressures resulting from increasing costs for materials and labour, increased uncertainty with availability of materials and products, and with builders facing liquidation. In addition, they spoke about the impact of changing work practices in the contemporary building industry; people preferring to communicate in emails rather than the telephone, with less discussion occurring in person on site. They described being ‘swamped’ by an overwhelming volume of emails and information that requires reading and processing.

“There’s just so much information out there, so many emails. I mean, I work closely with a few builders and they’re just swamped with the amount of emails they’re getting and requests and information and all the rest of it, so I guess it’s about trying to cut through the noise.” (ARCH01)

They identified the challenge of implementing new guidelines, such as minimum accessible standards, in the context of an increasingly remote and fragmented work environment in which clients, architects and builders have less face-to-face contact. As described by 1 participant:

“I think a big part of it is – is what happens onsite and the level of supervision. So, you know, everyone’s sort of chasing their project timelines and – and their budgets and the like, and not enough time is spent going through the detail of it and identifying where the risks are and what needs more attention. And of course, by the time we get out there, it’s all a little bit too late and there’s a few arguments to be had.” (ACCC03)

Overall, participants described a sense of being overwhelmed within the industry, potentially impacting their ability to respond to the new challenges associated with the implementation of mandatory minimum accessible guidelines.

Theme 3: Navigating practice in an uncertain environment

This theme captures the experience described by participants of navigating a change in practice in the early stages of adoption of mandatory minimum accessible guidelines. Sub-themes include: 1) Negotiating and problem solving and 2) Recognising challenges. The 'Negotiating and problem solving' sub-theme emphasises the on-the-ground experience of practicing while integrating accessible design, in essence the '*getting on with the doing*'.

Through this enacting of accessible design participants became cognisant of a variety of challenges, which are explored in the sub-theme 'Recognising challenges.' This theme of 'navigating practice in an uncertain environment' is nested within the context of multiple stakeholders with their own needs and priorities. Participants described challenges and tensions arising from relations between stakeholders, predominantly between architects and builders, and the importance of communicating across stakeholders to support the successful implementation of minimum accessible guidelines.

Sub-theme 1: Negotiating and problem solving

This sub-theme describes the ways in which practitioners are negotiating and problem solving through the early stages of implementation of accessible design standards. The participants described a process of navigating client expectations, compliance requirements, other stakeholder priorities, and their own design agendas and/or perceptions of good practice or professional integrity.

In the absence of established systems and procedures to guide the implementation of accessible design standards, participants reflected on informal education occurring between professional networks, and the ways they seek information and guidance from other professionals.

"It was very much a – a self-education, to some degree. And that's just reading guidelines obviously...I am generally someone who likes to network, so I like to ask a lot of questions and I think it was once again this is a bit of a self-education...I kind of reached out to [an expert in the field] who was always extremely generous with his time and – and just free advice, to be honest. And he was quite lovely and so I think through that, that's kind of how I broaden my knowledge about it." (BUIL06)

Furthermore, participants described taking on informal educator roles, and recognised the need to educate other stakeholders with whom they were engaged on a project. A number of participants also talked about educating clients about accessible design, and the need to address concerns and anxieties about the look and function of the home. They recognised a lack of understanding in the community about accessible design.

"It's a really big part of my job 'cause I guess talking to people [clients] about their concerns and their anxieties and then addressing them by saying, 'Well, this is why - you know, this is why we do it this way'." (ARCH01)

One volume builder talked of the capacity of large companies to invest in educating staff and clients about regulatory changes by producing bespoke informational brochures.

"When other regulations have come in, for example, whether it's pool fencing or whatever it may be, you know, we'll put a 1-page document together to really explain as best we can to keep it simple, but also explain why we need to make these changes, the relevance of them, understanding these are constant, there's a reason why." (BUIL06)

This experience contrasted with that of the builders and architects working for smaller companies or self employed, who feel less supported in their education and upskilling in accessible design. These participants spoke about the need to share expertise among practitioners, creating communities of practice where information and lessons learned are shared.

One example of information sharing came from a participant who is employed in a large volume build company. This participant said that they keep a 'Lessons Learned' document in which they detail aspects of projects that have not gone to plan and lessons learnt. The participant reflected that sharing this document has been of value for different stakeholders involved in the design and construction process, including both colleagues within their company as well as smaller contractors with whom they collaborate on projects.

"We've just got a lessons learnt for example, document that's completely - which is continuously updated and it's great, when you've got a new site manager who comes on board and you just go, this is quite a complex build, you talk them through it but then you go, 'This is some of our learning from the past.' ... If you've got something like a tutorial that someone can just in their own time just watch over and revert back to all the time, it is, and makes it a lot easier for them to I - I guess absorb that information and get it right." (BUIL06)

Consistent with this recognition of the need to educate and upskill, participants emphasised the shift in practice from accessible design being a specialist area in which access consultants have been traditionally engaged to provide advice, to a more 'generalist' practice in which all architects and builders require a minimum level of understanding of accessible design.

Sub-theme 2: Recognising challenges

This sub-theme encapsulates challenges identified by participants through their experience of 'getting on with the doing' of accessible design. The challenges include: Design and planning factors; informational factors; and market factors. As opposed to the constraining factors described in the second theme, these challenges have emerged through the experience of practitioners navigating the implementation of mandatory minimum accessible design standards in practice.

Design and planning factors

Participants identified a number of specific accessible design features that were considered challenging. These included detailing level thresholds and easily operable sliding doors. In terms of the site itself, site constraints, steep sites and smaller land sizes were identified as challenges, particularly in relation to ramp access. The design composition, in terms of space and planning, split levels and elevated housing types, were also identified as a challenge.

Participants shared concerns that when complying with minimum accessible standards, there are fewer design choices and creativity may be restricted. They described the process to be at times complex due to the need to work with limited design choice in meeting accessible design guidelines, while also negotiating with clients to meet their design preferences.

For example, a number of participants shared stories of client anxieties and fears regarding the potential 'institutional' appearance of accessible-compliant homes, and features which may appear abnormal or different, even if they are of benefit to the occupants of the home. These negotiations were impacted by factors such as the client-practitioner relationship, end user needs and other design priorities. Participants felt there was often no clear 'right answer' in these situations. Reflecting on the complexity of these challenges, participants noted that there is often a lack of time and process invested by all stakeholders in getting the right outcome.

“I think that in – in the haste of building a project and the million other things that people are focused on, or not focused, but the million other things that they need to tick a box on, you know, sometimes, you know, unfortunately, access can be left in an undesirable sort of state in a project... And – and sort of hurried through and ushered over the line, rather than planned and incorporated in a deliberate way.”
(ACCC03)

Informational factors

Participants felt there was poor access to information to guide implementation of accessible design, with a lack of consistency across information sources. They recognised the need to upskill across the industry, with a particular need to address knowledge gaps in the practical implementation of accessible design.

“There’s still a knowledge gap and not just of what it is but of how to do it and then I think that you’re going to need to sort of have an education across all of the disciplines from the structural engineers, the earthworks – earthworks contractor, you know, and right through, and the architects so that – so that we’ve got that sort of nestling in until it becomes best practice learning, you know, and business as usual.” **(BDEV02)**

Additionally, participants noted that building is not an exact science and that drawings may not always be followed, leading to mistakes in incorporating accessible design features. This can be particularly challenging if builders rely on previous knowledge rather than seeking advice when faced with unfamiliar drawings or plans, or where there is limited access to information and support to assist with new learning about accessible design.

“So I had a builder within the last 6 months for 2 wheelchair-accessible units pour concrete steps at the front. The plans say ‘stepless entry’.” **(ARCH01)**

Participants discussed the need for clear and detailed information outlining key measurements and clearances to ensure clarity and remove ambiguity. It was also suggested to have ‘how to’ information for constructing the detail on site, to ensure builders are adequately informed for how to construct a compliant detail as intended.

*“I’ve seen a lot of architects and designers write things like, ‘stepless entry required’, but they provide absolutely no detail to the builder as to how they have to achieve that! So that’s a similar note on the drawings where they say, ‘everything to Australian Standards’, and you’re like, ‘what does that mean?’”***(ARCH01)**



Market factors

The commercial context of housing was recognised by participants. While the market opportunities related to accessible design were noted, perceptions about good design costing more were discussed. In the context of high density dwellings such as apartment complexes, potential concerns were raised about the space needed to incorporate accessible design for each apartment, compounded by the number of apartments per complex. More generally, while the participants were supportive of the move to mandatory minimum accessible design, some reflected on the additional costs to the client or consumer and the need to explain the reasons for these costs.

“If I put my retail hat on and sit with a customer and say, ‘Hey, you know, we’ve got a – we need to do x, y and z, and it’s going to increase your build by whatever it is, \$5,000 – \$10,000 or something like that’ ...it’s not easy to justify to a customer well...I think there’s people out there, without being rude, [who] are a little bit ignorant or [question why] are these changes being implemented and will say, ‘Well, I don’t really care about that. Why do I need to do that? Because that’s going to cost me x amount of money. I don’t need it.’”(BUIL06)

Participants also noted the volume of work required to understand and implement accessibility compliant homes, which comes at a cost of time and money. More specifically, 1 volume builder described the process involved in updating their library of templates or ‘master designs’ drawing attention to the investment of time and associated costs.

“I talk about once again our experiences as a volume home builder. You know, we have a library of templates or what we call master designs, basically. So, you know, and then we’ve got construction details which are applicable to those designs, and then we’ve got a bill of quantities that are applicable to those...So, we need to obviously then go through a whole, you know, almost – I wouldn’t call it R and D but I guess it’s an update, isn’t it? You know, of our master drawings, our bill of quantities, our construction details...there’s lots involved.” (BUIL06)

In summary, the 3 key themes of this study provide insights into accessible design, from the perspective of builders, architects and access consultants. While each of the themes contain valuable reflections, when considered together, they represent the experience of, and factors impacting, the implementation of accessible design standards.

As illustrated in Figure 1, the research findings suggest there is positive momentum for the implementation of mandatory minimum accessible standards in the building and construction industry. While constraining factors, namely a strained workforce due to rising costs, increasing compliance and more remote work practices, have an impact, the participants interviewed in this study are committed to increasing the accessibility of new housing for all Australians.

However, on further exploration, the implementation experience to date has been challenging; requiring negotiation and navigation across a number of key stakeholders. In this context, a number of potential solutions have been identified. The suggested solutions, grounded in the experience of the research participants, offer a pragmatic and sustainable approach to supporting the adoption of accessible design in the Australian building and construction industry.

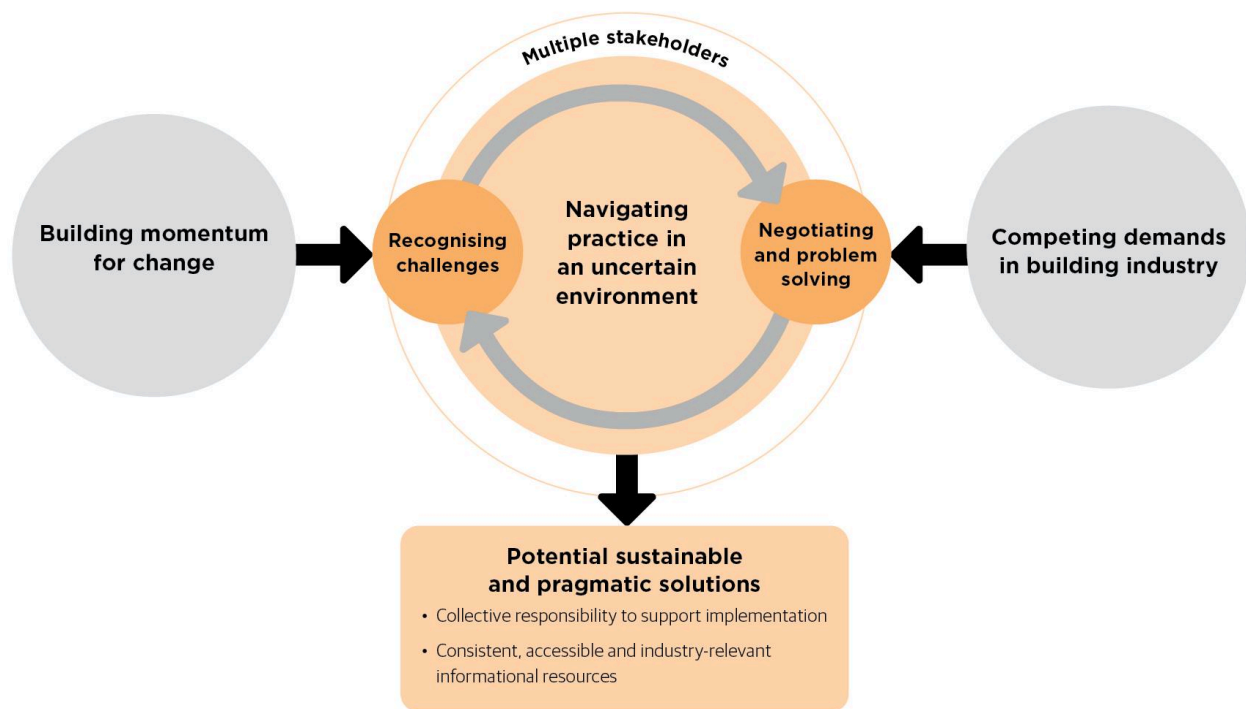


Figure 1: A diagrammatic representation of the process of implementing accessible design in practice

Potential sustainable and pragmatic solutions to support the sector to evolve

This collection of potential solutions is drawn from participant perspectives on how the sector could be supported to integrate minimum accessible design, and includes strategies related to collective or outsourced responsibility to support implementation, and the need for consistent, accessible and industry-relevant informational resources. These suggestions from participants are in response to their experience of navigating the implementation of mandatory minimum accessible guidelines, and through their observations of what is needed and what would be supportive.

Collective responsibility to support implementation

Participants spoke about the transition to the implementation of mandatory minimum accessible standards as a collaborative process, with all stakeholders having a role to play and the need for a regulatory body overseeing implementation. Participants were unsure who or what body would be positioned to provide this role, but felt strongly about the need for oversight of the implementation and coordination process.

“I think we all need to play a part, don’t we? But I don’t know exactly who’s going to – who’s going to manage it, but it would be good if there was 1 regulatory body who were going to manage I guess those types of releases or improvements or whatever it may be.” (BUIL06)

When asked further, participants expressed a desire for a central body to take responsibility for key tasks such as the coordinated dissemination of government policy information, education of stakeholders, information and advice, as well as compliance checks. Participants did not know of any efforts towards such responsibility. Given the number of stakeholders engaged in the implementation, the majority of participants saw value in engaging a central body that is representative across stakeholder groups, rather than aligned with 1 group.

Participants also emphasised the importance of the representative body having resources and expertise to execute a communications strategy to facilitate the engagement of practitioners across the industry.

Consistent, accessible and industry-relevant informational resources

Aligned with the functionality of a central body to oversee the implementation of mandatory minimum accessible standards, participants recommended the development and sharing of resources to support the upskilling of all stakeholders.

“There’s still a knowledge gap – and not just of what it is but of how to do it and then I think that you’re going to need to sort of have an education across all of the disciplines from the structural engineers, the earthworks – earthworks contractor, you know, and right through, and the architects so that – so that we’ve got that sort of nestling in until it becomes best practice learning, you know, and business as usual.” (BDEV02).

Resource suggestions ⁴⁴ included:

1. **Lists of products and suppliers:** Lists of compliant products and suppliers, to save time and hassle identifying suitable fixtures, fittings and materials.

“Products that are useful and appropriate, having those on the suppliers’ website very prominently, so that they come up on your first screen.” (ARCH02)

2. **Established drawings and templates:** Showing a range of house designs and demonstrating compliance with accessibility standards. These should be clear and consistent.

“Once a design practitioner has, if you like, got their new templates or their new standards, it becomes very standardised.” (ACCC01)

3. **Guidance documents:** Clear and consistent written resources outlining the design requirements, with no discrepancies between documents.

“I know myself, and I open the Australian Standards hundreds of times, but I still have trouble finding stuff at times. There does need to be a variety of, you know, modules and learning schedules. But hopefully they all point to the same information.” (ARCH01)

⁴⁴ Since the research was conducted there have been some resources made available to the housing industry and these are listed at Appendix B.

4. **Education and courses:** Improving the availability, consistency and quality of information on accessible design, including online workshops, and professional development opportunities. Short and succinct 'how to' video content was also suggested. These materials should take into account learning differences (including across generations).

“Little things that are easy, like YouTube clips on how to ...you know, install a step 3 shower, level threshold shower. How to position the toilet in a room, you know, just little things like that, preferably not too dry.” (ARCH02)

5. **Drawing on the wisdom and experience** of more experienced builders and architects. Opportunities for experienced builders and architects to share their learnings so far and to contribute to the upskilling of others.

“There’s a clear role for the design and building professions to participate in the development of case studies and examples about how different types of impairment can be accommodated in a way that is cost-effective, in a way that is [effective] in terms of meeting a need, and in a way that potentially solves other problems as well in the process.” (BDEV01)

6. **Mainstream marketing of accessible design:** Mainstream marketing such as featuring design examples on The Block television series or other such programs, to enhance consumer engagement.

“I think that we’re wanting a mass response. Like we’re wanting the general awareness to be increased... I think we need a mass sort of campaign.” (ARCH02)

7. **More detail in drawings and computer-aided design (CAD) blocks:** Ready availability of CAD blocks and detailed drawings would assist in the transition to standardised accessible design, and assist (drawn) communication between designers, builders and other stakeholders.

“CAD blocks definitely – I think – so not just for things like bathrooms, but in particular for difficult bits. I think going back to those CAD blocks, things with standard details are really, really important.” (ACCC01)

Discussion

In April 2021 Australia's building ministers agreed to amend the NCC to include mandatory minimum accessibility standards, which would apply to most new houses and apartments. However, not all states and territories agreed to these standards, which will lead to unequal implementation across Australia. Furthermore, concerns from some sections of the building industry about the high cost and difficulty of implementing new standards have been raised.

This study responds to the urgent need for rigorous evidence to support the implementation of accessible design standards within the design and construction sector. By seeking the perspectives of sector professionals with intimate understanding of accessible design standards and the context of the design and construction sector, this study provides valuable insights with industry relevance.

Participants supported the move to mandatory minimum and accessible design, recognising the role of foundational work in enabling this transition, such as access to premises standards that have been in use for a decade and paved the way for universal design in private housing.

Participants also noted the shift towards accessible design as relevant for people at all stages of life, and not solely an issue for people with disability. They reflected a sense of momentum and preparedness for the sector to move to mandatory minimum accessibility standards in all new builds. Similar to the experience of change and acceptance associated with the implementation of universal design in new public buildings, the participants of this study described accessible design as the future of the design and building industry.

However, despite this momentum for change, participants cited competing demands in the building industry that contribute to a context of pressures and demands for compliance. For example, post pandemic cost pressures and changing work practices, as well as compliance demands and client expectations. Within this context, practitioners are navigating the integration of minimum accessible design to the best of their abilities, but not without difficulties and the need for negotiating and problem solving.

Furthermore, participants recognised gaps in knowledge about accessible design across the industry, especially the 'how to' of design implementation and inadequate accessibility of resources to address this knowledge gap.

These research findings underscore the need for a coordinated infrastructure to provide guidance and oversight of implementation processes, as well as investment in developing and sharing industry-relevant informational resources. Such action has the potential to support better adoption of minimum accessible design, enhanced communication between stakeholders, and stimulating design through good precedent examples.

The data also suggested a nuanced picture of stakeholder perspectives, and the complex relations occurring across stakeholders, such as builders, architects, designers, access consultants, volume builders, clients, regulatory bodies, and funding bodies. Some stakeholder groups predicted potential reticence from other groups in the sector, reflecting on current barriers to collaboration across stakeholders.

Recognising the enmeshed and relational nature of the challenges identified, and the complexities of the interrelations between stakeholders in delivering minimum accessible design standards in new homes, the need for a coordinated approach to implementation is highlighted. This includes not only the development of resources but also sharing of resources, and enhanced communication across stakeholders to support communities of practice working collaboratively to support the adoption of accessible design.

While these findings have relevance in supporting the implementation of accessible design, it is important to acknowledge limitations of the study. Research participants were recruited from a network of architects and design practitioners, developers and representatives from the building and construction sector who are currently engaged in the design and construction of residential dwellings in Australia, and known to the Summer Foundation.

Recruiting practicing professionals was essential to ensuring the research is grounded in the practice experience of participants, contributing to the relevance of the research findings. However, given that the research participants were recruited from known contacts, it is possible that the views of the participants are not representative of the wider building and construction sector, and may be skewed towards being in support of minimum accessible standards in all new homes built in Australia.

Practice implications

This study has explored contemporary issues surrounding integration of accessible design, as viewed by individuals working in the sector. Findings from in-depth interviews with sector professionals has yielded important insights into the challenges experienced in practice relative to accessible design and possible strategies for facilitating implementation and transition.

Two sustainable and pragmatic solutions derived from this study are suggested. These solutions could be readily implemented to support the design and construction sector to successfully integrate accessible design into the build of all new homes in Australia: 1) Collective responsibility for oversight of the implementation of minimum accessible design, and 2) Consistent, accessible and industry-relevant informational resources.

Participants identified the need for a central body to oversee dissemination of policy information, education of stakeholders, information and advice, as well as compliance. While the Australian Building Codes Board and other peak bodies are likely well positioned for such a role, the participants in this study emphasised the importance of having a central body that is representative of all stakeholder groups.

They also emphasised the importance of education and communication for the successful implementation of mandatory minimum accessibility guidelines, and expressed a desire for the central body to have the resources and expertise to develop informational platforms to engage practitioners. These platforms could host educational resources, templates and documents that are consistent, accessible and industry-relevant. Integral to the development of these resources would be involvement from stakeholder groups to ensure the relevance of resources.

Conclusion

We acknowledge the endorsement of minimum accessible standards to date. However, there is an urgent need for future work to guide the development and implementation of the solutions derived in this study, and to develop the educational, guidance and practice resources suggested by participants to support this phase of transition and adoption. Critical to this work will be ongoing engagement with and support from stakeholders across the design and construction sectors.

Appendix A

Research Study Title: How might we support the design and construction sector to transition to minimum accessible standards in new homes?

Semi-Structured Interview Guide: Phase 1

1. Firstly, could you begin by telling me about your experience of the accessible housing design projects you have worked on
2. Let's focus on the minimum accessible design standards recently added into the National Construction Code. What are some of the challenges experienced by design professionals when using these standards?

Additional prompts: Which accessible features might be the most challenging in the transition, do you think? Are the standards readily comprehensible and user friendly? What are design professionals concerned about?

3. We have seen a mixed response to the mandatory inclusion of minimum accessible design standards. What do you think are some of the reasons why design professionals would be reluctant to incorporate these standards?

Additional prompts: What risks are design professionals concerned about? Are there problematic attitudes? Are there economic/market/consumer factors involved? Is information availability fulsome and accurate? What factors may influence the capability to adapt and apply minimum accessible design standards in practice?

4. We are interested in how these accessible design standards might impact selection of products, materials and other fixtures.

4a. Do you think there will be specific products and materials in high demand with the introduction of these accessible design standards? If so, what are they?

4b. Do you think there will be specific products and materials which might become obsolete? If so, what are they?

5. Which features are likely to be the most and least costly to introduce? Why?

5a. Are there any relevant products or potential solutions to implementing this design element in a cost-effective way at scale?"

6. We are interested in potential solutions to support the transition of the design and construction sector to integrate these accessible design standards.

6a. What training, resources or other tools do you think might support architects and building designers to incorporate accessible features in a seamless and cost effective way to new housing?

6b. What training, resources or other tools do you think might encourage developers to incorporate accessible features in a seamless and cost effective way to new housing?

6c. What training, resources or other tools do you think might encourage or enable smaller builders to incorporate accessible features in a seamless and cost effective way to new housing?

7. What role might people with disability have in helping the building sector make sense of these changes and ongoing review of these standards?

Additional prompts: How might this be facilitated? How might this support change?

Semi-Structured Interview Guide: Phase 2

Part 1: Testing Understanding – Education, Challenges and Solutions

I would like to invite your thoughts and reflections on some findings we have identified so far through our research, and see if these accord with your views.

Participants identified education as a key barrier to implementation of accessible design. They felt that there was poor access to information to guide implementation, with a lack of consistency across information sources. Resources such as online workshops, professional development and videos were suggested, with an emphasis upon CAD blocks and example drawings and templates. What are your thoughts on this?

Additional prompts: Can you talk to what this might look like in practice – who might be involved? Who should be leading this? Where do you go to for advice and information? Should industry bodies be meeting to discuss the implementation? What impact would this education have on you and your practice?

Participants described experiencing ‘regulation fatigue’, identifying the potential challenge of having to change habitual practice and/or rectify work according to the new guidelines. In particular, the need to raise awareness and understanding from clients was identified. Does this resonate with your experience?

Additional prompts: How do you navigate relations with the client regarding balancing client needs against regulatory requirements? Can you give an example of this in your practice? Why is this a challenge? How are you personally impacted by this?

Part 2: Case Study

We have invited you to share a case study project and talk us through it.

Prompts:

- a) *Perhaps you can start with telling me a little about the brief and the client?*
- b) *How did you navigate client expectations together with accessible design requirements?*
- c) *What were some of the challenges?*
- d) *What were some of the wins on this project?*
- e) *How would you have done this project differently if there had not been the accessible design element of the project?*
- f) *Could this project process have been improved if some of the solutions discussed earlier were available (such as templated, CAD blocks)?*

Part 3: Personal Reflections

With the minimum accessible standards becoming mandatory, how are you feeling about this impending change?

Additional prompts: How will this impact you personally as a practitioner? How are you feeling about your practice at this time? Are there things you are nervous about? Are there things you are excited about? Are you ready to be compliant come September?

Part 4: The Building Better Homes Campaign

Do you have any suggestions for what the Building Better Homes Campaign could focus on to help the transition and implementation in industry?

Appendix B

Resources available to support the implementation of the 2022 National Construction Code mandatory accessible housing design Silver Standards.

Australian Building Codes Board (ABCB)

NCC 2022 Webinar Series: Livable housing <https://www.youtube.com/watch?v=BeihCeWfFsA>

Resource library - <https://bit.ly/3JNoYic>

Website - <https://bit.ly/40DHGPR>

ABCB Standard: Livable Housing Design - <http://ow.ly/PjOw50NVGkg>

ABCB Handbook: Livable Housing Design - <http://ow.ly/AqqR50NVGcy>

ABCB Voluntary Standard: Livable Housing Design - Beyond minimum - <http://ow.ly/P85150NVGfT>

Centre for Universal Design (CUDA)

Livable Housing Design short online course. CUDA presents this course under licence from the Australian Building Codes Board.

<https://universaldesignaustralia.net.au/livable-housing-design-course/>

Housing Industry Association (HIA)

NCC 2022 Changes for Livable Housing Standard

<https://www.youtube.com/watch?v=VBe9BE6gX0g>

New livable housing provisions for NCC 2022

<https://hia.com.au/resources-and-advice/building-codes/new-livable-housing-provisions-for-ncc-2022>

Livable Housing Australia

LHA Livable Housing Guidelines Fourth Edition (2017)

https://livablehousingaustralia.org.au/wp-content/uploads/2021/02/SLLHA_GuidelinesJuly2017FINAL4.pdf