

AT2030

Case Study: Full Report

Inclusive Design and Accessibility of the Built Environment in Ulaanbaatar, Mongolia

Prepared by
GDI Hub

**Cluster 4 Capacity
& Participation**
Inclusive Infrastructure

Country
Mongolia

Date
September 2020



Funded by



Led by



In partnership with



Summary: Becoming a more inclusive city

Ulaanbaatar city presents unique challenges and opportunities for accessible and inclusive design. The city is full of divisions between its more developed core city and the surrounding Ger areas. The Ger areas are unplanned settlements that have grown to become 70 percent of the city's population in the last 30 years. These parts of the city lack access to basic infrastructure, widening inequality, impacting health and wellbeing and presenting immense urban development challenges. The city's architecture and urban planning is blending its nomadic history, 20th century Soviet influences and contemporary plans towards a thriving technological city. These wider forces influence the extent to which disability inclusion can be embedded in the built environment.



Ulaanbaatar's Ger areas surround the city centre.

Image source: Google Streetview

In 2016, Mongolia adopted the 'Law Protecting the Rights of Persons with Disabilities', seven years after ratifying the UNCRPD. The law marks an important step in making progress towards inclusion across all sectors. In the built environment, this is accompanied by accessibility standards that were first developed in 2009 and are currently being updated. However, the standards are not mandatory which creates a barrier to implementing and enforcing them. Current understanding on accessibility and inclusion is being driven by international influences and standards and is not fundamentally embedded in architectural training or urban development programme delivery.

Ulaanbaatar's Ger areas and unique geographical, climatic and cultural context require an approach to inclusive and accessible design and planning in the built environment that embeds local context and knowledge. Currently the design of

accessibility is centred on basic physical modifications such as ramps and accessible toilets, inclusive design has the potential to do much more. Inclusive design can be applied across the city's urban development and planning initiatives to integrate local perspectives and amplify the voices of people with disabilities, who have some of the best understanding of how the built environment is



Participants felt stigma in the built environment

inequitable. To ensure inclusion and equity are embedded in the built environment; urban planning, infrastructure and building projects should set a vision for inclusive design that can ensure consistent implementation.

An inclusive built environment creates access and opportunity, allows for participation and builds equity in society. It is the result of collaborate efforts across society to ensure that no one is left behind. There is appetite for making Ulaanbaatar more inclusive across policy, built environment industry and community stakeholders and a reasonable understanding of the wider benefits of inclusive design. Setting a comprehensive vision and action plan for a more inclusive Ulaanbaatar should be complemented by training and education in disability inclusion and inclusive design across stakeholders and the general public. These steps would allow the city's design and development to accommodate and celebrate diversity, improving the lives of everybody: including people with disabilities.

“An inclusive and accessible Ulaanbaatar is somewhere that can be experienced by everybody in a fair and equal way. By creating safe and accessible environments for all members of the community the city can allow everyone to access and participate in the opportunities they would like.”

Inclusive design should be understood as a mindset and methodology above technical standards, to allow responsive and adaptive design in a rapidly changing city. This adaptive mindset in design has the potential to engage more effectively with the city's rich history in nomadic ways of life, consider the different ways people want to live in a city and respond to sustainable development challenges including climate related stresses associated with the extreme climate.

Key Barriers

- People with disabilities experience physical, social and economic barriers to accessing the built environment.
- The way the city is evolving leaves limited space for accessibility. Urban planning and coordinated efforts should make space to build in accessibility
- A lack of knowledge on the cost of inclusive design is a barrier for decision-makers. Good quality design should not cost more
- Laws and policies fall through on implementation. Mechanisms are needed to ensure implementation
- A lack of responsibility and accountability for inclusion in built environment and infrastructure projects means existing standards are not enforced
- A lack of good examples of local inclusive design solutions creates a barrier to motivating the general public and designers. Ulaanbaatar needs a vision for inclusive design.

Recommended actions

- Find out what matters to people
- City stakeholders should establish a shared vision and ambition for an inclusive and accessible Ulaanbaatar
- Awareness raising and education is vital. It can teach stakeholders how inclusive design benefits everyone and help to create a culture of inclusion.
- Accessibility in the built environment is not just about technical standards. Inclusive design can be beautiful and aspirational. Inclusive design is good design.
- Ulaanbaatar's unique climate, culture and geography require an inclusive design strategy that responds to those contexts

- Embed inclusive design from the start of a project and budget for it, earlier integration is more effective
- Start somewhere. People need to discover for themselves how inclusive design can make the city a better place to live.

Creating enabling environments

An enabling environment for people with disabilities should integrate: a supportive legislative environment, participation in design and decision-making, positive cultural change, an accessible and inclusive built environment and access to good quality and affordable assistive technology.

So what might an inclusive Ulaanbaatar look like?

- Mandatory accessibility standards that account for a spectrum of abilities and different disabilities
- Accessible and welcoming public places and services that people can experience equally
- Access to good quality, affordable, assistive technology
- A culture of awareness, understanding and support for people with disabilities
- Equity of access, opportunity and participation for all



Accessible outdoor exercise spaces are important

What's next?

This case study outlines the key findings from four months of research on the city of Ulaanbaatar. As the first of six case studies on inclusive design and the built environment in lower-and-middle-income countries, it will be built on through the following case studies and go on to inform global actions on inclusive design.

The findings of this report will be shared with both international and local audiences and GDI Hub and partners plan to maintain remain active in Mongolia through supporting projects in country.

Acknowledgements

This report was written by Mikaela Patrick, Iain McKinnon and Vicki Austin of the Global Disability Innovation Hub (GDI Hub).

We'd like to thank our team based in Ulaanbaatar; Tulgamaa Damdinsuren, Tamirkhuu Narangerel, Nyam-Ochir Byambadorj, Undrakhbayar Chuluundavaa, Enkhbuyant Lhagvajav and Avirmed Yamkhin for their contributions throughout the research case study and in producing this report. In particular, we'd like to acknowledge Tulgamaa Damdinsuren and Tamirkhuu Narangerel for their work on translating the report to Mongolian.

We have also been supported by the Asian Development Bank (ADB) during this case study.

We'd like to thank all of the participants in the research for their enthusiasm and honesty. It is our goal to amplify the voices of people with disabilities in our research and we hope this report reflects your vision for a more inclusive and accessible Ulaanbaatar.

We'd also like to thank the GDI Hub team who have supported the work, including; Katherine Perry, Prof. Cathy Holloway, Vicki Austin, Rosa Salazar and Louise Gebbett and finally, the members of our research advisory group who are; Luis Artieda, Prof. Richard Bibb, Rama Gheerawo, Chapal Khasnabis, Dr. Maria Kett, Sophie Morley and Julian Walker for their continued support, guidance and feedback.

Suggested citation: Patrick, M., McKinnon, I. and Austin, V. (2020) Inclusive Design and Accessibility in Ulaanbaatar, Mongolia. AT2030 Inclusive Infrastructure Case Studies. Prepared by the Global Disability Innovation Hub and partners for the UK Foreign, Commonwealth and Development Office.

This research has ethical approval from University College London (UCL) and permission from the Government Agency for the Development of Persons with Disabilities in Mongolia.

Global Disability Innovation Hub

www.disabilityinnovation.com

GDI Hub is a research and practice centre driving disability innovation for a fairer world. Our vision is of a world without barriers to participation and equitable opportunity for all. We believe disability innovation is part of a bigger movement for disability inclusion and social justice. GDI Hub works across 5 domains, research, innovation, programmes, teaching, and advocacy. We are solutions-focused experts in; Assistive Technology; Inclusive Design; Culture and Participation. Based in East London and a legacy of London 2012 Paralympic Games, we deliver world-class research, ideas and inventions, creating new knowledge, solutions and products, and shaping policy through co-creation, participation and collaboration. An Academic Research Centre (ARC) and a Community Interest Company (CIC) we are guided by an Advisory Board of disabled people. We operate in 33 countries and expect to impact 15 million people by 2024.

AIFO

www.aifo.it

AIFO is a grassroots organisation with groups and regional coordination covering the whole of Italy. It is also an international network organisation with member associations in India, Brazil and Mongolia and has an official relationship with the World Health Organisation (WHO). In Mongolia, AIFO is working since 1991 in implementing Community Based Rehabilitation approach for people with disabilities (CBR). AIFO opened its Country Coordination Office in 1996 in Ulaanbaatar city. AIFO pursues the international slogan “Nothing about us without us” in all the actions in country. All AIFO’s activities are implemented with the active participation of people with disabilities as they are the experts. On the basis of 29 years of experience working in disability field in Mongolia, AIFO recognises the potential people to contribute to the development of disability sector and has a long history of training and support.

Tegsh Niigem

Tegsh Niigem NGO was established in 2006 to contribute to improve quality of life of the persons with disabilities through Community Based Rehabilitation approach (CBR) for people with disabilities and implementing UN Convention on the rights of the persons with disabilities (UNCRPD). Tegsh Niigem implemented sub-grant project on the employment of people with disabilities under GSP+ scheme and has implemented two EU co-funded projects in collaboration with AIFO and other national DPOs. Tegsh Niigem also contributed to elaborate the new law on the rights of persons with disabilities, which was adopted by the Parliament of Mongolia in 2016. Since January 2017, Tegsh Niigem is member of the National Steering Committee on disability, headed by the Minister of Labor and Social Protection. Tegsh Niigem NGO has submitted two shadow reports to the UNCRPD Committee in 2015 and 2018.

Universal Progress ILC

The Universal Progress Center is the first independent living center in Mongolia created by people with disabilities. The center aims to create an inclusive environment for everyone, promote the social participation of people with disabilities, provide services to support independent living, and empowering its members. The center currently having over 140 members with different type of disabilities and 17 staffs. 12 of those staffs are disabled people. Our center is running following four programs: Independent living, social participation, infrastructure accessibility and inclusive education for people with disabilities.



Contents

Foreword	1
Glossary of Key Terms	3
Acronyms and Abbreviations	4
AT2030 and Inclusive Infrastructure Programme Background	5
About AT2030	5
About Inclusive Infrastructure	5
Why does 'inclusive infrastructure' matter?	6
Why focus on cities in low-resource settings?	9
Meeting global goals?	10
Why inclusive design?	11
What do we want to find out?	12
Introduction to the Case Study in Mongolia	14
Background and Contextual Factors	17
Disability and Accessibility in Mongolia	17
Culture and History in Ulaanbaatar's Development	22
Urban Development and Living Conditions	23
Health, Environment and Climate	28
Summary of activities	30
Who has a stake in inclusive design and an accessible built environment in Mongolia?	32
Pathway to inclusion – where are they?	33
Insights	34
Lived Experience of Disability in Ulaanbaatar	34
Urban Development, Infrastructure and Land	38
Transport, mobility and the continuity of accessibility	41
From policy to action – accountability and implementation	43
Adaptive and collaborative approaches to inclusive city-making	46
Inclusive Design	47
Assistive Technology and the Inclusive Design of the Built Environment	53
Enabling environments: awareness, education, and participation	54



Towards a more inclusive city	57
Lessons learned	59
What works and what matters?	60
What have we learned about access to assistive technology and the built environment?	62
Setting Priorities	62
Identifying tangible actions	62
Limitations and areas for further exploration	67
Pathway to inclusion – where are they going?	68
Conclusion: Actions toward inclusion	69
Creating enabling environments	71
What's next?	72
References	73



Foreword

“BECOMING A MORE INCLUSIVE CITY”

The Government of Mongolia ratified UN Convention on the Rights of Persons with Disabilities in 2009 and has been successfully fulfilling its international obligations. The State Great Khural of Mongolia adopted the national Law on the Rights of Persons with Disabilities in 2016 aiming to improve the policy and legal environment for ensuring the rights, participation, and protection of persons with disabilities and public service accessibility.

In 2017, the Government of Mongolia elaborated the National Program to Support the Rights, Participation and Development of Persons with Disabilities in order to tackle different issues including health, education, employment, and accessibility of public transportation, roads, housing, and public facilities through implementing conventions and laws to ensure inter-sectorial cooperation and coordination. Currently we are elaborating a draft Law on Accessibility to eliminate barriers for persons with disabilities to live independently and to create an accessible environment in terms of infrastructure and public services.

The terms of “accessibility” and “inclusive design” are quite new to Mongolia, however, governmental and non-governmental organizations, citizens, and international organizations are carrying out research, situation analysis, recommendations for creating inclusive society. The research on understanding Inclusive and Accessible Environments in Mongolia, led by The Global Disability Innovation Hub (GDI Hub) and University College London in partnership with the Italian Association Friends of Raoul Follereau (AIFO) and supported by local NGOs - Tegsh Niigem NGO and “Universal Progress” Independent Living Centre is contributing greatly to the development of the policy of the country, especially in overall process of elaborating a Law on Barrier-free and Accessibility, and planning, developing, implementing, and monitoring the state policies, programs, and actions ensuring the rights of persons with disabilities and creating more inclusive society.

We are highly confident that we can develop “Inclusive Ulaanbaatar”, which promotes human rights, full participation of all the population ensuring active participation, opinions and voices of many different stakeholders from government, non-governmental organizations and society.

E.Tamir

Director of General Authority for the
Development of Persons with Disabilities





Foreword

Accessible environments and inclusive design are understood as the domain of persons with disabilities and are often just seen as a ramp or accessible toilet. The concept should be seen more broadly in relation with social development. In other words, accessible environment and inclusive design should apply to all sectors including policy making, decision making, activities, technology, education, social protection, tourism and services. The issue is becoming an essential challenge to state and city development. However, countries have different cultural contexts and ways of life that should be considered and social life for everyone must be on equal basis.

The Global Disability Innovation Hub (GDI Hub) is leading the research on understanding Inclusive and Accessible Environments in six selected countries with the help of the partners involved in the broader AT2030 programme that has been funded by the UK's Foreign, Commonwealth and Development Office (FCDO). In Mongolia, the research is conducted in partnership with the Italian Association Friends of Raoul Follereau (AIFO) and supported by local NGOs - Tegsh Niigem NGO and "Universal Progress" Independent Living Centre.

The recommendations that have come out from the research will give us ideas and a baseline to implement inclusive design in Mongolia. It will also contribute to other initiatives such as the development of an accessibility law and decision-making processes among stakeholders.

Furthermore, we are also very appreciative for how this research could contribute to the implementation of the Sustainable Development Goals (SDG 2030) in Mongolia.

We would like to express our deepest gratitude to GDI Hub and AIFO, who gave us opportunity to raise our voice in this global research.

L. Enkhbuyant

Chair of Tegsh Niigem NGO
Living Center

Ch.Undrakhbayar

"Universal Progress" Independent



Glossary of Key Terms

Inclusive Design - can help all human beings experience the world around them in a fair and equal way by creating safe and accessible environments for all members of the community. Inclusive design is a mindset, a methodology that embraces diversity to create a world that is more intuitive, elegant and usable for all of us.

Infrastructure - is the physical and organisational structures, services and facilities that support society. Good infrastructure should contribute to inclusive prosperity, including health and wellbeing. The term often refers to; transport, water and waste-water systems, energy and telecommunications industries, and social welfare structures such as health, education and social support systems¹. For the purpose of this report all structures (whether physical, institutional or digital) that contribute to the participation of people with disabilities in daily life and society fall under the remit of infrastructure.

Inclusive and Accessible Infrastructure and Environments - promote access, opportunity, participation and equity in society. Inclusive and accessible infrastructures and environments take into account the principles of inclusive design, embracing diversity and acknowledging that designing for people who experience the least equity in the built environment, such as people with disabilities, has the potential to benefit all of us.

People with Disabilities – throughout this report the term people with disabilities is used as it is more common internationally, but we acknowledge that in the UK the term ‘disabled people’ is preferred.

¹ Anjlee Agarwal and Andre Steele, ‘Disability Considerations for Infrastructure Programmes’ (Evidence on Demand, 8 March 2016), https://doi.org/10.12774/eod_hd.march2016.agarwaletal.



Acronyms and Abbreviations

ADB: Asian Development Bank

AIFO: Italian Association of the Friends of Raoul Follereau

AT: Assistive Technology

AT2030: UK Aid-funded programme, 'Testing what works to enable access to life-changing assistive technology for all'

DPO: Disabled Persons' Organisation

FCDO: Foreign, Commonwealth and Development Office (*incorporating what was formally known as DFID*)

GDI Hub: Global Disability Innovation Hub

ILC: Independent Living Centre

LMICs: Lower-and-Middle-Income Countries

NUA: New Urban Agenda

PwD: Persons with Disabilities

SDGs: the UN's Sustainable Development Goals

WASH: Water, Sanitation and Hygiene

WHO: World Health Organisation

UN: United Nations

UNCRPD: United Nations Convention on the Rights of Persons with Disabilities



AT2030 and Inclusive Infrastructure

Programme Background

About AT2030

This case study is part of the FCDO UK Aid-funded ‘AT2030: Life-changing assistive technology for all’ programme. The AT2030 programme aims to explore ‘what works’ to increase access to life changing assistive technology (AT) for all. The World Health Organisation (WHO) estimates that there are currently 1 billion people around the world who need assistive technologies, but 90% of them do not have access, and this figure is project to rise to 2 billion by 2050. The programme aims to reach 9 million people directly and 6 million indirectly through activities that cut across the domains of data and evidence, innovation, country implementation and capacity and participation. The programme is currently operational in 15 countries and works with a wide range of delivery partners².

About Inclusive Infrastructure

The Inclusive Infrastructure sub-programme of AT2030 responds to the idea that successfully reaching all the people that need assistive technology is also dependent on supporting accessible and inclusive environments and infrastructure.

GDI Hub believe that ‘Inclusive Design’ has an important role in facilitating enabling environments for people with disabilities³. Research on the current state of accessibility in different cities around the world and the capacity and appetite for inclusive design in policy and industry in those places is needed both to enable better access to assistive technology and contribute to the inclusion and participation of all assistive technology users in society.

Current knowledge around disability inclusion and inclusive design is largely limited to high income settings⁴. This research aims to counter that by building local and specific knowledge of what constitutes an inclusive environment in diverse, lower-and-middle-income countries (LMICs) by engaging directly with communities, industry and policy makers. This will build knowledge and generate actions around

² For further information on the AT2030 programme please visit <http://www.at2030.org>

³ For more information on GDI Hub’s approach to inclusive design please visit: <http://www.disabilityinnovation.com/inclusive-design>

⁴ Infrastructure and Cities for Economic Development (ICED), ‘Delivering Disability Inclusive Infrastructure in Low Income Countries’, Inception Report: Summary, 2019.



inclusive design that is adaptive to these diverse contexts. Research will take place in three areas:

1. The community experience of disability and the built environment;
2. Industry focused research on the awareness and application of inclusive design in practice; and
3. Policy focused research on the governance, guidelines and protocols of accessibility and inclusive design at the higher levels.

Through qualitative and participatory research, the project will engage diverse stakeholders interested in and influencing the built environment such as; decision-makers, urban planners, architects and Persons with Disabilities. It will generate new insights on the challenges and opportunities for an inclusive built environment and inclusive and accessible infrastructures and build a picture of what good inclusive designs looks like in different settings and cultures.

Inclusive Infrastructure summary:

- Three-year research programme
- 6 cities in 6 different countries, in low-and-middle-income settings
- Engaging local partners and diverse stakeholders
- Conducting research and engagement across the domains of policy, industry and people for inclusion in the built environment

Why does ‘inclusive infrastructure’ matter?

‘Access’, in its various forms, is a primary factor in the connection between disability and poverty. Where there is a lack of access, such as access to employment, access to essential infrastructure such as water or electricity, or access to safe spaces for women, inequality and social exclusion will increase. This can be both a cause or effect of either disability or poverty and is described as a ‘vicious cycle’⁵, reinforcing the relationship between disability and poverty^{6 7}. For example, in Mongolia, households with at least one person with a disability have double the poverty

⁵ Department for International Development, UK Government, ‘Disability, Poverty and Development’ (Department for International Development, 2000).

⁶ Christoffel J. Venter, Thomas E. Rickert, and David A. C. Maunder, ‘From Basic Rights to Full Access: Elements of Current Accessibility Practice in Developing Countries’, *Transportation Research Record: Journal of the Transportation Research Board* 1848, no. 1 (January 2003): 79–85, <https://doi.org/10.3141/1848-11>.

⁷ Department for International Development, UK Government, ‘Disability, Poverty and Development’.



incidence of other households⁸. Research on the multi-dimensional nature of poverty has also shown higher incidences of poverty in households with disabilities in middle-income settings compared to low-income settings, indicating a ‘disability development gap’⁹ and making clear the importance of disability inclusive development programmes.

People have a right to access the spaces, services and activities they would like, accessibility is a right that is set out in the UNCRPD¹⁰. Access can be either enabled or disabled by the built environment and infrastructure and this is understood best by those who experience inaccessibility in the built environment most profoundly, people with disabilities¹¹. To break cycles of disability and inequality, it is necessary to design accessible and inclusive environments. To do that there must be consensus on what barriers to accessibility exist in the built environment and what the barriers to designing, building, implementing and regulating accessible environments are. Justice-based approaches to disability and the built environment propose that, ‘the distribution of space is an important aspect of realizing justice for disabled persons’¹² highlighting the importance of designing and building inclusive infrastructure for creating more equitable societies.

Infrastructure, transport and the built environment represent one of the largest areas of investment for any country and ‘good’ infrastructure can be a driving force for positive change and achieving development goals. Infrastructure should be designed to support society. However, if it is inaccessible, it can exclude individuals or groups, diminish quality of life and infringe on human rights.

In lower-resourced settings, where basic infrastructure needs are great, accessibility is often taken as an extra and is rarely integrated as part of infrastructure development¹³. Inaccessible infrastructure profoundly impacts the freedom, independence and rights of people with disabilities and their ability to access

⁸ Asian Development Bank, ‘Living with Disability In Mongolia: Progress Toward Inclusion’ (Manila, Philippines: Asian Development Bank, December 2019), <https://doi.org/10.22617/TCS190596-2>.

⁹ Monica Pinilla-Roncancio and Sabina Alkire, ‘How Poor Are People With Disabilities? Evidence Based on the Global Multidimensional Poverty Index’, *Journal of Disability Policy Studies*, 17 May 2020, 104420732091994, <https://doi.org/10.1177/1044207320919942>.

¹⁰ Disability Inclusive and Accessible Urban Development Network (DIAUD), World Enabled, and CBM, ‘The Inclusion Imperative: Towards Disability-Inclusive and Accessible Urban Development. Key Recommendations for an Inclusive Urban Agenda’, 2016, 40.

¹¹ Aimi Hamraie, ‘Designing Collective Access: A Feminist Disability Theory of Universal Design’, *Disability Studies Quarterly* 33, no. 4 (5 September 2013), <https://doi.org/10.18061/dsq.v33i4.3871>.

¹² Victor Santiago Pineda, ‘Enabling Justice: Spatializing Disability in the Built Environment’, n.d., 14.

¹³ The World Health Organisation, ‘World Report on Disability’ (The World Health Organisation, 2011).



opportunities. Some of the factors contributing to inaccessible infrastructure include lack of knowledge or understanding among decision-makers around the implications of design choices, lack of user consultation and consideration of diverse needs and ‘missed opportunities’ to integrate added value through promoting equal access¹⁴. Previous research led by the iBuild centre on inclusive infrastructure has emphasized the importance of a more integrated and holistic understanding of infrastructure, including the wider and longer-term benefits to infrastructure spending and multi-scalar systems-based approaches¹⁵.

The World Report on Disability¹⁶ highlights the importance of ‘enabling environments’ for people with disabilities and defines these environments as physical, social and attitudinal environments. The implementation of policy, compliance and the suitability of existing standards on accessible environments in relation to low-resource settings, informal settlements and rural areas are all discussed as barriers to enabling environments. The report also suggests that the pace at which technologies to support people with disabilities are developing is ‘out-pacing’ the rate at which standards and regulations in the built environment can be developed calling for a more integrated and adaptive approach to regulating the build environment¹⁷.

A comprehensive understanding and application of inclusive design practices to infrastructure programmes would address some of these barriers. As one of the largest areas of investment in any country, infrastructure development has the opportunity to lead the way in terms of creating an enabling environment for people with disabilities¹⁸.

¹⁴ Agarwal and Steele, ‘Disability Considerations for Infrastructure Programmes’.

¹⁵ Richard Dawson, ‘Delivering Effective and Inclusive Infrastructure’, ESRC Evidence Briefings (Economic and Social Research Council, March 2018), <https://esrc.ukri.org/news-events-and-publications/evidence-briefings/delivering-effective-and-inclusive-infrastructure/>.

¹⁶ The World Health Organisation, ‘World Report on Disability’.

¹⁷ The World Health Organisation.

¹⁸ Hamraie, ‘Designing Collective Access’.



Why focus on cities in low-resource settings?

The world is rapidly becoming more urban and more than half the world's population live in urban settlements¹⁹. This growth is not always accompanied by equivalent infrastructure development, leading to wide gaps in urban equality or an 'urban divide'²⁰. Urbanisation is most widespread in low-and-middle-income settings, leading to the suggestion that 'poverty is urbanising'²¹. By 2050, 66% of the world's population will live in cities; 90% of which will be in low-middle-income settings²². UN-Habitat estimates that in 75% of cities people have less access to basic services, quality public spaces, affordable housing and livelihood opportunities than two decades ago and spatial inequality like this exacerbates social exclusion²³. The capability to connect to urban infrastructure, services and opportunities such as work and education are vital to building social inclusion.

According to the World Bank, urban inclusion is multi-dimensional and expressed through three domains: spatial inclusion, social inclusion and economic inclusion²⁴. These three domains are driven by principles of access (such as access to housing, land and essential services), opportunity (such as access to education and employment or access to increasing prosperity in the place they live) and the right to participation (the ability to participate in society). These principles offer a foundation for planning inclusive infrastructure.

Research on, 'what works' for disability inclusive infrastructure has shown the importance of taking city-wide or holistic approaches, to avoid siloed solutions within one type of infrastructure. Additionally, in low-resource settings, large components of infrastructure still need to be built and so there is an opportunity to 'get it right the first time' highlighting the relevance of focusing on inclusive infrastructure in lower-and-middle-income cities.²⁵

¹⁹ Bharat Dahiya and Ashok Das, 'New Urban Agenda in Asia-Pacific: Governance for Sustainable and Inclusive Cities', in *New Urban Agenda in Asia-Pacific*, ed. Bharat Dahiya and Ashok Das, *Advances in 21st Century Human Settlements* (Singapore: Springer Singapore, 2020), 3–36, https://doi.org/10.1007/978-981-13-6709-0_1.

²⁰ Dahiya and Das.

²¹ The World Bank, 'World Inclusive Cities Approach Paper' (The World Bank, May 2015).

²² 'New Urban Agenda' (United Nations, 2017).

²³ UN-Habitat, 'Flagship Programme 1: Inclusive, Vibrant Neighbourhoods and Communities' (UN-Habitat), accessed 19 September 2020, <https://unhabitat.org/programme/inclusive-vibrant-neighbourhoods-and-communities>.

²⁴ The World Bank, 'World Inclusive Cities Approach Paper'.

²⁵ Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries'.



Meeting global goals?

Cities, and particularly cities in low-resource settings, are central to the UN 2030 Agenda and the Sustainable Development Goals, most clearly marked through SDG 11: 'Make cities and human settlements inclusive, safe, resilient and sustainable'. Habitat III and the New Urban Agenda represented a shift in thinking around cities and urbanisation as a cause of poverty and exclusion to thinking about cities as sites of opportunity and marked an important moment of centring inclusion in development processes through participatory approaches to sustainable development. These global agendas have generated a vast amount of discussion on the topics of 'inclusive cities'^{26 27 28}. However, inclusive cities are often discussed in its broadest meaning and explicit attention to *disability-inclusive cities* and the design and construction of accessible and inclusive environments and infrastructure in high level policy agendas remains somewhat limited.

The UN2030 Agenda recognises that disability inclusion must be at the heart of poverty eradication²⁹ and the UNCRPD Article 9 and Target 3 of the Incheon Strategy to 'Make the Right Real for People with Disabilities in Asia' in 2012 explicitly connects access to the physical environment and an inclusive society: "*Access to the physical environment, public transportation, knowledge, information and communication is a precondition for persons with disabilities to fulfil their rights in an inclusive society.*" The Global Disability Summit in 2018 was a pivotal event in which inclusive infrastructure was highlighted as one of six spotlight issues where commitments to embedding disability inclusion in the infrastructure sector were made³⁰. To realise these policies, knowledge and guidance on disability inclusive design for cities in low-resource settings is necessary and so our research and these six case studies will help support making these policy goals a reality.

²⁶ Asian Development Bank, 'Enabling Inclusive Cities: Tool Kit for Inclusive Urban Development' (Manila, Philippines: Asian Development Bank, 1 December 2016), <https://doi.org/10.22617/TIM157428>.

²⁷ The World Bank, 'World Inclusive Cities Approach Paper'.

²⁸ Diana Mitlin and David Satterthwaite, 'On the Engagement of Excluded Groups in Inclusive Cities: Highlighting Good Practices and Key Challenges in the Global South', Urban Development Series Knowledge Papers (The World Bank, 2016).

²⁹ The World Health Organisation, 'World Report on Disability'.

³⁰ Infrastructure and Cities for Economic Development (ICED), 'Delivering Disability Inclusive Infrastructure in Low Income Countries'.



Why inclusive design?

*“Inclusive Design can help all human beings experience the world around them in a fair and equal way by creating safe and accessible environments for all members of the community.”*³¹

Inclusive design was highlighted by the former UK Department for International Development (now FCDO) as one of six key opportunity areas for ‘delivering disability inclusive infrastructure’³².

An accessible environment is often considered to be one that offers step-free level access whereas an inclusive environment goes further, looking at equality of experience in the built environment and infrastructure. Inclusive environments embrace diversity and flexibility, understanding that everyone has different needs and those needs are constantly changing³³.

Inclusive design is about genuine engagement and innovation, listening and making space for people. It is a practice that embeds participation and embraces diversity in solving design problems. It differs from universal design in how it embraces difference and recognises that ‘one size fits one person’ and ‘universal solutions’ are not always feasible or optimal to promote inclusion for everyone³⁴. Inclusive design can help to minimise social exclusion³⁵ and the inclusive design of the built environment has the potential to embed the principles of access, opportunity, participation and equity in the lived experience of cities, contributing to spatial, economic and social inclusion for people with disabilities.

In a world where 1 billion people need access to assistive technology, a world that is ageing and experiencing worsening inequality, designing and building a world that limits access or is unnecessarily challenging for people with disabilities is not an option. Inclusion benefits everyone.

³¹ Global Disability Innovation Hub, Queen Elizabeth Olympic Park, and London Legacy Development Corporation, ‘Inclusive Design Standards’, May 2019.

³² Infrastructure and Cities for Economic Development (ICED), ‘Delivering Disability Inclusive Infrastructure in Low Income Countries’.

³³ Global Disability Innovation Hub, Queen Elizabeth Olympic Park, and London Legacy Development Corporation, ‘Inclusive Design Standards’.

³⁴ World Economic Forum: Strategic Intelligence, ‘Global Issue: Inclusive Design. Curated by the Smithsonian Institution’, World Economic Forum: Strategic Intelligence, accessed 12 September 2020, <https://intelligence.weforum.org/topics/a1G0X0000057IniUAE?tab=publications>.

³⁵ Dr Ellie Cosgrave, ‘The Role of the Engineer in Creating Inclusive Cities’, n.d., 16.



The application of inclusive design principles, methods and practices to the holistic design of urban development and inclusion - be that policies, a city masterplan, road infrastructure, a building or a service – is an area that is under-investigated and requires research and engagement to understand what inclusive design looks like in resource-constrained contexts.

The holistic approach and practice of inclusive design can be applied to more than physically accessible designs. It can be used to build cohesion across sectors by placing disabled voices at the heart of problem solving. Inclusive design could also contribute to achieving the World Health Organisation's Disability Action Plan by offering methods to develop 'culturally appropriate person-centred approaches'³⁶.

Evidence shows that isolated interventions for urban development have limited success. To improve quality of life in cities, interventions and urban programmes need to be holistic and sustained over long periods of time³⁷. This calls for a deep understanding of context-based planning and design, where inclusive design can help by bringing together the people with the most intimate knowledge of the challenges to be solved. The opportunity for inclusive design in disability inclusive infrastructure does not just lie in technical design solutions but in how its practice could mediate multi-sectoral and cross-thematic approaches to pressing urban development challenges for people with disabilities.

What do we want to find out?

The over-arching research question for this sub-programme is, 'What is the current state of inclusive and accessible environments and infrastructure in LMICs and what is the role of inclusive design in creating an enabling environment for disabled people?'.

1. What legislation, policy, regulation and guidance currently exists to protect the rights of disabled people in the built environment in each case study city?

³⁶ F Khan et al., 'World Health Organization Global Disability Action Plan: The Mongolian Perspective', *Journal of Rehabilitation Medicine* 50, no. 4 (2018): 388–366, <https://doi.org/10.2340/16501977-2207>.

³⁷ Dahiya and Das, 'New Urban Agenda in Asia-Pacific'. Pg.23



2. What is the current awareness, understanding, acceptance and application of inclusive design in built environment policy, planning, design and construction among key stakeholders in each case study city?
3. What are the current barriers to and opportunities for inclusion in the built environment for people living with disabilities in each case study city?
4. How can inclusive design contribute to creating enabling environments for AT and AT users?



Introduction to the Case Study in Mongolia

This purpose of this case study is to explore inclusive and accessible environments in Ulaanbaatar, Mongolia, for people with disabilities through engagement with policy, industry and community stakeholders.

This is the first of six case studies analysing the state of accessibility and inclusive design in low-resource contexts around the world. The six independent case studies will then be analysed to develop a comparison report and finally a global action report that will offer evidence and recommendations that support making infrastructure, the built environment and urban development in low-resource settings more accessible and inclusive.

Across the Asia-Pacific region, urban economic growth has not been equal and the urban poor carry this burden. This region already houses over half the world's urban population and its urbanisation is only increasing³⁸. Major inequalities in access to housing, infrastructure and services, and affordable transportation³⁹ are found across cities in Asia and the Pacific. These inequalities in urban development, disproportionately affect people with disabilities and these case studies will contextualise the lives of people with disabilities across Asia and Africa through research on inclusion and accessibility in the built environment.

One of the Asian cities that is experiencing this rapid urbanisation is Ulaanbaatar in Mongolia. Mongolia is a landlocked country and the most sparsely populated country in the world. Since its transition to a democracy and free market economy in the 1990s, the country has seen rapid changes across economic, social and political spheres. These changes are accompanied by political ambitions for inclusive growth. However, the dimensions of social exclusion in Mongolia are complex and must consider social, cultural, environmental, economic and political factors such as Mongolia's history of nomadism and pastoralism. Research on social inclusion in Mongolia has shown that there can be a mismatch between policy narratives and

³⁸ Dahiya and Das.

³⁹ Judy L. Baker and Gauri U. Gadgil, eds., *East Asia and Pacific Cities: Expanding Opportunities for the Urban Poor* (The World Bank, 2017), <https://doi.org/10.1596/978-1-4648-1093-0>. Pp. XVIII

lived experiences⁴⁰ highlighting the importance of participatory and inclusive solutions to development approaches.

Ulaanbaatar is the capital city of Mongolia, home to around half of the country's 3 million inhabitants⁴¹. Around 60-70 percent of the city's inhabitants live in the unplanned settlements around the city centre, called the 'Ger areas'⁴². Much of the city as it is seen today developed during Mongolia's time within the Soviet Bloc and the remnants of this are visible in its architecture and urban planning⁴³. The Ger areas began to develop during the second half of the 20th century when the city experienced rapid urbanisation. The way in which the government responds to the challenges of rural-urban migration in Ulaanbaatar and the resultant Ger areas is considered one of the major challenges and opportunities to Mongolia achieving inclusive and sustainable development.

Inclusive growth and development for the city of Ulaanbaatar must address



The city is divided in two parts:
 1. a developed city centre that has reasonable access to services and infrastructure;
 2. the Ger Areas which have limited or no access to even basic infrastructure such as water and sewage systems.

Image sources: Google Streetview

⁴⁰ Bayartsetseg Terbish and Margot Rawsthorne, 'Social Exclusion in Ulaanbaatar City Mongolia', *Asia Pacific Journal of Social Work and Development* 26, no. 2–3 (2 July 2016): 88–101, <https://doi.org/10.1080/02185385.2016.1199324>.

⁴¹ Mongolian Statistical Information Service, '2015 Population and Housing', Census of Mongolia, 1 January 2016, www.1212.mn.

⁴² Asian Development Bank, 'Living with Disability In Mongolia'.

⁴³ Alexander C. Diener and Joshua Hagen, 'City of Felt and Concrete: Negotiating Cultural Hybridity in Mongolia's Capital of Ulaanbaatar', *Nationalities Papers* 41, no. 4 (July 2013): 622–50, <https://doi.org/10.1080/00905992.2012.743513>.



the inclusion of people with disabilities who can be most affected by the current urban development challenges. Since Mongolia ratified the UNCRPD in 2009, inclusion and recognition of the rights of people with disabilities has been improving, including the introduction of the Law on the Rights of Persons with Disabilities in 2016. However, while the legislative environment is improving, the extent to which this is creating an enabling environment and addressing barriers in the domains of spatial, social and economic inclusion is to be explored.

This case study will build a picture of the current state of inclusion and accessibility in the built environment and infrastructure in Ulaanbaatar through engaging local stakeholders and communities and explore the understanding of and potential for inclusive design to address some of the current barriers to inclusion. The case study will first describe the background research and contextual factors that influence questions of access and inclusion in the built environment in Ulaanbaatar. It will then describe the activities that took place before discussing insights, lessons learned, and actions towards inclusion for the city of Ulaanbaatar.



Background and Contextual Factors

Mongolia's population is growing, expected to reach 4 million by 2030 and as mentioned previously the country is rapidly urbanising, centred on the city's capital city, Ulaanbaatar. The statistics below give an indication of the population demographics and prevalence of disability. The statistics show that rates of disability are slightly higher among men, and in rural populations.

Statistics on Disability in Mongolia			
Population of Mongolia	3238479 ⁴⁴		
Population of Ulaanbaatar	1345500 ⁴⁵		
Population of People with Disabilities in Mongolia	105691 ⁴⁶	59700 male	46000 female
Population of People with Disabilities in Ulaanbaatar	35600 ⁴⁷	19700 male	15900 female

Disability and Accessibility in Mongolia

Since the mid-1990s Mongolia has been making progress towards disability inclusion, establishing the first Mongolian Social Security Law for People with Disabilities in 1995⁴⁸. Mongolia ratified the UNCRPD in 2009 and since then has made progress in disability and accessibility policy. Most importantly, in 2016 the Law on the Rights to Development for Persons with Disabilities was established. However, DPOs suggested that although the provisions and services the law sets out are sufficient, there is not enough budget to implement them⁴⁹. In 2017, Mongolia published the first White Paper on Disability, with another published in 2019⁵⁰ and one set to be released in 2020. These white papers are important as they

⁴⁴ 'National Statistics Office of Mongolia', 2020, <https://www.en.nso.mn/>.

⁴⁵ Mongolian Statistical Information Service, '2015 Population and Housing'.

⁴⁶ Government of Mongolia and JICA, 'White Paper on Disability in Mongolia 2019' (Government of Mongolia: Ministry of Labour and Social Protection, 2019).

⁴⁷ Government of Mongolia and JICA.

⁴⁸ Khan et al., 'World Health Organization Global Disability Action Plan'.

⁴⁹ Federation of Independent Living Organizations of Mongolia (MIL) and Tegsh Niigem, 'Submission from Disabled People's Organizations of Mongolia to Inform the Development of the List of Issues Prior to Reporting for a 2nd Periodic Review of Mongolia under the Convention on the Rights of the Persons with Disabilities', 29 July 2018.

⁵⁰ Government of Mongolia and JICA, 'White Paper on Disability in Mongolia 2019'.



consolidate Mongolia's disability policy through one document, building a monitoring and accountability process. These documents function as an 'knowledge infrastructure' to help embed disability-inclusive practice and share progress⁵¹.

The census collected data on disability for the first time in 2010, with the census set to be conducted every 10 years⁵². Data on disability is not robust and while just under 4% of the population is registered disabled, research by the Asian Development Bank suggests the statistic is not considered accurate and does not correlate with the WHO's estimated prevalence rates of disability^{53 54}. This may be due to the way in which disability is understood in Mongolia, with the medical or traditional model still prominent and the process of registering as a disabled person being medicalised. Disability is also defined as 'labour capacity loss', a common occurrence in Post-Soviet states, which has resulted in inconsistency and lower disability rates being recorded in the older population⁵⁵.

Of the registered population with disabilities, 29% report mobility impairments, 19% report intellectual impairments or mental health conditions, 15% report visual impairments, 12% hearing impairments and 6% speech-related impairments⁵⁶. People with acquired disabilities make up 56% of the population and the rates of disability due to accident or health issues are high⁵⁷. Rates of unemployment for people with disabilities in the working population are double, health costs are higher and the poverty rate in households with one or more person with disability is double⁵⁸. DPOs are concerned that employment for women with disabilities is much lower and a survey conducted by the DPO 'Tegsh Niigem' reports unemployment rates of 44 percent among people with disabilities and of those employed, 34% are

⁵¹ Masateru Higashida, 'Consolidating Information on Disability-Inclusive Policies: A Case Study on White Papers in Mongolia from the Perspective of International Technical Cooperation', *Asia Pacific Journal of Social Work and Development* 30, no. 2 (2 April 2020): 122–30, <https://doi.org/10.1080/02185385.2020.1713208>.

⁵² Gerelmaa Amgaabazar and Kate Lapham, 'Disability Is No Longer Invisible in Mongolia', Open Society Foundations, 12 June 2014, <https://www.opensocietyfoundations.org/voices/disability-no-longer-invisible-mongolia>.

⁵³ Asian Development Bank, 'Living with Disability In Mongolia'.

⁵⁴ Khan et al., 'World Health Organization Global Disability Action Plan'.

⁵⁵ Asian Development Bank, 'Living with Disability In Mongolia'.

⁵⁶ Khan et al., 'World Health Organization Global Disability Action Plan'.

⁵⁷ Government of Mongolia and JICA, 'White Paper on Disability in Mongolia 2019'.

⁵⁸ Asian Development Bank, 'Living with Disability In Mongolia'.



self-employed, 27% in governmental organisations, 15% at NGOs and 18% volunteer at NGOs⁵⁹.

Accessibility is embedded in legislation through the 2016 Disability Law, through 'access to a barrier free environment'. The Urban Development Law and Law on Construction were both updated in 2016 to expand on provisions for people with disabilities. However, the mechanisms to make those provisions are not clear. It is generally reported that the laws need to be implemented more systematically and that the 'aspirations of the law should be fulfilled'⁶⁰.

Accessibility standards exist, first developed in 2009, and are currently being updated. However, they are not mandatory. Research on accessibility in-country is limited, with evidence largely based on access audits that are not widely available⁶¹. DPOs are active in conducting assessments and audits in order to campaign for accessibility and an audit on public services conducted in 2014 and 2015 showed that less than one third of the facilities surveyed were sufficiently accessible⁶².

Environmental barriers reported by people with disabilities include;

- poor access to physical infrastructure
- lack of accessible transportation
- negative attitudes
- ineffective categorisation of disability in the law; and
- lack of access to assistive technology⁶³.

Challenges in living conditions include harsh winter weather, steps or lack of lifts in high rise buildings, lack of water, heating and sanitation infrastructure and external toilets in Ger Areas⁶⁴.

⁵⁹ Federation of Independent Living Organizations of Mongolia (MIL) and Tegsh Niigem, 'Submission from Disabled People's Organizations of Mongolia to Inform the Development of the List of Issues Prior to Reporting for a 2nd Periodic Review of Mongolia under the Convention on the Rights of the Persons with Disabilities', 29 July 2018.

⁶⁰ Asian Development Bank, 'Living with Disability In Mongolia'.

⁶¹ Sunil Deepak, 'Barriers Faced by Young Adults with Disabilities in Ulaanbaatar, Mongolia: Report of a Community-Based Emancipatory Disability Research (CB-EDR)' (Ulaanbaatar, Mongolia: Tegsh Niigem, n.d.).

⁶² Asian Development Bank, 'Living with Disability In Mongolia'.

⁶³ Delgerjargal Dorjbal et al., 'Living with Spinal Cord Injury in Mongolia: A Qualitative Study on Perceived Environmental Barriers', *The Journal of Spinal Cord Medicine* 43, no. 4 (3 July 2020): 518–31, <https://doi.org/10.1080/10790268.2019.1565707>.

⁶⁴ Danielle Morante, 'Occupational Therapy Emerging in Mongolia: A Case Study', *World Federation of Occupational Therapists Bulletin* 73, no. 2 (3 July 2017): 88–93, <https://doi.org/10.1080/14473828.2017.1281870>.



Disabled Persons' Organisations (DPOs) are very active in Mongolia. The latest White Paper on Disability, produced by the Ministry of Labour and Social Protection, reports 43 active DPOs in Mongolia⁶⁵. A submission for the second review of the UNCRPD in Mongolia led by DPOs in 2018 outlined matters of concern for people with disabilities in Mongolia. The submission highlights the need for better awareness among the general public and suggests DPOs could conduct disability awareness training. On accessibility, they report it remains an issue in public facilities, that the general rules or standards don't work when applied to specific buildings and that a lack of consultation with people with disabilities in the design process is a driving problem. The report describes how the lack of enforcing mechanisms for legal obligations infringes on people with disabilities rights and that an anti-discrimination law is needed to support and promote equal participation. The DPO 'Universal Progress' ILC conducted a series of accessibility audits between 2015-2018 and subsequently found that these evaluations have not yet resulted in the uptake of changes. Public facilities say they have no budget for accessibility and adaptation with any changes that do take place often funded by international agencies. This demonstrates that better knowledge of the norms and standards is needed and also highlights a lack of people with disabilities in the workplace, as improvements are not being demanded by staff⁶⁶.

Another area of concern among DPOs is the lack of understanding around independent living and community-based rehabilitation, the government is still focused on residential care. It is the view of DPOs that the approach to disability must be changed from the traditional or medical view in order to support independent living. The current perception means that most of the social welfare budget is allocated to nursing homes and rehabilitation institutions. An example of this is that the salary for personal assistants is less than half the national minimum average salary; and the support of personal assistants is essential to facilitate independent living and equal participation. Another issue raised is that there is a lack of clarity over which government department should fund independent living.

Recommendations from the DPOs submission the UNCRPD Commission include; a yearly plan to make public facilities and transport more accessible and that

⁶⁵ Government of Mongolia and JICA, 'White Paper on Disability in Mongolia 2019'.

⁶⁶ Federation of Independent Living Organizations of Mongolia (MIL) and Tegsh Niigem, 'Submission from Disabled People's Organizations of Mongolia to Inform the Development of the List of Issues Prior to Reporting for a 2nd Periodic Review of Mongolia under the Convention on the Rights of the Persons with Disabilities', 29 July 2018.



information be provided on why existing standards have not been enforced when buildings go through approval processes. They ask whether further standards are planned and what the current status of plans for accessible transport is including any plans to upgrade. For example, by when will all buses be wheelchair accessible? A suggested action is to ensure timetable information for public transport is available in an accessible format for disabled public transport users.⁶⁷

A recent emancipatory research project⁶⁸ on the barriers experienced by people with disabilities in Mongolia sets out barriers across 12 domains:

1. barriers faced by people with disabilities in the Ger Areas, and barriers to:
2. public transport
3. social welfare services
4. independent living
5. sexual health/sexuality
6. employment
7. education
8. non-discrimination
9. personal assistants and support
10. empowerment
11. health services; and
12. assistive technology.

Barriers from physical infrastructure and environments intersect with barriers to opportunities and issues around discrimination can come from both public and private life. Barriers also fluctuate depending on personal and contextual factors and addressing these barriers for people with disabilities would have wider benefits⁶⁹.

The findings highlight that most research on disability in Mongolia is focused on medical rehabilitation, meaning there is limited information on environmental barriers. The research suggests there is a link between inaccessible physical and legislative environments and disempowerment among people with disabilities. It also specified the importance using research to promote solutions and encourage positive change, not focusing solely on problems. However, a comprehensive understanding of barriers could provide a roadmap for service providers and decide priorities for advocacy work⁷⁰.

⁶⁷ Federation of Independent Living Organizations of Mongolia (MIL) and Tegsh Niigem.

⁶⁸ Deepak, 'Barriers Faced by Young Adults with Disabilities in Ulaanbaatar, Mongolia: Report of a Community-Based Emancipatory Disability Research (CB-EDR)'.

⁶⁹ Deepak.

⁷⁰ Deepak.



Culture and History in Ulaanbaatar's Development

Mongolian history and culture is rich and varied, rooted in nomadic traditions⁷¹. Research indicates that plans towards urban development and densification can be at odds with people's way of life⁷² and access to land and open space are important parts of Mongolian culture. The city of Ulaanbaatar began as a Buddhist mobile 'yurt-based' monastery in 1639⁷³. This historic city of 'Örgöö' (as Ulaanbaatar was formerly known) migrated depending on water and grazing land availability or the presence of hostile forces. The city settled in its current location in 1778, the location offering access to water and trade routes, functioning as a motivator to a more sedentary settlement pattern. Over the course of its history, both the country and city have been subject to fluctuating geopolitical influences between Russia and China. In 1921, after the revolution, the country became known as the People's Republic of Mongolia and while nominally independent, it was still part of the Soviet sphere. One of the changes that ensued was the renaming of the city as Ulaanbaatar, 'red hero' in 1924. The changes the city has undergone in the years since becoming independent in 1990 indicate a city in a flux, a city negotiating diverse ideologies and ambitions, such as the dichotomy between nomadic and sedentary ways of life or socialist legacies and neo-liberal or market-driven development and these tensions are evident in the very fabric of the city⁷⁴.

Social and community structures are often rooted in collective ways of life in Mongolia, offering opportunities for community development if stakeholders can be sensitive to these community connections⁷⁵. Civil society and NGOs are very active in Mongolia, although residents that are newer to the city are less likely to be involved, which may worsen exclusion among rural to urban migrants. Research indicates that rapid urbanisation is altering family and community structures, causing

⁷¹ Zsolt Szilágyi, 'Lingering Nomad Ideology in 21st Century Mongolia', *Acta Ethnographica Hungarica* 61, no. 1 (June 2016): 197–211, <https://doi.org/10.1556/022.2016.61.1.9>.

⁷² Raven Anderson, Michael Hooper, and Aldarsaikhan Tuvshinbat, 'Towers on the Steppe: Compact City Plans and Local Perceptions of Urban Densification in Ulaanbaatar, Mongolia', *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* 10, no. 2 (3 April 2017): 217–30, <https://doi.org/10.1080/17549175.2016.1223739>.

⁷³ Aubrey Menard, *Young Mongols: Forging Democracy in the Wild, Wild East* (Penguin Random House SEA, 2020).

⁷⁴ Diener and Hagen, 'City of Felt and Concrete'.

⁷⁵ Terbish and Rawsthorne, 'Social Exclusion in Ulaanbaatar City Mongolia'.



a breakdown in traditional collective relations with the adaptation to city life^{76 77}. Ger area residents can experience barriers to social participation driven by; poor physical infrastructure, poor access to public services, limited engagement in civil society and limited social networks⁷⁸. The historical and cultural tradition of kinship associated with nomadic ways of life, in which collective community relations are rooted, should be considered in urban planning and development in order to design a built environment that is socially and culturally inclusive and appropriate. Nomadic ways of life in Mongolia also reflect a more sustainable relationship with nature and land⁷⁹ which may offer valuable insights for inclusive and *sustainable* development that adapts to climate and urban change.

Urban Development and Living Conditions

Ulaanbaatar city sits in a valley on the Tuul river at the foot of the Bogd Khan Uul Mountain. As the capital, the city is both politically and economically important with two thirds of Mongolian GDP produced in the city in 2013⁸⁰. As outlined in the history of the city, the urban context in Ulaanbaatar is rapidly changing. The city was designed for a population of half a million and is now resident to more than three times that, varying reports now estimate the population is between 1.4 -1.7 million. More than half the country's population is living in 0.2% of its land⁸¹. The three city's major urban development challenges are: rural to urban migration, lack of infrastructure and a lack of strong legislation on land use⁸². These three factors are causing further problems such as damage to the environment, inadequate housing supply, traffic, inappropriate land use and expansion; exacerbated by a lack of

⁷⁶ Ilana Stol and Enkhjargal Adiya, 'Intergenerational Relationships in Mongolia: Togetherness as a Family Unit', *Journal of Intergenerational Relationships* 8, no. 1 (4 March 2010): 83–89, <https://doi.org/10.1080/15350770903520783>.

⁷⁷ Caroline Upton, 'Social Capital, Collective Action and Group Formation: Developmental Trajectories in Post-Socialist Mongolia', *Human Ecology* 36, no. 2 (April 2008): 175–88, <https://doi.org/10.1007/s10745-007-9158-x>.

⁷⁸ Terbish and Rawsthorne, 'Social Exclusion in Ulaanbaatar City Mongolia'.

⁷⁹ Hirofumi Sugimoto et al., 'Living Environment of Nomads Residing on the Outskirts of Ulaanbaatar, Mongolia—Dispositional Characteristics from the Perspective of a Comparison of Nomads and People Living in Ger Fixed Residences in the City —', *Journal of Asian Architecture and Building Engineering* 6, no. 2 (November 2007): 283–90, <https://doi.org/10.3130/jaabe.6.283>.

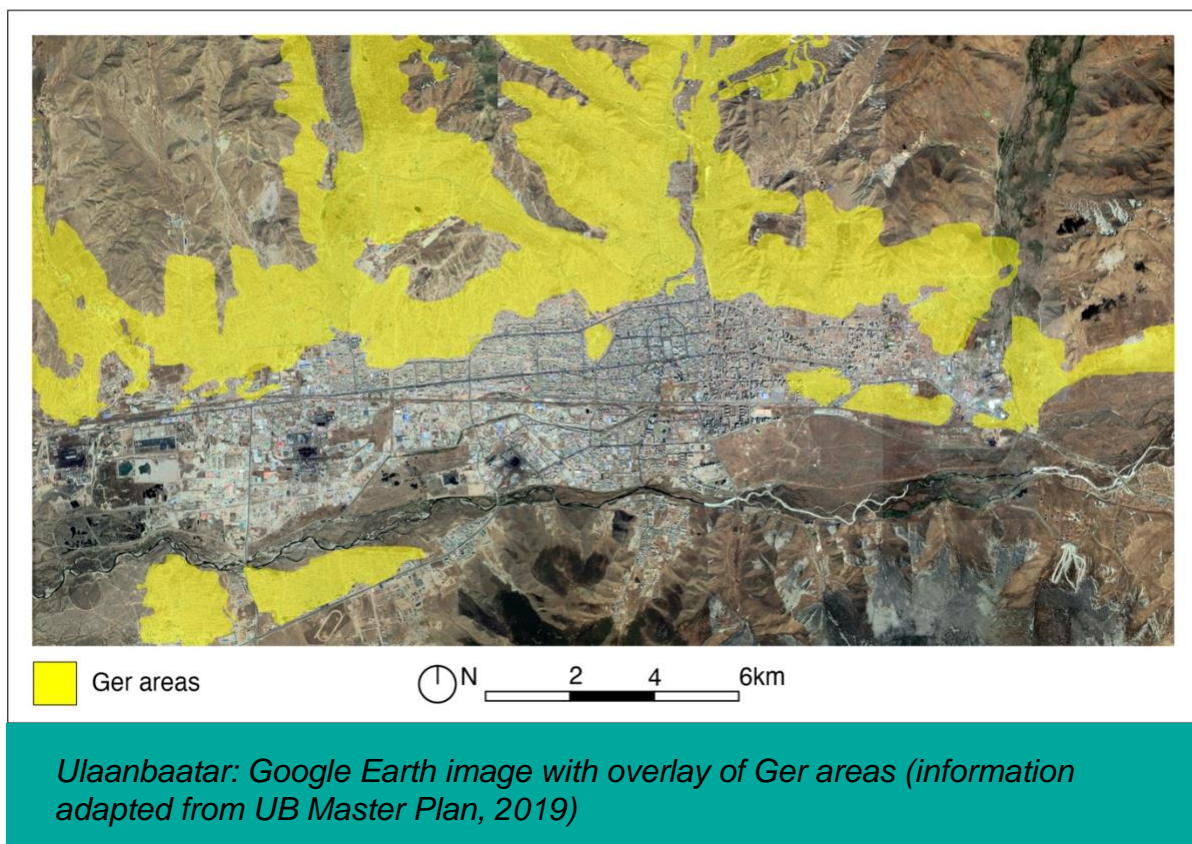
⁸⁰ Peilei Fan, Jiquan Chen, and Ranjeet John, 'Urbanization and Environmental Change during the Economic Transition on the Mongolian Plateau: Hohhot and Ulaanbaatar', *Environmental Research* 144 (January 2016): 96–112, <https://doi.org/10.1016/j.envres.2015.09.020>.

⁸¹ Menard, *Young Mongols*.

⁸² Government of Mongolia and Asia Foundation, 'Ulaanbaatar Master Plan 2020 and Development Approaches for 2030: Technical Summary', 2014, <https://asiafoundation.org/publication/ulaanbaatar-city-master-plan-technical-summary/>.

funding, institutional capacity and legal environment and an inappropriately centralised city⁸³.

High-levels of rural-urban migration is caused by both the impact of extreme weather events on rural livelihoods and the drivers of access to opportunities in employment and education in the city⁸⁴. The main impact of this rapid urbanisation has been the expansion of the Ger areas, large areas of unplanned settlements formed of plots of lands with 'Ger' tents, which house 60-70% of the city's population.



The Ger areas lack basic infrastructure, residents rely on water points to collect fresh water and stoves for cooking and heating. Around half of the residents of the Ger areas still live in Ger tents and half in houses⁸⁵ and only 42% of houses have access to indoor toilets⁸⁶. Ger area residents are more likely to work in manual labour

⁸³ Government of Mongolia and Asia Foundation.

⁸⁴ Fan, Chen, and John, 'Urbanization and Environmental Change during the Economic Transition on the Mongolian Plateau'.

⁸⁵ Takuya Kamata et al., *Managing Urban Expansion in Mongolia: Best Practices in Scenario-Based Urban Planning* (The World Bank, 2010), <https://doi.org/10.1596/978-0-8213-8314-8>.

⁸⁶ Mongolian National Statistics Office, 'Main Findings of the 2010 Population and Housing Census', 2010, en.ubseg.gov.mn/content/49.



professions such as the manufacturing and construction sectors (both representing 15% of the labour force in these areas)⁸⁷. Access to employment in these sectors is limited for people with disabilities and indicate that access to opportunities for employment for people with disabilities in the Ger Areas may be more difficult.

Transport infrastructure is poor in the Ger Areas⁸⁸, there is limited access to public transport and roads are unpaved leading to poor drainage, dust and safety hazards such as potholes. Lack of street lighting is also considered a hazard and a factor in the higher crime rates in Ger areas⁸⁹. A study showed that 67.6% of respondents living in Ger Areas would not feel safe walking the streets at night, with women being the group most likely to report this fear⁹⁰. Another study on transport and social equity in Ulaanbaatar also found that women are the greater user of public transport and due to safety issues and childcare duties experience more challenges in using the services. The study also added that stray dogs are an issue for pedestrians⁹¹. This study also showed that people living in Ger areas often need to rely on more than one mode of transport, such as taking a shared taxi to reach a bus stop, due to the gaps in the public transport system⁹².

The inclusion of the Ger Areas in city planning brings together the three urban development challenges in the city. Priority areas for urban development centre on access to infrastructure and services in the Ger Areas such as roads, heating systems, solid waste management, affordable housing and access to utilities⁹³. As an example, Ulaanbaatar is heated by a central infrastructure system which Ger area residents do not have access to, meaning 60% of the city are left without heating. Private costs of heating in Ger areas are significantly higher (\$200 - \$500 annual) than the costs of using the central system (\$72 annually)⁹⁴, exacerbating inequality and reinforcing poverty cycles.

⁸⁷ Kamata et al., *Managing Urban Expansion in Mongolia*.

⁸⁸ Iqbal Hamiduddin et al., 'The UNAA Project: Ulaanbaatar Accessibility Appraisal', n.d., <https://www.unaa-project.org/>.

⁸⁹ Kamata et al., *Managing Urban Expansion in Mongolia*.

⁹⁰ Terbish and Rawsthorne, 'Social Exclusion in Ulaanbaatar City Mongolia'.

⁹¹ Iqbal Hamiduddin, 'Travel and Social Equity in Ulaanbaatar's Ger Districts: The Case of Khoroo 31', www.unaa-project.org.

⁹² Hamiduddin.

⁹³ Kamata et al., *Managing Urban Expansion in Mongolia*.

⁹⁴ Yun Wu et al., 'Paving the Way to a Sustainable Heating Sector A Roadmap for Ulaanbaatar Urban Heating', Energy Sector Management Assistance Program (ESMAP) (The World Bank, 2019)



Prevailing development plans for Ulaanbaatar indicate a trend towards urban densification, but concerns exist around the limited evidence on the benefits and social impact of urban densification in lower-resourced settings⁹⁵. Research has shown that Ger Area residents generally prefer to live in small groups of low-rise apartments rather than high rise apartment blocks indicating that local support for densification plans should be investigated⁹⁶. Another survey suggested that 70% of Ger area residents would refer to stay in their homes, citing the importance of being able to step out of their Ger directly to green space and the freedom and flexibility of the nomadic structures⁹⁷. However, plans for affordable housing to address some of the Ger areas infrastructure issues are underway, led by the Asian Development Bank, and a survey in 2016 showed that 60% of residents would be willing to relocate if the proposed housing was acceptable and affordable⁹⁸. These projects have great potential to improve living conditions in the Ger areas, but attention to accessibility and inclusion is key to ensure the solutions are equitable. The impact on accessibility of higher density accommodation should also be considered in development plans.

Urban planning is relatively new to Ulaanbaatar and much needed in order to resolve the city's division between a more affluent centre and the surrounding Ger areas⁹⁹. The vision for the city centres around preserving nomadic heritage and environmental sustainability while developing to become a technological centre, 'a smart city with Mongolian character'. The 2030 Master Plan defines urban planning priorities as follows:

- Priority 1: Ulaanbaatar will be a safe, healthy and green city that is resilient to climate change.
- Priority 2: Ulaanbaatar will provide a liveable environment for its residents through appropriate land use planning, infrastructure and housing.
- Priority 3: Ulaanbaatar will be a city with good governance and a developed legal environment that serves the general public and private sector.

⁹⁵ Anderson, Hooper, and Tuvshinbat, 'Towers on the Steppe'.

⁹⁶ Terbish and Rawsthorne, 'Social Exclusion in Ulaanbaatar City Mongolia'.

⁹⁷ Menard, *Young Mongols*.

⁹⁸ Asian Development Bank, 'ADB to Help Ulaanbaatar Transform Its Ger Areas into Eco-Districts', Asian Development Bank, 28 August 2018, <https://www.adb.org/news/adb-help-ulaanbaatar-transform-its-ger-areas-eco-districts>.

⁹⁹ John Larkin and Gantuya Ganzorig, 'Case Study: Can Better Urban Planning Help Ulaanbaatar Glimpse a Brighter Future?', Asian Development Bank, 16 August 2018, <https://www.adb.org/results/can-better-urban-planning-help-ulaanbaatar-glimpse-brighter-future>.



- Priority 4: Ulaanbaatar will encourage the further development of settlements, towns and satellite cities outside the city centre.
- Priority 5: Ulaanbaatar will be one of Asia's tourist destination cities.
- Priority 6: Ulaanbaatar will have an internationally competitive business centre and develop as a world-standard capital city.¹⁰⁰

These priority areas are reflected through a decentralised approach that will connect the Ger areas to the city through sub-centres. Some urban planners suggest that the development of transportation infrastructure is focused on roads and car travel, despite research that indicates transportation by car only makes up 23.4% of the city's demand, with travel by bus and walking making up larger percentages at 33.7% and 31% respectively¹⁰¹. Pedestrian travel is not prioritised despite being the second largest transport mode. Walking in Ulaanbaatar is not considered to be very safe with the Government of Mongolia reporting that 80% of traffic fatalities from 2000-2007 were pedestrians¹⁰². People also described injuries coming from all directions including above (from construction sites) and below (potholes)¹⁰³.

It is inscribed in law that all Mongolians have the right to land tenure and have the right to a plot of 0.7 hectares of land when they migrate to the city, one of the factors behind the growth of the Ger Areas¹⁰⁴ ¹⁰⁵. This has resulted in residents in Ger areas being more likely to own their house than people living in apartments as the cost of constructing a Ger on a plot of land is much lower. However, the process through which Mongolians can acquire the rights to this land are complex and bureaucracy can be a barrier, resulting in informal occupation through the construction of *hashaas* (fences) around their land plots. These *hashaas* are described as a form of personal or relational infrastructure that people use to assert their right to land, and in some cases use as a tool to acquire more land¹⁰⁶. Redevelopment plans for the Ger areas

¹⁰⁰ Government of Mongolia and Asia Foundation, 'Ulaanbaatar Master Plan 2020 and Development Approaches for 2030: Technical Summary'.

¹⁰¹ Menard, *Young Mongols*.

¹⁰² Herbert Fabian et al., 'Walkability and Pedestrian Facilities in Asian Cities: State and Issues', ADB Sustainable Development Working Paper Series (Asian Development Bank, 2010), http://www.indiaenvironmentportal.org.in/files/Walkability_Final_Report_15Oct2010.pdf.

¹⁰³ Menard, *Young Mongols*.

¹⁰⁴ JICA, 'Ulaanbaatar, a Reborn City: 10 Years of Urban Development in a Rapidly Expanding City', News, 26 October 2016, https://www.jica.go.jp/english/news/field/2019/20191016_01.html.

¹⁰⁵ Menard, *Young Mongols*.

¹⁰⁶ Rebekah Plueckhahn and Terbish Bayartsetseg, 'Negotiation, Social Indebtedness, and the Making of Urban Economies in Ulaanbaatar', *Central Asian Survey* 37, no. 3 (3 July 2018): 438–56, <https://doi.org/10.1080/02634937.2018.1442318>.



which focus on rehousing Ger residents must take into account residents land rights¹⁰⁷, the community support for redevelopment plans and preferences for housing typologies.

Health, Environment and Climate

Health, environmental conditions and the climate are closed linked in Mongolia. Mongolia has an extreme climate, with temperatures fluctuating between -40°C in winter and +40°C in the summer. One of the major drivers of urban poverty in Mongolia, and the rapid rural-urban migration, is linked to severe winter snowstorms, known as the 'Dzud'.

The rapid urban growth has expanded spatial inequalities in income and opportunity and impacted on health and wellbeing. Barriers to healthcare provision in Ulaanbaatar relate to the 'interacting effects of poverty, unhealthy daily living environments, social vulnerability and isolation', particularly for the urban poor. The health system is also not adequately prepared to support the needs of people with disabilities¹⁰⁸.

In Ulaanbaatar's Ger areas, the combination of the cold winter and lack of basic water, sanitation and heating infrastructure exacerbate environmental health conditions, with contaminated air, water and soil¹⁰⁹. The Ger areas account for 80% of the city's pollution¹¹⁰. Air pollution, exposure to metal pollutants in water, air and soil, lack of water and sanitation and occupational exposures are all prominent environmental risk factors for health. In the Ger areas, indoor air pollution is also an issue, created by the coal burning stoves that are the only form of heating available to the Gers. The lack of road infrastructure in the Ger areas also creates dust leading to pollution and dirty internal living environments. Ventilation and better cooking facilities are needed in the Gers to improve health¹¹¹. WASH-related hazards are a

¹⁰⁷ Amnesty International, 'Falling Short: The Right to Adequate Housing in Ulaanbaatar, Mongolia' (Amnesty International, 2016).

¹⁰⁸ Khandsuren Lhamsuren et al., 'Taking Action on the Social Determinants of Health: Improving Health Access for the Urban Poor in Mongolia', *International Journal for Equity in Health* 11, no. 1 (2012): 15, <https://doi.org/10.1186/1475-9276-11-15>.

¹⁰⁹ Amarzaya Jadambaa et al., 'The Impact of the Environment on Health in Mongolia: A Systematic Review', *Asia Pacific Journal of Public Health* 27, no. 1 (January 2015): 45–75, <https://doi.org/10.1177/1010539514545648>.

¹¹⁰ Aubrey Menard, 'Mongolia's Urban Planning Paradox', *New America Weekly*, 31 August 2020, <https://www.newamerica.org/weekly/mongolias-urban-planning-paradox/>.

¹¹¹ Yeonghwa So et al., 'Characteristics of Lifestyle and Living Environment of Ger District Residents in Ulaanbaatar, Mongolia', *The Korean Journal of Public Health* 55, no. 2 (31 January 2019): 12–21, <https://doi.org/10.17262/KJPH.2018.12.55.2.12>.



concern, both in the use and disposal of water¹¹². An example is that living in the Ger areas, people do not have access to running water or drainage, so when they cook wastewater is poured directly into the unpaved street. This causes flooding or muddy and unsanitary conditions even when the weather is dry, creating accessibility challenges and detrimental effects on hygiene¹¹³. The lack of water and sanitation infrastructure creates barriers to accessibility and inclusion for people with disabilities as hygiene and sanitation is more difficult to maintain and the labour associated with daily tasks such as chopping wood and collecting water can be harder or impossible.

¹¹² Sayed Mohammad Nazim Uddin et al., 'Exposure to WASH-Borne Hazards: A Scoping Study on Peri-Urban Ger Areas in Ulaanbaatar, Mongolia', *Habitat International* 44 (October 2014): 403–11, <https://doi.org/10.1016/j.habitatint.2014.08.006>.

¹¹³ Deepak, 'Barriers Faced by Young Adults with Disabilities in Ulaanbaatar, Mongolia: Report of a Community-Based Emancipatory Disability Research (CB-EDR)'.



Summary of activities

Research activities took place in June – August 2020 in three phases. The research combined virtual and face to face research activities and followed local protocols around the COVID-19 pandemic.

Phase 1 focused on understanding the current state of accessibility in the built environment in Ulaanbaatar through desk research, document reviews, working sessions and stakeholder mapping. Interviews took place with key stakeholders including; government officials, architects, urban planners, project managers and development sector advisors.

Phase 2 focused on capturing the lived experience of people with disabilities in Ulaanbaatar and their experience of the built environment and infrastructure. Interviews, photo diaries and co-design activities were employed to understand; the challenges and barriers people with disabilities face in the city, areas where good practice can be found and aspirations for a more inclusive city.



Photo Diaries: In this image one of our participants is showing the difficulties of using the bus

Phase 3 focused on synthesising the findings of the previous two phases by holding a series of workshops to discuss and validate the initial findings. The aim of these sessions was to identify, 'actions towards inclusive environments' by identifying shared challenges and opportunities across diverse stakeholders. The workshops employed participatory inclusive design techniques to develop insights and priority areas for action and allowed participants to gain experience in inclusive design methods that could be applied to their own work.

The research engaged three key stakeholder groups; government and policy, industry and communities. 15 stakeholder interviews were undertaken with government and industry professionals operating in the domains of inclusion, accessibility and/or the built environment. 10 interviews and 5 photo diaries with

interviews were conducted with people with disabilities. Across the interview the gender balance was 17 male, 13 female participants with a gender balance among our disabled participants of 8 male to 7 female participants. Age groups ranged from 18-29 to 60+ with the majority of participants between 30-39 (12) and 40-49 (8). Our disabled participants had a mixture of mobility, visual and hearing impairments. Two workshops, one with disabled participants and one multi-stakeholder workshop took place where exploratory co-design activities were used to discuss the findings from the primary data. Activities included journey mapping, participatory mapping and priority setting. An additional workshop took place with the immediate research team to validate the research findings.

We also met with seven organisations operating in this field to inform our research. These included multi-national development organisations, local non-governmental organisations and architectural practices.



Co-design Workshop with Remote Collaboration

Who has a stake in inclusive design and an accessible built environment in Mongolia?

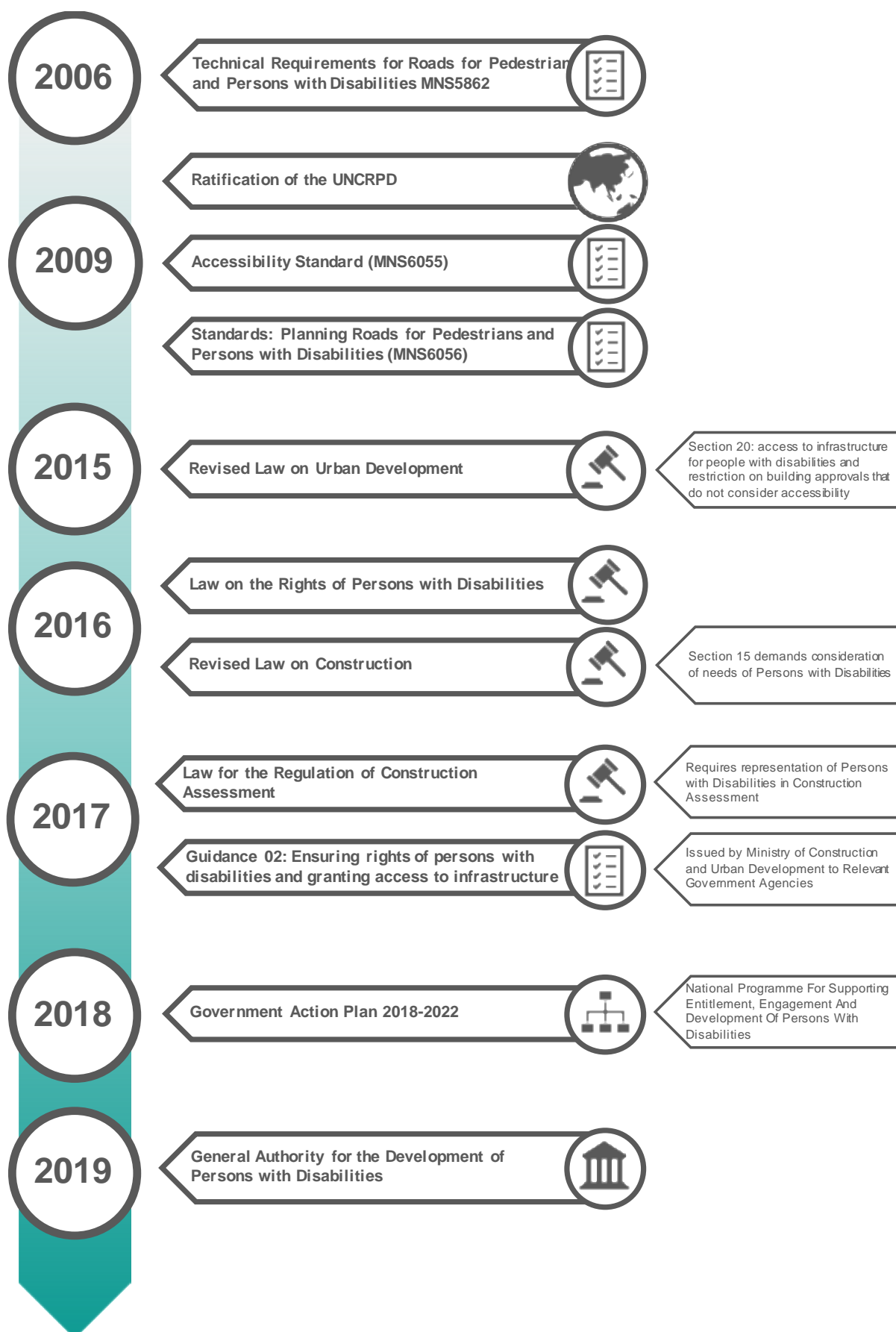
To identify who has a stake in a more inclusive and accessible built environment, the team conducted a virtual mapping session to identify relevant stakeholders. This was built on with the findings from the primary data to build a picture of all stakeholders, including those who can benefit from a more inclusive environment, and those that play a role in shaping it.



Virtual stakeholder mapping activities



Pathway to inclusion – where are they?





Insights

Thematic analysis was used to explore research data, identifying important themes across the different stakeholder groups of; policy, community and industry. The insights are organised by themes, touching on the different stakeholder perspectives throughout.

Lived Experience of Disability in Ulaanbaatar

What is like to be a disabled person in Ulaanbaatar?

People with disabilities experience many barriers in accessing the built environment and feeling included. Examples of their experiences include:

“Living in Ulaanbaatar with disability is difficult. Even if the city becomes accessible we don’t have programs and policy to socialize for new disabled people. We need to do so many works on psychological support and give hope to live for people with disabilities. Also, people with disabilities have to try/work hard and be strong because no one will talk and work for us unless we do.”



Participants felt stigma in the built environment

“The place that I would like to go is quite difficult. So I try not to go.”

Physical accessibility and the challenges associated with mobility impairments are best understood by all stakeholders, but the built environment still presents many issues for people with reduced mobility: *“every step I face stairs and steps”*.

Participants talked about how places that were considered accessible were still not accessible for all users and not considerate of different disabilities. This indicates the need for better inclusive design training that considers a spectrum of abilities.

Examples included Deaf participants feeling unable to go to restaurants as staff do not know sign language or being unable to access services due to communication



and information barriers: *“everyone has equal rights on law but I could not get enough information”*.

“We should reserve the table before we go to restaurant, we cannot reserve by online or phone. The people in restaurant don’t know sign language. So, we meet at someone’s home”



Kitchen accessibility was a challenge for one participant

Homes are generally not accessible, with some participants describing how they had made adaptations to move around their house and conduct day to day activities. However, in most cases, living spaces were not wheelchair accessible, including kitchens, doorways to enter different rooms, or even access to the house or apartment itself: *“Our house has high stairs on the outside and no ramps. It was already built when we bought it and the constructors did not plan it to be accessible”* and *“my*

home is not accessible, so I mostly spend time in bed”. From one perspective, the Ger structure avoids some accessibility challenges as it is one level and consists of a relatively flexible construction. However, one participant said that access to and from the Ger, due to a high step, and the lack of an interior toilet are accessibility barriers.

Physical accessibility was closely connected to attitudes and mental health. Stress brought on by inaccessibility was itself a barrier to feeling included and being able to participate fully in society. Stigma and discrimination were discussed by the participants both in public and private life, making clear the importance of how good inclusive design should also help to make people feel welcome and comfortable.

Where do people want to live and spend their time?

Participants lived in different parts of the city and different housing types, from Gers to apartments and houses. Some of the participants valued quiet spaces and talked about how living in the city centre can be very noisy. The Ger areas can be quieter as houses are typically further from the roads. People expressed positives and



negatives about the different types of accommodation, but multiple participants said they had moved to an apartment and that it was better for them than living in the Ger Areas.

“It is cleaner than living in a Ger. My apartment where I live is in one of the old 9 floor building, which means it has lot of stairs in it.”

One participant with visual impairments talked about how living in one place had benefits because they knew the layout so well: *I am living there since I was born so I know every corners and things (furniture) at home*. Another participant said: *“I am adapted to the inside environment of my house”*. Familiarity and comfort can be important aspects of an inclusive living environment and urban development plans should consider this within rehousing plans.

“I like to change my environment”

The ability to participate in diverse activities from work and education to entertainment and socialising is an important aspect of an inclusive city. Recreational activities and green spaces were prominent features of the photo diaries and co-design activities. Karaoke places were somewhere people go to for fun and to relieve stress, but they are not accessible. Accessibility issues specific to karaoke venues included; stepped entrances without ramps, inaccessibility of the karaoke equipment for people with visual impairments and lack of sensitivity of staff and other customers towards people with disabilities. For one participant, being able to access manicure places was important as their nails were frequently damaged by their wheelchair use.



A photo diary entry illustrating the inaccessibility of karaoke venues

The accessibility of cultural spaces could also be improved and was identified as a priority during a workshop. Examples of this include a blind participant wanting to



visit a museum but they were not allowed to touch anything so were unable to have an equal user experience. The national park is seen as both a cultural venue and recreational space. Sport is an important part of Mongolian culture and access to green, open space is valued. However, the national park is limited in its accessibility with a single accessible toilet at the entrance that is poorly maintained and steps in some parts of the park. On the positive side, the park is generally seen as quite inclusive and it is equipped with dedicated exercise equipment that participants like to use. The accessibility of the park is further limited by public transport inaccessibility and for some participants the cost of taxis was a barrier to being able to visit the park. This mirrors participants discussion about living conditions where they frequently commented on how leaving the house and getting home were the most difficult aspects of their day.

“Mostly, I like to visit to national park, game centres and other public places with my girlfriend. Only difficulties are on the way to there and to home. It happens to go through broken road, sidewalk less streets and some stairs.”



DPOs provide a space to socialise

DPOs are a major support for people with disabilities, and a source of social connection. Spaces like this that are free of stigma are important: *“I like to visit Universal Progress ILC. When I go to other places people don’t understand my speech. I have many friends here and I can freely talk with them. They can understand me.”* Spaces where people **feel** included are as important as

physically accessible spaces: *“I like to go to the places where people’s attitude are nice”*. Both physical accessibility and public attitude were described as deterrents to participating in public activities.



Urban Development, Infrastructure and Land

The disconnected city

Life in the Ger areas can be very different to living in the more developed part of the city. Three of the major issues for people with disabilities are that:

- people don't have access to a toilet within their home,
- they are not connected to water and heating infrastructure; and
- road and transport infrastructure are poorest in these parts of the city.



Toilets in Ger areas are completely inaccessible.

Image source: Universal Progress ILC

For these reasons, participants describe apartment living to be more convenient and it would be interesting to know if this view is consistent throughout the city population. The Ger areas present obvious accessibility and infrastructure challenges that require significant investment to address. There is little data on how Mongolians with disabilities were living before, in more rural, nomadic contexts. This makes it difficult to integrate more culturally or socially sensitive redevelopment plans.

Urban development, the need for essential infrastructure and making it inclusive

Primary data is consistent with desk research on the urban development and infrastructure challenges in Ulaanbaatar. In addition to this, participants viewed infrastructure as an important enabler for participation and inclusion: *“infrastructure opens doors to employment and education, which would again improve quality of life”*. For industry stakeholders, construction health and safety is considered a cause of inaccessibility and disability. According to some participants, debris falling from high-rise construction is a common occurrence causing injuries that often can lead to temporary or permanent disability, this resonates with findings from our desk



research¹¹⁴ and is something that should be address in construction regulations. The White Paper on disability states that Mongolians have a high risk of acquiring disability either due to accident or health issues commonly linked to environmental conditions¹¹⁵. Participants also connected more inclusive infrastructure to non-discrimination. It was felt that more accessible infrastructure could reduce stigma and generally improve public attitude towards people with disabilities.

“Infrastructure is the most important link for everything. For example, if infrastructure is not accessible, we can’t study or work. And also I think the discrimination will be less.”

Making space for accessibility

Making ‘space’ for accessibility at both the city and building scale is challenging. Older buildings are typically more difficult and expensive to modify than new ones and the way land ownership and zoning is organised in the city makes it difficult to systematically plan infrastructure with integrated accessibility. *“Organisations are trying to make ramps, accessible entrances, remove curbs or add tactile roads but if there isn’t sufficient space not much can be changed”*

City construction is described as chaotic as *“Land tenure is not systematic, so it is difficult to free up land to build public facilities, which means things like roads missing sidewalks because they don’t have enough space”*. One participant working in the government agency responsible for roads and transport described how design drawings were completed with pavements that meet the accessibility standards (1.5m wide with 0.5m wide green spaces). However, due to lack of space in the city the pavements often end up being built at 0.8 - 0.9m wide making it inaccessible for wheelchair users. This suggest that inclusive design and accessibility standards should be integrated to urban planning initiatives and part of the approval process for gaining construction permits.

Land tenure within the Ger areas is also complicated and made more complex by the lack of systematic planning. This impacts on the lives of people with disabilities as it means they do not always have control over the immediate environment surrounding their home: *“I live in a fence. The fence is not mine so I cannot tell them that it is difficult to go in and out”*. These informal infrastructural relationships between

¹¹⁴ Menard, ‘Mongolia’s Urban Planning Paradox’.

¹¹⁵ Government of Mongolia and JICA, ‘White Paper on Disability in Mongolia 2019’.

neighbours create accessibility and inclusion challenges as people try to lay claim to space in the city. Inclusive planning and regulations should also be applied in the Ger areas to support residents experiencing these problems.

Within buildings, space planning could be more inclusive and go beyond meeting technical accessibility standards. In general buildings are built following norms and standards based on occupancy numbers, with accessibility added afterwards, which is problematic. This creates situations whereby users are having to adapt to access buildings, such as using the goods ramp to access supermarkets. Inclusive design training could motivate both clients and industry professionals to view accessibility and inclusion with creativity within the design process instead of limiting technical requirements.



As a Deaf, female, taxi driver, one participant experiences communication barriers and discrimination in her work.

In many public buildings, essential services are not on the ground floor. If adding in lifts is prohibitively expensive, organisations should think about how services are delivered and where they are located. To maximise accessibility and inclusion in the built environment, inclusive design of the physical environment should be complemented by inclusive service delivery and organisational planning.

Disability is connected with other barriers to inclusion

When discussing barriers to accessibility, participants also talked about issues related to gender and socio-economic status. Barriers to mobility included the cost of using taxis, because public transport is not accessible, and for women with disabilities further issues around safety in taxis and on buses presented barriers. Women also face additional challenges in accessing essential women's health services. Measures to improve accessibility and inclusion should consider these intersectional issues in order to form a holistic inclusive design response.



“I am afraid of going alone when it is dark and taking a taxi, sometimes the drivers are violent, saying things like give me your phone number or I will not drop you off”

“I am a woman so I don’t serve for drunken men or 2 or 3 men to my taxi. It is difficult to serve for elderly people they don’t understand and sometimes they give me small amount of money than taxi price of they went.”

Multiple participants talked about relocating in relation to their disability, such as moving from a rural area to the city, or from a Ger to an apartment for a more comfortable living environment. People with disabilities who are moving home, driven by better access to services and a more accessible environment, may also experience associated barriers to social inclusion in a new context and this should be considered in how the city is planned, designed and developed.

Transport, mobility and the continuity of accessibility

Roads and transportation were the most frequently discussed infrastructure accessibility issue, *“leaving the house and using public transportation are the most difficult”*. Issues range from a lack of accessible transportation, there is only one accessible bus route, to a complete lack of road infrastructure in the Ger areas of the city. Buses that are not accessible have very high steps and narrow doors and there is a lack of accessible information, for example timetables, for different impairments. Accessibility of transportation is also dependent on effective service delivery and participants report that bus drivers and taxi drivers can discriminate against people with disabilities: *“when I take the bus the steps are high and the drivers are in a hurry, they set off quickly before I sit so I can fall”*. Participants report taxi drivers not stopping, bus drivers on the accessible bus route not deploying the ramp or announcing the presence of a disabled passenger leading to stigma. Most of our disabled participants reported needing assistance to use public transport, or they opted to use taxis or private cars. However, in most cases this solution presented a financial barrier *“I can’t always afford to take a taxi so I only take a taxi when the road is bad”*.

While transportation policies on disability were introduced later than in construction and urban development, the Ministry of Roads and Transport seems to be making progress and had a good understanding of the issues: *“the road is public property, that’s why it must be accessible to everyone”*. Road law now contains articles on



disability, stipulating a commission that includes people with disabilities to sign off projects. Government stakeholders discussed how the lack of systematic planning of city infrastructure creates a barrier to more inclusive transportation and efforts must be coordinated across city planning.

“Mongolia used to legislate accessibility issues on more construction-related issues. However, as the legal environment has improved over the past few years, the Law on Roads was amended in 2017, where accessibility issues for PWDs addressed. In addition, the issue of accessibility for PWDs has been included in the accompanying norms and standards. Also, requirements for traffic and vehicle lights and signs are provided in the law. But, the level of demand has not yet been reached.”



Photo diary illustrating mobility challenges

For pedestrians, the city is difficult to move around. Some parts of the city centre have tactile paving and accessible road crossings. However, it is not consistent. In the Ger areas, roads are unpaved, without pavements and the steep terrain makes it difficult to move around in all weather conditions.

Some of our participants preferred to use the road as the surface was easier for wheelchair use: *“It is dangerous, car go so close*

*to me but I don’t have the way to go and I don’t have other choice. Some area of sidewalk blocked by mound/levee or parked car.”*Continuity of accessibility is frequently an issue and examples include a participant’s apartment where there is a lift installed but there is no step-free access from the outside to reach the lift, so it is not accessible. Again, this can be seen as an issue of urban planning and collaboration: *“even though buildings are having some accessible places but linking channels, accessible channels are not accessible”*.

Participants shared journeys of accessibility to illustrate the importance of consistent and continuous accessibility: *“My work is not far from my home, I spend around 20 or 30 min. So I mostly walk in between them. The road from home to work is inaccessible, half of this road broken. Therefore, it is impossible to walk on sidewalk, I use the auto road between work and home. When I get back home, my apartment has no ramp at its outside. After I got inside, I need to go on some more stairs to reach the elevator. So, to come home I have to ask others help. Only my work environment is accessible. So the physical environment in UB is inaccessible”*



An example journey map

From policy to action – accountability and implementation


Policies and laws to protect the rights of people with disabilities are reasonably developed in Mongolia. One of the main legislative issues is the lack of legal requirements for accessibility, with the current standards not being mandatory. However, an accessibility law is under development and Disabled Persons' Organisations' are participating in this process. Monitoring and evaluation is also an important aspect of making progress towards inclusion at a policy level, but current evaluation mechanisms, such as access audits, are limited and not consistent.

The overarching barrier from government stakeholders is on the implementation of policies: *“The problem is in the system, not much on the law, but the system to approve the design of the constructions”*. Mechanisms to implement and enforce accessibility-related issues are missing and the current approval processes for buildings leave accessibility considerations and the inclusion of people with disabilities in the process too late. Currently, approval from disabled representatives is only sought once a building is complete.

When consultation does take place (post-completion), contractors and designers are then only given two weeks to make any changes, which often means that any suggestions made are not taken onboard. One participant also explained that sometimes the views of people with disabilities can be overridden by other

committee members in the building approval process, or bribes can be used. The accessibility measures by which buildings are currently approved are minimal, focused on ramps and toilets. Stakeholders are attempting to improve the accessibility approval checklist to make it more comprehensive and inclusive. The approval checklist should be consistent with accessibility standards, otherwise industry stakeholders aren't incentivised to follow the standards.

Another issue is adhering to the standards and guidelines that do exist. Across stakeholders, from clients to designers, engineers and contractors, following the requirements is an issue: *"If everyone follow the rules and regulations in their job the environment would be accessible"*. These findings in Mongolia are consistent with global findings in the World Report on Disability that awareness on and compliance to standards that are not mandatory are both low¹¹⁶.

Object: Ramp of outdoor stairs				
Sub-object: Ramp				
Question	Measurement	State	Note	Picture
Ramp width	180	Standard		
Slope percent	17.5	None standard	1:12 or 8% slope	
Smooth and non-slip surface	Yes	Standard		
Height of the kerb	0	None standard	Kerb height has to be not less than 5 cm	
The width of the slope start	180	Standard		
The length of the slope start	150	Standard		
The width of the slope end	180	Standard		
The length of the slope end	150	Standard		
Advise				
Renovate the outdoor ramps by accordance with the standards.				

Example of an access audit reporting a non-standard ramp

Source: Universal Progress ILC

The policy to implementation gap could partially be explained by a lack of understanding by key stakeholders of the terms related to accessibility and inclusion. In most cases, these terms have been adopted from international agendas, and while they exist in the policy documents, one participant suggested terms like, 'reasonable accommodation' and, 'inclusiveness' are not well understood in Mongolia. The understanding of the general public is also limited further exacerbating the challenges to implementation: *"I think, first we need to define the right terms of inclusiveness or universal"*. Clear understanding of these terms could support building consensus among stakeholders.

¹¹⁶ The World Health Organisation, 'World Report on Disability'.



Cost should be converted from a barrier to an incentive

Both policy and industry stakeholders would benefit from a deeper understanding the cost and value of inclusive and accessible design. In both the built environment and assistive technology sectors limiting cost is more important than quality: *“The company focuses on cost of their work, they do not focus on quality of their work. That's what we need to change.”* People believe inclusive design and accessibility is expensive. Better understanding about the value of embedding inclusive design from the start of a project and the longer-term added value and wider economic benefits of more inclusive places would help incentivise design decisions.

“[on assistive visual aids] They are not good quality. The government provides money but private companies import them, so they do not worry about quality and they just care about numbers.”

Who is responsible and how do we design in accountability?

A lack of clarity around responsibility creates a barrier to accountability. Responsibility should be considered at the political level as well as the industry level. Local government is as important as national policy: *“A policy on accessibility at capital city level is needed”*. The ‘critical voice’ coming from Disabled Persons’ Organisations is valued by government stakeholders and seen as an essential component of designing a more accessible city. However, the mechanisms through which this input is integrated could be further developed. Community responsibility also matters as seen in this example from the governments road and transport agency: *“we can’t see all the issues as quickly as people so the reporting system makes things easier”*. Inclusive design was described as *“the domain of ‘architect science and planning’* indicating a perception that it is the built environment that is responsible for inclusive design.

In terms of oversight for accountability, in 2019 the General Authority for the Development of Persons with Disabilities was set up. This government agency plays a vital role in overseeing disability policy across the board and organises the sub-committees where representative people with disabilities are consulted in policy-making.

On a technical level, other enforcing agencies are important such as the State Accreditation Commission and the Metropolitan Inspection Agency. A policy on accessibility for Ulaanbaatar city would help encourage change, including the



incorporation of accessibility features in the updates to the city masterplan. The capital city can serve as example to the rest of the country. Participants report that government commissioned construction now requires adherence to accessibility standards. However, private clients focus on maximising efficient use of space: clients only embed inclusion from the beginning if they are motivated to do so. Building awareness and generating positive cultural change could help motivate the private sector to meet standards, as it would increase demand for accessibility and inclusion from the general public.

Adaptive and collaborative approaches to inclusive city-making

Barriers to accessibility and inclusion are multi-faceted

“I think inaccessibility is sort of stigma itself”

Physical inaccessibility, public attitude and awareness and service problems intersect to form an inaccessible and excluding environment. It is clear from the findings that technical design solutions are not sufficient to create fully inclusive environments. Participants described how one of the reasons behind this is a disconnect in legislation: planning and development, access to services and rights to work. Taking a people-centred approach to planning and designing both the built environment and services would help build bridges between these interrelated barriers.

“People with disabilities have a lack of accessibility to get services and information, and now they need to get where they want to go, they need to get services, and if they can't go there they should have access to get the information in a way that suits them, but they can't, and that is need to be improved”

Barriers to accessing services across sectors, including education, health and entertainment contribute to an inaccessible city. These barriers can be physical but they can also be due to staff training, awareness and attitude: *“I always face with stigma. For example, when I try to catch a taxi with my personal assistant the taxi driver stops when he sees my personal assistant, then he leaves after seeing me.”* People have equal rights to essential services and opportunities but an inaccessible environment can infringe on those rights, particularly for people with disabilities: *“last time I went to the hospital I couldn't enter through the door, I spoke to my doctor from outside because the wheelchair did not fit through the door”.*



Holistic, multi-sectoral and participatory approaches

Across participants, the value of integrating the voices of people with disabilities was evident. The Government of Mongolia has established a series of 14 sub-committees that integrate representatives from Disabled Persons' Organisations. This has the potential to add valuable voices to the policy-making process. However, it also appears that consultation can happen too late and does not have an established mechanism to integrate participation.

“Disability is in every sector because it is human being”

Overall, participants indicated that a holistic or systems-minded approach to inclusive environments is needed. A people-centred and inclusive approach to designing the city should account for human diversity and allow it to flourish, which includes all people with disabilities. This was expressed in the design of spaces, services and systems, *“where there is good design, the service and staff need to match it”* and in the connection between assistive technology and the built environment: *“AT and services are like inner environment, buildings and infrastructure outer environment, all one system”*. Evidence on good inclusive infrastructure has shown that siloed or individual interventions have limited impact¹¹⁷. One example of a good practice for an integrated approach to inclusion that is developing in Mongolia is an electronic system to register complaints that will enable the general public to take part in urban planning, which participants reported is under development.

Inclusive Design

Physical barriers and components of inclusive design

“From the outside a building must be understandable and promote equal participation”

Narrow doors are a barrier throughout the built environment and infrastructure in Mongolia, restricting access to hospitals, ATMs and buses. A lack of or non-standard ramps and stepped access, inaccessible pavements and road crossings also create barriers. Participants also talked about the importance of design legibility,

¹¹⁷ Infrastructure and Cities for Economic Development (ICED), ‘Delivering Disability Inclusive Infrastructure in Low Income Countries’.

that existing buildings are not intuitive to navigate, creating another barrier. This begins to build a picture of an inclusive environment as something more than the physical structure. It is an environment that is enjoyable and easy to use, allowing everyone to participate in a fair and equal way. This approach must also consider different disabilities (beyond mobility issues) which is an area the current accessibility standards could improve on.

Inclusive design is in the details



At the hospital, although the building has a ramp, the design decision for a raised entrance immediately creates an inclusion barrier for people disabilities

Perceptions around design accommodations for accessibility focus on meeting technical requirements, and while meeting those specifications is important, quality of design and materials is also important. To realise inclusive environments and not just accessible design, products, spaces and the infrastructure should provide equality of experience for diverse users not just equality of access. Quality control and consistency matters, particularly when knowledge on accessibility among stakeholders is limited: “*implementation is difficult, drawings must be done very*



carefully with detailed specifications. The drawing must be very specific and detailed and the technical specifications of the built design must describe the accessibility and inclusion aspects very clearly”.

Material selection was identified as an important opportunity for inclusive design. Slippery surfaces were a matter of concern for all stakeholders and patterns or holes in paving were a problem for both mobility impaired and visually impaired people. Material selection and quality also extended to the design of products such as assistive technology, and the interaction between materials in the built environment, such as slippery paving and the material



Poor road surfaces create accessibility issues and damage assistive technology

of a cane is very important: *“The quality of the cane is very important, I use it for everyday life, sometimes in the city sidewalks can become slippery so the cane rubber quality is very important”*. Quality assistive technology can enable people to access and participate in the built environment whereas poor quality design and materials can be disabling: *“wheelchairs given by welfare service of government are easy breakable and don’t meet the user’s requirement so I do not get them. I take its money then I add some more money to buy high quality wheelchair for myself.”*

Participants talked about AT not being well-fitted to users and of poor quality, showing that the inclusive design of assistive technology also matters.



Inclusive Design in Context: Climate and Geography



Example of a road in the Ger Areas

The inclusive design of the built environment is also heavily dependent on its environmental and geographical context. In Ulaanbaatar, the city sits in a basin which means the further you go from the city centre, the steeper the terrain: *"I live in a hill so I need to climb up and down. There is no accessibility at all".*

The harsh winter climate plays a significant role in accessibility. Issues range from snow, ice and rain causing slippery surfaces which can be problematic for both people and assistive technology and can also be a source of injury. Wheelchair users also get stuck in the snow, which is complicated by poor roads and rough terrain. People report feeling less independent and able to travel alone in the winter (October – March) due to these conditions. Heavy winter clothing makes it more difficult for assistants to support people with disabilities. The cold weather makes reading braille more challenging as people's fingers lose sensitivity. For some people with disabilities who have lost sensitivity in their limbs, the cold weather can be dangerous as it heightens their risk of frostbite, and wounds can take longer to heal.

People living in the Ger areas also need to chop wood for heating which can be more difficult in cold conditions, partially due to the amount that needs to be chopped to sustain heating in the freezing conditions. Many people rely on burning coal or anything they can find, which in turn creates immediate indoor air pollution as well as contributing to poor air quality and high levels of pollution across the city. At an infrastructural level, due to budget issues the city is not equipped to deal with clearing snow and ice, which means a lot of time is spent trying to remove ice after it has formed. Winter conditions also increase financial burdens as the conditions make walking or waiting long times for public



All throughout the year the climate impacts on accessibility



transport not feasible, forcing people to rely on taxis which are more expensive. Stakeholders also report that the extended cold winter also means the construction period is very short, with people reporting figures between 3-6 months over the Summer (April – September).

In summer it can also be very dusty and heavy rains cause muddy conditions, made more challenging by the poor road conditions.

Understanding and applying inclusive design - What does inclusive design mean?"

"It is a philosophy and standard to create accessible environment for everyone. It applies to ever day consumables. Living environment, education sector etc. It is not costly. Everyone can use same design."

Responses indicate an encouraging grasp of some of the principles behind the philosophy of inclusive design. Only a couple of participants had not heard of either inclusive design or universal design. Participants describe inclusive design as *"providing equal participation, friendly to everyone"*; *"about the right to non-discrimination"*; *"the easiest, simplest way of useful design"*; *"barrier-free design"*. One participant also commented that it should account for diversity. However, the practice, processes or methods of inclusive design was less evident. Training is needed to build understanding around how inclusive design approaches can foster inclusion, how its practice that can facilitate participation (in social life, decision-making, design). Inclusive design, or inclusiveness, is taken as a broader term than accessibility and is applied to society more generally.

"Inclusive design is about not discriminating against anyone and about leaving equal access to services and living in a safe environment, we say that this is an accessible environment"

Choice of language and terminology is important, as an example the Law on Construction focused on the concept of a barrier-free environment. People use inclusive design, universal design and accessibility interchangeably and it may be more useful to build coherent policy and vision if the terms are defined clearly: *"I do not really make it difference between accessibility or universal design sometimes I change to use, you know, based on the opportunity on some occasions."* However, it was positive to see that participants saw accessibility as beneficial to everybody and



discussed how better accessibility would have additional benefits such as supporting the older population.

The importance of planning inclusive design from the beginning of a project was understood by some participants but in the current planning process, the opportunity to assess accessibility and inclusivity prior to construction is limited as accessibility standards are not mandatory so they don't form part of the official planning approval process. DPO representatives are only able to assess accessibility once construction is completed. Control over these aspects is improving with government funded projects now requiring accessibility checks. However, with private clients there is less control and they are often driven by other motivating factors such as costs and aesthetics.

Participants demonstrated the importance of embedding inclusion from the start of a project: *"if they do not have any info or knowledge of the concept, then it will not be applied in the following stages"*. This suggests that training should focus on the 'first stage' of a project. Setting inclusive design principles and having a vision or approach would help inclusive design consistency. Another participant described how universal design should be applied across all project stakeholders and the entire project process, showing an understanding of inclusive design practice.

Depending on the stakeholder, different perspectives on who should be applying inclusive design were found. Some participants discussed how the government is leading by making accessibility mandatory for government sponsored projects. However, other participants discussed how design and construction companies should be advocating for or requesting accessibility measures be incorporated. Another participant remarked that some clients are beginning to request accessibility due to their organisation's mission statements: *"some organisations are beginning to implement their social responsibility and equipping toilets or some other special adaptations"*.

Making inclusion (and inclusive design) visible

It is clear that people need to see the benefit of inclusive design to understand it: *"if people see by their eyes and check by their bodies... what does the ramp mean or understand what it's like to use a wheelchair ... people don't imagine the real situations"*. The government has plans to develop exemplar projects representing how to make a building accessible. alongside planned campaigns to demonstrate



good accessible environments. However, among other stakeholders, knowledge of these campaigns is limited: *“the Ministry of Labor and Social Protection is organizing event such as the determining the best accessible environment for PWDs of the year. It aims to spread the good practices.”*. Building visible evidence on the benefits of inclusive design would assist in driving change. Currently, budgeting for inclusive design is seen as an additional expense and the associated costs are unclear and assumed to be prohibitive.

Assistive Technology and the Inclusive Design of the Built Environment

Essential and life changing assistive technologies and an inclusively designed built environment, when combined, have significant potential to advance equitable and urban inclusion. However, barriers to access and participation emerge when these two domains are not working together as effectively as they could or, if one of them is missing.

“AT is definitely very important. It has wide range. Just one example is wheelchair. When a person having a wheelchair is not solving the problems, there is wheelchair space and road building legislation, policy, physical environment and other many things could include to talk about AT of wheelchair only.”

One participant stated that people should not need to rely on assistive technology to overcome barriers in the built environment and another thought that it was difficult to use assistive technology in Ulaanbaatar: *“If I had an automatic wheelchair it would ease everything, but in Mongolian condition, especially in the Ger Area it is impossible to use it. So the most important thing is to make the good road according to the standard.”*

In Ulaanbaatar, the quality and availability of assistive technology¹¹⁸ and the inaccessibility of the built environment are both commonly reported issues. Participants consistently described the poor state of infrastructure such as roads, as both a barrier to accessibility and a barrier to the usability of assistive technologies: *“We receive a cane once in three years. Sometimes people and cars broke it accidentally.”* Potholes, construction work or unpaved roads were all causing damage to assistive technology and impacting its durability. The extreme climate was also a barrier to using assistive technology.



A photo diary participant demonstrates how they use assistive technology in the built environment

“That is how I go outside. I use my wheelchair as a walker. When I get tired, I sit on my wheelchair.”

Enabling environments: awareness, education, and participation

Education and awareness

“Everyone, policy makers, government people, NGOs, construction people and citizens should understand about inclusiveness”

Education among the general population about accessibility and barriers in access, opportunity and participation is important: *“people ‘know’ accessibility, but it is not clear, it needs to be explained in ways understandable to everyone, including children”*. Participants suggested including education on disability in the curriculum from a young age would help. Better understanding of disability would be a major driver to overcoming stigma: *“My parents though the wheelchair and crutches cannot go inside the home, they think it is bad luck, but now I live independently.”*

¹¹⁸ WHO and Global Disability Innovation Hub: Country Capacity Assessment: Mongolia (forthcoming)



What does participation mean?

The importance of participation is discussed frequently among stakeholders, usually referring to the right to participate in society rather than participatory design processes: *“I do participate. I often use the entertainment venues. I face difficulties to participate in things, when the facility is inaccessibility but I try to participate as much as possible”*. Some people felt able to participate in social life and public activities but others felt barriers limited their ability to participate: *“I can’t get the information on time. And also it is organized in inaccessible place”*. Isolation, stigma and lack of community also create barriers to participation and impacts on wellbeing: *“growing up in apartment, in general I feel alone. My mother and younger sister/brother care about me. No friends”*.

In terms of participation in design or decision-making, participants felt that although the participation and representation of people with disabilities is guaranteed in the law, the realisation of it is not so effective: *“In general, citizen participation is considered as low.”* DPOs are not involved in discussions around funding, negotiation, procurement which would be crucial to becoming more accessible. The timing of participation and consultation is also important, and at the moment it often takes place too late to be effective: *“Participation only happens at the building handover, not during design, construction, so changes are requested by the client after completion”*.

“We can improve anything, but in order to do that, we need to solve many issues, such as preparatory research, planning and proof, preparing our partners, and deciding on the budget. I also would say that the participation and leadership of PWDs’ NGOs is very important. It is important because they represent PWDs. Because government and its agencies do not criticize themselves, so NGOs are openly critics.”

Drivers of change

“I wonder why people don’t make construction accessible to everyone”

Motivating factors to improve accessibility seem to be driven by external factors. Examples include the improvement of public space accessibility linked to an international conference on ‘Inclusive Community Development’ held in 2019. Buildings that report higher levels of accessibility have international influences such as international clients (i.e. hotel chains). However, whether those buildings would



meet international accessibility standards is not clear. The built environment industry is very cost driven, so it is important to develop an understanding of the business case for inclusive design. At the same time, education and training on the value of inclusive design and the benefit to people's quality of life would help motivate industry professionals to design a better world: *"the concept of 'accessible environment for all people' is not taught to students"; "architects need to understand perspective of people with disabilities"*.



A blind participant uses his computer to create audiobooks

From the human perspective, people with disabilities want their voices heard, to have equal access to rights and opportunities and for people to be supportive and positive: *"I want people to follow the standards and norms as urbanisation increases and for them to have a positive attitude to disability"*. It is clear that people with disabilities in Mongolia feel stigma and are very motivated to change people's perception of disability: *"I spend time where I want. If we don't try we can't go anywhere. So I am trying create opportunities to ourselves."*

"We also have same rights. We also feel same responsibility. We also must study and do job. Not evaluating someone from outside. People must see the heart of anyone."

Building an enabling environment

When working in harmony, assistive technology and the built environment can work together to build an enabling environment. For assistive technology users, one or the other is not enough: *"My cane helps me to participate in social life so it is very important to me"*.

The role of technologies such as computers and mobile phones is also important in enabling access to both social connection and livelihood opportunities, with both considered a vital aspect of 'daily life'. Most of our disabled participants used a computer for their work, and for many it enabled them to work from home. some of

the advantages of the mobile phone is that it can be used everywhere, and it saves time, eases communication and enhances social interaction.

Towards a more inclusive city

In Ulaanbaatar, the built environment is constantly changing, there is a lot of construction and rapid urbanisation, the climate varies massively throughout the year and accessibility needs are constantly shifting and evolving. Good inclusive design should be able to adapt to more fluid environments like this and it emphasises the importance of inclusive design training and practice above and beyond accessible standards that cannot keep pace with the evolving urban context.

Ulaanbaatar is not an accessible city and a more inclusive city would benefit everyone

Participants report varying levels of accessibility across the city. The reporting indicators for accessibility need improving, as in many cases buildings reported as accessible may only have an access ramp, but it may not even meet the standards. Older buildings are considered the least accessible and participants report the Soviet era architecture to be very inaccessible. The buildings that are most accessible are new international construction projects, such as high-end hotels and shopping malls.



Participatory mapping workshop: Pink marks inaccessible places and green marks accessible places



The city presents a major divide between the ‘downtown’ and the Ger areas, and it was clear some participants did not consider the Ger areas as part of the city when discussing development. This is a major barrier to an accessible built environment, as two thirds of the city reside in Ger areas and people with disabilities who have the greatest need from lower-income households, are more likely to be living in the Ger areas. A more accessible Ger area would also have other inclusive place-making benefits: *“my kids have no place to play in the ger district”*. On the other hand, compared to rural areas, the city is considered much more accessible. Multiple disabled participants reported moving to the city centre because it is more accessible for them, meaning they can live more independently.

To what standard and what are we comparing to?

Ulaanbaatar has the potential to set the standard for the rest of the country:

“Attitudes, accessibility, education, employment, and so on. Ulaanbaatar itself accounts for half of the population. It is therefore an important policy center.”

Participants suggested that accessibility in the city is much better than in rural areas and perhaps the way forward is for the city to lead by example.

Inclusive design is described as ‘international standards’ and Mongolia is looking to international standards to develop more inclusive policy. Japanese and Korean influences are evident in current accessibility measures: *“A new shopping center, we call emart, that is the actually Korean funded. Therefore, they make it to the Korean standard of accessibility standards. So there is the accessible toilet and elevators”*.

The country could also benefit from looking at accessibility standards in countries with similar climates to address some of the issues around cold weather. Mongolia is considered to have a well-developed social welfare system compared to other Asian countries and there is an opportunity for Ulaanbaatar and Mongolia to also lead by example in inclusive design standards, especially if collaboration and participation between stakeholders can lead the way.



Lessons learned

The biggest learning opportunities in the case study were in developing a deeper understanding of the lived experience of disability in Ulaanbaatar, building a picture of the whole ‘system’ of accessibility and inclusion needs in the city and starting conversations between diverse stakeholders. Participants reported that the collaborative activities in the workshops prompted discussion between people with disabilities and government stakeholders and offered ideas for where to start.

Disabled Persons’ Organisations’ advocacy work has predominantly focused on government stakeholders, getting policy-makers to understand accessibility standards. The participatory activities showed how other stakeholder groups can also play a valuable part and collaborative efforts between industries, communities and government could amplify the impact of any advocacy and awareness raising campaigns.

Accessibility is not just the domain of people with disabilities and Disabled Persons’ Organisations. Everyone is affected by inaccessibility in the built environment as illustrated by participants feelings on the state of road infrastructure, which is both limiting mobility and causing injuries. Another example highlighted by our research partners is that the tourism industry may offer an opportunity to advocate for more inclusive places. Currently newly built hotels are one of the more accessible building types and by bridging the gap between international and local standards of accessibility, Ulaanbaatar can be more inclusive for both local communities and national/international visitors which would align with the city’s master plan priorities and potentially drive engagement in more inclusive design.

Empowering people with disabilities to advocate for inclusive design will also help improve state entities’ knowledge of the issues and public attitudes. A lot of effort is



concentrated on physical accessibility and technical modifications through activities like access audits. These are important, tried and tested mechanisms to make the city more inclusive. However, more people-centred and creative approaches such as co-designing awareness campaigns and education on the practice and philosophy behind inclusive design could also help. People with disabilities need to be seen for people to understand the barriers to accessibility and inclusion, so cultural change and creative thinking is equally important.

What works and what matters?

Building knowledge on 'what works' is a fundamental aspect of making more accessible and inclusive environments. In Ulaanbaatar, this means understanding what places are currently doing better in terms of inclusive environments, what policies and activities have been effective in encouraging change and understanding who can champion actions towards a more inclusive city.



Accessible outdoor exercise spaces are important

It is equally important to build a strong picture of **what matters to people**.

Participants identified physical components of accessibility, important places, attitudes, awareness and education as important aspects of an inclusive built environment. Places or infrastructure that matter include public transport, public services such as education and health, recreational spaces such as cinemas, karaoke and gyms, green spaces such as parks, road infrastructure, and housing. Physical components of accessibility include ramps, step-free access, wider doorways, tactile paving, accessible toilets and information accessibility, but these must all be designed and built according to standards. Attitudes, awareness and education efforts are needed across all the stakeholder groups.

Government and industry stakeholders need to improve their understanding of the lived experience of disability as well as the value and potential of inclusive design. They also need to understand their role in advocacy and championing more inclusive environments. Awareness and education among the public is needed to help remove



stigma and encourage the participation of people with disabilities. People with disabilities also need to build awareness on the spectrum of abilities and people's different needs beyond their own experience. Awareness on what people with disabilities can do to help build a more inclusive society would encourage positive change and improve people's attitudes and participation.

Inclusive design knowledge is weak and even understanding of basic accessibility requirements can be minimal, as evidenced by inconsistency in adhering to standards. People need to see the potential of good inclusive design to support it. By incorporating best practice inclusive design to popular or frequently visited places in the city, the general public can begin to see the benefits of inclusive design in their daily lives. By developing best practice examples of inclusive design in the city and monitoring and evaluating the design and construction process, decision-makers and funders can see how inclusive design is practically implemented, understand what it costs and appreciate the wider value to society.

There is also an opportunity to look at where else innovation in design is happening in the city. In the Ger areas, the Ger Innovation Hub, a community space developed by a local NGO, 'GerHub' offers an example of construction innovation, climate-responsive design and community engagement coming together in an elegant way. Developed outside of the formal planning processes in the city, the GerHub offers creative potential to think about culturally sensitive inclusion by adapting and reinventing the model of the Ger as a nexus of both community and research and innovation¹¹⁹.

Mongolia and Ulaanbaatar are undergoing rapid change, which are both driving and reinforcing persistent urban development challenges around unplanned development, lack of infrastructure and rural to urban migration. These challenges all make the lives of people with disabilities in the city harder as accessing basic life necessities such as water or keeping warm in winter is more difficult and protection and support to access the city in a safe and enjoyable way through a regulated built environment is limited. The agenda for disability inclusion should not be lost among these large-scale infrastructure and development challenges and should be seen as an opportunity. Embedding the voices of people with disabilities in decision-making around urban development would help shape a more accessible and inclusive built environment, helping to meet the priorities set out in Ulaanbaatar's Master Plan 2030

¹¹⁹ For more information on the various initiatives led by GerHub please visit: <https://gerhub.org/>



and drive progress towards Mongolia's vision for meeting the sustainable development goals.

What have we learned about access to assistive technology and the built environment?

The insights shared in the case study illustrate the intimate connection between enabling access and use of assistive technology and an accessible and inclusive built environment. An accessible built environment must consider assistive technology use in its design and to be inclusive it should also support assistive technology use in a seamless way. As described by case study participants, an inaccessible built environment can limit assistive technology use and even cause damage. Participants view assistive technology as empowering and an enabler to participation which should be celebrated within an inclusive city.

Setting Priorities

Becoming a more inclusive city cannot happen overnight and changes will need to be made gradually and within resource constraints. For this reason, understanding people's priorities and areas of opportunity is really important. Interview participants suggested public transport, access to public spaces, ramps, living environments, legal environments and access to employment were key areas for attention. Multiple participants also discussed how research and budget are needed to make improvements, as people currently do not have good awareness of the costs of inclusive design and assume that it is a financial burden. At an industry and implementation level the design and drawing process for new buildings must embed inclusive design and accessibility standards from the beginning, and all project stakeholders must support this activity.

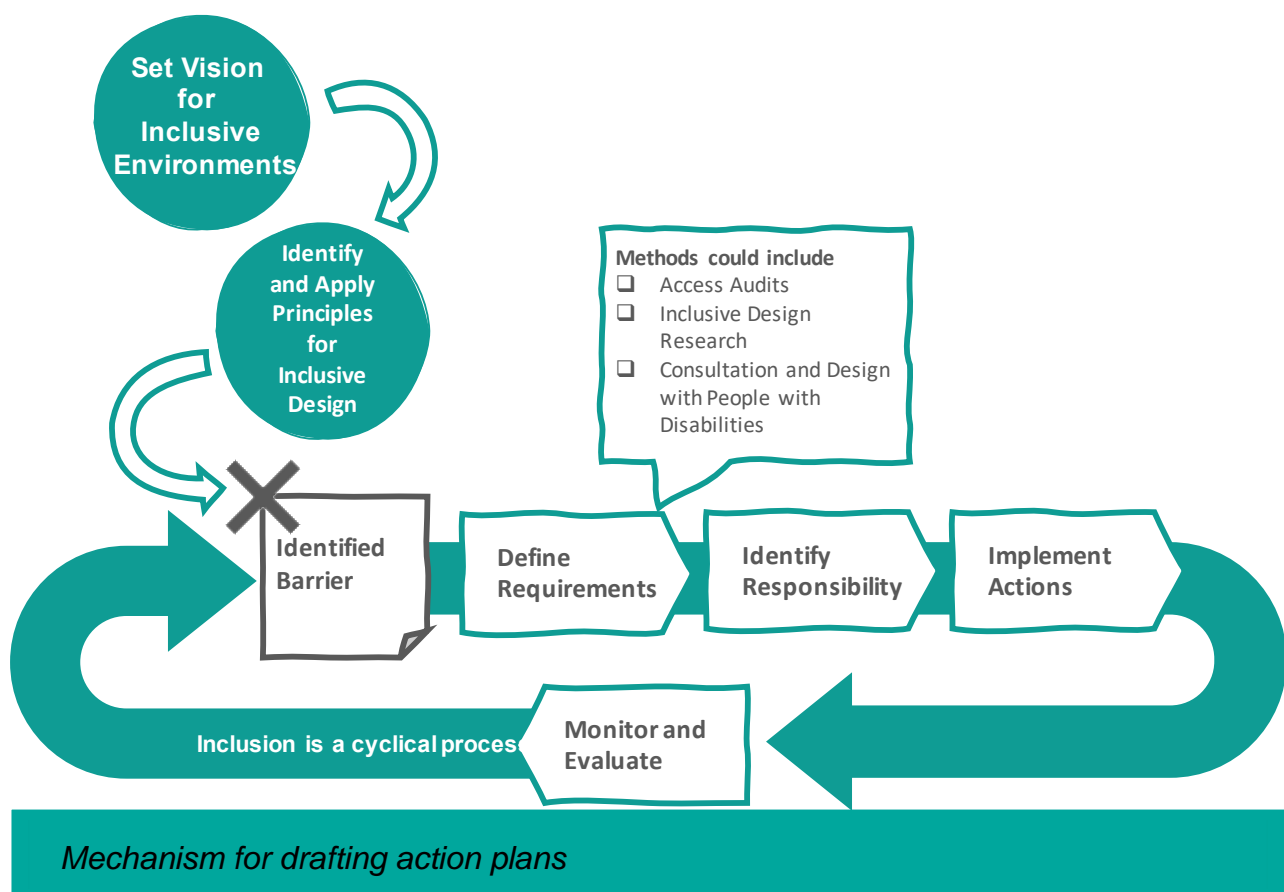
Identifying tangible actions

During workshops participants worked in three groups to identify key areas for action. Across the groups, participants identified a diverse set of interventions for inclusion, including built environment, service and policy interventions. These actions were then prioritised and first steps to take action explored, along with identification of responsible stakeholders.

One area of intervention identified was how public transport needs to be more accessible. Participants proposed that simply allocating a percentage of public

transport that must be accessible is not sufficient. People with disabilities must be involved in the commission for procuring and purchasing transport infrastructure and infrastructure implementation must be accompanied by training for services providers and all staff working on public transport.

The examples shared were used to draft a mechanism for identifying actions to improve accessibility. This mechanism can be applied to processes for improving accessibility across different sectors and it is not limited to implementing physical design modifications. The idea is that once a barrier has been identified, the requirements to overcome that barrier should be defined, responsible parties or champions should be identified and then actions should be implemented based on the requirements. These actions can be most effective if a wider vision for more inclusive city making and set of guiding principles can be applied.

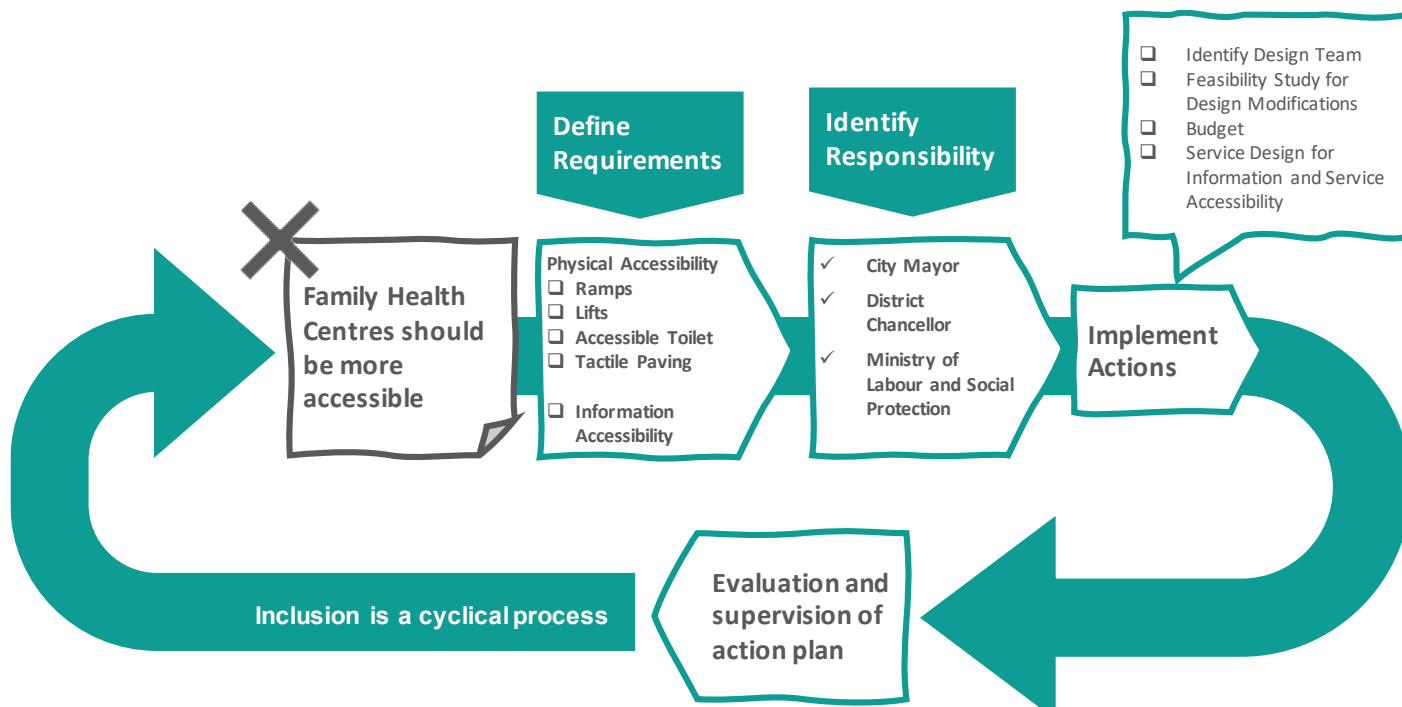


An example shared by participants was about how family health centres, the first point of care for health services, are not accessible. These centres are located at the neighbourhood 'Khoroo', the local government office, but the centre is always located on the second floor and there is no lift.

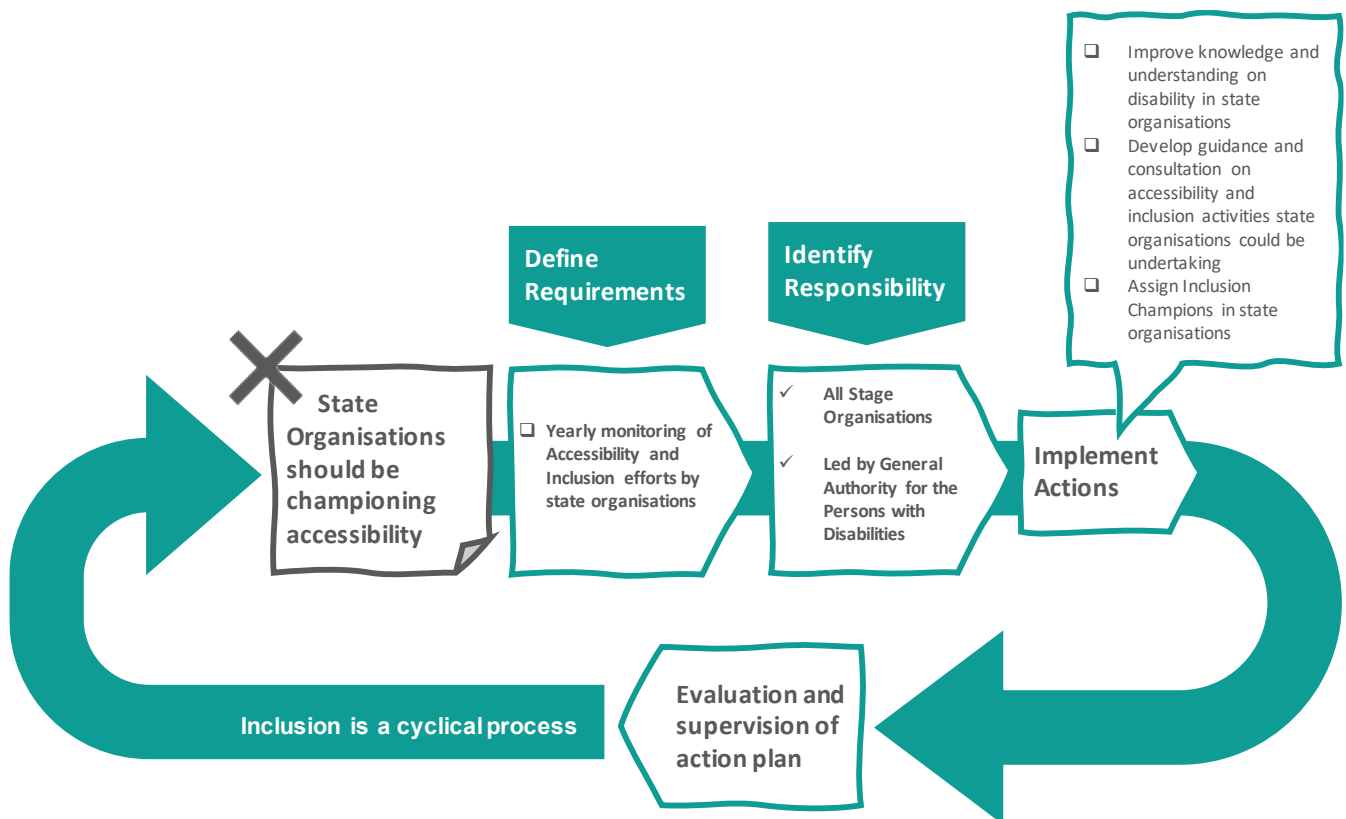


"Agency for Labour and Welfare Service" in one district : the services it provides are not clear to people with disabilities, particularly for Deaf users.

Additionally, one of our participants explained how as a Deaf person it is very difficult to access information on what government services are available to them. In this example, participants were identifying physical design changes needed to improve accessibility.



Action plan for making health centres more accessible



Action plan for encouraging accessibility in state organisations

Another example shared by participants was about responsibility and cooperation within state organisations through monitoring and supporting accessibility efforts across different organisations.

Based on the findings the following more general actions were also identified:

Value:

- A definition of inclusive design for Mongolia is needed to set a clear vision for advocacy efforts
- Clear costs of inclusive design are needed to allow for inclusive design budgets. Public perception is that it is expensive. We must demonstrate it does not need to be.
- Set a vision and encourage design standards beyond the minimum requirements
- Identify how different stakeholders can use evidence (such as this case study) to advocate for inclusive design
- Motivate clients to value inclusive design

**Responsibility and Accountability:**

- Appoint inclusive design champions at different levels
- Standards must be mandatory
- Inclusive design/accessibility checklist must be more comprehensive. Current access audits are using different criteria which means data on accessibility is inconsistent
- Accountability mechanisms and responsible stakeholders must accompany legislation

Processes:

- Inclusion should start from the beginning, with inclusive education in schools, raising awareness on disability inclusion
- Design and budgeting should not be separated out
- For older buildings, incremental changes with a budget spread over a longer period can help address resource constraints

Consultation and Collaboration:

- Set up robust consultation mechanisms
- People with disabilities must be consulted at the design stage and during negotiations on budget, otherwise inclusive design is costed out.
- Consult people with disabilities from the very beginning

Understanding:

- Increase public awareness about the wider benefits of inclusive design
- Efforts must account for a spectrum of abilities and in particular consider neurodiversity and learning disabilities
- People with disabilities understand the challenges they face very well but don't always know how to fix them. Inclusive design training should support people with disabilities to co-design solutions with policy-makers and built environment professionals.
- A clear and illustrated manual for how to conduct inclusive design would help - visuals are important



Limitations and areas for further exploration

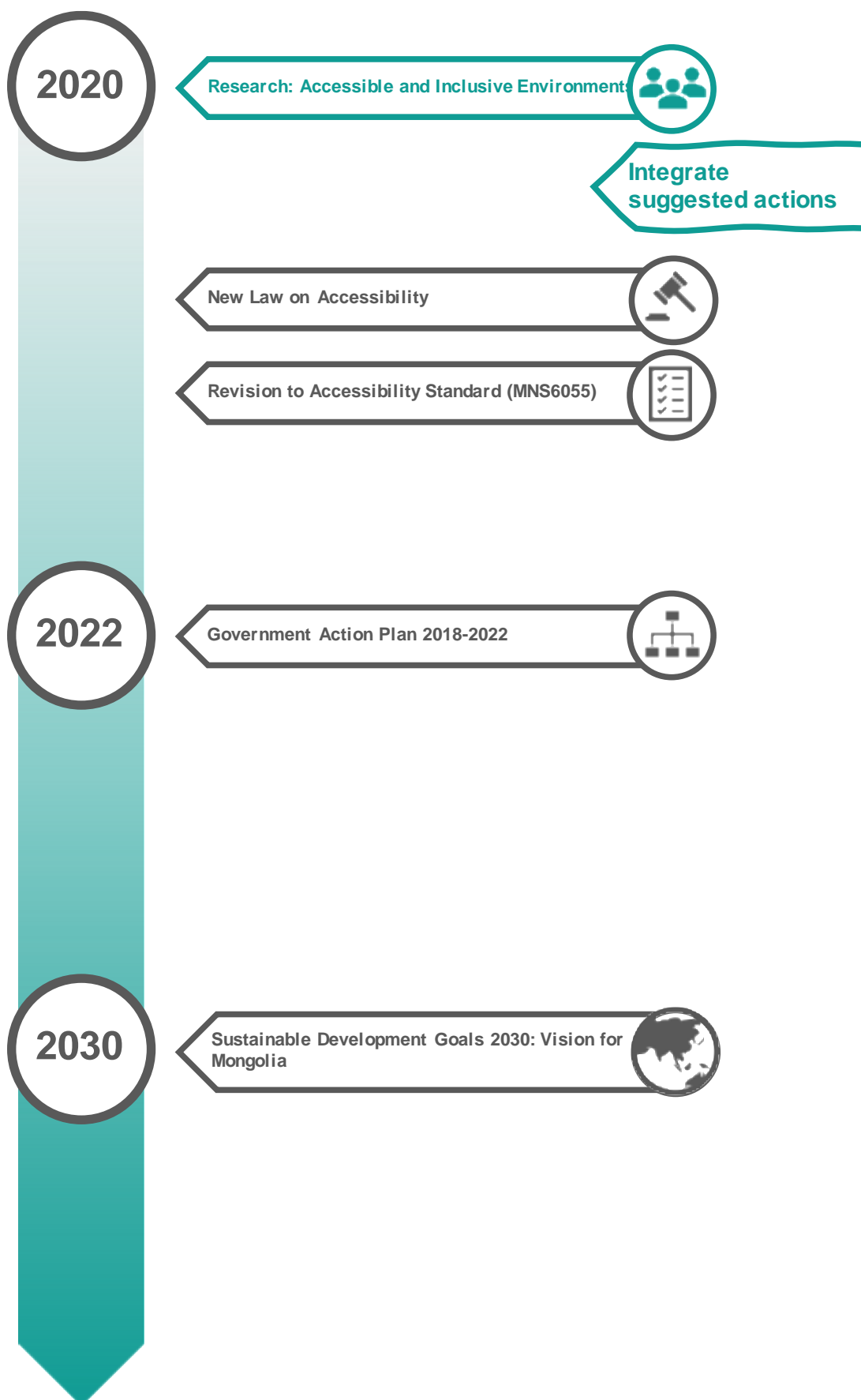
The following limitations were identified in association with this study:

- The research team had to adapt to the ongoing coronavirus pandemic, which meant adapting and limiting some fieldwork activities. While online collaboration is possible, it is important to remain mindful of the limitations it can have regarding engagement and consensus
- The participants represented three major groups of disabilities, but it would be important to also involve diverse participants with other disabilities such as cognitive or sensory impairments in further engagement and consultation on inclusive design
- The research team was unable to conduct site visits and some collaborative live projects were delayed due to the coronavirus pandemic, limiting the amount of projects featured in this report
- The research deliberately focused on accessibility and inclusion from a disability perspective. It is important to note that inclusive design also considers groups that may be excluded from participation for other reasons such as race, class, gender, or socio-economic status

Priority areas for further research, which would assist some of the actions suggested throughout this report include:

- Research on socio-cultural factors associated with disability inclusion or research on socio-cultural factors in inclusive design approaches
- To drive policy agendas, it would be useful to develop more robust data on how different aspects of exclusion intersect, such as gender and disability, class and disability and race and disability. This research touched on some aspects in terms of people's experiences as Ger area residents and women, but a more focused study on this topic could be useful
- Research and participation with people with disabilities on redevelopment and rehousing plans in the city
- Research on accessibility and inclusion of the built environment in rural areas, as statistics show a higher proportion of people with disabilities are living in rural areas, and may be harder to reach
- Research on the role of inclusive design in sustainable development priorities such as the relationship between climate adaptation measures and inclusive design and accessibility would be useful

Pathway to inclusion – where are they going?





Conclusion: Actions toward inclusion

“An inclusive and accessible Ulaanbaatar is somewhere that can be experienced by everybody in a fair and equal way. By creating safe and accessible environments for all members of the community the city can allow everyone to access and participate in the opportunities they would like.”

Setting a comprehensive vision and action plan for a more inclusive Ulaanbaatar should be complemented by training and education in disability inclusion and inclusive design across stakeholders. These steps would allow the city's design and development to accommodate and celebrate diversity improving the lives of everybody, including people with disabilities. Inclusive design should be understood as a mindset and methodology above technical standards, to allow responsive and adaptive design in a rapidly changing city. This adaptive mindset in design has the potential to engage more effectively with the city's rich history in nomadic ways of life, consider the different ways people want to live in a city and respond to sustainable development challenges including climate related stresses.

Enforcement of good practice and action towards inclusion is the responsibility of all stakeholders. At a policy level, laws must be accompanied by mandatory standards. At the industry scale, good design practice, design reviews and inspections must take place. Communities must convey their needs through conducting accessibility audits and advocacy work¹²⁰.

Priority areas for action:

- Find out what matters to people
- City stakeholders should establish a shared vision and ambition for an inclusive and accessible Ulaanbaatar
- Awareness raising and education is vital. It can teach stakeholders how inclusive design benefits everyone and help to create a culture of inclusion.
- Accessibility in the built environment is not just about technical standards. Inclusive design can be beautiful and aspirational. Inclusive design is good design.
- Ulaanbaatar's unique climate, culture and geography require an inclusive design strategy that responds to those contexts

¹²⁰ The World Health Organisation, 'World Report on Disability'.



- Embed inclusive design from the start of a project and budget for it, earlier integration is more effective
- Start somewhere. People need to discover for themselves how inclusive design can make the city a better place to live.

Additional areas to consider action:

- Develop consistent data on the state of accessibility, a standardised checklist for access audits can build consistent and robust evidence for making improvements. Where possible, this should include financial analysis on the costs of accessibility (*when retrofitted post construction*).
- Start with incremental changes to show that inclusive design works, build evidence on the benefits and clarity on costs, with a focus on affordability when integrated from the very beginning of a project
- Use initial exemplar projects to define budget mechanisms and evidence
- Mobility around the city through transport and road infrastructure
- Multi-sectoral collaboration between infrastructure and service sectors, coordinating with efforts to expand assistive technology access
- Training in inclusive design practice and its applications for government and industry stakeholders
- Training or awareness raising among built environment professionals on the important relationship between assistive technology and an inclusive built environment
- Enforcement mechanisms for accessibility standards and consistency between standards and audit checklists
- Decentralised approaches – focusing on neighbourhoods and zones of proximity for access needs¹²¹
- Inclusive design practices should be applied across sectors and consider long term planning and maintenance
- Embed inclusive design early on, this maximises economic benefit when integrated from the start
- Inclusive design and accessibility standards should be integrated to urban planning initiatives and part of the approval process for gaining construction permits
- A holistic inclusive design approach could offer a bridge to overcoming the current policy to implementation gaps

¹²¹ UN-Habitat, 'Flagship Programme 1: Inclusive, Vibrant Neighbourhoods and Communities'.



Recommendations for policy and decision-makers:

- Involve people with disabilities in procurement processes and financial decision-making such as developing budgets for infrastructure development or a new building commission
- Establish vision and design intent for government sponsored built environment projects
- Audits and consultations with DPOs must be scheduled to allow for coordination with yearly spending plans
- National policies and legislation must translate to local policies and plans, integrate a vision for inclusive design to urban planning

Recommendations for industry:

- Education and Training in Inclusive Design as well as existing national and international Accessibility Standards
- Establish mechanisms for inclusive design and consultation with people with disabilities
- Inclusive design guidance should be available in digestible and practical formats
- Plan access and inclusion through user journeys, highlighting that the need for accessibility doesn't end at the main entrance.

Recommendations for the community:

- Identify champions or visionaries for progress towards inclusion
- Audit and evaluate the built environment
- Spread awareness on the value of inclusive environments through cultural activities and advocacy
- Participate in decision-making, design processes and evaluations, and ask to participate if it is not offered

Creating enabling environments

An enabling environment for people with disabilities should integrate: a supportive legislative environment, participation in design and decision-making, positive cultural change, an accessible and inclusive built environment and access to good quality and affordable assistive technology.

So what might an inclusive Ulaanbaatar look like?



- Mandatory accessibility standards that account for a spectrum of abilities and different disabilities
- Accessible and welcoming public places and services that people can experience equally
- Access to good quality, affordable, assistive technology
- A culture of awareness, understanding and support for people with disabilities
- Equity of access, opportunity and participation for all

What's next?

This report outlines the key findings from a four-month case study on the city of Ulaanbaatar. As the first of six case studies on inclusive design and the built environment in lower-and-middle-income countries, it will be built on through the following case studies and go on to inform global actions on inclusive design.

The findings of this report will be shared with both international and local audiences through a range of activities including directly engaging stakeholders with the research and training on inclusive design. GDI Hub will continue to have an active role in Mongolia through a developing partnership with the Asian Development Bank, where the team will provide inclusive design support to active projects in the city. The team will also continue to support our research partners in activities such as consultation on the new accessibility law, which the findings of this case study will help inform.



References

- Agarwal, Anjee, and Andre Steele. 'Disability Considerations for Infrastructure Programmes'. Evidence on Demand, 8 March 2016. https://doi.org/10.12774/eod_hd.march2016.agarwaletal.
- Amgaabazar, Gerelmaa, and Kate Lapham. 'Disability Is No Longer Invisible in Mongolia'. Open Society Foundations, 12 June 2014. <https://www.opensocietyfoundations.org/voices/disability-no-longer-invisible-mongolia>.
- Amnesty International. 'Falling Short: The Right to Adequate Housing in Ulaanbaatar, Mongolia'. Amnesty International, 2016.
- Anderson, Raven, Michael Hooper, and Aldarsaikhan Tuvshinbat. 'Towers on the Steppe: Compact City Plans and Local Perceptions of Urban Densification in Ulaanbaatar, Mongolia'. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* 10, no. 2 (3 April 2017): 217–30. <https://doi.org/10.1080/17549175.2016.1223739>.
- Asian Development Bank. 'ADB to Help Ulaanbaatar Transform Its Ger Areas into Eco-Districts'. Asian Development Bank, 28 August 2018. <https://www.adb.org/news/adb-help-ulaanbaatar-transform-its-ger-areas-eco-districts>.
- . 'Enabling Inclusive Cities: Tool Kit for Inclusive Urban Development'. Manila, Philippines: Asian Development Bank, 1 December 2016. <https://doi.org/10.22617/TIM157428>.
- . 'Living with Disability In Mongolia: Progress Toward Inclusion'. Manila, Philippines: Asian Development Bank, December 2019. <https://doi.org/10.22617/TCS190596-2>.
- Baker, Judy L., and Gauri U. Gadgil, eds. *East Asia and Pacific Cities: Expanding Opportunities for the Urban Poor*. The World Bank, 2017. <https://doi.org/10.1596/978-1-4648-1093-0>.
- Cosgrave, Dr Ellie. 'The Role of the Engineer in Creating Inclusive Cities', n.d., 16.
- Dahiya, Bharat, and Ashok Das. 'New Urban Agenda in Asia-Pacific: Governance for Sustainable and Inclusive Cities'. In *New Urban Agenda in Asia-Pacific*, edited by Bharat Dahiya and Ashok Das, 3–36. Advances in 21st Century Human Settlements. Singapore: Springer Singapore, 2020. https://doi.org/10.1007/978-981-13-6709-0_1.
- Dawson, Richard. 'Delivering Effective and Inclusive Infrastructure'. ESRC Evidence Briefings. Economic and Social Research Council, March 2018. <https://esrc.ukri.org/news-events-and-publications/evidence-briefings/delivering-effective-and-inclusive-infrastructure/>.
- Deepak, Sunil. 'Barriers Faced by Young Adults with Disabilities in Ulaanbaatar, Mongolia: Report of a Community-Based Emancipatory Disability Research (CB-EDR)'. Ulaanbaatar, Mongolia: Tegsh Niigem, n.d.
- Department for International Development, UK Government. 'Disability, Poverty and Development'. Department for International Development, 2000.
- Diener, Alexander C., and Joshua Hagen. 'City of Felt and Concrete: Negotiating Cultural Hybridity in Mongolia's Capital of Ulaanbaatar'. *Nationalities Papers* 41, no. 4 (July 2013): 622–50. <https://doi.org/10.1080/00905992.2012.743513>.
- Disability Inclusive and Accessible Urban Development Network (DIAUD), World Enabled, and CBM. 'The Inclusion Imperative: Towards Disability-Inclusive and Accessible Urban Development. Key Recommendations for an Inclusive Urban Agenda', 2016, 40.
- Dorjbal, Delgerjargal, Birgit Proding, Claudia Zanini, Baljinnyam Avirmed, Gerold Stucki, and Sara Rubinelli. 'Living with Spinal Cord Injury in Mongolia: A Qualitative Study on Perceived Environmental Barriers'. *The Journal of Spinal Cord Medicine* 43, no. 4 (3 July 2020): 518–31. <https://doi.org/10.1080/10790268.2019.1565707>.
- Fabian, Herbert, Sudhir Gota, Alvin Mejia, and James Leather. 'Walkability and Pedestrian Facilities in Asian Cities: State and Issues'. ADB Sustainable Development Working Paper Series. Asian Development Bank, 2010. http://www.indiaenvironmentportal.org.in/files/Walkability_Final_Report_15Oct2010.pdf.
- Fan, Peilei, Jiquan Chen, and Ranjeet John. 'Urbanization and Environmental Change during the Economic Transition on the Mongolian Plateau: Hohhot and Ulaanbaatar'. *Environmental Research* 144 (January 2016): 96–112. <https://doi.org/10.1016/j.envres.2015.09.020>.
- Federation of Independent Living Organizations of Mongolia (MIL), and Tegsh Niigem. 'Submission from Disabled People's Organizations of Mongolia to Inform the Development of the List of Issues Prior to Reporting for a 2nd Periodic Review of Mongolia under the Convention on the Rights of the Persons with Disabilities', 29 July 2018.

- Global Disability Innovation Hub, Queen Elizabeth Olympic Park, and London Legacy Development Corporation. 'Inclusive Design Standards', May 2019.
- Government of Mongolia, and Asia Foundation. 'Ulaanbaatar Master Plan 2020 and Development Approaches for 2030: Technical Summary', 2014. <https://asiafoundation.org/publication/ulaanbaatar-city-master-plan-technical-summary/>.
- Government of Mongolia, and JICA. 'White Paper on Disability in Mongolia 2019'. Government of Mongolia: Ministry of Labour and Social Protection, 2019.
- Hamiduddin, Iqbal. 'Travel and Social Equity in Ulaanbaatar's Ger Districts: The Case of Khoroo 31'. 2019. www.unaa-project.org.
- Hamiduddin, Iqbal, Rebekah Plueckhahn, Daniel Fitzpatrick, GerHub, and PublicLab Mongolia. 'The UNAA Project: Ulaanbaatar Accessibility Appraisal', n.d. <https://www.unaa-project.org/>.
- Hamraie, Aimi. 'Designing Collective Access: A Feminist Disability Theory of Universal Design'. *Disability Studies Quarterly* 33, no. 4 (5 September 2013). <https://doi.org/10.18061/dsq.v33i4.3871>.
- Higashida, Masateru. 'Consolidating Information on Disability-Inclusive Policies: A Case Study on White Papers in Mongolia from the Perspective of International Technical Cooperation'. *Asia Pacific Journal of Social Work and Development* 30, no. 2 (2 April 2020): 122–30. <https://doi.org/10.1080/02185385.2020.1713208>.
- Infrastructure and Cities for Economic Development (ICED). 'Delivering Disability Inclusive Infrastructure in Low Income Countries'. Inception Report: Summary, 2019.
- Jadambaa, Amarzaya, Jeffery Spickett, Burmaajav Badrakh, and Rosana E. Norman. 'The Impact of the Environment on Health in Mongolia: A Systematic Review'. *Asia Pacific Journal of Public Health* 27, no. 1 (January 2015): 45–75. <https://doi.org/10.1177/1010539514545648>.
- JICA. 'Ulaanbaatar, a Reborn City: 10 Years of Urban Development in a Rapidly Expanding City'. News, 26 October 2016. https://www.jica.go.jp/english/news/field/2019/20191016_01.html.
- Kamata, Takuya, James A. Reichert, Tumentsog Tsevegmid, Yoonhee Kim, and Brett Sedgewick. *Managing Urban Expansion in Mongolia: Best Practices in Scenario-Based Urban Planning*. The World Bank, 2010. <https://doi.org/10.1596/978-0-8213-8314-8>.
- Khan, F, B Amatya, B Avirmed, Y Yi, B Shirmen, G Abbott, and M Galea. 'World Health Organization Global Disability Action Plan: The Mongolian Perspective'. *Journal of Rehabilitation Medicine* 50, no. 4 (2018): 388–366. <https://doi.org/10.2340/16501977-2207>.
- Larkin, John, and Gantuya Ganzorig. 'Case Study: Can Better Urban Planning Help Ulaanbaatar Glimpse a Brighter Future?' Asian Development Bank, 16 August 2018. <https://www.adb.org/results/can-better-urban-planning-help-ulaanbaatar-glimpse-brighter-future>.
- Lhamsuren, Khandsuren, Tserendolgor Choijiljav, Enkhtuya Budbazar, Sureenchimeg Vanchinkhuu, Diana Blanc, and John Grundy. 'Taking Action on the Social Determinants of Health: Improving Health Access for the Urban Poor in Mongolia'. *International Journal for Equity in Health* 11, no. 1 (2012): 15. <https://doi.org/10.1186/1475-9276-11-15>.
- Menard, Aubrey. 'Mongolia's Urban Planning Paradox'. New America Weekly, 31 August 2020. <https://www.newamerica.org/weekly/mongolias-urban-planning-paradox/>.
- . *Young Mongols: Forging Democracy in the Wild, Wild East*. Penguin Random House SEA, 2020.
- Mitlin, Diana, and David Satterthwaite. 'On the Engagement of Excluded Groups in Inclusive Cities: Highlighting Good Practices and Key Challenges in the Global South'. Urban Development Series Knowledge Papers. The World Bank, 2016.
- Mongolian National Statistics Office. 'Main Findings of the 2010 Population and Housing Census', 2010. en.ubseg.gov.mn/content/49.
- Mongolian Statistical Information Service. '2015 Population and Housing'. Census of Mongolia, 1 January 2016. www.1212.mn.
- Morante, Danielle. 'Occupational Therapy Emerging in Mongolia: A Case Study'. *World Federation of Occupational Therapists Bulletin* 73, no. 2 (3 July 2017): 88–93. <https://doi.org/10.1080/14473828.2017.1281870>.
- 'National Statistics Office of Mongolia', 2020. <https://www.en.nso.mn/>.
- 'New Urban Agenda'. United Nations, 2017.
- Pineda, Victor Santiago. 'Enabling Justice: Spatializing Disability in the Built Environment', n.d., 14.

- Pinilla-Roncancio, Monica, and Sabina Alkire. 'How Poor Are People With Disabilities? Evidence Based on the Global Multidimensional Poverty Index'. *Journal of Disability Policy Studies*, 17 May 2020, 104420732091994. <https://doi.org/10.1177/1044207320919942>.
- Plueckhahn, Rebekah, and Terbish Bayartsetseg. 'Negotiation, Social Indebtedness, and the Making of Urban Economies in Ulaanbaatar'. *Central Asian Survey* 37, no. 3 (3 July 2018): 438–56. <https://doi.org/10.1080/02634937.2018.1442318>.
- So, Yeonghwa, Naae Lee, Seyeon Kim, Youngji Lee, Chimedsuren Ochir, and Kiyoungh Lee. 'Characteristics of Lifestyle and Living Environment of Ger District Residents in Ulaanbaatar, Mongolia'. *The Korean Journal of Public Health* 55, no. 2 (31 January 2019): 12–21. <https://doi.org/10.17262/KJPH.2018.12.55.2.12>.
- Stol, Ilana, and Enkhjargal Adiya. 'Intergenerational Relationships in Mongolia: Togetherness as a Family Unit'. *Journal of Intergenerational Relationships* 8, no. 1 (4 March 2010): 83–89. <https://doi.org/10.1080/15350770903520783>.
- Sugimoto, Hirofumi, Umekazu Kawagishi, Koki Kitano, Ishjamts Gonchigbat, and Naoyuki Hirota. 'Living Environment of Nomads Residing on the Outskirts of Ulaanbaatar, Mongolia—Dispositional Characteristics from the Perspective of a Comparison of Nomads and People Living in Ger Fixed Residences in the City—'. *Journal of Asian Architecture and Building Engineering* 6, no. 2 (November 2007): 283–90. <https://doi.org/10.3130/jaabe.6.283>.
- Szilágyi, Zsolt. 'Lingering Nomad Ideology in 21st Century Mongolia'. *Acta Ethnographica Hungarica* 61, no. 1 (June 2016): 197–211. <https://doi.org/10.1556/022.2016.61.1.9>.
- Terbish, Bayartsetseg, and Margot Rawsthorne. 'Social Exclusion in Ulaanbaatar City Mongolia'. *Asia Pacific Journal of Social Work and Development* 26, no. 2–3 (2 July 2016): 88–101. <https://doi.org/10.1080/02185385.2016.1199324>.
- The World Bank. 'World Inclusive Cities Approach Paper'. The World Bank, May 2015.
- The World Health Organisation. 'World Report on Disability'. The World Health Organisation, 2011.
- Uddin, Sayed Mohammad Nazim, Zifu Li, J.C. Gaillard, Pauley F. Tedoff, Heinz-Peter Mang, Jean Lapegue, Elisabeth Maria Huba, Olivia Kummel, and Eric Rheinstein. 'Exposure to WASH-Borne Hazards: A Scoping Study on Peri-Urban Ger Areas in Ulaanbaatar, Mongolia'. *Habitat International* 44 (October 2014): 403–11. <https://doi.org/10.1016/j.habitatint.2014.08.006>.
- UN-Habitat. 'Flagship Programme 1: Inclusive, Vibrant Neighbourhoods and Communities'. UN-Habitat. Accessed 19 September 2020. <https://unhabitat.org/programme/inclusive-vibrant-neighbourhoods-and-communities>.
- Upton, Caroline. 'Social Capital, Collective Action and Group Formation: Developmental Trajectories in Post-Socialist Mongolia'. *Human Ecology* 36, no. 2 (April 2008): 175–88. <https://doi.org/10.1007/s10745-007-9158-x>.
- Venter, Christoffel J., Thomas E. Rickert, and David A. C. Maunder. 'From Basic Rights to Full Access: Elements of Current Accessibility Practice in Developing Countries'. *Transportation Research Record: Journal of the Transportation Research Board* 1848, no. 1 (January 2003): 79–85. <https://doi.org/10.3141/1848-11>.
- World Economic Forum: Strategic Intelligence. 'Global Issue: Inclusive Design. Curated by the Smithsonian Institution'. World Economic Forum: Strategic Intelligence. Accessed 12 September 2020. <https://intelligence.weforum.org/topics/a1G0X0000057IniUAE?tab=publications>.
- Wu, Yun, Arto Emerik Nuorkivi, Pekka Kalevi Salminen, Peter Johansen, and Rong Cui. 'Paving the Way to a Sustainable Heating Sector A Roadmap for Ulaanbaatar Urban Heating'. Energy Sector Management Assistance Program (ESMAP). The World Bank, 2019. <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/361331554753311754/paving-the-way-to-a-sustainable-heating-sector-a-roadmap-for-ulaanbaatar-urban-heating>.