

Planning and Designing Accessible Public Spaces in Canadian Universities:

A Case Study of the University of Manitoba

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Abstract

This practicum focuses on the design of public spaces at the University of Manitoba in Winnipeg, Manitoba and the use of universal design standards as a catalyst for a more accessible campus. The research contributes to current thinking about accessible, universal and inclusive planning and design in Canada. This practicum reviews planning documents and the recently enacted *Accessibility for Manitobans Act*, complemented by design ethnography using moving interviews, and photo mapping, to build grounded insights that lead to new ideas about accessibility planning and accessible campus design in Winnipeg and other cities in Canada. Urban marginalization affects the lives of many residents in Winnipeg with disabilities; in fact, one in six Manitobans have some form of disability. This marginalization often leads to deprivation of basic human rights and inhibits access to goods and services. When basic human rights are violated, independence and urban engagement can potentially be limited.

Keywords: Accessibility, Barrier-Free, Civil Right, Design Exclusion, Design for All, Disability Matters, Disability Planning, Inclusive Design, Inclusive Environments, Universal Design, User-Friendly

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Table of Contents

Abstract Summary	2
Acknowledgements	3
Table of Contents	4
List of Tables	6
List of Figures	7
Acronyms	8
Key Definitions	9
Brief Chronology of Accessibility-Related Initiatives in Manitoba	12
1.0 Introduction	13
1.1 Significance of Study	14
1.2 Key Research Questions	16
1.3 Structure of Document	17
2.0 Research Site	19
2.1 Site Context	20
2.2 Demographics	24
3.0 Literature Review of Theoretical Framework or Concepts	27
3.1 Countering Design Exclusion	27
3.2 Accessible and Inclusive Environments	38
3.4 Summary	44
4.0 Research Methods	46
4.1 Design Ethnography	47

4.1.1 Moving Interviews	47
4.1.2 Photographic Documentation + Maps	51
4.2 Data Analysis	52
5.0 Results	56
5.1 Findings	56
5.1.1 Overall Addressed Participant Experiences	56
5.2 Occurrence of Barrier Types	67
5.3 Common Barriers Addressed and Their Location	71
5.4 Summary of Findings	75
6.0 Analysis and Synthesis	77
6.1 Results and Trends	77
6.2 Addressing the Research Questions	83
6.3 Limitations	88
6.4 Recommendations for Further Research	90
6.5 Research Questions Arising	92
6.6 Summary	93
7.0 Conclusion	94
8.0 List of References	97
9.0 Appendices	105

List of Tables

Table 1: University of Manitoba Demographics. Retrieved from the Office of Institutional Analysis:
https://umanitoba.ca/admin/oia/media/student_enrol_F17.pdf)

Table 2: Students Registered with SAS According to Type of Disability (2016-2017) Retrieved from
<https://umanitoba.ca/student/accessibility/media/SAS-Annual-Report-2016-2017.pdf>

Table 3: Applying Lecompte's (2000) Method to This Research Project

Table 4: Comparing Research Barriers to the Barrier Priorities in the Accessibility Survey at the University of Manitoba

Table 5: Barrier Themes Occurrence in Research and University of Manitoba Accessibility Survey

List of Figures

Figure 1: University of Manitoba Fort Gary Campus Site Context in Winnipeg

Figure 2: Fort Gary Campus Site Context at the University of Manitoba

Figure 3: Image of the Fort Gary Campus

Figure 4: Bannatyne Campus Site Context at the University of Manitoba

Figure 5: Image of the Bannatyne Campus

Figure 6: University of Manitoba Campus Site Context and Planned Rapid Transit Connectivity within City Limits

Figure 7: Research Tools Used

Figure 8: Research Study - Triangulation

Figure 9: Image of the Front of the Animal Sciences Building at the University of Manitoba

Figure 10: Image of the Accessible Access Point for the Animal Sciences Building

Figure 11: Image of the Door Signage in the Animal Sciences Building Where the Access Point Is Located

Figure 12: Overall Distribution of Experiences for All Participants

Figure 13: Students Registered with SAS According to Type of Disability 2016-2017

Figure 14: Barrier Category Occurrence (based on the Customer Service Standard)

Figure 15: Fort Garry Campus Moving Interview Routes

Figure 16: Bannatyne Campus Moving Interview Routes

Figure 17: Themes in Data

Acronyms

ADA	American Disabilities Act (1990)
ALC	Active Living Centre
AODA	Accessibility for Ontarians with Disabilities Act (2005)
AMA	<i>The Accessibility for Manitobans Act (2013)</i>
ASL	American Sign Language
DIO	Disabilities Issues Office
SAS	Student Accessibility Services
The Code	The Human Rights Code of Manitoba
UofM	University of Manitoba

Key Definitions

NOTE: All the terms below have been taken from: Government of Manitoba. (2012). Guide for Public Sector Organizations | How to Create Your Accessibility Plan | *The Accessibility for Manitobans Act*. Winnipeg: Government of Manitoba. (Retrieved from <http://accessibilitymb.ca/glossary.html>.) As these terms have been drawn from local material, they represent the perspective of local legislation. Terms such as persons disabled by barriers and persons with disabilities, as well as universal design distinct from inclusive design are further defined in the literature review. (See Chapter 3)

Accessibility – Related to legislation, accessibility means giving people of all abilities opportunities to participate fully in everyday life. Accessibility refers to the ability to access and benefit from a system, service, product or environment.

Accessible Formats – Information provided in a way that is accessible to people with disabilities.

Examples: large print, recorded audio or Braille instead of standard printed material.

Accommodations – Arrangements made to allow persons with disabilities to participate or benefit equally. There is no set formula for accommodating people with disabilities; the person involved must be consulted. Examples: healthy snacks at events accommodate individuals with dietary needs; flexible hours accommodate employees whose schedules are affected by homecare duties or medication.

Active Offer – Offering the public the opportunity to request an accommodation.

Examples: inviting requests for disability accommodations in event advertisements; including the active offer on print materials: “this information is available in alternate formats on request” or advertising disability accommodations, for instance with a wheelchair access icon.

Alt Tags – Also referred to as alt attributes, alt tags provide a verbal description of a visual or graph for individuals with visual impairments who use screen readers.

Alternate Formats – Alternate ways of providing information beyond traditional printed material. Examples: large print, electronic text, CD ROMs, DVDs and Braille.

American Sign Language (ASL) – Interpreters use hand gestures and physical expression to translate spoken words into “sign language” for persons who are Deaf. American Sign Language is common to English-speaking North Americans. In Quebec, another form of sign language is used (LSQ).

Barriers – Related to this legislation – obstacles that limit access and prevent people with disabilities from fully participating in society. Most barriers are not intentional. Barriers usually arise because the needs of people with disabilities are not considered from the beginning.

Built Environment – More than buildings, the built environment includes everything humans have changed in the natural environment, such as sidewalks, curbs, roadways and parks.

Captioning – Text at the bottom of the screen (television/video) allowing persons who are Deaf or hard-of-hearing to follow the spoken dialogue. It is also widely used in bars and sports facilities. Closed captioning is similar but the text must be decoded to appear on the screen.

Disability – A disability is a condition that limits a person's daily activities. Persons with disabilities may have long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their participation on an equal basis with others. A disability, aging, an injury and other life events may temporarily or permanently affect mobility, dexterity (use of hands), vision, hearing, communication, understanding or mental health.

Duty to Reasonably Accommodate – The requirement established by The Human Rights Code (Manitoba) to remove barriers up to the point of undue hardship.

Interveners – People specially trained to communicate auditory and visual information to persons who are deaf-blind. Various methods are used depending on individual needs. These include visual sign language, tactile sign language, tactile finger spelling, Braille and large print notes.

Large Print – Printed information provided in a large font size (14 points or larger) for people who have low vision. For easier reading, select "sans serif" fonts.

Oral Interpreters – An oral interpreter is a person that silently mouth interprets speech. This is done when a person who is hard-of-hearing or Deaf is able to lip read but does not use sign language.

Persons Disabled by Barriers – Individuals with a physical or mental impairment prevented from full participation by a factor in the environment.

Personal Care Attendants – Attendants who assist persons with disabilities with the care of their physical needs. Tasks may include assistance with dressing, management of bodily functions and eating.

Persons with disabilities – Persons with disabilities include those who have long-term physical, mental, intellectual, communication or sensory impairments which in interaction with various barriers may hinder their full and effective participation on an equal basis with others.

Reasonable Accommodations – A wide range of modifications or adjustments to meet the needs of persons in a respectful manner. Usually simple and inexpensive, reasonable accommodations

consider the needs of persons or groups who have characteristics protected under The Human Rights Code (Manitoba), such as a disability.

Service animal – An animal (typically a dog) trained to provide assistance to a person with a disability.

Sign Language Interpreter – A person who translates from one language (English) to another language (American Sign Language) using gestures and physical expressions (sign language). Interpreter services are critical to ensure accurate communication between individuals who are Deaf and hearing persons who do not use sign language.

Support person – A person accompanying a person with a disability to help with communication, mobility, personal care or medical needs, or to access goods or services.

Accessibility for Manitobans Act (AMA) – Provincial legislation introduced to identify, remove and prevent barriers to accessibility. Standards will be developed in five key areas of daily living. These standards will outline specific measures to be taken by public sector and private sector organizations. Changes will result in improved accessibility for all Manitobans, regardless of (dis)abilities.

Universal Design – Refers to making things safer, easier, and more convenient for everyone. It involves a broad range of design concepts – including design of products, spaces and environments – to provide access in a way that respects all (dis)abilities.

Brief Chronology of Accessibility-Related Initiatives in Manitoba

<u>2003</u>	City of Winnipeg establishes Universal Design Policy
<u>2006</u>	City of Winnipeg establishes Universal Design Standards
<u>December 5, 2013</u>	The <i>Accessibility for Manitobans Act (AMA)</i> is enacted
<u>2015</u>	The Customer Service Standard under the AMA is released
<u>November 1, 2016</u>	Manitoba Government is required to be compliant with the Customer Service Standard
<u>December 2016</u>	All public-sector organizations are required to publish 'Accessibility Plans' with the requirement to update every two years
<u>November 1, 2017</u>	All public-sector organizations are required to be compliant with the Customer Service Standard (this includes the University of Manitoba)
	The Government of Manitoba releases a proposed Accessible Employment Standard Regulation available for public comment
<u>April 5, 2017</u>	The Accessibility Advisory Committee submits recommendations for an Accessibility Employment Standard for the Minister of Families
<u>November 1, 2018</u>	All private, small municipalities and no-profit organizations are required to be compliant with the Customer Service Standard
<u>May 2019</u>	The Government of Manitoba released the Accessible Employment Standard.
<u>2023</u>	The Government of Manitoba's committed date for achieving significant progress in making Manitoba more inclusive for everyone

1.0 Introduction

This practicum uses the University of Manitoba as the site for research into accessibility issues on university campuses in Canada. The theoretical issues around accessibility design and principles for accessible design that have been studied, documented and analyzed based on this particular location may have broader applications to other Canadian post-secondary campuses.

In the past, many people with disabilities were excluded from post-secondary education due to the design of university campuses (Neuhaus, Smith & Burgdorf, 2014). It is only relatively recently that campuses have become more inclusive, providing opportunities for those seeking access to higher education. Legislation like the Federal and Provincial Human Rights Codes, the National Building Code, and more recently the Province of Manitoba's *Accessibility for Manitobans Act* (AMA) have helped influence this heightened attention to accessibility. The aforementioned instruments, in particular the AMA, require all post-secondary institutions in jurisdictions with accessibility legislation to comply by producing accessibility plans and removing barriers to accessibility within a prescribed time period. While most cities and campuses have not been especially forward-thinking or progressive in developing the built environment to accommodate those with a range of disabilities, a few promising steps have been taken in Winnipeg, Manitoba to date. The City of Winnipeg has been developing design standards to establish a minimum for accessibility regulations within the city boundaries since 2006. Additionally, the regulatory environment has recently shifted. In 2013, Manitoba became the second province in Canada, following Ontario, to enact accessibility legislation.

Although design standards in Winnipeg are changing, there is still a heavy presence of old infrastructure and architecture embedded within the city. These present many barriers to full accessibility and impact Winnipeg's development processes. The population of persons with disabilities continues to grow. Combined with an aging population, this suggests the need for urgent attention to the forms of buildings and public spaces.

1.1 Significance of Study

The research conducted in this practicum aims to help foster independence for people with disabilities through design to create universal accessibility on Canadian campuses, and to begin to incorporate accessible design standards in all planning projects. This research attempts to bring to life the challenges people with disabilities face, and complement the current inventories being collected by the University of Manitoba and other post-secondary institutions. The University of Manitoba and other large organizations in Manitoba have started collecting important information through online surveys, unit auditing of barriers, community consultations and large-scale built environment auditing through the use of an external consultant. All these strategies have helped spread awareness about accessibility issues.

This practicum further contributes to this inventory with a more of an experiential lens. Such lens is important because it can help to improve the day-to-day lives for people with disabilities. It can improve freedom and independence and allow for more accessible public space. These ideas can be further applied to larger scales of design and planning. This is a topic that has been adopted by the City of Winnipeg and the Province of Manitoba, which supports the idea that the demand for new research based on experiential data (and the potential for change resulting from such data) is at its highest. Improving public spaces, making great places and

ensuring the well-being of people are arguably the primary priorities of all planners. Accessible planning and design should be directly embedded in all these priorities, and once it is, better places for all can become more common, thereby removing barriers that limit the lives of people with disabilities.

University campuses provide public amenities to the greater community. The University of Manitoba provides amenities to roughly 40,000 students, staff, and faculty alone (as cited in University of Manitoba - Office of Institutional Analysis, 2018). This does not take into consideration the greater community that regularly uses the libraries, gym, theatre, restaurants, and other amenities. Recently, the University completed its process for implementing compliance for the Customer Service Regulation, which focuses on improving all services on campus for those disabled by barriers. These barriers include but are not limited to attitudinal barriers, information and communication barriers, technological barriers, systemic barriers, and built environment barriers. Furthermore, the University has worked on an Accessibility Plan for all University of Manitoba campuses (the first edition was released in December 2016), which has and will continue to be updated annually, treating it as a living document. This plan includes an inventory of barriers identified over the course of many community engagements. This inventory sets the foundation for the Universities barrier prevention and removal strategy, which was first made public in December 2016.

Many barriers exist throughout university campuses, including the University of Manitoba. Some are not necessarily obvious to the 'average person', but for people with disabilities, these barriers hinder or prevent access. Common areas of consideration, which can be connected to the Human Rights Code, include accessible entrances, restrooms, and water

fountains. Clear universal signage is another component that contributes to accessible places. These kinds of components will be addressed throughout this research, as they are integral to university campuses and public in general.

Currently, many people think disability is the barrier; however, this is inaccurate. Barriers arise within the built environment, because the needs of people with disabilities are not considered from the outset of all planning and design processes. Once there is a comprehensive understanding of what barriers may arise based on experience and a complete understanding of the multiplicity of those barriers, better accessibility can be achieved and planned for.

1.2 Key Research Questions

Community engagement with people disabled by barriers has informed this research and the recommendations regarding better accessible planning and design herein. The research aims to explore the way in which the experiences of people with disabilities on university campuses intersects with *The Accessibility for Manitobans Act* requirements, as well as current accessibility initiatives underway at the University of Manitoba. The primary research questions are:

1. How do people with disabilities experience public spaces on university campuses, specifically the University of Manitoba?
2. What are some of the common campus barriers that create challenges for people with disabilities?
3. How do the on-campus experiences of those with disabilities intersect with recent accessibility policies in Manitoba?

1.3 Structure of Document

The first chapter of this practicum provides background information to better understand the research, as disability awareness in planning and design is not commonly incorporated. It also presents the questions that guided the research methods and discoveries, and highlighted the very significance of this research.

Chapter Two provides an overview of the research site, including important demographic information that has informed this practicum.

In Chapter Three, the theoretical framework is presented, particularly as this guides the research and recommendations. This chapter also reviews literature on countering design exclusion and accessible and inclusive environments.

Chapter Four details the research methods used. The chapter focuses on participant recruitment, the moving interviews, and methods of analysis.

Chapter Five outlines the findings from the design ethnography research, which used moving interviews as the main method for collecting user-centered qualitative data. This data collection technique allowed for data to be collected in multiple forms, such as photographs, audio recordings and mapping.

Chapter Six offers a summary of the answers to the research questions, and provides recommendations for further study.

The next chapter provides an in-depth description of the University of Manitoba as the research site that is being explored, reviewing demographics, understanding the context within the city, and the built form that makes up the site.

2.0 Research Site

Public amenities within the university setting (such as libraries stores, and transit) are often inaccessible for people with disabilities, making access to goods and services challenging, which can serve to perpetuate their marginalization. As noted in many documents from the Disability Issues Office (DIO), a branch of the Government of Manitoba responsible for developing the provincial accessibility legislation, an injury or incident can happen to anyone, at any time, leaving them with some degree of either mental or physical disability. When properly planned and designed, cities and their public amenities, particularly university campuses in this case can provide more inclusive and accessible spaces to accommodate a range of abilities.

The recently enacted *Accessibility for Manitobans Act* (AMA) features five Standards: The Customer Service Standard, which has recently become a regulation, the Employment Standard which is next to become a regulation, the Information and Communication Standard, the Transportation Standard, and the Built Environment Standard. These standards each have their own required schedule for implementing change at many scales. While the provisions of the Act are still in the early stages of implementation, its directions for planning and design have the potential to begin mitigating the marginalization designed into the urban form of many cities.

In addition to the *Accessibility for Manitobans Act*, the 2015 City of Winnipeg Accessibility Design Standard (3rd ed.) has also put in place policies to guide change in the direction of greater accessibility. The Accessible Design Standard sets out universal design building standards that, if enforced, will provide better accessibility. These resources help to frame my own exploration of design issues at the University of Manitoba that create barriers and disable people.

Other organizations in Winnipeg (such as Disability Matters Vote 2016, Barrier-Free Manitoba, and Abilities Manitoba) are also striving for general equality for all citizens living with disabilities, and their insights often influence the development of legislation during the consultation phases. These organizations' mandates range from employment equality to challenging stigmas and attitudinal barriers due to a lack of education, as well as identifying physical barriers embedded within the built environment.

Additionally, Manitoba's post-secondary institutions have started the planning processes required to create better inclusivity across campuses to achieve AMA compliance. Post-secondary institutions are collaborating to share resources not only to achieve accessible built environments, but also to spread awareness. Their work can be seen as a best practice within the province, as the group is able to work at a larger scale to remove the most difficult barriers, which include attitudinal barriers -- thereby helping to achieve accessibility beyond mere compliance.

With better research on the lived experiences of people with disabilities, greater awareness can be generated. The potential for change is rich; change that can begin to eliminate these longstanding issues.

2.1 Site Context

The University of Manitoba was founded in 1877 and has expanded to occupy nine campuses and research stations, spanning over 280 hectares of land, and comprising some seventy major buildings (as cited in University of Manitoba: About – Campuses, 2019). These buildings include health research institutions, medical and dental centers, colleges, laboratories, administrative offices, recreational facilities, research facilities, libraries, and residences. The University's rising population and campus growth demand "make it in essence Manitoba's third largest city" and a

“bustling knowledge community with an international reputation and reach” (as cited in University of Manitoba: About – Campuses, 2019). The main Fort Garry Campus comprises beautiful new and old buildings connected internally with below-ground tunnels and externally with landscaped walkways allowing for pleasant movement between buildings in both warm and cold seasons.



Figure 1: University of Manitoba Fort Gary + Bannatyne Campus Site Context in Winnipeg [Graphic by the author]



Figure 2: Fort Gary Campus Site Context at the University of Manitoba (showing the built form of the main University of Manitoba campus, interconnected by both pedestrian and automobile infrastructure) [Graphic by the author]



Figure 3: Image of the Fort Gary Campus (University of Manitoba, 2017) [Retrieved from <https://www.studyincanada.com/Discover/Article/13/4277/Discover-The-Benefits-Of-Studying-In-Canada>]

Similarly, the Bannatyne Campus features many tunnels and is connected to one of Winnipeg's main hospitals, the Health Sciences Centre. The Fort Gary campus is located in the south end of Winnipeg, and houses a Canadian Football League stadium.



Figure 4: Bannatyne Campus Site Context at the University of Manitoba [Graphic by author]



Figure 5: Image of the Bannatyne Campus (University of Manitoba, 2019) [Retrieved from <https://umanitoba.ca/campus/transportation/transit.html>]

Transit to the Fort Garry campus is good, however there is ongoing work being done to improve the transit connectivity from downtown city centre to the South end campus, transit connectivity is shown in Figure 6. The development formation of this campus is reflective of its suburban location within a sprawling car dominated city, this can be seen in Figure 2.

The Bannatyne campus is located in downtown Winnipeg where public transit connectivity is very good. Figure 1. demonstrates both campuses' orientation within the city limits, and Figure 6. shows the current and future rapid transit corridors connecting the suburban campus to the downtown city centre.



Figure 6: University of Manitoba Campus Site Context and Planned Rapid Transit Connectivity within City Limits [Graphic by author]

2.2 Demographics

The University of Manitoba's Office on Institutional Analysis tracks the registration numbers of faculty, staff, and students annually, which can be found in the '*University of Manitoba Multi-Year Accessibility Plan.*' The numbers shown in Table 1 below (taken from the plan) show a stable population of roughly 29,000 students from 2015-2018, and roughly 9,000 faculty and staff annually, for a total population of roughly 38,000 (University of Manitoba - Office of Institutional Analysis, 2018). This number does not take into account family, visiting alumni, community partners, patients, gym users and other daily visitors.

Table 1: University of Manitoba Demographics (Office of Institutional Analysis Website)

University of Manitoba Population 2014-2018				
	2014-15 (Revised)	2015-16	2016-17	2017-18
Full-time & Part-time Faculty	4,993	5,034	5,378	
Full-time & Part-time Support Staff	4,058	3,943	3,857	
Total	9,051	8,977	9,235	
	Fall 2015 Term	Fall 2016	Fall 2017	Fall 2018
Student Enrolment	29,929	29,987	29,185	29,266

[Retrieved from http://umanitoba.ca/admin/oia/media/summary_report_F18_FD.pdf]

Table 2: Students Registered with SAS According to Type of Disability 2016-2017

Category of disability		2016-2017		2015-2016	
		Number of Students	Percentage	Number of Students	Percentage
Mental Health Cognitive		558	43%	451	39%
	ADHD	347	27%	321	28%
	Asperger Disorder	179		156	
	Learning Disability	37		31	
	Acquired Brain Injury	101		103	
Physical/Medical	Chronic Illness	30		31	
	Mobility	212	16%	191	17%
Deaf/Hard of Hearing		40	3%	42	4%
Temporary		45	3%	50	4%
Blind/Low Vision		31	2%	24	2%
Other/Unclassified		78	6%	65	6%
Total		1,311		1,144	

[Retrieved from <https://umanitoba.ca/student/accessibility/media/SAS-Annual-Report-2016-2017.pdf>]

The plan also provides data from Student Accessibility Services (SAS) on the number of students registered with SAS and the types of disabilities identified. Currently there are 1311 students registered with SAS, requiring accessibility support and accommodations to successfully complete their studies. Employee Wellness is a unit within the University that works under Human Resources to provide similar supports to faculty and staff; however, comparable data is not collected. The available data reveals there is a significant population of students who identifying as having a disability. The University has supports in place to attempt to remove barriers for accessibility to this population of faculty and staff who identify as having a disability. The next chapter reviews literature pertaining to accessibility, exclusion by design, and the principles associated with inclusive environments.

3.0 Literature Review of Theoretical Framework or Concepts

The literature review following explores terms such as *accessibility*, *universal design*, and *inclusive design*, in order to better understand the relationships among them and how addressing them can influence the design of the built environment. Identified themes (including design exclusion, marginalization, and segregation) also help to position the research by addressing social justice and human rights concerns.

3.1 Countering Design Exclusion

Barriers within the built environment prevent independence and urban engagement for people with disabilities. Planning, design, and disability literature reveals these recurring themes. The first section of the literature review examines design exclusion, inclusive design, and universal design, and how these concepts can be applied to planning and design processes. The universal design and inclusive design sections examine urban marginalization, in order to identify, analyze, and synthesize underlying trends and issues within the history of planning and design, as well as current practice. The literature reveals an often-neglected topic in much of today's urban design and city planning practice, neglect that can be readily identified and experienced within the urban fabric of many Canadian cities.

Universal and inclusive design strategies attempt to bridge the gap between accessible planning and everyday urban design by addressing physical barriers within the urban form that lead to social exclusion. The exploration and comparison of these strategies suggests that planning scholars are attempting to help reduce marginalization and segregation by creating

accessible places for all.

Poor planning and design can create challenging barriers for people with disabilities. These barriers affect the level of engagement individuals with disabilities have within their built environment. These barriers also highlight the flaws of public spaces that offer goods and services. Failure to consider all ranges of user capabilities, in the sense of what abilities are required to utilize public spaces, often causes social exclusion. Countering design exclusion is a prominent theme found in the literature which, in practice, can address issues such as marginalization, segregation and social stigmas.

The built environment needs to be designed to be more user-friendly in order to provide accessible navigation for people with various disabilities. In other words, the built environment should be free of barriers that prevent independence for people with disabilities. Creating accessible and inclusive environments, in relation to user accessibility, is another theme outlined in the literature.

The concept that people are disabled by barriers can be understood by first addressing the relationship between social and spatial order. When this relationship is not considered in the design process, it creates a gap between usability and accessibility for people with disabilities. Designers and planners need to understand this relationship and use it to push the limits of existing theory, to create dynamic and accessible designs. The third and final theme found in the literature -- universal design for inclusive environments -- continues to push the boundaries of inclusive design.

These themes represent initiatives from the past, trends in current practice and provide a framework for future development. Inclusive design involves a fundamental strategy for

rethinking the built form and is a catalyst for addressing impediments to independence and the creation of social exclusion caused by barriers.

Literature Review Questions: How can inclusive design and universal design help to address the needs of those with disabilities? What are the key principles of inclusive design and how do they address the issues within the built environment, which create barriers for people with disabilities? How does the comparison of inclusive design and universal design principles further our understanding of current trends in urban design?

Design Exclusion

Design exclusion is best understood when considering built environments; this theme can be used to examine barriers within public spaces that result in challenges to, or even the exclusion of everyday uses by people with disabilities. Imrie and Hall (2001) describe the built environment as comprising obstacles and barriers that limit and deny access for those with physical and cognitive disabilities to public spaces.

History and context play an important role in understanding design and social exclusion, which can still be found within the built form today and ultimately cause accessibility limitations for people with disabilities. Imrie and Hall (2001) suggest that the knowledge and attitudes found in design exclusion are rooted in the history of a disabling society, where people with disabilities have been marginalized and denied opportunity throughout history. Keates and Clarkson (2004) do not explicitly explore the history of design exclusion; rather, they provide reasoning for designing inclusively. They suggest that inclusive design is an ethical movement addressing

“unnecessary” exclusion that can be found in design and the built form. Keates and Clarkson state that the movement aims to design for a broader range of user abilities.

Design exclusion can be seen as a reason for developing inclusive design. Inclusive design aims to create more inclusive spaces. Imrie and Hall (2001) define inclusive design as a development based on the principles of universal design, which they believe is more likely to lead to changes in societal relations within the development and design process necessary to improve urban conditions (p.18-19). Their definition involves “much more than a technical response to the needs of disabled people” (pp. 18-19). They describe the importance of inclusive design within the built environment as an “equity and quality of life issue” rather than a disability issue (pp. 18-19). Further, they note the significance in working and designing *with* people with a range of abilities rather than *for* them. This is important in order to allow users to control their own environments, just as those who do not have disabilities are able to control their experiences within their environments (pp. 18-19).

Inclusive Design

Keates and Clarkson (2012) offer a working definition of inclusive design as design which involves: the process, identification of need, the solutions regarding the user needs, and the end review, confirming the needs are satisfied in the design (p. 68). The authors suggest the basic requirements of this kind of design could be as simple as checking to verify the necessary functional abilities of the design. Alternatively, a more sophisticated design process would include evaluations and measurements, including quantitative information regarding usability and accessibility (p. 70).

Nussbaumer (2011) supplies several variations of the definition of inclusive design. Each variation is derived from the United Kingdom context and in particular, from the British Standards Institution and the English Partnership. Nussbaumer defines this design strategy as providing easy accessibility within the built environment and the services for people with all abilities, eliminating “social, physical, technical, political and economic” barriers, which affect overall quality of life (p. 30).

Inclusive design activists and scholars, such as Keates and Clarkson (2012), have suggested that design exclusion is a fault of the service providers, who fail to provide adequate support for those users. While they acknowledge that significant work has been done to address design exclusion, the work being done is simply not enough, as the fundamental issues in today’s practice stem from the manner of these approaches. Approaches, such as *design for disability*, are examples of this, furthering the idea of social segregation. Drawing attention to user’s limited abilities, and creating alternative products and services to accommodate the disability community, keeps them separate from the rest of the population. Many other failed attempts to achieve inclusive design, such as design for all, and transgenerational design, are discussed in Keates and Clarkson (2012). While all these attempts are important in design evolution, they are nonetheless user-exclusive, target specific populations and in some cases, further social segregation. These attempts may fall short in solving the issues regarding design exclusion, but they represent the initial stages and the early development of inclusive thinking. This thinking has transported designers and scholars to where society is today and is setting up the framework for where it can be in the future. This was a necessary milestone in thinking inclusively and has instilled values in design that will continue to evolve. Nussbaumer’s text supports these ideas and

draws on many of the same ideas presented by Keates and Clarkson (2012), particularly regarding the emergence of terminology that attempts to address design exclusion, which can in many cases lead to further segregation. This body of work also provides a vivid outline regarding the process of design exclusion. The text draws on many human rights acts that have evolved throughout the history of exclusion and discrimination found within society and have ultimately shaped and formed the built environment. The literature stresses the importance of understanding the context that cultivated the history of design exclusion, as there is a diverse range of disabilities spread evenly throughout North American populations. This range includes but is not limited to, the elderly population, those with visible disabilities and those with invisible disabilities (Nussbaumer, 2011).

Countering Design Exclusion

This selection of work addresses and outlines the many layers of exclusion within design and planning, and this helps to determine why exclusion happened and provides insight into how to plan to counter this trend. Each author addresses the physical components that form design exclusion. In addition, the literature addresses the social aspects of design and planning that create another level of barriers core to the outcome of design.

Imrie and Hall (2004) stress the importance of challenging social attitudes towards disability within the city and increasing awareness about design exclusion. If left unaddressed, these issues will remain stagnant and truly embedded within the built environment. The authors address the theme “*countering design exclusion*” by defining the issue as cultural and political forms of disability oppression (Imrie & Hall 2001). While this definition seems extreme, it

emphasizes prioritizing the creation of enabling environments to accommodate those experiencing urban marginalization. The authors elaborate on this with the use of terms such as social-enabling environments, independence, empowerment, social inclusion, and cultural respect. These terms are intentionally chosen to amplify the tone of the theme; countering design exclusion.

The term *design* exclusion was established to support the concept of *inclusive design*, as it represents the alternative side of inclusion (Keates & Clarkson, 2012). The focus of this concept is to draw attention to those who are excluded from services and environments based on their abilities. Inclusive design is simply a response to this social condition. Ironically, the definition of design exclusion in this body of work states “the key point made is that some people will always be excluded by any specific design and that design decisions should only be taken with due consideration of the impact on the users” (pp. 214-215). This statement is interesting, as the reality of total inclusion is never fully addressed in the bulk of this literature, nor most other bodies of literature addressing design exclusion (Keates & Clarkson, 2012).

Fundamentally, inclusive design for accessible environments is about the process that forms the outcome. It is important to recognize a set of criteria necessary within the process, and to analyze the assumptions that create barriers in the designed environment. From this recognition and analysis, guiding principles or a framework are formed to influence the outcome of accessible and inclusive environments. Imrie and Hall (2001) describe the process of designing for inclusion equal in importance to the outcome, as this process reveals the social attitudes that shape the practice and the professionals creating these environments. They address the

underlying issue and reality that design and planning professionals are often inattentive to the diversity and range of user capabilities.

Keates and Clarkson (2012) describe the inclusive design process as a fundamental approach established in 'user-centered' design theory. The process involves an in-depth collection of information regarding the users and the setting. It also addresses the potential disconnect between user and setting, and finally considers the wants and needs of the users for the redesign.

Nussbaumer (2011) describes the inclusive design process in more systematic terms, as a logical, yet creative process to achieving design solutions. The most fundamental step in this process is the data collection phase where the user, the user's desires' and needs and the specific content are identified. Nussbaumer draws on 'CABE' (the Commission for Architecture and the Built Environment), which suggests that inclusive design is a problem-solving tactic, deployed in a creative manner to ensure that barriers are being removed in the built form and that they do not resurface in new design (Nussbaumer 2011, p. 32). The design process requires user engagement, involving all users in the design process to come to an outcome that meets the needs of all parties involved. They title this process the "*participatory design process*." It involves both a method and a significant effort to negate the segregation that arises from design exclusion, by preventing the presence of barriers that deny accessible and inclusive environments for all users. Lastly, they promote inclusive design as an important approach to everyday design. Inclusive design provides fresh new insights with respect to user capability and the relationship between these capabilities and degrees of urban engagement.

When the design process is thorough and convincing, includes a set of criteria or strategy plan and involves all users in the process, its success can be measured based on the usability outcome, inclusive design can be achieved. If designs enable all users to access and engage, the design process is successful and independence becomes attainable for all users within an accessible and inclusive environment.

Universal Design

Universal design and inclusive design strategies are present in many design and planning practices today. They revolve around creating non-disabling environments and can be understood through comparison. Imrie and Hall (2001) suggest that disabling environments stem from architectural preoccupation with aesthetics rather than user. The authors discuss architectural historian, Lewis Mumford's attempts to changing professional practice and architectural ideas. For example, Lewis Mumford wanted to encourage broader thinking with respect to people and nature and to address the way in which people interact with their environments. Imrie and Hall quote Lewis Mumford: "We must look for a finer relationship between imaginative design and a whole range of biological, physiological, and sociological knowledge (originally published in Mumford's 'Towards a Rational Modernism')." Architectural norms must be more than the way in which individuals view the built environment; they must embody the experiences of individuals within the built environment, with respect to their abilities both physically and mentally.

Alternatively, Keates and Clarkson (2012) provide a step-by-step framework for creating non-disabling design, rather than a concept for changing the ideas of design, like Lewis Mumford.

Keates and Clarkson outline a three-step approach, which “provide a usable and accessible service” for all users (p. 151). They have termed this type of method a “user-sensitive approach to design practice” (p. 151). The idea is similar to Mumford’s. It aims to provide accessibility to a broader range of users with a broad range of abilities. The first step to the approach, as delineated in the literature, is to define the problem with clear regard to the targeted users. The second step is to develop a solution specific to the targeted users. Finally, the last step is to evaluate the solution. The final step, evaluation, is to be done by the users to ensure the design fulfills their needs (Keates & Clarkson, 2012). This is similar to the inclusive design process. The approach is not specific to inclusive design per se, but is meant for designing non-disabling environments generally.

Nussbaumer (2011) advocates for the integration of research throughout the design process to deliver a *richer* project. Nussbaumer posits that the research and data collection phase is the most important step in the design and planning process, as it looks to precedents to establish a starting point and validates successful past attempts. Nussbaumer suggests incorporating and engaging the users throughout the design process as a necessary step in understanding the relationship between design and users. Finally, constant evaluation is necessary to ensure the project is appropriately satisfying the needs of all users, with all types of abilities, in order to successfully design non-disabling environments. These concepts are similar to those of Keates and Clarkson (2012), as they require user engagement, a problem-solving tactic and an evaluation of the design, to ensure quality and accessibility.

Non-Disabling Environments

The theme of universal design for inclusive environments can be confusing without a proper understanding of the relationship between universal design and inclusive design. They are both strategies that influence current design and planning trends, as they attempt to achieve non-disabling environments and counter existing design exclusions. These strategies establish relevant criteria for design, and provide an alternative way of thinking, which in turn changes the way the built environment develops. Imrie and Hall support this idea, as they discuss the importance of universal design in comparison to many other strategies, which do not fully address all layers for designing inclusively (Imrie & Hall, 2001). Universal design not only addresses the issues within the built environment, but also addresses the societal issues influencing how people actually engage with the urban environment. The principles of universal design are characterized as progressive by Imrie and Hall [2001], as they believe universal design attempts to “restore disabled people’s self-esteem, dignity, and independence, while encouraging development and implementation of user-friendly design” (p. 16). The built environment must become more accepting and supportive for all bodily shapes, dimensions and movements, in order to promote accessibility for a range of user abilities, both physically and mentally.

Both universal and inclusive design are strategies developed to counter design exclusion and aim to create accessible and inclusive environments. These strategies address multiple issues found within the built environment. Universal and inclusive design highlight the physical barriers that can lead to social exclusion, and strive to eliminate the marginalization that exists within the urban context, in order to prevent exclusion from occurring in the future.

3.2 Accessible and Inclusive Environments

This section of the literature review identifies the gaps in planning knowledge, research and policy that result in a failure to address the needs of individuals with all ranges of abilities. This identification process has been completed by reviewing select planning and design literature that focuses on accessibility policy and principles to further understand requirements for developing accessible public spaces.

It is important to define what accessible planning and design means and to understand how it is applied to public space. When accessible planning and design is not implemented, barriers in the environment arise that affect independence for citizens with varying abilities, as outlined in the previous section of this literature review.

When considering accessibility, people without disabilities should consider the ease of everyday tasks they experience within their urban environment. This may allow people to better understand the experiences of people with disabilities, as living with a disability is not a reality for everybody. A large portion of today's population is living with some form of disability, and it is important to remember that becoming disabled can happen to anyone at any stage in life. Again, it is essential to note that the disabilities are not the barrier; rather, barriers arise because the needs of persons with disabilities are not considered at the very outset of planning processes.

The range of user ability is vast and yet the built environment is still primarily focused on accommodating the average ability of most people. Designing and planning for accessibility is an asset for all. Today, failing to design and plan for accessibility is a violation of basic human rights. In its current state there still remains a considerable grey area within accessibility legislation that

does not address the needs of all persons with disabilities. Generalizing disabilities remains an issue for both the political and planning sectors.

There is a need for more planners and designers to begin to examine and ultimately change the built environment at a larger scale. This is not to say that efforts are not being made to design and plan for accessibility, but in order to achieve accessible design at a larger scale, all designers and planners must be aware of accessibility barriers within the built environment. From here, planners and designers can begin working to prevent these barriers in all future development and eventually remove them from the existing built environment to the degree possible.

As previously mentioned, it is important to define accessibility for design and planning; this definition will set the parameters for accessible design. Once designers and planners become more aware of accessible design and planning principles, they will better understand the relationship between social and spatial order. Once accessibility is defined and the connection to spatial order is made and understood, the gaps will become readily apparent in planning and design. The body of literature reveals where the needs of persons with disabilities are not considered, which demonstrates a deficit in planning knowledge, further preventing accessibility for people with disabilities. These themes provide a framework that will be further explored in this literature review, to demonstrate a fundamental step in planning and designing for achieving better inclusivity and for rethinking the built environment and its potential barriers.

Literature Review Questions: What does planning literature have to say about accessible design and persons with disabilities? What gaps are there in the planning literature regarding accessible design?

Accessibility Legislation

Many places around the world have started thinking seriously about accessibility, with the UK being one of the first, followed by Australia, the US and Canada. Manitoba has recently enacted new legislation called *The Accessibility for Manitobans Act (2013)*, which has been enforcing accessibility planning and design requirements across the province for all new development. The Act also requires all municipalities and organizations to develop and institute accessibility plans. The Government of Manitoba has recognized the importance of becoming involved to help promote and enforce a change in all future development. In addition to enforcing accessibility requirements for new development, it is also important to work towards improving existing built environments that are not accessible, which can be achieved through retrofitting.

Accessibility is a basic human right. Public space, amenities and access to goods and services are a few of the many areas in planning that need to fully abide by accessible design standards. Accessibility is a catalyst for independence in accessing goods and services for society's participants.

Defining Accessibility

The *Oxford Dictionary* defines 'accessible' as the ability to reach or enter a place. Applying this to design and planning ensures a level of achievability for all users regardless of their abilities. Litman (2011), the author of *Evaluating Accessibility for Transportation Planning: Measuring People's Ability to Reach Desired Goods and Activities* (2011), writes and also quotes Hansen and Engwicht (1993):

“[A]ccessibility refers to the ease of reaching goods, services, activities and destinations, which together are called *opportunities*. It can be defined as the potential for interaction and exchange (Hansen 1959: Engwicht 1993, Litman 2011, 3). He is applying the term ‘access’ to social behaviors and norms. The paper also states; “accessibility can be defined in terms of *potential* (opportunities that could be reached) or in terms of *activity* (opportunities that are reached). Even people who don’t currently need a particular form of access may value having it available for possible future use, called *option value*” (Litman 2011, p. 3).

To add to Litman’s ideas about accessibility, Wolfgang (2009), the author of *Access for All Approach to the Built Environment* breaks down accessibility as the “degree” of services accessible for all “possible” users (p. 79). The term ‘*possible*’ in the context of all users is important in planning discussions. It ensures planners and designers are considering the widest range of user abilities for all projects (Wolfgang 2009, p. 79). Wolfgang outlines the idea of accessibility as the availability of urban resources such as transportation, goods and services and any other economic or community resources that people with any special requirements can easily access. Langdon, Lazar, Heylighen and Dong (2014) affirm that information regarding the concept of accessibility or accessible planning and design, as well as the body of literature regarding this topic are growing. This growth is reflected in changing building codes and regulations that enforce ‘barrier-free standards’ in the built form, essentially requiring all new development to respond to the minimum requirements of accessibility planning and design (Langdon et al. 2014).

Wolfgang (2009) argues that alternative terms are arising, which describe the actual design principles themselves, regarding the prevention of architectural barriers within the built form (p. 79). He builds on this idea by describing it as a local or small-scale concept, which promotes greater inclusion for individuals of all abilities. Wolfgang also makes an interesting connection between the scale of development and form and functions for forming great

accessible neighbourhoods:

“Relating urban form to urban function, Space Syntax is interested in how all different scales of accessibility overlap, thereby shaping our great cities and neighborhoods into successful communities. Through investigations of urban layout in relation to the different scale of movement we can identify how cities are shaping the emerging collective patterns of human behavior” (Wolfgang 2009, p. 79).

From this Wolfgang posits, safe and inhabitable environments are formed. Wolfgang’s thoughts for connecting Spatial Syntax as a ‘scientific approach’ in breaking down the concept of accessibility, which also promotes and seeks to maintain long-term sustainable communities.

Accessibility as a Priority

Donovan (2001) highlights a prominent and reoccurring theme among all speakers, a theme which is an important concept in promoting accessibility: “the designers must view disability provision in an inclusive way and not as an add-on” (Donovan, 2001). The *Inclusive Design: Joining Usability, Accessibility, and Inclusion* text quotes Kissane from 2010, stating “Including accessibility in an overall content strategy makes accessibility a strategic priority” (Langdon et al. 2014, p. 111). This idea supports the theme Donovan recaps in his article. This text goes on to stress the economic influences that act as a driving force in new development projects “Retrofitting is costly, on all fronts remediating accessibility barriers at the end of the design cycle or after launch is expensive and ineffective” (Langdon, Lanzar, Heylighen & Dong 2014, p. 113).

Access for Invisible Disabilities

Donovan's commentary furthers Wolfgang's idea of scale, form and function for creating accessible sustainable communities: in doing so it is important to consider the long-term economic benefits that go hand and hand with accessibility planning.

When researching accessibility planning principles there is a large gap commentary pertaining to the accommodation for individuals with invisible disabilities, such as cognitive disabilities. The most obvious explanation for this gap is that it is difficult to address and diagnose accessible solutions for those with cognitive disabilities. A cognitive disability is invisible, and often it is treated invisibly as well. As a result of this invisibility, these individuals experience greater barriers than those with disabilities that are easily identified through visual cues. Donovan's (2001) article points to this very issue: "Architects, together with most of the rest of the population, need to reali[z]e that disability encompasses not only wheelchair users but also those who are hard of hearing and who have impaired vision" (p. 17). Donovan (2001) is beginning to address the need for a larger scope of ability but notes that he fails to acknowledge those with cognitive disabilities. He continues on quoting parts of the lectures from the seminar stating, "It is not all about ramps and loos," said Stewart Coulter, director of the Adapt Trust. The disabled are not a group to be ignored, making up as they do some one in eight of the population with a spending power of \$40 billion a year". While Donovan acknowledges this group of individual's economic power, he fails to make a fully educated argument based on all groups of 'disability' (Donovan, 2001). Furthermore, in Manitoba, one in six Manitobans has a disability and this number is projected to grow to one in five Manitobans based on our aging population (The University of Manitoba Multi-Year Accessibility Plan). When cognitive disabilities are not

explicitly considered in accessibility planning the idea of planning for all is no longer truthful. The *Accessibility and Development* document introduces the idea of access declaring that “accessibility benefits all: once provided, none can be excluded from accessible environments for cause.” This declaration is not accurate if cognitive disabilities are not explicitly addressed within the planning process (Accessibility and Development, 2013). Cognition requires as much attention as mobility, visual, hearing, and all other invisible disabilities. The focus in research and resources should be equal among all focus areas to assure optimal response for each in accessibility planning. If this is done, the effects of segregation, exclusion and urban marginalization due to barriers in design will be significantly reduced.

The definition of accessibility with respect to its application in planning and design is fundamental for future development. Once the term is defined at the community scale, form and function will follow to benefit sustainable, healthy communities. Finally, it is important to include all areas of ‘disability’ in research for planning and design, to ensure accessibility for all ranges of disabilities. As previously noted, the cognitive focus seems to be largely neglected. Disability can happen to anyone at any time. Almost all of the population either has a disability, knows someone with a disability or will acquire a disability in the future (Government of Manitoba - Disabilities Issues Office, 2016). Changing the current conceptions and perceptions of accessible planning and design will benefit all, far beyond the disability population. Accessibility is a basic human right that cannot be neglected.

3.4 Summary / Conclusions

Both universal and inclusive design strategies were developed to counter the exclusion created by designed spaces by creating accessible and inclusive environments. These design practices

address the issues embedded within the built environment, breaking down the physical barriers that cause segregation and exclusion with design solutions that welcome people of all abilities. These design strategies laid the foundation for the development of accessibility planning, which seeks to promote inclusivity at a larger scale and to a wide range of abilities.

The next section of this practicum outlines and defines the research methods, and how they were used to drive the study concluded. This section reviews the research questions that have guided and framed the research, pairing them to the particular methods used in order to respond to the questions.

4.0 Research Methods

Design ethnography was used as the umbrella for this research method because it embodies “human-centered design methods with ethnographic techniques to take you on a guided tour of your users’ world, for the purpose of designing new... experiences” (Collins 2010, 155). Furthermore, “design ethnography research can be used to reveal the spoken and unspoken needs and wants of the ... users” and “it will assist ... in understanding the needs and challenges of the user to help you identify problems and issues that need solving”, which, fundamentally, is necessary to answer research questions and to understand the research content (Collins 2010, 155).

	Research Question	Research Method
1.	How do people with disabilities experience public spaces on university campuses, specifically the University of Manitoba?	Design Ethnography – Verbal Data collected in Moving Interviews
2.	What are some of the common campus barriers that create challenges for people with disabilities?	Design Ethnography (Moving Interviews + Photographic Documentation + Mapping)
3.	How do the on-campus experiences of those with disabilities intersect with recent accessibility policies in Manitoba?	Design Ethnography

This research gathers information about a variety of barrier types throughout University of Manitoba environments that prevent or limit participation and engagement for people with

disabilities. Types of barriers include the more obvious, physical and architectural barriers, but also include systemic, technological, information and communication and attitudinal barriers.

While the 'University of Manitoba Multi-Year Accessibility Plan' (2018) features data from their 'accessibility unit audits', which was conducted to identify the existing barriers around campus, the process did not involve actual consultation with people with disabilities. This research method used to gather the following information allows for rich collaboration with people who identify as having a disability, in order to recognize and categorize barriers that potentially limit participation in University life.

4.1 Design Ethnography

This practicum uses design ethnography to collect both qualitative and quantitative data to better understand the overall accessibility of Manitoba's largest post-secondary institution in order to answer the research questions (previously outlined).

4.1.1 Moving Interviews

The benefit of using walking interviews, or more appropriately, *moving* interviews as it pertains to this research, is that it allowed myself, the researcher, to understand how participants themselves conceptualize their environments and the public services they use. This method allows for the opportunity to observe how participants locate themselves within public spaces at the University of Manitoba. This method also allowed the participants to have control, which assisted in providing an accurate demonstration of how people with disabilities experience public space and urban amenities. As noted in a *Journal of Research Practice* article called *Exploring space and place with walking interviews*, "whether considering movement by the participant or

the researcher, mobility takes the research process out of fixed (safe, controlled) environments and introduces a range of new issues to consider” (Jones et al. 2008). The moving interviews I conducted were unstructured, to create a natural environment that would showcase how people with disabilities experience the University of Manitoba and how to best address their needs. The equipment needed for this method included a voice recorder, a camera, and a device to GPS track the routes taken (an iPhone 8 was used for this, as well as a physical map).



Figure 7: Research Tools Used

Audio recordings were used to review and notarize interviews, contributing to the overall data collection for understanding the challenges observed and documented by photographic evidence collected during the moving interviews. This information was later connected to the geographical location to compare similarities among all participants.

Photo documentation was used as part of the data collection method for the moving interviews. This involved capturing barriers identified by the participants themselves, as both the participant and I (the researcher) progressed through the moving interviews. The interviews were no longer than an hour, which provided enough time for participants to navigate their regular routes, while pointing out and identifying barriers. I took all of the photographs, with the participants' permission in order to allow participants to navigate their route in as natural a manner as possible. There are no faces (or other identifying personal details) documented in the photographs used. The mapping documentation is used as a secondary data collection method to compare all interviews. This assisted in recording the location of particular barriers around campus and the specific nature of those barriers.

The participants were asked to attend an information session prior to starting the moving interview. This ensured each participant was familiar with how the study worked, including how to notify and direct me when to document a barrier with the camera, and the manner in which I would be documenting our trip for mapping purposes. The information sessions were all undertaken one-on-one with the participant to allow for discussion about personal accommodations that were required during the moving interviews. This session allowed for the opportunity to set out the roles and responsibilities for the moving interview, and let me know about any potential supports required during the moving interview.

The photographs and dialogue, recorded with an audio recorder (with the participants' permission), during the moving interviews were intended to provide information about the barriers people with disabilities experience as they go about their daily tasks on campus.

The consent form for participants with both visible and invisible disabilities has been attached in Appendix B. If a photograph of a barrier was not able to avoid the documentation of someone's face, a consent form for the use of the photo image was prepared and made available to the participants. That consent form is attached in Appendix C.

Participants

It was anticipated that the moving interviews would be conducted with four pairs (8 participants in total) of participants identifying with similar types of disabilities; however, the number of participants was less than anticipated, due to their availability and willingness to participate. In total, five moving interviews were conducted.

Accessibility Services Office, the Disability Studies Office and around University Centre, as well as through emails to disability organizations. The poster and the email/phone script allowed for alternative methods of communication for disseminating information about the research and how to contact the researcher. In addition, a Project Backgrounder for recruitment of supporters and potential participants is included (see Appendix E, Appendix F and Appendix G).

People with both visible and invisible disabilities are sometimes considered a vulnerable population to include in studies. These people are considered vulnerable because they experience barriers that in some cases impede their ability to participate fully in society, and in some instances, may experience cognitive impairments, which can prevent their ability to fully comprehend the research study and provide full informed consent. The Tri-Council policy statement states, in such cases the participants must be involved to the greatest extent possible,

and when they are not capable, it is necessary to obtain consent from an authorized third party, most likely a relative. This study did not involve any participants requiring third party consent.

All sessions were kept to about an hour or less, to respect the time and efforts required of the participants. The information sessions prior to the moving interview lasted roughly thirty minutes and were held in neutral spaces agreed upon by the participants.

Participation in the moving interviews took place around both University of Manitoba main campuses, depending on participants' normal activities and experiences (at their regular campus), and were conducted during their weekly day-time routines. Additionally, it was made clear in the Participant Information and Consent form (see Appendix B) that informed consent could be revisited throughout the process, to determine if there was discomfort or unwillingness to continue.

4.1.2 Photographic Documentation + Mapping

Photographic documentation of the moving interviews allowed participants to show, rather than explain, their experiences. They were also encouraged to speak about their experiences. The participants' narratives told in their lived environments added detail for my understanding and insight into their lived experiences. This method was adaptive to the needs of the participant, which is appropriate for this research topic as abilities and challenges change every day and require a level of adaptability. Clark and Emmel (2010) describe the importance of photographs in documentation:

[They] form the basis of our visual data, they offer more than just information about what we observe in our field site. They allow us to map our reflexive engagement with the research field.... Our photographs are not just snapshots of life in the field site, or pieces of data to be analyzed as some kind of objective truth... the images we take facilitate hunches, ideas, and theories to help answer

particular research questions... Photographs are a record of what we saw in the field, but their meaning evolves (pp. 12-13).

Photographic equipment was used as part of this method, which permitted subsequent data analysis and interview documentation. As previously mentioned, this was done by the researcher to document and analyze where, what and why barriers are present.

Maps were also used as a tool to document the routes taken, and to illustrate the areas with the most common barriers. This method was used to support the data collected from the interview that revealed the challenges experienced, the variations in urban spaces, concerns highlighted and the location/areas of the photos taken.

Overview of Study

There were no direct benefits or rewards for taking part in this research study. However, it did provide participants with a platform for sharing their valuable experiential knowledge, which will help future researchers to better understand the relationship between people with disabilities and their day-to-day interactions with public spaces, such as university campus environments.

4.2 Data Analysis:

The moving interviews were recorded using a Samsung audio recorder, which recordings were later transcribed. Once the interviews were transcribed I imported the notes into Microsoft Excel and coded each interview based on themes, barrier types identified in the AMA, the type of experience and which campus it was experienced at to identify the common themes experienced among all participants. The data was analyzed using five steps from Lecompte (2000): (1) tidying data, (2) finding 'themes' within the data that are related to the questions, (3) organizing the themes into groups, (4) identifying patterns, and finally (5) identifying the links to what is being

studied. In order to tidy up the data, I, the principal investigator, notarized each interview twice, using two methods of writing. The first method was handwriting, which notes were then scanned to save electronically and the second method was typed notes. Both forms were saved in interview-specific folders with all other data collected, including the maps, photographs and audio recordings.

From there, I began sifting through the data, identifying applicable labels based on common themes, types of barriers, location of barrier and general experience. This was completed in order to clearly understand the compiled findings and represent them in the findings section of this practicum. I listened to the interviews, read through all sets of notes, flipped through the photographs taken and reviewed the mapped routes countless times to accurately assign proper categories for all data collected using both inductive and deductive means. The categories were formatted in a tabular spreadsheet for easy sorting and grouping, based on the similarities of the category.

To ensure validity, as stated by Lecompte (2000, 152), “researchers must continually ask the question: Do I, the researcher, really understand and describe what I am studying in the same way that the people who live it do?” I asked myself this question many times when reviewing the data and summarizing the findings. The photo and mapping documentation were used as secondary data to illustrate and support the themes generated during the interview analysis process.

Table 3: Applying Lecompte's (2000) method to this research project

Step	Lecompte	This Project
1	Tidy up	Notarized interviews notes by hand and then typed, coded themes with labels in excel, and saved all data into specific folders for each participant for easy sorting
2	Find initial items	Revisited the research questions to focus the findings and the analysis, ensuring all labels and themes were applicable
3	Stable sets of items	Organized the themes and labels into focus sets based on the experience, type of barrier, and location
4	Identify patterns	Began to quantify the data with common themes, reoccurrences, and other patterns
5	Link patterns	Identified results and trends among the labels and the themes and used this to draw conclusions

Triangulation

Triangulation is a qualitative method of collecting different types of data from multiple perspectives and recognizing the different qualities that come with different methods of data collection to ensure validity in the study. Using many methods of data collection allows for consistency, reliability and credibility in research findings and analysis (What is Triangulation (Qualitative research)?, 2013). The methods that were used and triangulated in this ethnographic research project were: moving interviews, photographic documentation map documentation and the literature review, which helped inform the process.

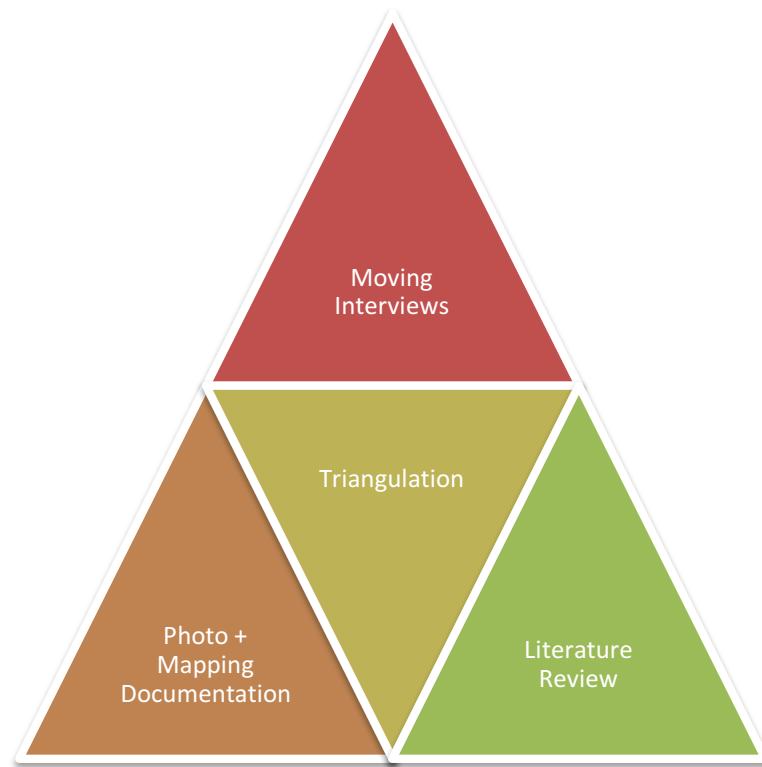


Figure 8: Research Study – Triangulation [Graphic by the author]

Verbatim Quotes

Verbatim, by definition, pertains to the particular wording used by the participant, without any change in wording. Verbatim quoting, in this study, quotes the participants word for word, without revealing the identity of the participant. Verbatim quotes are used in the findings section and data analysis for further data reliability and validity, as well for providing direct evidence when describing a theme found in the research. This further allows the reader to experience parts of this research project, such as the moving interviews, and to generate their own impression of the data.

The next section will reveal the findings within the research study data, detailing participant experiences with supporting imagery from each moving interview.

5.0 Results

5.1 Findings

The following section outlines the findings from the data collected in the design ethnographic research, which used moving interviews, photographic documentation and mapping for five participants at both University of Manitoba major campuses, Fort Garry Campus and Bannatyne Campus. Findings are grouped into categories to better understand and analyze the factors of this research method: what kind of experience was the participant having? What type of barrier was the participant addressing? Which campus? Which building? The findings also consider the overall themes, the occurrences of each theme and each category of barrier. The categories are used to understand the types of barriers that limit or prevent access to individuals with disabilities. Individual names and all identifying information has been excluded from this practicum in order to respect the privacy of each participant. The participants instead are described as Participant 1, 2, 3, 4, and 5.

5.1.1 Overall Addressed Participant Experiences

As predicted, there were many negative experiences identified in the data as participants, and myself, the principal investigator, moved through the respective campuses. There were also neutral and positive experiences noted by each participant, the negative experiences were outnumbered. These experiences allowed me, the principal investigator, to categorize the bulk of the data into one of the three categories: (i) positive, (ii) neutral, and (iii) negative experience, as this was the nature of the discussions that took place while participants pointed out barriers

in the built environment during the moving interviews. The most common category experienced was negative.

Bad experiences due to barriers at the University of Manitoba

The data collected through the moving interviews supported the fact that often barriers prevent access for people with disabilities, limit experiences, and/ or cause feelings of being unwanted or not welcome. Often these experiences are due to both physical and architectural barriers and attitudinal barriers presented by the people administering the spaces. The physical and architectural barriers cover a range of barrier types – from the architectural design of spaces, the actual physical environment (including temporary objects in a space, such as storage boxes in loading areas, which result in additional barriers), on through to attitudinal barriers and social stigmas experienced by participants. Each interview participant shared at least one instance where this occurred and how their feelings were affected based on that experience.

Participant from Interview #1 said:

“...I don’t have my note taker, don’t have my textbooks, I’m not allowed to use my iPad in class, so how am I supposed to participate? ...”

This discussion came at the end of the moving interview when the participant shared their in-class experiences. A common in-class barrier includes the delay in attaining electronic formats of textbooks that allow screen readers to read the content out loud, which not only benefits people with visual disabilities, but also assists people with learning disabilities. The participant had informed me, the principal investigator, that iPads were banned for the participant in this particular class, and that they were not able to get the printed course content in a larger format to read prior to class, which ultimately prevented the participant from following along during the

class. Further, because this was a class with a no laptop or IPad rule, therefore note takers in the class are quickly identifiable, resulting in a violation or potential violation of the privacy of the student requiring the accommodation. All of these issues resulted in a negative experience for the student who required accommodations to participate in class, which class is a University requirement for the participants' degree.

The student went on to state:

"I'm already a student, you know I'm living in Canada, awesome, now I'm fighting for, you know not an education but like accommodations, right? So, it's like, there's always that one extra step, you know, I always look on the bright side, but the other part of me is like, no other student, other students that don't require accommodations, don't have to put up with this."

The participant attempted to rationalize the issue they were experiencing, and quickly stopped rationalizing it, as it is not something that all students would understand or ever experience. The participant experiences this on a daily basis due to a disability. The participant draws on the irony that the participant is already in a position to obtain and earn a university education, yet there are still barriers in accommodations that limit their experiences, despite living in a country like Canada, a more progressive country for accessibility awareness and activism. Participant #1 experienced technological barriers, information and communication barriers, systemic barriers, and attitudinal barriers. Participant #2 shared a similar negative experience from the in-class perspective, which occurred between a student and a professor and was based on the challenges faced when travelling to class.

Participant #2 said:

"What do you think this says to somebody in a wheelchair who is coming to have a class or something in here?"

The participant asked the question to provoke empathy during the moving interview so that I, the principal investigator could understand the feelings and experiences of a student unable to access classes in the building we were entering due to a disability and/or the physical and



Figure 9: Image of the Front of the Animal Sciences Building at the University of Manitoba



Figure 10: Image of the Accessible Access Point for the Animal Sciences Building

architectural barriers that limit access from the front corridor of the building. The student directed me to where the accessible entrance of the building was located, which was at the back of the building.

The rear accessible entrance was through the maintenance area where the loading dock services the building. To access this area, one must travel through a closed door labeled 'Research Laboratories 127-140 and to Receiving', a sign that would not indicate the buildings' accessible access point.

Furthermore, it is an area where garbage is commonly left waiting for disposal. The misleading signage and presence of debris poses an additional barrier to anyone with a visual disability, as there is no indication to individuals passing through that there is debris barricading



Figure 11: Image of the Door Signage in the Animal Sciences Building Where the Access Point is Located

the space. As the moving interview continued, the participant shared an in-class experience between themselves and a professor:

“Prof asked me to come to the front of class and explain what my issue was ... I am a confident [gender removed] ... I am going to come to the front of the class and talk to somebody I have never met before about how my body is broken in 15 or 20 different places, and I can’t complete an assignment by Friday. Why do I have to do that in front of my peers?”

The participant was explaining an attitudinal barrier that they were “asked” to experience in front of their classmates when the participant had attempted to speak to the professor to arrange a meeting to discuss the accommodations they had set up with SAS (Student Accessibility Services) to have more time to complete assignments. The arrangement had been set up with SAS because the participant had experienced a significant accident during the semester, which caused severe pain flare-ups, sometimes making it difficult to meet deadlines. The accommodation had already been arranged with SAS, based on medical documentation. In this instance, the professor wanted to know the reason for why the student required the extension and the professor inquired in the presence of other students. This is an example that illustrates a violation of a participants’ privacy. The manner in which the participants’ accommodation was discussed ultimately identified their disability in a public setting, and impacted the participant’s class and school experience negatively.

Participant #2’s negative experiences were due to physical and architectural barriers, systemic barriers and attitudinal barriers. Participant #3 did not share any negative experiences regarding physical and architectural barriers or their time on University of Manitoba campuses

in particular, rather Participant #3 shared a negative experience that occurs regularly, due largely to societal attitudinal barriers.

Participant #3 said: “About once a month, I get comments like ‘Jesus can heal you’, ‘Jesus can heal disabilities.’”

This is a message heard by the participant too often from others who believe disabilities are something to be healed, as they express unwanted ‘sympathy’ while the participant is performing daily tasks. The participant shared that this sometimes occurs in front of their family, resulting in causing the participants’ child to wonder if the participant is unwell, when their health is totally fine, instilling unnecessary worry in the participants’ child. Participant #3 went on to explain: “I am not sick, I like the way I am – I don’t need to be healed.”

Even though the participant does not invite random people out in public to share their perspective on the state of the participants’ health, they hear them anyways, resulting in regular negative experiences for both the participant and the participants’ family. This only perpetuates the attitudinal barrier that there is something wrong or something that needs to be healed with people with disabilities. Participant #3’s negative experiences were primarily due to attitudinal barriers. This ties into the negative experiences of Participant #4, who shares their experiences when attending University events.

Participant #4 said: “We are part of the community but people are still divided and separated... not an accommodating community... I want to feel like I belong here.” This participant shared many examples of instances when events were not accessible, resulting in the participant feeling unwelcome, and like they and others who identify as having a disability should

not be there. This created a divide from the community of the other event attendees whose participation was not impacted by barriers.

The participant further shared that when they do wish to attend an event, they must self-identify prior to attending the event to ensure that access is available:

“I shouldn’t have to self-identify in advanced, people with disabilities should be expected to be there... that’s how I feel I really belong here, when I don’t have to think about being disabled.”

Forcing people to identify as having a disability, rather than proactively providing a service in a way that is accessible to everyone prevents people from feeling welcome and like they are meant to be there. This is another example of a reactive rather than a proactive approach to accessibility planning. Participant #4 experienced systemic barriers, information and communication barriers and attitudinal barriers that resulted in negative experiences overall. Participant #5 had similar negative experiences as the previous four participants, where the participant felt unwanted, unwelcome which limited their university experiences.

Participant #5 said: “It just really felt like I wasn’t meant to be here,” after explaining barriers experienced day-to-day trying to get to classes around campus. The participant explained the difficulty in finding accessible parking stalls that are in close proximity to the buildings in which the participants’ classes are located; an experience that lasted an entire winter when the accessible parking stalls were barricaded off to store construction materials, rather than barricading off the regular parking stalls. The participant went on to share many examples where they felt like they were not meant to be in university because of the overwhelming presence of barriers. These examples included: the risk of slipping and falling due to ice and snow ground coverage conditions; and a stairwell commonly populated with students, where the hand rail

switches from the left side to the right-side half way down, and the participant has to push through other students to get across to continue to safely move down the stairs using the hand rail. The participant ended the moving interview by stating, "It's a good thing I like challenges when people tell me I can't do things, because I work harder to prove that I can."

The participant's entire university experience is a constant challenge; a challenge far greater than students who are not impacted by barriers. The participant chooses to find satisfaction in continuously overcoming the challenges and breaking down the barriers that instill an unwelcome feeling in the participant. The participant also shared that other universities the participant has visited (where the spatial design is centered around the student experience) tend to be more accessible and easier to navigate. Participant #5 expressed that because of the age of the University of Manitoba campuses, they are inaccessible and very difficult to navigate. Participant #5 primarily shared experiences from both physical and architectural barriers and attitudinal barriers.

All five participants identified more than one negative experience where they felt different, unwelcome and even unwanted. The negative experiences were caused by physical and architectural barriers, systemic barriers, information and communication barriers, and technological barriers; however, they almost all were also the result of attitudinal barriers, based on the people occupying the space surrounding them.

Neutral experiences at the University of Manitoba

While most of the data collected through the moving interviews supported the fact that most often the experiences identified were negative and the result of barriers that prevent and limit access, neutral and positive experiences were also identified by a few participants.

Participant #1 commented on the benefit of the screens located across campus displaying information about student life and how to participate. The screens unfortunately, did not provide the information in audio format, and the font was too small of a format for students with visual disabilities. So, while there was a positive step in taken to convey information to the student body, limitations remained.

Participant #3 shared an experience where they were outdoors, stuck in the snow waiting for help for a while, until the buildings maintenance person came along and helped the participant out of their stuck position. Until this point, the participant had experienced situations like this at this location frequently. After this occurrence the building maintenance person always cleared the snow in this particular place first to ensure the participant would not be stuck on their way in or out of the university again. The participant stated the importance of making good relationships with people and to “always make friends,” so that instances like this can turn from negative experiences to positive experiences.

Participant #4 also commented on the importance of making friends with the building caretakers so they understand the importance of accessibility and keeping the building barrier free, using snow removal as an example.

There are far fewer examples of neutral experiences than negative experiences that were identified by the research participants, and most examples were not situations where barriers

were fully avoided or removed. Rather, the severity of barrier was limited to reduce the impact that was impeding full participation in university life. The examples wherein participants commented on the importance of creating relationships with caretakers to ensure barriers are reduced remains an onerous task for the participants, and is not something that would be commonly experience by everyone in order to participate fully in daily life.

Positive experiences at the University of Manitoba

Positive experiences were the least common category of experience found in the data. A few examples were shared, which included the benefits of service disruption notification systems and event accommodations.

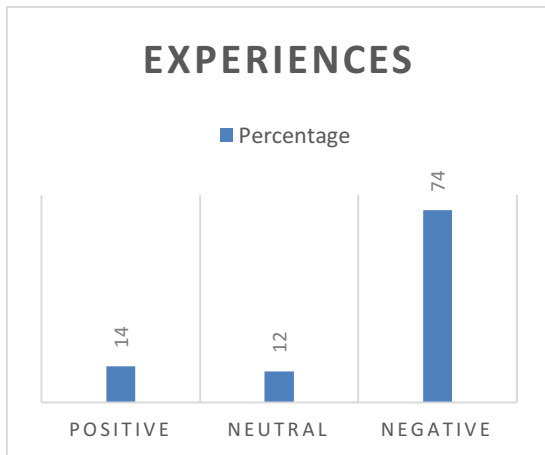
Participant #1 shared an experience where an email was received from Student Accessibility Services (SAS) regarding an elevator down in Active Living Centre (ALC). The participant commented the notice was appreciated, as it allowed the participant to plan ahead to avoid disruption in their day.

Participant #4 described a small change that resulted in improved accessibility at University of Manitoba convocations. A ramp for the stage was installed a few years ago, thereby allowing all graduates, faculty and staff partaking in the convocation an alternate route to the stage if needed. There is also assistance for all hoodings during the convocation ceremony, so no one feels different for requiring the service.

While positive experiences were generally under-represented in the data set, examples of situations where the barrier was overcome by proper awareness, planning, and notification

allowed the participants to continue to go about their day without barriers to limit their participation.

Negative experiences were significantly more common among the five research participants than positive or neutral experiences when visiting the University of Manitoba campuses. The bar graph below visually represents the imbalance between experience categories identified by participants. While this only represents the stories and experiences the participants decided to share during the moving interviews, it can be interpreted as a representation of the overall experiences these people have at the University of Manitoba. The



data also takes into consideration the impressions the participants are left with after interacting with university services, which would not resemble the same experiences of all others who frequent the university and are not impacted by barriers to accessibility.

Figure 12: Overall Distribution of Experiences for all Participants

5.2 Occurrence of Barriers Types

Each participant identified barriers as we moved through each moving interview, allowing me to document the barrier type through notetaking, audio recording, photographic documentation and location recording on the respective campus map, in accordance of order during the route. Figures 12 and 13 show the routes travelled, as well as the locations in which notable barriers were documented for each campus. The barriers identified were categorized based on the

categories prescribed under the AMA, Customer Service Standard, which include: attitudinal barriers, information and communication barriers, technological barriers, systemic barriers, and physical and architectural barriers.

Participant #1

Participant #1 most commonly reported barriers from the physical and architectural category as we moved through the Fort Garry Campus, Participant #1 also reported barriers due to information and communication and technology as those have also great impacted the participant's in class experiences when requiring information in alternative formats. This participant reported few instances of attitudinal barriers but many of the information and communication barriers and technological barriers can also be connected to attitudinal barriers and a lack of awareness. The least reported barrier type was systemic barriers, which could be due to the nature of the participants' disability.

Participant #2

Participant #2 most commonly reported on attitudinal barriers experienced around the Fort Garry campus, with physical and architectural barriers as the second most common type of barrier experienced. This participant reported few examples of information and communication barriers, and systemic barriers with no instances of technological barriers.

Participant #3

The experiences shared by Participant #3 were different than the rest of the participants, reporting on the fewest number of barriers that impede daily tasks. The few instances of the presence of attitudinal barriers were shared as well as physical and architectural barriers at the Bannatyne Campus.

Participant #4

The moving interview with Participant #4 was different than the others, as this interview took place in one location to accommodate the needs of the participant. This participant narrated all the barriers they recalled experiencing around the Fort Garry Campus and because of the nature of the participants' disability and the manner in which the interview was conducted, this participant reported the highest number of barriers. The most common barrier identified during this interview was physical and architectural barriers, with systemic barriers second highest and attitudinal and technological barriers third and fourth highest, respectively.

Participant #5

Participant #5's moving interview took place at the Fort Garry Campus. The participant also submitted notes based on experiences at the Bannatyne Campus to provide context and experiences for both main University of Manitoba campuses. For both campuses, physical and architectural barriers and attitudinal barriers were identified, which had significantly impacted the participants' experiences with the University of Manitoba.

All five participants experienced similar, yet very different barriers based on how they interact with the University of Manitoba, as a student, faculty member and/or staff member. While some participants' disabilities were more physical and required assistive devices, other participants' disabilities were invisible, adding another layer of barriers in which they experienced University life (as their disabilities were not necessarily easily identified). The participants' demographics are comparable to the demographics collected by the University of Manitoba through Student Accessibility Services of self-identified students. Invisible disabilities like mental health and cognitive disabilities were among some of the highest disabilities identified, with physical disabilities being the second highest category, and low vision disabilities among one of the lowest self-identified disabilities categories.

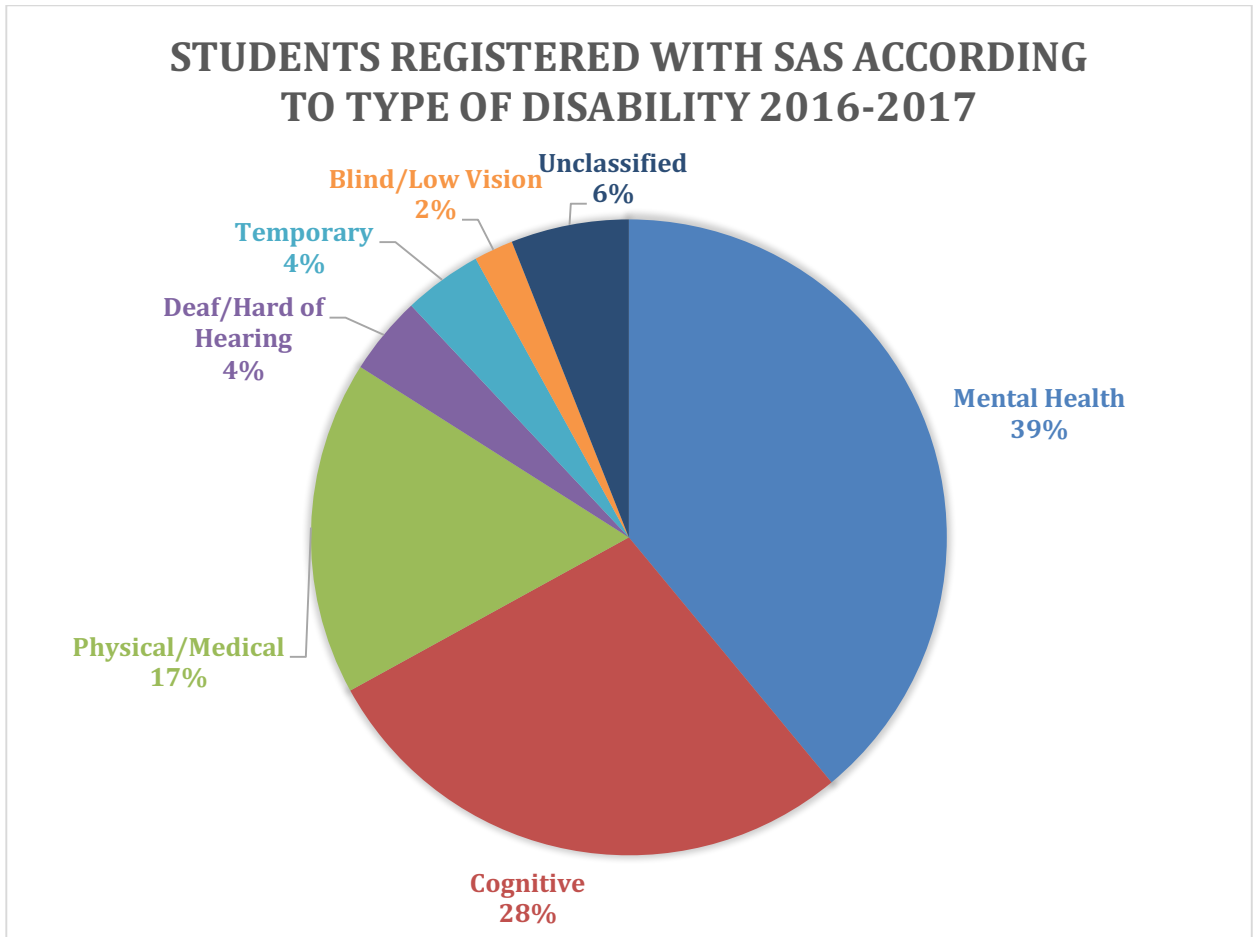


Figure 13: Students Registered with SAS According to type of Disability 2016-2017

<https://umanitoba.ca/student/accessibility/media/SAS-Annual-Report-2016-2017.pdf>

Summary of Barrier Category Occurrence

Physical and architectural barriers were the most common barriers identified by participants. This is likely due to the nature of the study, which consisted of moving through physical spaces to document barriers as they were experienced. Interestingly due to the difficulties in identification and documentation, attitudinal barriers were the second highest identified barrier among all participants. Every participant identified at least one instance where attitudinal barriers were experienced, which limited their ability to complete daily tasks, and

created feelings of being unwanted or unwelcome in a space. See Figures 12 and 13 for a bar graph representation of the occurrences of each barrier type in the data set.

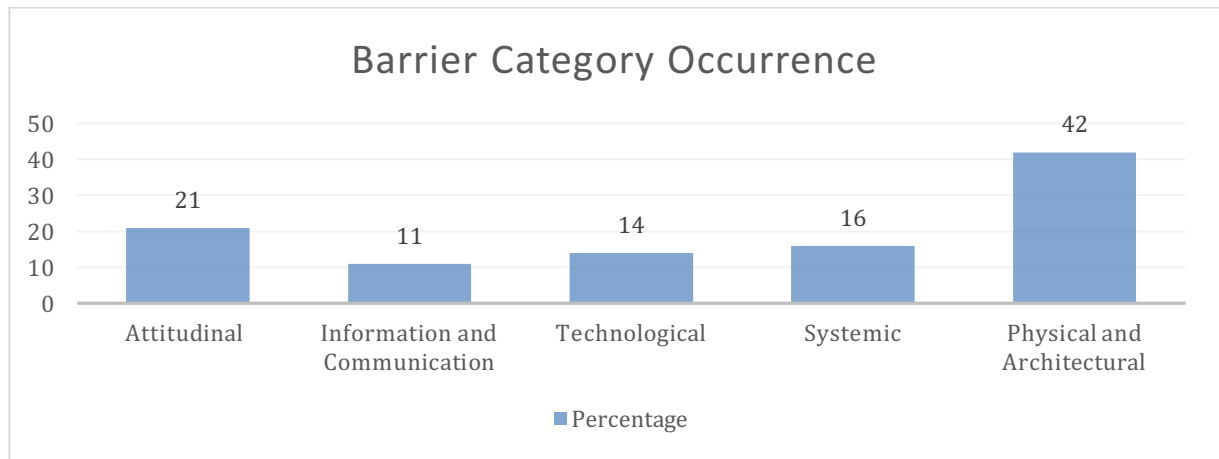


Figure 14: Barrier Category Occurrence (based on the Customer Service Standard)

5.3 Common Barriers Addressed and their Location

A portion of the data collected in this study included GPS tracking to document where barriers were experienced. This, to determine if there were any patterns or commonalities concerning barriers experienced the most during the moving interviews. The building with the most reported barriers was the Tier building, which was flagged by Participants # 1, 2, and 4. Figures 12 and 13 show maps of both campuses where the most barriers were reported. The data reveals higher

numbers of barriers reported at the Fort Garry Campus over the Bannatyne Campus, but this is likely due to the fact that less data was collected at the Bannatyne Campus. As well, one



Figure 15 Fort Garry Campus Moving Interview Routes



Figure 16 Bannatyne Campus Moving Interview Routes

participant shared experiences from both campuses, while only completing the moving interview at the Fort Garry Campus.

Tier Building

The Tier Building was the most commonly reported building in the data set for causing barriers to accessibility among participants. The building was first opened in 1932, and represented a 'radical change' in history for building development at the University of Manitoba, as it was the first limestone exterior building, surrounded by the red brick buildings that made up the original campus design (U of M Campus Map and Tour: Tier Building).

Participant #1 reported the original main entrance to the building as a major barrier. The entrance features a set of large wooden and glass double doors that open into a grand staircase that leads both up and down into the building. The glass panels on the doors caused the barrier reported by the participant because there is not clear visibility through the doors, which has caused the participant to collide with others coming out of the building. Furthermore, once inside the building, the lighting is extremely dark with no transition from the bright daylight sun outside to the dark landing inside. Participant #1 flagged this barrier as a challenge for anyone who is low vision, as the poor transition makes it difficult for one's eyes to adjust, particularly so with a vision disability. The participant also pointed out that there is nowhere for one to wait while their eyes adjust as it is a landing which leads to stairs both up and down, causing further risk of collision or tripping up or down the stairs. Lastly, the stairs are not properly marked with step indicators and they all blend together causing another barrier to access. Participant #1 noted:

"There could be indication where the stairs start and stop as it is easy to misstep, especially with the poor lighting."

Participant #5 shared a similar experience with a barrier due to stairs in the Tier Building. Participant #5 commented that stairs without railings are very scary, particularly when using a cane or crutches and that in order to access an elevator to get to the participant's third floor class they must take a small set of stairs to access the elevator. This is challenging for the participant, when the halls are crowded with students, making it difficult to move through the space. While the participant noted the beauty of the building, the participant also noted that the experience is not enjoyable, as there are many barriers to overcome in order to access the classes located within Tier.

University Centre

University Centre was the second highest reported building for experiencing barriers at the University of Manitoba. This space houses all the major University of Manitoba amenities, including the main cafeteria, a convenience store, postal office, bookstore, the health services and most student services and the student unions offices. This space is intended to accommodate students and is heavily occupied every day by many faculty, staff and students.

Two of the research participants have ruled out accessing this building altogether, as it is not very accessible and the crowds of people add greater challenges when accessing the space.

Participant #4 noted that they avoid University Centre altogether, as the flooring finish is too slippery and causes a safety concern. Participant #5 stated: "University Centre I just avoid... totally doesn't work for me." The high traffic, fast paced space, which provides most of the campus' amenities has been identified as a place that doesn't work to serve all the community members it was designed to serve.

University College Building

University College was the third most commonly reported building for containing barriers to participation for people who identify with having a disability. All participants who moved through the University College space, or shared experiences within this space, commented on the inconsistent and poor signage within the building. It was reported that the signage placement causes a barrier, since signs are typically located in high traffic areas where there is no opportunity to stop and read the sign. Additionally, the participants noted that the contrast between background color and writing is poor and causes a further barrier for anyone with low vision and certain color blindness. Signage is inconsistent and not all tactile, so it makes it both difficult to locate and impossible to read for someone who is blind. While there were other barriers reported within University College, signage was the most common barrier reported.

The documentation of the location of barriers allowed for connections, themes and patterns to be drawn among participants, regarding where the most common barriers occurred at the University of Manitoba. Many buildings at the University of Manitoba were reported to contain/cause barriers which impede daily tasks, with the Tier Building, University Centre, and University College most commonly noted.

5.4 Summary of Findings

The design ethnographic research findings for all five participants at both major University of Manitoba campuses focused on themes and categories to organize the data collected through moving interviews, audio recordings, photographic documents and GPS tracking. The findings

were grouped based on the type of experience the participant experienced, what type of barrier the participant identified, which campus, which building, the occurrences of each theme and each type of barrier. Categorizing the data to review the findings allowed me to understand what the barriers are, and where barriers occur, that limit or prevent access to individuals with disabilities before analyzing the data further. The next section will focus on the data analysis.

The following section of this practicum provides the analysis and synthesis of the data collected during the research study. This section reviews the results and trends with supporting tables and diagrams and responds to the research questions set out at the onset of the practicum to guide the research study.

6.0 Analysis and Synthesis

Chapter 6, Analysis and Synthesis, investigates the findings revealed and presented in chapter 5. This analysis explores the relationship between barriers to accessibility, and the experiences of those who utilize university amenities and identify as having a disability, by comparing the findings in the research with other accessibility research and accessibility plans from the University of Manitoba.

6.1 Results and Trends

According to the moving interview results, the most commonly identified barrier was Architectural Barriers, which comprised of 42% of the identified barriers, with Attitudinal Barriers the second most commonly identified barrier, followed by Systemic Barriers. Interestingly enough, the rest of the identified barriers compare and contrast to the data collected by the 2016 Accessibility Survey at the University of Manitoba. The survey identified Physical and Architectural Barriers as a number one priority at 43%. Notwithstanding the foregoing, the U of M survey data differs in that it identified Information and Communication barriers as a second priority, followed by Technological Barriers. The University of Manitoba Accessibility Survey had 556 respondents answer questions specific to type of disability, types of barriers witnessed on campus and priorities to focus on to improve accessibility with respect to the development of the University of Manitoba Accessibility Plan and Policies. The data collected in The University of Manitoba Accessibility Survey was, again, very similar to the data collected by the University's Student Accessibility Services with 21.6% of respondents identifying as having a disability.

Temporary vs. permanent disabilities, physical disabilities, visual disabilities, mental health, hearing, and accommodations were the most commonly identified themes pertaining to disability type among respondents (University of Manitoba Multi-Year Accessibility Plan, 2018).

Table 4: Comparing Research Barriers Occurrence to the Barrier Priorities Identified in the Accessibility Survey at the University of Manitoba

Type of Barrier	Occurrence Percentage in Research Project	Priority Percentage in UofM Accessibility Survey *
Built Environment/ Architectural Barrier	42%	43%
Attitudinal Barrier	21%	N/A
Systemic Barrier	14%	N/A
Technological Barrier	12%	22%
Information and Communications Barrier	11%	29%

University of Manitoba Accessibility Survey data shown above represents overall priorities only, and is not a full representation of survey results. (University of Manitoba Multi-Year Accessibility Plan, 2018).

When taking a comprehensive look at the physical and architectural category that was identified in the interview data, some themes emerged. The top three reoccurring themes include: lack of power door access, barriers integrated/caused by with stairs and barriers within the tunnels. Some less common themes include: entrance barriers, and barriers within washrooms, plus barriers arising as a result of poor lighting.

Table 5: Barriers Themes Occurrence in Research and University of Manitoba Accessibility Survey

Barrier Theme	Occurrence in Research Project	Occurrence in UofM Accessibility Survey
Building Connectivity	3x	
Classrooms	N/A	18x
Entrances	8x	

Elevators	7x	20x
Heights	4x	
Lack of Power Door Access	10x	13x
Lack of Tactile Warning	3x	
Lighting Barrier	6x	
Old Infrastructure	2x	15x
Poor Railings	1x	
Power Door Access	4x	
Quick in and out needed	1x	
Ramps	4x	
Retrofit	1x	
Space Promotes Anxiety	2x	
Stairs	10x	
Tunnels	10x	
Visibility	4x	
Washrooms	7x	18x
Water Fountain Barrier	2x	
Contrast + Glares	1x	

(University of Manitoba Multi-Year Accessibility Plan, 2018)

As seen in the Table above, there is some overlap in the barrier themes identified by the University of Manitoba community from the Accessibility Survey and the research data collected in the moving interviews. While the order of most commonly occurring themes differ, elevators, washrooms and power door openers, or lack thereof were some of the most commonly identified barrier themes in both sets of data. The similarities in both sets of data suggests a pattern among the experiences of those who visit the University of Manitoba campuses and who identify as having a disability.

The following descriptions of the patterns within the themes that emerged:

Elevators:

Barriers to accessibility with respect to elevators were discussed 7 times in the research project among the five participants, and 20 times in the UofM Survey on Accessibility among the 556 respondents, each were among the highest groups occurring theme in the dataset, with 10 being the highest in the research project, and 38 being the highest in the UofM Survey.

Power door openers, or lack thereof:

The lack of power doors was one of the most commonly discussed barrier themes among the five research participants, occurring 10 times in the data set, whereas, this was one of the lower reoccurring themes in the UofM Survey. The reoccurrence was significant enough to be summarized in the overall findings found in the University of Manitoba Accessibility Plan, as it presents a significant area for improvement within the built environment.

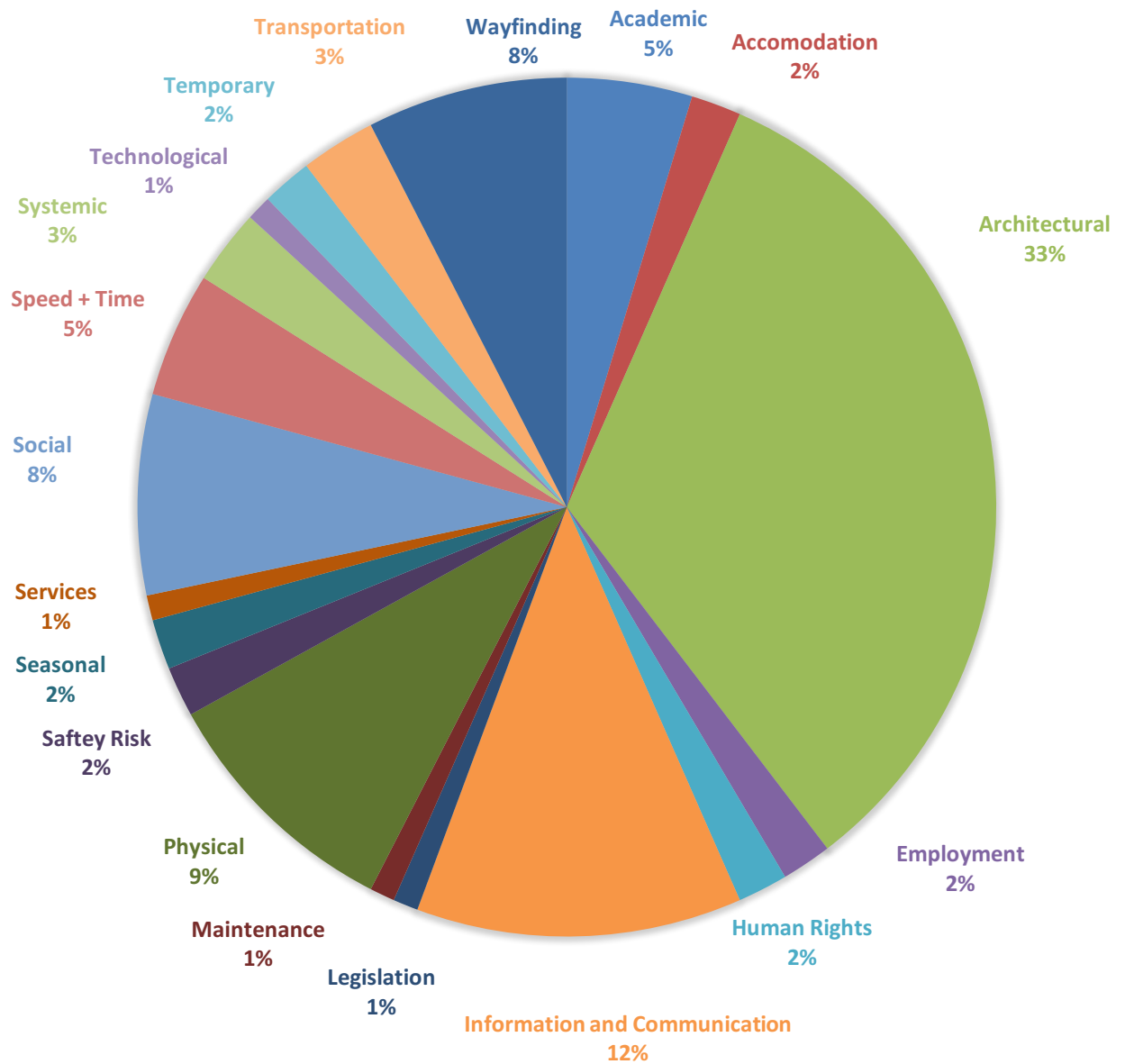
Washrooms:

Similar to elevator barriers, barriers associated with washrooms were quite high in occurrence among both sets of data, occurring 7 times in the research project and 18 times in the UofM Survey. The high occurrence rate speaks to the need for improvement within the built environment at the University of Manitoba.

Additionally, navigational barriers or wayfinding barrier were identified in the data set, occurring 11 times among participants involved in the moving interviews, and 18 times in the UofM Survey. Other themes that were found in the research project that were labeled and quantified include: information and communication barriers, physical barriers, social barriers,

academic barriers, barriers pertaining to speed and time, and many others, which can be seen in Figure 14: Themes in the Data, visually representing the quantity of occurrences in the dataset.

Figure 17: Themes in Data



Other similarities among the data exist, beyond the physical and architectural barrier category. The highest barrier theme identified in the data from the University of Manitoba Survey pertains to attitudinal barriers, which occurred 38 times, this category theme was the second highest category in the research project, with an occurrence rate of 14 times, which accounted for 21% of the data collected. While this barrier is difficult to identify, because it is an invisible barrier, it has a great impact on those who visit the University of Manitoba campus, as evident in both sets of data.

Another pertinent barrier theme identified in the research study data was accommodation barriers, which had a low rate of occurrence in the research project (only mentioned twice); however, it was mentioned ten times in the UofM Survey. Documents, which were categorized as information and communication barriers in the research project, were identified 4 times among the participants, and 10 times in the UofM Survey data. Seasonal barriers, such as snow and ice, were mentioned twice in the research project and 5 times in the UofM Survey, while parking barriers were mentioned 3 times among the participants in the research project, and again 5 times in the UofM Survey. Lastly, systemic barriers, such as barriers created by policy, were identified 3 times in both the research project and in the UofM Survey. Each of these barrier themes present specific areas of focus that need to be improved upon in order to remove barriers to accessibility for those who frequent the campus. While some barrier themes are easier to identify (and thus it is potentially easier to create a plan to remove those barriers), others are much more difficult to navigate. The impact on those who experience barriers is significant with respect to each type of barrier. This data presents a need for prioritization, specifically, regarding the physical and architectural barriers that impede

participation for some at the University of Manitoba. General participation in the built environment is a basic human right. This may include access to a washroom, access into the front entrance of a building and independent navigation within.

6.2 Addressing the Research Questions

The following section addresses the research questions that guided this research project, which were presented in Chapter 1.2: 'Key Research Questions'. While the data generated in the study was limited due to the very small sample size, I can draw an educated conclusion from the literature discussed in the literature review section, and the data collected from the ethnographic study, which used moving interviews, photo documentation, and geographical mapping, as this data informed Chapters 5 and 6 (the finding and analysis) of this practicum.

The research questions were regularly reviewed, based on Lecompte's (2000) method, which was previously outlined in Chapter 4.2: Data Analysis in the research methods section. Additionally, regularly reviewing the research questions, allowed the research focus to stay top of mind, while sorting, labeling the themes and organizing the categories within the data.

6.2.1 How do people with disabilities experience public spaces on university campuses, specifically the University of Manitoba?

This question was posed to understand how people with disabilities experience university environments, particularly, the scenarios that impact the way in which people with disabilities experience these environments, and in some cases, can cause them to avoid certain university points of interest altogether.

Wolfgang defines 'accessibility' as the availability of urban resources, like access to economic or community resources, for example, access to university and the amenities within, where people with any special requirements can easily access (Wolfgang, 2011). This suggests that the experiences of those who identify as having a disability, would be positive, as access to the public spaces at the University of Manitoba would be easy and effortless. The research data did not reveal positive experiences. Participants reported negative experiences at the University of Manitoba more commonly than positive and neutral experiences. Most negative incidents reported were due to barriers within the built environment, such as architectural barriers that impede one's ability to access the space. Each participant shared specific examples where they felt they did not belong on campus because of the barriers they experience, or where the environment presented additional challenges, thereby impeding their participation. The result, avoidance of spaces altogether.

Participants also reported cases where they experienced attitudinal barriers from others on campus, which made them feel unwanted, as if they don't belong and like they are different. In some cases, these attitudinal barriers caused them to avoid situations, leading them to segregation on campus.

There were no real suggested solutions among the research participants about how to go about removing the barriers that limit their access around campus. There is growing awareness regarding accessibility, inclusive and universal design, and there are many examples of good design on campus, which suggest some clear solutions for removing barriers on campus. Some participants did acknowledge which spaces work for them on campus, stating that is where they

spend most of their time. This, however, is not a solution, as it continues a degree of segregation among the University of Manitoba community.

Overall, the results were consistently negative among all participants. From lived experience, each participant was able to clearly identify the ways that the spaces limit and impede their experience with the University of Manitoba.

6.2.2 What are some of the common campus barriers that create challenges for people with disabilities?

The purpose of this research question is to understand what the common barriers are on campuses and how they impact the experiences and campus life of people with disabilities.

As the previous question revealed, all five participants shared their experiences while moving around both UofM campuses. Most experiences were negative and illustrated how their participation in campus life is limited by barriers to access. It is important to delve deeper into this information, and question what barriers are creating these challenges that result in negative experiences for people with disabilities.

According to Imrie and Hall (2001), the built environment is comprised of obstacles and barriers, limiting and denying access of those with disabilities in public spaces, resulting in exclusion by design. Many types of barriers were identified in the research project data, which in some instances led to exclusion by design. Elevators, lack of power door openers, and inaccessible washrooms were among the most frequently identified barrier types.

While working elevators and power door openers are designed to improve accessibility for people with disabilities, this did not seem to be a reality for most of the research participants. One participant shared a story where they were unable to reach the buttons in an elevator that

would take them to the top floors, because they were too high. Another participant shared examples of many multi-story buildings on campus that do not have elevators or lifts. Yet another participant shared the necessity of regular maintenance of elevators, as many elevators on campus are very old, slow, small, and dark, which can evoke a feeling of unwelcomeness. These are just a few of the many common barriers reported while moving around the University of Manitoba campuses.

Other common barriers include barriers with access to washrooms, which was mentioned seven times among the five participants. Barriers with washrooms included placement and height of soap dispensers as well as washroom signage, which can make it difficult and time-consuming to locate a washroom on campus.

In general, the old infrastructure of the University is riddled with barriers to accessibility, but the most prominent barriers are the ones pertaining to human rights, such as washrooms, access into buildings, access to other floors within buildings and emergency escapes.

6.2.3 How do the on-campus experiences of those with disabilities intersect with recent accessibility policies in Manitoba?

This question is an important question to ask, with respect to the actual implementation of accessibility policy in Manitoba. It is important to reflect on how implementation is impacting the lives of those it is intended to impact.

The University of Manitoba, by law, is required to produce an Accessibility Plan, and comply with the Accessible Customer Service legislation. Even with the enactment and implementation of the legislation, though, research participants shared experiences with barriers

that limited their access to University of Manitoba amenities. According to the University of Manitoba Accessibility Plan, there were many actions being taken to improve accessibility on campus, but did these actions address the needs of its community?

While elevators, power door operators, and washrooms were among the most commonly discussed barriers, these are not focus areas mentioned or represented on in the University of Manitoba Accessibility Plan, nor are these a current area of focus in Manitoban Accessibility Policy. These are examples of built environment barriers, which are the last elements to receive attention.

While the Customer Service Standard is supposed to address the way in which services are provided in Manitoba (including services to students, faculty and staff), services in regard to accessibility at the University of Manitoba were mentioned once in the data set, accounting for the smallest portion of data labels. While the well-written plan outlines many initiatives to be implemented at the University, arguably, according to the data, they are not initiatives resonating with the community. Alternatively, they are not well-communicated or shared with the community, so they are not able to notice and comment on the improvement.

The research questions ask, how do the on-campus experiences of those with disabilities intersect with recent accessibility policies in Manitoba? Based on the data collected among the five research participants, there was little mention of the accessibility policy in Manitoba, suggesting that they are either not aware or are not impacted by it, neither positively or negatively, or they simply did not find it worth mentioning during the moving interview. The majority of the feedback received during the interviews commented on negative experiences, which suggests that the policy in Manitoba is not yet effective enough to improve the overall

experiences of those with disabilities. It is important to recognize that the policy is in its infancy and the challenges it faces, both in the built environment and the attitudes of many, are daunting. A shift towards accessibility planning is underway, but the process will be long and laborious.

6.3 Limitations

As all research features its own unique range of assumptions and limitation, there were many assumptions and limitations experienced with respect to this research. The most notable assumption pertains to the research participants. I had hoped to gather ten interviewees over roughly two months. Recruiting participants who were comfortable enough to self-identify as having a disability and who were willing to participate in the moving interview proved to be a challenge. The sample size reached was ultimately half the originally anticipated sample size and took over five months to collect.

As a result of this challenge, the sample size provides a narrow scope. Rich data was nevertheless collected. A small sample size made it difficult to draw general themes potentially applicable to all University campuses and even urban development, as it had been anticipated at the outset of the research project.

The first part of this research included moving interviews around the University of Manitoba campus with students and staff familiar with the space. Due to the intimate nature of this process, it made it difficult for participants to participate fully. Some feared they were still too identifiable, despite all the steps taken to ensure anonymity and confidentiality. Recruitment involved a number of methods, including posters and email circulation internally at the University

and to external communities/organizations. Due to the university-specific location, participants did not include external community members, as they were not familiar enough with the campuses to participate. As a result, the research scope does not include the experiences of individuals coming to the campus for the first time.

In addition, there was a late start to the research, as it was approved by ethics in July. Participants did not agree to participate until mid-September, at which time they would be on campus for classes. Due to this, I was able to gather a range of experiences in both warmer weather, cooler fall weather and winter weather, posing a range of weather conditions for consideration.

Additionally, because of the time required to gather and schedule all research participants moving interviews, by the time each interview was conducted, too much time had passed to schedule the follow-up interview as the interview information was no longer fresh and top of mind.

Lastly, I attempted to use accessibility assistive software to transcribe the audio recordings of the moving interviews. I also anticipated use of the software would be a learning experience about accessibility assistive devices of this nature. This experiment failed as the software, a highly skilled and often used software among many students (available through the University of Manitoba Assistive Technology Lab) did not successfully pick up and transcribe all the information in the interviews. Because of this, I changed the way in which I synthesized the data, listening to the recordings many times, notarizing, and typing up all the information collected during the interview process. Ultimately, more time was consumed than anticipated during the post-interview phase.

Overall, I, the principal investigator, wish I could have gathered additional participants to enrich the data, but ultimately I feel the study was a success.

6.4 Recommendations for Further Research

As mentioned in the limitations sections, recruitment was very challenging, resulting in a lengthy research study period, prolonging the overall process. Additionally, while the nature of the moving interviews allowed for adaptability among each participant, it also generated a wide range of information that could have been better focused. I recommend the following two areas for further research on the topic of planning and designing universities for accessibility: (1) better recruitment strategies, and; (2) structured interview questions for the moving interviews.

Recruitment

Flexibility with the location of moving interviews would likely have generated greater participation as all participants in this research study, ideally, had to be familiar with the University of Manitoba campuses, and required access to some form of transportation to the campuses in order to conduct the interview. If the location were shopping malls, for example, there would have been many opportunities within close proximity to most neighborhoods, with a large enough population of people familiar with the space, who could access the space and were available to participate in the study, to collect data from and analyze the data to draw conclusions. I would recommend furthering this research by selecting a location or a few locations where there is a greater population of people that would be willing to participate.

Knowing the demographic is important as well. In a university context, not everyone is willing to self-identify. Choosing a location where there are enough people coming and going on a regular basis, where there is no fear of being identifiable, will assist with participant recruitment. Using the shopping mall scenario, shopping malls are generally accessible to everyone and are occupied by a vast and largely transient range of users every day. Individuals are drastically less identifiable at a shopping mall than at a University where the majority of the population is static in any given academic year.

Lastly, focusing on one type of disability could allow for richer data for producing specific design solutions. This would also target a few specific groups where participant involvement may be greater.

Moving Interviews

In order to enhance the moving interviews, specific questions could be asked to start the conversation, in order to guide and provide discussion, as well as narrow the scope of information for data analysis. I would recommend starting all moving interviews with a set of questions that pertain to and address the research questions more pointedly.

Follow-up interviews with each participant could have allowed for additional data collection, as participants may have wished to add additional feedback upon second review. Alternatively, a focus group session with all the participants together to review the data findings and generate further group feedback could have been effective. Issues related to participant anonymity would have arisen, however.

Interviews could have been better enhanced by asking each participant for examples of places they have visited with improved accessibility and what made the accessibility of those

places good. This data could have provided more tangible data, and provided evidence for a best practice section in this practicum.

All further research on the topic of planning and designing universities for accessibility should look to best practices and feature a case study section highlighting the fundamentals of accessibility planning within the academic context. There has been much movement on accessibility issues, particularly in the university sector since this practicum began, and the topic will continue to evolve and develop with provincial and federal legislation mandating the need for better accessibility. This project only skimmed the surface of this research, as major developments in this topic paralleled the timing of my research. The scope had to be narrowed for timely completion of the practicum.

6.5 Research Questions Arising

Based on the research findings, further research questions have been sparked, most of which center around the idea of online learning and virtual academic environments, the impact on the location of a campus and the relationship between policy and physical space.

Further research questions may include:

How have online courses and programs changed perspectives on university accessibility?

How many students registered with Student Accessibility Services are enrolled in online courses?

What is the perception of university life when experiences are within a virtual environment? Are the programs offered online in an accessible format? How successful is self-guided, online

learning? Is this really an accessibility solution, or does this further segregate people who identify as having a disability?

What role does location play in university accessibility?

How is accessibility impacted in relation to urban location? Is an urban downtown campus more likely to be more accessible than a suburban campus? What role does the surrounding urban environment play in campus accessibility?

What kind of impact does policy have on physical accessibility?

What is the actual likelihood of physical space modification and improvements when accessibility policy is in place? How does policy affect the budget allocation process? To what extent does policy enforcement impact accessibility?

6.6 Summary

Overall, the data revealed that the barriers experienced by people with disabilities at the University of Manitoba are generally negative experiences. They feel isolated to some degree, because of the manner in which barriers limit or prevent their ability to participate in campus life. Disabilities are commonly misinterpreted as the barrier; however, it is the barriers within the spaces - such as inaccessible washrooms, lack of working elevators, poorly designed elevators and the lack of power door openers, to showcase a few common barriers - that render a place inaccessible.

This practicum included a unique range of assumptions and limitations. Primarily, within the recruitment stage, a limitation became evident. It was extremely challenging and time-

consuming to recruit the five participants for the study. Many recommendations on recruitment were made for future research on planning and designing universities for accessibility. Additionally, recommendations were made about the format of moving interviews, using a set of structured interview questions to gather a focused data set for analysis. As a result of the research gathered, the findings generated and the analysis produced, further research questions pertaining to online education, location of campus, and the relationship between policy and physical space arose.

The following final section summarizes this practicum, outlining implications for future planning and design practice at the University and Manitoba, and provides closing remarks.

7.0 Conclusion

How does good accessibility improve the overall experience for all who utilize a space, in particular, university campuses? In general, poor accessibility is an issue that impacts everyone; predominately those with disabilities. This can be studied further in the academic and university context, where historically people with disabilities were excluded due to the very design of university campuses. A well-designed and planned space provides equal access to all amenities and to all users, regardless of ability. The *Accessibility for Manitobans Act*, the City of Winnipeg Accessible Design Guidelines and the University of Manitoba Multi-Year Accessibility Plan are a few examples of the local initiatives in Manitoba that are working to foster accessible and inclusive environments. As noted throughout this practicum, barriers arise for many reasons. The most common barriers that impede one's ability to participate in university life encompass physical and architectural barriers. A multiple stage implementation approach is required in order to remove these barriers. Policy change has been implemented within the Province of Manitoba, but until there is sufficient funding, greater awareness and attitudinal changes, barriers will continue to prevent people with disabilities from fully participating in society.

Implications for Planning and Design Practice and the University of Manitoba

The findings and analysis from this practicum provide significant lessons for planning practice and the University of Manitoba, as the data revealed a substantial need to address the physical and architectural barriers embedded within the fabric of campus design. Entrances, stairs, elevators and washrooms were among the many barriers identified during the research study. Planners

and designers involved in campus planning must begin to work through these barriers and commit to ensuring better access to everyone who uses campus amenities.

The data revealed that overall experiences with access on campuses are more likely to be negative experiences where barriers impede one's ability to take part in normal day-to-day tasks. Many participants reported feeling anxious, confused, and even unwanted or like they did not belong, due to the barriers they experienced. This suggests a strong and urgent need to better address campus accessibility in both the design of campuses and in social policy and planning.

There is a need to readdress and assess the effectiveness of policy and plans that have recently been implemented. Planners and designers must continually search for ways to ensure better accessibility. If plans and policy remain stagnant, they will become a minimum level to achieve, and will not achieve barrier removal and inclusivity. It is the responsibility of all planners and designers to create places that welcome people of all abilities. In order to do this, planners and designers must continue to challenge the status quo and develop better standards and policies in order to promote inclusive practices.

In closing

This research project has explored and investigated a relatively recently tackled topic in Canadian planning circles - accessibility in planning and design, specifically for post-secondary campuses, which often house many communal amenities. The University of Manitoba has a large enough population on a daily basis to be compared to Manitoba's second largest city, Brandon (pop. approx. 50,000), as it offers resources and amenities to upwards of 40,000 faculty, staff, students and others.

The purpose of this research was not to propose a step-by-step solution to instill better accessibility planning practices, but rather to explore the way in which people with disabilities experience campus life and to understand the dynamics of those experiences. The intent was to investigate the commonly experienced barriers and cross-reference the experiences with policy and plans designed to improve access. This research study has analyzed and reflected on these topics and issues, outlining the opportunities for future research and addressing the research questions which framed the study. As outlined in the limitations section, this research has only scratched the surface of campus accessibility planning and design. There are many more avenues to be explored and investigated to better understand the necessity for improving campus accessibility.

How does good access impact everyone? When accessibility is considered at the start of a planning and design process, everyone, regardless of ability, can equally use and benefit from a space. This may include parents with strollers, people pushing carts and someone on a scooter. Good access benefits everyone and results in a stronger, more connected community. The intention of this research is to continue the conversation about accessibility and to influence others to explore the opportunities and potential for achieving fully inclusive environments where everyone is welcome.

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9.0 Appendices

APPENDIX A: Project Summary

Planning and Designing Accessible Public Spaces in Canadian Universities: A Case Study of the University of Manitoba

The proposed research focuses on the design of public spaces at the University of Manitoba in Winnipeg and the use of universal design standards as a catalyst for achieving user independence and a more accessible campus. The research will contribute to current thinking about accessible, universal and inclusive planning and design in Canada and in winter cities. Through content analysis of relevant planning documents and the recently enacted *Accessibility for Manitobans Act*, complemented by design ethnography using moving interviews (or walking interviews), including photographic documentation and map documentation, grounded insights will lead to new ideas about accessibility planning and accessible campus design in Winnipeg, and other cities in Canada.

Urban marginalization affects the lives of many residents with disabilities; in fact, 1 in 6 Manitobans have some form of disability or impairment. This marginalization often leads to deprivation of basic human rights and access to goods and services. When basic human rights are violated, independence and urban engagement are limited. Multiple barriers exist within the built environment that limit how and when people can access public spaces. While attempts have been made to remove these barriers, in some cases they have further

segregated people with different abilities. It is imperative that designers, planners, and decision makers further explore principles such as universal and inclusive design, in order to remedy the issues that exist within campuses and to strengthen the attempts that have already been made with the *Accessibility for Manitobans Act*. The built environment must respond to the needs of all its inhabitants, including those with disabilities, as public services and accessibility to public space are the foundations for a good quality of life, particularly in cities featuring extreme winter conditions.

My research questions include:

1. How do people with disabilities experience public spaces on university campuses, specifically the University of Manitoba?
2. What are the experiential perceptions of the spaces at the University of Manitoba? What are the common barriers that create challenges for people with disabilities?
3. What is the relationship between accessibility policy and the experiences of people with disabilities in public spaces? What are the lessons learned?

APPENDIX B: Research Participant Information and Consent Form for participant with disabilities and support persons



City Planning
201 Russell Building
84 Curry Place
Winnipeg, Manitoba
R3T 2N2
Tel: (204) 474-6578
Fax: (204) 474-7532

Faculty of Architecture

Statement of Informed Consent

Research Project Title: *Planning and Designing Accessible Public Spaces in Canadian Universities: A Case Study of the University of Manitoba*

Principal Investigator: Krystyl Bergen, Graduate Student, Master of City Planning,
Faculty of Architecture, University of Manitoba

Supervisor: Dr. Rae Bridgman, Professor, Department of City Planning, University
of Manitoba

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the study

The proposed research will gather information about various barrier types throughout the University of Manitoba environments that prevent or limit participation and engagement for people with disabilities. Barriers may include the more obvious, physical and architectural barriers, but can also include systemic, technological, information and communication, and attitudinal barriers. The research aims to collect an inventory of barriers that are actually experienced by people with disabilities, which will later be used to explore the relationship between the experienced barriers with the university accessibility plans and policies. Information for this study will be gathered through photographic documentation, audio recording, and mapping. The moving interview is a research method that allows for data to be collected in multiple ways; including photographic documentation, map documentation, and audio recording, and allows for participants to choose the routes around campus where barriers may be experienced. Four sets of participants (who have both visible and invisible disabilities and who require assistive devices, service animals, and support persons [i.e. translators], and those who do not require assistance) will be asked to take part in an information session prior to the moving interview. Then they will be asked to participate in a single moving interview which will be

complemented by photo documentation, mapping documentation and audio recording to identify and document barriers around campus. Finally, the participants will later be asked to participate in a post-moving interview review session that will be semi-structured to discuss further the contents of the experienced barriers that have been documented to ensure the data is being accurately represented.

This research project is my Major Degree Project, a requirement of the two-year Master of City Planning program at the University of Manitoba.

Study procedures

If you participate in this study you will be asked to attend an information session where I will ensure you are familiar with the process, I will ensure accommodations required to participation are secured, and we will review the roles and responsibilities for the study. The information sessions will be held individually, to ensure the privacy of all participants.

The information session will be approximately 30 minutes long. Once you feel comfortable with the process, we can schedule a time to conduct the moving interview. After the moving interview is conducted, which will take about an hour, I will follow up to schedule the final review session. You will be asked to talk about your experiences during the study, and clarify that the data gathered depicts your actual experiences accurately. This session again, will be kept to approximately 30 minutes. In total, this research project will take up approximately 2 hours of your time.

Participant risks, benefits, costs

There is no evident, direct risk in participating in the moving interview process. The study will ensure proper precautions while undertaking photographic documentation, will respect weather conditions, and will ensure participants refrain from taking part in any activity they wouldn't normally take part in, in order to demonstrate a barrier. Indirect risks may arise while participating in the moving interview, like unexpected barriers, and barriers due to weather. It will be acceptable to take routes indoors or observe barriers from indoors, when the conditions outside do not permit full accessibility.

There is no risk to you in taking part in both the information session and the final review session, as they will be scheduled at times that work best for you, and in locations that are fully accessible for you (and your support person as needed) and myself, the Principal Investigator.

The risk of being identified by readers within the final Master of City Planning Major Degree Project document will be diminished as the findings will highlight the barriers that prevent and limit participation in campus life rather than the details of my disability, especially details that may be identifying information.

There are no direct benefits of taking part in the study. Your participation, however, does provide you with a platform to share your valuable experiential knowledge. This, in turn, can help future researchers better understand the relationship between people with disabilities and their university campus environments.

Audio Recording & confidentiality

With your permission, the interviews will be audio-recorded and transcribed at a later time to ensure accuracy. The transcriptions will contain no identifying information, and names and other personal information will be omitted from the final Major Degree Project document. Photographs will only be included, if they are accompanied by a signed consent form for people appearing in photographs. Transcriptions, photographs, and the mapping will be kept in a secure place during the study, and destroyed (by myself) at the end of the study. The data collected that will be used in the final document for my Master of City Planning Major Degree Project will highlight the barriers identified and collected, rather than focusing on any identifying details regarding the nature of a participant's disabilities.

Feedback & debriefing

Once the moving interview is done, I will provide you with a transcript giving you the opportunity to verify the information and strike anything you feel uncomfortable with. I will provide individual feedback to you within two months of the moving interview, in person; however, if this cannot be done in person, the information can be shared via phone or email. This will ensure the compiled data from the moving interview accurately represents your experiences. Once the Major Project Degree has been completed, I will provide you with a digital copy, if requested.

Dissemination of results

Study results will be disseminated through my Master of City Planning Major Degree Project, a hard copy held at the Architecture/Fine Arts library at the University of Manitoba, a digital copy online through University of Manitoba's M Space (https://mspace.lib.umanitoba.ca/xmlui/handle/1993/6/discover?filtertype=subject&filter_relational_operator>equals&filter=planning), and my oral defense.

Voluntary participation/Withdrawal from study

Your decision to take part in this study is entirely voluntary. Initial consent will be obtained from interested participants at the end of the information session.

I, the principal investigator, will ensure ongoing consent, with verbal check-ins with you as we make our way through the moving interview, and remind you that you have the option to withdraw at any time. Ongoing check-ins will enable myself, the Principal Investigator, yourself to determine if there is any discomfort or unwillingness to continue. You are able to refuse participation or to withdraw from the research study at any time. If you decide to participate you have the right to refuse to answer any question or to refuse participation in any activity, at any time. This also applies to the final review session.

Contact information

Student researcher

Krystyl Bergen, Graduate Student, Department of City Planning, Faculty of Architecture,
University of Manitoba

Phone: XXX-XXX-XXXX

Email: [email removed]

Research supervisor

Rae Bridgman, Professor, Department of City Planning, Faculty of Architecture, University
of Manitoba

Phone: 204-474-7194

Email: rae.bridgman@umanitoba.ca

Statement of consent

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the University of Manitoba Joint-Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

I have read this consent form. I have had the opportunity to discuss this research study with the student researcher. I have had my questions answered by her in language that I understand. I understand that I will be given a copy of this consent form after signing it. I understand that my participation is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that the information I provide will be incorporated in a presentation and report by the Principal Investigator. I understand the final document will not include any identify information regarding the nature of my disability. I also understand that all information will be treated as confidential, stored in a private and secure place, and destroyed June 1st, 2020, two years after the end of the project by the student researcher.

☐ I would like to receive the final Major Degree Project electronically once it is complete.

Accommodations required for the information session:

☐ I do not require any special accommodations to participate in the information session.

☐ I require _____ in order to participate in the information session.

Initial Consent – after the information session

Participant #1 printed name

Signature of Participant #1

Date

Authorized third party printed name, if needed (Support Person)

Authorized third party, if needed (Support Person)

Date

Name of Principal Investigator

Date

Signature of Principal Investigator

Date

Ongoing consent – Upon participating in the moving interview, where cameras will be used to document barriers, along with mapping documentation, and audio recording. Your signature on this form indicates that you understand to your satisfaction the information regarding participation in the research project and agree to continue participating as a subject, as per the statement of consent above.

Consent for audio recording the moving interview

- ☐ I consent to having the moving interview audio-recorded and transcribed
- ☐ I do not consent to having the moving interview audio-recorded and transcribed

Participant #1's signature

Date

Authorized third party's signature (when needed)

Date

Principal Investigators signature

Date

Ongoing consent – At the start of the final review session

Your signature on this form indicates that you understand to your satisfaction the information regarding participation in the research project and agree to continue participating as a subject, as per the statement of consent above.

Participant #1's signature

Date

Authorized third party's signature (when needed)

Date

Principal Investigators signature

Date

APPENDIX C: Consent for people appearing in photographs

City Planning
201 Russell Building
84 Curry Place
Winnipeg, Manitoba
R3T 2N2
Tel: (204) 474-6578
Fax: (204) 474-7532

Consent for people appearing in photographs

I, _____ (printed name of person appearing in photo), give my permission for Krystyl Bergen to include me in a photograph for the research project **“Planning and Designing Accessible Public Spaces in Canadian Universities: A Case Study of the University of Manitoba.”** I understand that every effort will be made to ensure I remain unidentifiable in the photographs (e.g., my back is turned to the photographer, I am too far away to be clearly identified, etc.) but that complete anonymity cannot be guaranteed.

I understand that the research is being conducted as a part of a Major Degree Project (MDP) for the Department of City Planning at the University of Manitoba, and that I may direct any questions to the Principal Investigator, Krystyl Bergen at telephone number: XXX-XXX-XXXX or email address: [email removed]. I also understand that this photograph may be seen by other people (through a hard copy of the final MDP held at the Architecture/Fine Arts library at the University of Manitoba, a digital copy online, or the Principal Investigator’s oral defense), but that

my name will not be identified. I understand that confidentiality cannot be guaranteed due to the nature of this photography project.

Signature of Person Photographed

Date

Signature of Photographer

Date

APPENDIX D: Final Review Questions

The Interview Guide focused on acquiring information from participants who identified as having a disability and who took part in the moving interviews identifying barriers to accessibility around both major University of Manitoba campuses. The semi-structured sessions were to be conducted following the moving interviews, once all information gathered was transcribed and compiled. To ensure reliability and consistency, all interviews included initial standard questions, and became less structured towards the end, based on the participant's own lived experiences. All follow-up questions were to clearly relate to the topics being discussed as a result of the Standard Sample Questions listed below. This information was critical 1) for understanding the present relationship between the experiences of people with disabilities and current accessibility plans, and 2) for informing future accessibility planning at the University of Manitoba and other academic institutions, and for assisting planners with mapping out accessibility initiatives. Below includes a list of standard sample questions asked in each session is provided below.

Final Review Session Standard Sample Questions to be asked of the participant, and in some cases the support persons as well

- 1) To what degree do these photographs accurately represent the barriers you experienced during the moving interview that we conducted around the University of Manitoba _____ [identify which campus] campus?

- 2) Which photograph best represents the challenges you experienced that day and why?
- 3) Which photograph best represents the most common barrier(s) you experience on a daily basis?
- 4) To what extent does this map of our route taken during the moving interview represent your daily routine?
- 5) To what extent does this transcription accurately represent our dialog during the moving interview?
- 6) Is there anything you feel we did not necessarily experience during the moving interview? Please explain.
- 7) What specific barriers generally impede your daily routines? [Then consider probes re. attitudinal (any stereotypes), physical and architectural (design issues), information and communication (any information which you cannot access), technological (supports not available, what kinds), or systemic barriers (policies that make it difficult to perform tasks).]
- 8) What would make it easier for you to get around and participate in more University of Manitoba activities?

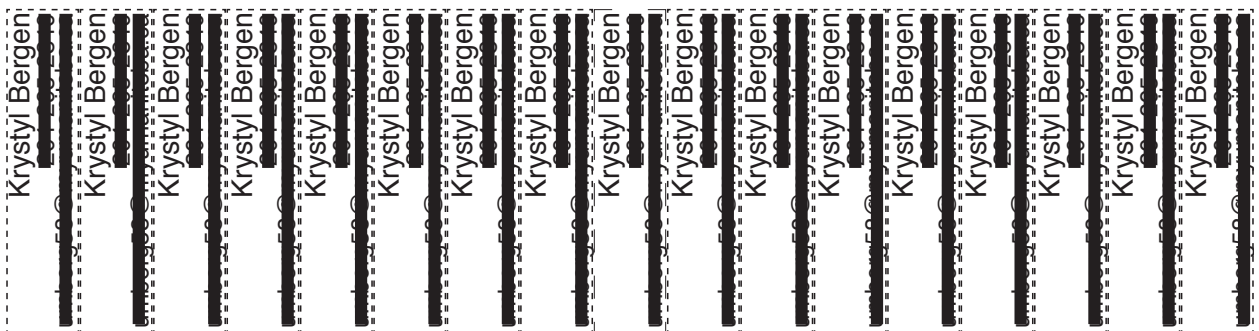
Hey! Do you experience barriers to accessibility on campus?

My name is Krystyl Bergen and I am a graduate student in the Department of City Planning at the University of Manitoba. My research aims to gather information about various types of barriers throughout the University of Manitoba environments that prevent or limit participation and engagement for people with disabilities.

meeting 1 meeting 2 meeting 3

30min. Info Session + 1hr Moving Interview + 30min. Review Session = 2 hrs, 3 Meetings Full Participation

For more information about this study, and The Major Degree Project, please contact Krystyl Bergen. This research has received ethics approval from University of Manitoba's Joint-Faculty Research Ethics Board.



APPENDIX F: Email/phone script for initial contact with recruiting supporters

City Planning
201 Russell Building
84 Curry Place
Winnipeg, Manitoba
R3T 2N2
Tel: (204) 474-6758
Fax: (204) 474-7532

Salutation,

My name is Krystyl Bergen, and I am a student in the Master of City Planning program at the University of Manitoba. I am currently completing my Major Degree Project, which aims to explore the relationship between barriers actually experienced by people with disabilities around university campuses (specifically the University of Manitoba) and the respective institutional plans for creating accessibility. The research is being supervised by Dr. Rae Bridgman in the Department of City Planning and has received ethics approval from the Joint-Faculty Research Ethics Board. Attached is a “Project Backgrounder” which will provide you with more information about the project.

I would greatly appreciate your help in recruiting potential participants for a moving interview around both major University of Manitoba campuses (which will include an information session, and a de-briefing review session). Moving interviews involve giving study participants an opportunity to identify barriers that they experience while moving around campus. I would appreciate you letting people know about the research and how to get in touch if they are potentially interested in participating.

I am looking specifically for participants who identify as having a disability, ranging from individuals who have invisible disabilities and do not require personal supports, as well as participants who do require personal supports, such as support persons (e.g., translators), assistive devices, and service animals. The entire study will include an information session lasting approximately 30 minutes, a moving interview that can last up to an hour, and a final review session that, again, will last about 30 minutes. These will take place at the University of Manitoba that is fully accessible and at a time that is convenient for the participant.

If you would like additional information, please feel free to contact me at [email removed] or XXX-XXX-XXXX.

Thank you for your time and consideration,
Sincerely,

Krystyl Bergen

APPENDIX G: Project Backgrounder***Planning and Designing Accessible Public Spaces in Canadian Universities:******A Case Study of the University of Manitoba*****Project Backgrounder for Prospective Study Participants**

The following information provides background information about Krystyl Bergen's Master's Major Degree Project (Dept. of City Planning, University of Manitoba). The research is being supervised by Dr. Rae Bridgman in the Department of City Planning, and has received ethics approval from the University of Manitoba Joint-Faculty Research Ethics Board.

Purpose: The research aims to gather information about various types of barriers throughout the University of Manitoba environments that prevent or limit participation and engagement for people with disabilities. (Barriers may include the more obvious physical and architectural barriers, but can also include systemic, technological, information and communication, and attitudinal barriers.) The research aims to collect an inventory of barriers that are actually experienced by people with disabilities, which will later be used to explore the relationship between the experienced barriers with the University of Manitoba's accessibility plans and

policies. Participants: Participants with visible and/or invisible disabilities, and who may or may not require assistive devices, service animals, and support persons (e.g., translators), will be asked to take part in an individual information session (1/2 hr.). Then they will be asked to participate in a “moving interview” (no more than 1 hr.), which will be complemented by photo documentation, mapping and audio-recording – all to identify and document barriers around campus. Finally, participants will later be asked to participate in a brief post-moving interview session (1/2 hr.) to discuss the identified barriers, to ensure their insights are accurately represented.

Moving Interviews: Information for this study will be gathered through moving interviews. Moving interviews involve a research approach that allows for data to be collected in multiple ways, including: conversation, photographic documentation, mapping, and audio-recording. Moving interviews allow for participants themselves to choose a route around campus where barriers may be experienced.

Benefits of the Research: There are no direct benefits of taking part in the study; however, participation does provide you with a platform to share your valuable experiential knowledge. Your insights can help future researchers better understand the relationship between people living with disabilities and their university campus environments.

If you would like additional information, please feel free to contact me at [email removed] or XXX-XXX-XXXX, or my advisor, Rae Bridgman at XXX-XXX-XXXX or rae.bridgman@umanitoba.ca.