Accessible Homes: A Film

by Mohsen Mahjoobnia

Submitted to OCAD University in partial fulfillment of the requirements for the degree of

Master of Design in Inclusive Design

Toronto, Ontario, Canada, April 2016 Mohsen Mahjoobnia, 2016

This work is licensed under the Creative Commons Attribution-Non Commercial 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by-nc/4.0/ or write to Creative Commons, 171, Second Street, Suite 300, San Francisco, California 94105, USA.

Copyright Notice

This document is licensed under Creative Commons Attribution - Non Commercial Works 4.0 License http://creativecommons.org/licenses/by-nc/4.0/ca/

You are free to:

Share: copy and redistribute the material in any medium or format

Adapt: remix, transform, and build upon the material **Under the following conditions:**

Attribution: You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

Non-Commercial: You may not use this work for commercial purposes.

Notice: You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation.

No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material.

Author's Declaration

I hereby declare that I am the sole author of this MRP. This is a true copy of the MRP, including any required final revisions, as accepted by my examiners.

I authorize OCAD University to lend this MRP to other institutions or individuals for the purpose of scholarly research.

I understand that my MRP may be made electronically available to the public.

I further authorize OCAD University to reproduce this MRP by other means, in total or in part, at the request of other institutions or individuals for the purpose of scholarly research.

Abstract

This project explored the lived experiences of three persons with mobility challenges during their quotidian negotiations with their environment in their partially or fully renovated homes. Following them with a video camera, a documentary film was put together to vividly capture nuanced adaptations they make to achieve an accessible living environment. Their responses to a series of questions exposes the ambivalence associated with their notions and emotions about accessibility. The question central to the film is: what is accessible home for you? Rather than trying to dictate guidelines for architects and builders, the film exposes the audience to the perspectives of people with disabilities that reveal the plurality of their notion of accessibility and the unique challenges associated with striving for it. This project reinforces the inclusive design lesson: one size fits but one; easier achieved in the digital realm, but an equally important goal in the physical realm.

Keywords: Accessible home, Inclusive design, Architectural design, Interior design, Renovation, Mobility, Physical disability, Media, Film.

iv

Acknowledgment

At the outset, I offer my sincerest gratitude to my Principal Advisor, Professor Geoffrey Shea, for providing support and guidance throughout the research process.

Next, I would like to profusely thank the stars in my film—Kausar Mian, Patty De Guia, and Joschi Shea—for welcoming me to their homes and sharing their experiences with me.

Thanks are due in no small measure to all the professors in the MDes program in Inclusive Design, especially Professors Jutta Treviranus and Sambhavi Chandrashekar, for their inclusion, support and encouragement.

Last but in no way the least is my gratitude to David Dyer Lawson who painstakingly edited my report.

Thank you, all!

Table of Contents

List of Figures	vii
Introduction Original Intention and Pivot	
Pre-production	6
Production1	12
Guests	13
Kausar Mian	
Patty De Guia	
Joschi Shea	
Accessible design principles	
Kitchen Bathroom	
Principles Affecting Accessible Design	
Ambivalent Truths	
Post-production	<u>2</u> 9
Anticipated Outcome	29
Actual Outcome	
Wrap up3	32
References	38

List of Figures

"Barriers might not just be physical; they might be psychological or social. Like, not being able to open the door is terrible, but not having people take your disability seriously, or take your ability seriously, is more terrible.

Geoffrey Shea

Introduction

My major research project involved the production of a documentary film about accessible homes. Through this documentary film shot in the homes of persons with mobility challenges, I showcase the design elements involved in the personalization of living spaces by persons with mobility challenges. My film and the supporting text present a story of ambivalence: a tension between seeking to make environments accessible and adapting oneself to suit the environment. Perhaps, a cliché, and not a trope favoured by academics; however, my three guests (persons with mobility challenges who participated in my research) expressed this idea. An accessible home is more than accessible house that complies with building codes and accessibility standards. An accessible home is where a person feels emotionally whole.

The Canada Mortgage and Housing Corporation, states that, "Accessible housing design accommodates everyone, including those with disabilities, including houses that are minimally accessible, houses that can easily be made accessible at a later date and houses that are completely accessible (CMHC, n.d.). However, rules and regulations in the Ontario Building Code apply to new constructions or major renovations (*ibid*) but not to the older buildings and apartment complexes.

Further, built environment accessibility is not always practiced. There is a need, therefore, for media resources that sensitize professionals about accessibility needs, but with a design focus. The research question examined by this project is: How do people with mobility challenges personalize the design of their homes to suit their needs towards living a comfortable life?

An accessible home is important to empower and maintain the dignity of individuals with disabilities (Baldarica, 2003; BFEI, 1991). A welcoming environment for everyone in the family is needed for

the entire family to thrive. Designs that architects, designers and builders provide do not always meet the needs of their clients with disabilities. This is because not all professionals are fully aware of accessibility and inclusion indicators. As well, given the diversity that is humanity, no two clients might have the same requirements.

Original Intention and Pivot

Originally, as I began my MRP, I had decided to address the standards needed for creating an accessible home. It was also my intention to create a matrix and a 3D model of an accessible home. I felt that this would be a good way to create media resources that sensitized professionals about accessibility needs but with a design focus.

In this project, as conceived originally, the goal was to create a short documentary film that would help explain the idea of an accessible home by presenting details of design and research within the film as well as an accompanying text. The film would focus on how each person has adapted to their setting, or managed their environment to better suit them.

Sensing a state of ambivalence in my guests during initial conversations, amply supported by preliminary research, as well as consultations with my Principal Advisor, I radically modified my approach to the study. I recognized that researching standards including architectural design, building codes and creating a set standard/module for an accessible home, meant assuming an outcome as a researcher; therefore, I would be creating a standard that, from the perspective of an inclusive designer, would result in speculations about an individual's needs. This would suggest making one design for all. And this, I realized, would be contrary to my own personal beliefs and to the professional practice of inclusivity.

Because of this reluctance to impose my own bias, I decided not to set any predetermined outcomes. Instead, I interviewed and observed each guest at his/ her own home. The ultimate goal being to understand and explore their experiences and ways of living; to understand what is an accessible home for each person; and to have a better sense of their experience at their accessible home.

The sections that follow describe the pre-production, production and post-production stages in the making of my film titled "Home, Accessible Home", with a final wrap up of the ideas from the research. "There is no option for renovation because it is a rental home. If this is all you can afford, what kind of renovation can you ask your landlord to do?"

Patty De Guia

Pre-production

The film project was built on a sound foundation of research. On the one hand, there is a substantial amount of academic and commercial research around establishing standards and building codes. On the other hand, advocates have been pushing design focused on the individual's needs. Ideologically, I swayed to the latter side in the making of my film.

There are several ongoing commercial and research projects reported by the Canada Mortgage and Housing Corporation (CMHC) and Toronto Rehabilitation Center. They have established research-based standards for accessible homes and a Building Code. I have used their findings and references in my work. However, the focus of my study is more on the human side of design. Research on Accessible Barrier-Free Homes and Offices by Adapt-Able Design Group proved useful in providing a starting point for the film project. I also found several useful and informative articles, books, and research studies such as "The Right Space---A Wheelchair Access Guide (Ayala, 2005).

An accessible home is empowering for an individual and their family. In his book "Design Meets Disability," Pullin emphasizes the human side. He presents the idea of design as an interaction with the user at a humane level. It is not just the product, design, or use of the tool but it is more of its practical use and customization. In the chapter, Chair Design, Pullin stresses that accessibility should be a part of the design and not an add-on (2011).

In order to create a suitable design for each person, the designer has to know the client's abilities, their needs and their preferences. It is not possible to have one standard for all. The National Housing Conference held in Adelaide in 2003, highlighted a national strategy for accessible housing for all as follows: the perfect design would adapt to the needs and abilities of each user. In their book, "Women and Housing: An International Analysis", Kennett & Chan (2010) state that one design cannot satisfy all the

requirements for each individual unless it is adapted to or designed for that specific person.

I had the benefit of studying several papers and articles throughout this research process. I have only listed a few which bore an influence on this project although I have used topics and outcomes of several related material in order to create a path/narrative for the film. For example: Accessible Housing by Design—House Designs and Floor Plans, which is an overview of the key concepts of universal design, is provided in "The Principles of Universal Design" a great research and reference for comparing the three homes that I visited.

The book "Knack Universal Design: A Step-By-Step Guide To Modifying Your Home For Comfortable, Accessible Living (Knack: Make It Easy)" by Barbara Krueger and Nika Stewart was useful for understanding modern attitudes toward new building design. It taught me hundreds of ways to make one's own surroundings barrier-free, and to help others do the same, covering: Entries & Doorways, Flooring Kitchen Counters & Sinks Hand Helpers,

Bathrooms, Living & Dining Rooms Bedrooms, Storage Halls & Stairs and Landscaping (Kreuger & Stewart, 2010)

Another very influential initial reading was "Beyond Jack and Jill: designing for individuals using HADRIAN" (Porter et al, 2004). It was about the importance of having correct edge cases and making the best use of the collected data. The authors mention two key areas that are critical to success in supporting the practice of 'design for all' within the design community: (1) provision of accurate and relevant data on the target users, in this case people of all shapes, sizes, ages and abilities; and (2) efficient and effective support in the use of these data during concept generation and product development. Focused on maintaining data sets for individuals, the group created a database of individual people including their 3D anthropometry and functional abilities. As part of the observing and researching the physical environment it is also key to understand the basic standards set and used today in the industry, such as having enough room for wheelchair manoeuvring using a 360-degree turn.

In particular, house builders are being encouraged to develop sustainable construction practices, and to sensitize the design of dwellings using local building materials, design styles, and traditions. Drawing inspiration from "The Role of the Building Regulations in Achieving Housing Quality", published by the Department of Geography, Royal Holloway University of London, the government has noted that the building regulations will play a key role in ensuring the development and delivery of design quality. However, there is little or no knowledge of how far, and in what ways, the building regulations will be able to attain the objectives that government has set.

In conclusion, CMCH policy makers and the like, as well as industry professionals such as architects, designers and builders, suggest/advocate for universal standards for accessible housing. However, problematically, one design does not fit all. Academics, such as Simpson-Little and Pullin, advocate for designing for individuals. Even though my guests are living in semi or fully accessible homes, this has been the result of their own or their family's efforts. In the following section, several principles of accessible design advocated by Simpson-Little and Pullin are stated

and illustrated, using guest responses to provide additional context and framing.

"Ultimately, an accessible home is just a place where, you know, you just feel like a whole person; not someone who is disabled. You just want to feel whole."

Patty De Guia

Production

From my research, I moved forward to the film project. To begin with, I asked myself, "What is an accessible home?" This was the question that started my project. As a researcher and a filmmaker, I decided not to aim for any specific answers but, instead, to observe and experience the answers given by the guests in my study. To help them tease out their thoughts, I expanded the central question into a series of related questions:

- What do you love about your home?
- What would you change in your home?
- What renovations have you done to make your home accessible?
- If you had the option to change anything, what would you change to make your home more accessible?

- Do you get any financial support? Does the Ontario government provide any of it?
- What is your favourite place in your home?
- What is your most important challenge?
- What are your everyday chores?
- How did you learn to make your home accessible?
- How do you adapt the environment to suit your needs?
- What is an accessible home to you?

The above questions were posed to each of the three guests—Kausar Mian, Patty De Guia and Joschi Shea. Here is what ensued.

Guests

Kausar Mian

My first visit was to the home of Kausar Mian, an energetic 74 year-old woman. Kausar had a blood clot in her spinal cord, which burst when she was 64 years old and made her loose her senses in her legs. She used to live in Nova Scotia until 4 years ago when her children moved her to Toronto. She expressed that the reason for the move was to be closer to her children. According to Kausar, her previous home in Halifax, NS, was only accessible on the first level and she could not use the second floor. She noted that she misses her old home as it was more spacious and had a backyard that she loved. For the past four years, Kausar has been living in a renovated, accessible apartment condo. The apartment was renovated to fit her needs and her wheelchair. The bathroom and kitchen were fully renovated. Although she has round-the-clock caregivers living with her, the home was modified in a way that allowed her to do most of her daily chores herself. The main barrier in her home is exterior to her building. The entrance to her condominium has several steps and the elevator for wheelchairs is out of service. Therefore, she has to go around the building to enter from the lobby of an adjacent building.

Patty De Guia

Patty is a 39 year-old photographer, baker, single mother of three and an active person. Ten years ago, she was diagnosed with cancer in her right foot, which led to loss of sensation below the knee and amputation at that point. She uses crutches and a scooter to move around. She lives in 2-story semi-attached rental home with her children. She has always lived in a duplex and prefers the bedrooms being on the second floor as it gives her

privacy. When I asked her if having to go up and down the stairs poses a barrier for her, she simply replied: "I have been doing it for the past nine years; I'm used to it. I have adapted!"

Patty loves baking and she feels most comfortable in her kitchen. As presented in the film, she uses a wheeled stool in the kitchen. The stool acts as a leg for her as she can sit on it to push herself around. In doing so, she can use her hands and reach for everything she needs in the kitchen. She is, however, unable to use the stool anywhere else in her home as the floor everywhere else the house is covered with carpet. Her response to the question "What would you change to make your home accessible?" was, "Nothing! I mean, what can you change in a rental home?" She also added, "If had the option, I would have ripped up the carpets, so I can use my stool everywhere, and I would have moved the laundry to the second floor."

In my imagination, I thought that having to climb up and down the stairs would not be difficult, but my perspective changed after she showed how hard it really was for her to do the laundry and carry a basket of clothes up and down. A process that sounds

easy and safe to an able-bodied individual apparently requires extreme effort in her case. Also, this could be a high-risk task because she could fall and roll down the stairs if she is not careful.

Joschi Shea

Joschi is 22 years old and living with his parents. His family home is fully accessible at the first level, with access to the backyard and basement except during the winter. Joschi moves around their home in a wheelchair. Usually, one of the caregivers or his parents would use a lift to transfer him from his bed or couch to his wheelchair or from wheelchair to the bathtub. Joschi likes to read and is interested in human biology. He studies nursing textbooks provided by his caregiver. He also enjoys hearing stories from people, especially about travel and expeditions.

He is hoping to move out of his parent's house and have his own place in Guelph, ON. The main concern for him, and his parents, is how he will function when he moves out, when his parents are not around. An additional worry is that when he became an adult, the support provided by the Ontario government was reduced. "Till he turned 21, there was one set of rules, and now

that he is 21, there is another set of rules" explained his father Geoffrey Shea. He continued sharing his concerns about the availability of government funding by saying: ".... at this time they [Ontario government] say that there is nothing available! But that can't be the case! After us, we don't know what would happen when we are not around anymore!"

The film examines the human side of the accessibility experience, the objective being to achieve a better understanding of "what is an accessible home for each individual?" The film also captures the attitudes of each of the guests towards life in their homes.

Ambivalence, the narrative and theme of the research, became evident at a very early stage of filming, even after some introductory conversation. This theme, repeatedly highlighted by the guests, was the human side of the homes of people with mobility issues. In response to the question, "What would you change in your home in order to make it more accessible," Kausar, the first guest, stated "I would like myself to be changed! There is nothing wrong with the home. The home is accessible."

The film starts by introducing each guest and outlining the factors underlying their need for an accessible home. With respect to the building code, the homes of Kausar and Joschi are fully accessible homes and Patty's is partially accessible. The film provides insights into the life, behaviour, work, hobbies and goals of each guest and about how they have made their home accessible or adapted themselves to it. In response to the questions asked by the researcher, the guests narrate the story of their lives, how they live, what they do during the day and what their future goals and dreams are.

During the filming of the documentary, I met the guests at their homes. I started the interviews by asking questions to find out what is an accessible home for them; what they love or dislike about their home and if they had the opportunity to change something (finance not being an issue), what that change would be. Sometimes, based on their answers a follow-up question was asked to better understand their experience. For example, the question: "How do you adjust/adapt with accessibility needs?" would be followed by, "How did you make your home accessible?"

home more accessible, what would you change?" Lastly, I asked them more personal questions such as, "How much do your financial affairs affect your life style? Do you receive financial support from the Ontario Government?"

My initial plan was to interview participants off camera observing their movements and then filming them encountering obstacles, showcase them, and seek comments and feedback from guests and researchers. But with a change in perspective explained in the introduction, I allowed my guests to narrate their experiences throughout the film. This provided a lens through which the audience would witness the daily struggles and experiences of the guests. They open the door and welcome the audience into their homes. They share their experiences, their ups and downs, the barriers and difficulties they face, and the ways in which they have come to adapt to their circumstances or overcome the barriers.

The film introduces each participant and their unique abilities. It then provides the context for the barriers they face in their homes. Since each person has different abilities, likes, needs, style of living and attitude towards their home, they have renovated and adapted the environment and themselves accordingly. An accessible home for each of the individuals is unique and adapted to their desires. Thus, in the film, each of the guests comfortably expresses their experiences. The film captures and presents the findings based on the guests' experience and views on accessible home, and not based on what industry professionals have suggested as standards for accessible homes.

In this film, outside of Joschi's father, I did not interview family members on camera or direct the research attention to their perspective, however in order to understand what is an accessible home for people with disabilities, it is important to recognize how it would affect other family members. As Patty mentioned in the interview, when her children are with her she can "ask them to bring laundry or toilet paper." She also mentioned that when she brings guests over - this part was edited out of the final version - and if it's their first time in the home of a person with a disability, they do not know what to do. "When I am at my home I feel whole, but when I have a date or a guest over, at first they don't know what to do! Do I stand here? Do I help? But, when they see me moving around comfortably, they relax." For Kausar living near her children

definitely had more weight over living in Halifax and having a backyard. She explains, "The only thing is that my kids are close by." Another example, that was edited out of the final film for want of time and relevance was Kausar's enthusiasm for being able to make food for her young son: "He doesn't like any food, he prefers pasta and Italian and I can cook that for him."

Accessible design principles

Informing my understanding of accessibility for the film, below I have highlighted several key principles of inclusive design described by Simpson-Little (2014) from the University of Sussex.

Kitchen

As part of each person's culture and eating habits, kitchen is key for empowerment and also it is one of the most used spaces in the home. Therefore, the best home designs create solutions for the home by discovering unmet needs in the kitchen.

Cooking is a multi-sensory activity (as is eating) and this could be seen as an opportunity to engage people. One way to better engage people with cooking and their kitchen is by designing a highly desirable and more sensual or pleasurable kitchen than is currently available in the market.

Both Kausar and Patty mentioned that their kitchen was one of the favourite places in their homes. "I feel whole when I'm in my kitchen," Patty said a few times during the interview. Further, the ease of access and everything being at their reach was the most important feature of their accessible kitchen for both of them.

Bathroom

Simpson-Little declares in her article 'Product design' (2014) that bathrooms have become very important spaces, meeting our needs for rest and pampering and that, in today's stressful society, we find our renewal and replenishment in the comfort and warmth of the bathroom. This room is becoming the new temple of wellbeing.

The concept of the accessible washroom has to change from the building code standards to individual standards. As we see in the film, washrooms used by each participating guests are renovated differently in each home. Kausar uses a commode, has a walk in bath and needs her caretaker's help for undressing and dressing up. Patty uses standard on-suite with no bathtub, and walkin shower. Joschi, on the other hand, uses a big tub and a lift to go in and out of the tub with assistance from his caregivers. As explained through these examples, washrooms need to be designed based on individual needs and preferences.

Principles Affecting Accessible Design

Home is a place of daily living; a place that holds emotional value to those living in it. The goal is to give fair access to everyone in order to satisfy the dignity of each person. As Kausar reminds us: "You forget about your physical dignity. I don't care who is watching when I go to take a bath. But it is nice for me to be able to go to the washroom by myself; especially when no one is around." she has to wear adult diapers during the night when the caretakers are not around.

Design of a house and products keeps developing to accommodate a wide range of individual preferences and abilities throughout the life cycle of the occupants (Simpson-Little, 2014). The best example would be Joschi's home. As his father explains in the film, they have constantly renovated their home since the day he was born.

Initially, his bedroom was on the second floor and he used the washroom in any of the floors. But with time and his growth they decided to add a second washroom and bedroom for him at the main level. This ongoing live project changed from living in 2 stories

to living on the main level by adding the kitchen and the rest of the vicinities.

This was possible due to simplicity of the home structure and, intuitively, of the family members. The layout and design of the home and devices were easy to understand. Design elements used were simple and intuitive (Simpson-Little, 2014).

Again the ad hoc solutions, non-traditional material and adapting to the environment and vice versa, has made his home accessible. The use of simple design provides great examples of simplicity and usability, from using a beanbag, a day bed, and no stairs at the main floor access.

Although, this principle might not be visible in all three homes, the need for "Low Physical Effort" is absolutely crucial just by observing Patty when she demonstrates her everyday chores. Some people with different abilities from Patty might not recognize the effort needed for doing laundry or vacuuming. However when she demonstrates a simple task of carrying few pounds of food from her basement to kitchen, she runs out of breath and has to sit down.

Another example is her safety concern when she has to carry laundry up the steps or perform other chores.

In the interview, Kausar and Patty both mentioned that having a bigger and more spacious home was important and featured on their wish list. However, they also liked the fact that their current homes are small and as Patty likes to call hers, "cute and reachable." The fact that her small home has limited space has worked to Kausar's advantage. "I can make anything I like in the kitchen because I can grab everything. Everything I need is right here," she explains while making an egg.

"My previous home was bigger. I had a bigger kitchen with more storage space and a bigger bedroom, but this home is much smaller and cuter. I like it because I can reach everything in the kitchen while sitting on my stool. Or, in my bedroom I can get to things easily, whereas in my old home I had to use my crutches." In keeping with the Simpson-Little principle (2014), which focuses on the amount of room needed to access space, equipment and controls, Joschi's home was designed so as to enable all family members and visitors to safely reach, see and operate all elements

of the home. As explained by Joschi's father Geoffrey, a second room in the main floor acts as a parking garage for all his gear, such as lift, beanbag, mounts, wheelchair and other equipment. "Just having a place like this to store all this stuff is important," he said.

Ambivalent Truths

Again, as reflected in the film, what makes each home accessible for each person is different for that person. From attitudes, priorities and culture to abilities, financials, interior design and even age. Based on these elements, this project demonstrates the adaptation of each individual to their living environment or vice versa. Ultimately, three guests with their unique personalities and abilities loved their homes and believed that the home is accessible for each of them. The end result that surprised my pre-judgment of the accessible home was that: yes we do need standards and building codes for accessible homes, but we also need to understand and design based on each individuals preferences; the human side of things.

I went into each of the homes expecting to record issues and barriers, film frustration and show how hard and essential it is to

renovate and make a home accessible. I wanted to highlight financial issues and expected to experience all the bells and whistles of assistive technology lying around the homes. But, I was faced with homes no different from any other, personalized by and for the person living in that home. "A place that I have adapted to. I feel whole when I'm in my home," said Patty. Herein lies her ambivalence. While on the one hand she decries the difficulties that she experiences as a person with a disability, on the other she is pleased with her housing arrangement. In the process of making my film, as I edited it, I strived to depict this inner conflict within each of my guests. "I would like myself to change so that I can walk a little! There is nothing wrong with the home. The home is accessible."

Kausar Mian

Post-production

Anticipated Outcome

When I began shooting the film, I expected a confirmation of my suspicion that the lives of my guests would be unremittingly bleak. I expected to find errors and issues in the design of each home that I had planned to visit. I was expecting to receive loads of comments from my guests in regards to barriers in their so-called "accessible homes"; and a reinforcement of my default assumption that each of the three guests would talk about what they would change in order to have a better and more accessible home.

As an example, I expected Patty to complain about the stairs to her second level bedroom. I expected Kausar to not be happy in her current, small apartment that does not have a place for her to grow her plants because she used to live in a bigger house in Halifax. I also based my study of Joschi on the assumption that his
family would be unhappy with the location of their home far away from Toronto.

Actual Outcome

To my surprise, however, all my guests were, to some extent, satisfied with their home and its level of accessibility, signifying, in the postmodern sense of the word, ambivalence, as presented in the film. As Kausar expresses in the film, "My home is accessible for me, it's good for my needs." Patty declares, "Being like this for the past nine years, I am used to it! I have adapted. My bedroom at the second floor is accessible for me and I like the privacy that I get being on the second level." Each person has adapted to their home in ways that make it more accessible for them. I personally love Joschi's response to the question. "If you could do anything or change anything in your home, what would you do? He simply conveyed to his caregiver, with a satisfied smile, "Nothing. Its good."

Ultimately, all three guests, who were unique in their own way, had one factor in common: they loved their homes and did not want to change anything; theirs homes are accessible for each of them.

But, demonstrating their mixed feelings, it was no surprise that each guest has a wish list that they would like to have as part of their home. Having a wish list of a bigger cabinet space, more rooms, no steps to the garage, having a balcony or an apartment to live alone are only but a few of those unfulfilled desires. Could these be associated with disability? Is it not universal to have desires and wishes for more?

"A big part of how we adapt is that we use things like a couch with a ton of pillows on it. That's not a special needs device; just something we made work."

Geoffrey Shea

Wrap up

Everyone can benefit from an accessible home, but particularly those for whom manoeuvrability is the top mobility issue. People with manoeuvrability concerns could be persons using scooters, wheelchairs, walkers and people who are aging. All such, who might initially or eventually need to customize their home environment, would benefit from watching the film; as would professionals associated with the work of designing and building homes.

In my assessment, three points from this project provide fuel for further thought: (1) the use of non-traditional means to achieve accessibility; (2) the importance of financial resources in ensuring accessibility; and (3) the safety concerns attached to issues concerning accessibility. These are elaborated below. As advocated by Graham Pullin in his book "Design Meets Disability," establishing accessibility standards and designing based on them might not entirely meet the requirements arising out of human diversity and, thereby, might not accomplish the goal of inclusive design. However, when disability and design interact, or better yet, meet at a certain point, they can create solutions. All three homes visited in this study meet standards for accessible architecture and contain traditional or typical assistive technology such as wheel chairs or crutches. Yet in all three homes, nontraditional materials have been used for comfort or for creating better access as described below.

A case in point is the use of furniture at Joschi's home, where materials and tools not usually associated with designing for disability are used to create ad hoc solutions that work well. Joschi enjoys stretching in his day bed more than sitting in his wheelchair, a bed that was not designed for him specifically but works perfectly for him. Another example is a green lazy-boy style chair from a retailer that he finds comfortable to sit in, even though it was not designed to meet disability needs. The rolling kitchen stool in Patty's home provides another illustration of this point. She sits on it and pushes herself around the kitchen. Demonstrating the movement of the chair for the camera, she said "I don't have to use my crutches anymore; and now I have hands! I can push my stool around and reach anything in the kitchen!". She adroitly pushed the stool to the corner and sat on top of it with a fast and smooth jump to reach the top cabinet. Then she stated, "It is as if I have both my legs."

Such modified use of traditional tools and furniture as nontraditional assistive technology is significant and important to each individual as their own unique solution for adapting to their existing environment. These examples illustrate how design meets disability—or, better yet, abilities—to reassign the use of nontraditional material as means for improving access.

This project also heightened my awareness of the importance of financial resources, a topic whose surface is barely scratched in the film. Financing assistive technology and home renovations relies on both personal and governmental resources. As discussed in the film, even thought there are options available for each individual,

the financial support available is typically nowhere close to the sum required. All three cases provide illustrations as shown below.

Kausar does not qualify for disability funding from the Ontario government as she has a good pension plan. Does she need that support? Well, the answer is Yes and No. She could use extra money to have round-the-clock caretakers; but she still gets "enough time from the caregivers."

In Joschi's case, he could use greater financial support to procure a better wheelchair, or an extra chair. He could also have more time with his caregivers. Yet, his crossing the age of 21 allowed him lesser financial support than he was receiving till then.

Endowed with a positive attitude, Patty is living a great life and can get around comfortably, but with a prosthetic leg costing \$66,000, she would be able to carry out 93% of the movement(s) that she was able to perform before her surgery. The government only pays only 10% of the cost of the new leg. An anonymous personal donation of \$40,000 has made it possible for Patty to proceed with the purchase of her new prosthetic leg.

Ultimately, it is all about quality of life. Who should decide what are the minimum and maximum? In fact, the government does, as the payer; however, is this just?

Safety was a theme that often surfaced in this project. Several times during the filming, Patty mentioned and demonstrated situations of safety concern. Ever since she fell a few years ago, she is overly conscious not to fall again. "When I am going up and down the stairs to do laundry, or even when I'm just walking with my crutches, I have to be aware not to fall," she said. In the case of Kausar, who lives in an apartment building, there are elevators for use in case of fire, but what would happen if she were alone and couldn't leave the apartment? It might well be useful to follow up this project with a study of the safety aspects of accessible homes

One significant aspect about my guests that shines through the film is that all of them feel good about their environment and believe that their home is fully accessible. They all declared in the film, "My home is accessible! I would not change anything." Yet, each of them expressed unique and conflicting notions about

accessibility. To illustrate, when Kausar was asked, "Would you like to have a balcony so you could grow flowers and plants? Would that make your home more accessible for you?" she replied, "Bathroom, kitchen and everything else is accessible for me.... but balcony would be for my pleasure, not for my needs." She appeared to associate the requirement for accessibility with life's essential chores, and not so much with activities of pleasure, which she considered optional.

Perhaps my final observation stemming from the social justice issues discussed above could be wrapped up in the following ten words:

I expected extreme negativity, but found much happiness as well.

Truly, a state of ambivalence.

References

- Accessible Housing by Design—Fire Safety for You and Your Home. (2015). https://docs.google.com/viewer?url=https%3A%2F%2Fwww.cmhcschl.gc.ca%2Fodpub%2Fpdf%2F66093.pdf.
- Accessible Housing by Design—House Designs and Floor Plans. (2015). The Principles of Universal Design [©2010, Canada Mortgage and Housing Corporation; revised 2015.
- Accessible Housing by Design Living Spaces, Universal Design. (2015). http://www.cmhcschl.gc.ca/en/co/acho/acho_002.cfm#principles.
- Adapt-Able Design Group For Accessible Barrier-Free Homes and Offices. http://www.adaptabledesign.com/.
- Ayala, A. M. (2005). The Right Space A Wheelchair Access Guide Spiralbound. Published by Debold-Marquez Books, LLC.
- Baldrica, N. (2003). The Accessible Home: Updating Your Home for Changing Physical Needs. Chanhassen, MN: Creative Publishing International.
- B.F.E.I. (1991). Barrier Free Environments Inc.: The Accessible Housing Design File. New York: John Wiley & Sons.
- Canada Mortgage and Housing Corporation (CMHC). http://www.cmhcschl.gc.ca/en/co/acho/acho_011.cfm#appendix.
- Gaver, B., & Bowers, J. (2004). The drift table: Designing for computing

machinery.

- Kennett, P., & Chan, K. W. (Eds.). (2010). Women and housing: An international analysis. Routledge.
- Kreuger, B. & Stewart, N. (2010). Knack Universal Design: A Step-By-Step Guide To Modifying Your Home For Comfortable, Accessible Living (Knack: Make It Easy). http://www.amazon.com/Knack-Universal-Design-Step-Step/dp/1599216132.
- Leibrock, C., and Terry, J. E. (1999). Beautiful Universal Design: A Visual Guide. New York: John Wiley & Sons.
- NAHB Research Center and ToolBase Services. (2006). 2006 Directory of Accessible Building Products. Upper Marlboro, MD: NAHB Research Center.
- Porter, J. M., Case, K., Marshall, R., Gyi, D., & neé Oliver, R. S. (2004). 'Beyond Jack and Jill': designing for individuals using HADRIAN. International Journal of Industrial Ergonomics, 33(3), 249-264.
- Pullin, G. (2011). Design Meets Disability.
- Redmond, J. (2015). City Of Winnipeg Accessibility Design Standard. Third Edition.
- Simpson-Little, D. (2014). *Product design*. https://www.sussex.ac.uk/webteam/gateway/file.php?name=fulllist-of-pd-project-proposals.pdf&site=356.
- Steven Winters Associates. (1997). Accessible Housing by Design: Universal Design Principles in Practice. New York: McGraw-Hill.

Toronto Rehabilitation Institute.

http://www.uhn.ca/TorontoRehab/Education/Pages/scholarships_ awards.aspx.

What is Universal Design? http://www.humancentereddesign.org/universal-design.

- Workplace Law Group. (2009). Making Buildings Inclusive and Accessible: Special Report.
- Wylde, M. (1994). Building for a Lifetime: The Design and Construction of Fully Accessible Homes. Newtown, CT: Taunton Press.

Online resources:

http://globalaccessinclusion.org/wp-content/uploads/RHF-Lit-Review.pdf.

https://docs.google.com/viewer?url=https%3A%2F%2Fwww.cmhcschl.gc.ca%2Fodpub%2Fpdf%2F66093.pdf.

http://www.cmhc-schl.gc.ca/en/co/acho/acho_002.cfm.

https://www.youtube.com/watch?v=YhYQ57s8Myk.

http://www.kent.edu/ashtabula/accessibility-services.

http://oshawalittletheatre.com/venu-information.

- http://www.edmonton.ca/transportation/Edmonton_Wayfinding_Detailed _Strategy_Aug_2014.pdf.
- https://sustain.ubc.ca/sites/sustain.ubc.ca/files/Sustainability%20Scholars/ GCS%20reports%202014/Assessment%20of%20new%20wayfinding% 20system%20and%20identification%20of%20opportunities%20for%20

further%20development.pdf.

http://cgj.sagepub.com/.

http://www.cmhc-schl.gc.ca/en/co/acho/acho_002.cfm.

https://docs.google.com/viewer?url=https%3A%2F%2Fwww.cmhcschl.gc.ca%2Fodpub%2Fpdf%2F66093.pdf.

http://www.homemods.info/publications-byhminfo/occasional/dementia-design-guidelines-home-andcommunity-care-capital-works-program

http://www.w3.org/WAI/RD/2014/way-finding/

http://www.senderogroup.com/