Accessibility Inventory of Iceland:

An Interactive Qualifying Project Report submitted to the Faculty of Worcester Polytechnic Institute in partial fulfilment of the requirements for the degree of Bachelor of Science

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Abstract

Our inventory provides practical, specific, and up-to-date information on the accessibility of Reykjavík to inform students interested in the Reykjavík project center. We identified five city zones as high-interest zones for project-center students and documented the physical accessibility levels of our apartment complex, restaurants, bus stations, grocery stores, and department stores in full detail in all five zones. We examined restaurant menus and grocery stores for dietary information and product availability. Moreover, we examined the accessibility of popular tourist attractions within the city and the countryside. We organized our inventory using Microsoft Lists on a SharePoint site as a tool for students to decide if their personal accessibility needs can be met in Reykjavík.
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Executive Summary

The goal of this project was to examine through observation, assessment, and documentation, which aspects of traveling, working, and residing in Iceland are accessible to those with physical disabilities or dietary restrictions and to address the Reykjavík Project Center’s need for a resource outlining accommodations available for students with accessibility needs abroad in Iceland. Students with physical disabilities or dietary restrictions know what accommodations they can expect on campus at WPI, but do not necessarily know what to expect on IQP in a foreign country where resources, culture, and laws are different.

Our project team gathered information on the state of accessibility of places in Reykjavík that an IQP student from WPI would likely during their stay in Iceland. This was accomplished through daily observation, personal experiences, and meticulous photographic and written documentation. To declutter the data when compiled into the inventory resource, our group developed subsections of the city deemed to be the most heavily traversed by the IQP students. The five geographic city zones were the Downtown Reykjavík Apartments Zone (DRA Zone), the Main Tourism Zone, the University of Iceland Library Zone, the Kringlan Mall Zone, the City Library Zone. We created a sixth category for places of interest to IQP students.

We observed over 200 locations total across all zones. We assessed various features at each place, all of which related to a student’s potential needs. For example, doorways needed to be wide enough for wheelchairs, bus stops needed to have tactile pavement for visually impaired individuals, crosswalks needed to have visual signals for those with auditory impairments, and restaurants needed menu options that fit a range of dietary needs.

Our team created a SharePoint site within WPI’s SharePoint collection as a repository for storing the information that detailed the accommodations that each zone provided. We decided to use the Microsoft Lists, document libraries, and SharePoint page features to display our findings.

It was created for project center directors, Professor Sarah Stanlick and Professor Aaron Sakulich, as a dynamic inventory that allowed them to answer questions interested students posed to them. They could also direct those students to the site to see for themselves what accommodations each zone can offer. Ultimately, our SharePoint is designed to avoid definitive accessibility judgements. Rather it is a compilation of all the challenges and accommodations a student can expect. It is a tool a student can use to make their own decisions regarding whether they can meet their own personal accessibility needs while abroad in Reykjavík, Iceland.
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1.0 Introduction

In 2022, the Worcester Polytechnic Institute (WPI) Office of Accessibility Services (OAS) worked with 784 students with documented disabilities enrolled at WPI (Office of Accessibility Services, 2022). According to the Assistant Director of the OAS, Taylor Rohena, disabilities pertaining to physical impairments, executive functioning, and mental health are the most common for WPI students (Appendix C). The OAS provides many accommodations on campus like academic coaching for students with executive function challenges, attendance flexibility and assignment extensions for students with mental health issues and assuring accessible class facilities for students with physical disabilities (Appendix C). However, providing accommodations for disabled students who wish to complete their IQP internationally is a different story. The OAS can still provide many of the same accommodations for mental health and executive functioning disabilities remotely, but some countries are known by the OAS to be less physically accessible than others because they are not held to the same accessibility standard as the US is (Appendix C). In the US, the Americans with Disabilities Act, passed in 1990, protects people with disabilities in many areas of public life (Americans with Disabilities Act, n.d.).

In addition to students with disabilities, some students have dietary restrictions such as food allergies and personal diets. Chartwells at WPI provides accommodations for students with food allergies like the G8 menu, the S.P.A.C.E. (Special Product Allergen Controlled Eating), and the Limited Nut Exposure Policy. WPI has Vegetarian and vegan menu options for students at Pulse On Dining, the Campus Center, and Goat’s Head (Food Allergies, Celiac Disease, & Other Dietary Concerns, n.d.).

Evidently, students with such physical disabilities or dietary restrictions know what accommodations they can expect on campus at WPI, but do not necessarily know what to expect on IQP in a foreign country where resources, culture, and laws are different.

2.0 Background

2.1 History of Disability in Iceland

In 2005, it was estimated that somewhere between 9-13% of the Icelandic population lives with some form of disability. Most of them are over the age of 66 (Ólafsson, 2005). Disabled people in Iceland were not officially recognized as a legal category until 1936,
compared to the early 1800s in the U.S, but have had a history all the way back to the 9th century (The history of disability rights in the United States, n.d.). Remains recovered from burials and Pre-Christian graves were examined to see if there were any noticeable differences that could have constituted as that person having a disability. Some differences noticed were bone lesions, inflammation, cleft lips or palates and hydatid cysts (Crocker, Ebenezersdóttir, Ólafsdóttir, Bergsdóttir, Haraldsson, et al, 2022). Old literature and religious texts were used to provide context to the person behind the disability. In more recent times, the use of censuses, church records, death reports, auction records were used. Data from the National Museum of Iceland’s medical collections showed old versions of glass eyes, crutches, and amputation tools. All the data studied showed that there were instances of prejudice and social exclusion at this time. (Crocker, Ebenezersdóttir, Ólafsdóttir, Bergsdóttir, Haraldsson, et al, 2022). As of 2005, with a change of laws, the understanding and acceptance of those with disabilities has changed. There has been promotion of inclusion and participation for those with disabilities, focusing on public services, infrastructure, and inclusion in education, the workplace, and community life. Campaigns like “My Future is Open” challenge stereotypes and promote the potential of those with disabilities (Ólafsson, 2005).

2.2 Who Has Accessibility Needs?
This report focuses specifically on the needs of students with physical disabilities and students with dietary restrictions.

Disabilities are classified into the following main categories: vision, movement, hearing, thinking, remembering, learning, communicating, mental health, and social relationships (Centers for Disease Control, 2022). This report focuses on the categories, vision, hearing, and movement. A person with vision impairments is any individual who is fully blind or has some sort of compromised vision. When traveling, visually impaired individuals’ navigation options are a walking stick or guide dog or the company of a sighted person (Michalko, & Titchkosky, T., 2018). Having a sighted person with them makes interactions significantly easier and makes it possible for them to do things they otherwise would not be able to (Michalko, & Titchkosky, T., 2018). A person with hearing impairments is deaf or has their hearing hindered in some way. A person with mobility impairments is someone who has limitations to their own physical movements, caused by injury, disease, or birth defects (Australian National University, n.d.).
Dietary needs include food allergies and personal dietary restrictions. Individuals with dietary restrictions rely on having a list of ingredients in the foods they might eat to be provided whenever they dine out or go grocery shopping (Food Insight, 2023). People who live with personal dietary restrictions base their diets on ideological, health, and religious diets like vegan, kosher, and halal diets (Food Insight, 2023). Due to their diets’ highly restrictive nature it can be difficult for them to find foods that meet their daily nutritional needs.

2.2.1 What do People with Accessibility Needs Struggle with?

Barriers make it difficult for people with accessibility needs to function in their full capacity. For disabilities, there are seven common barriers that can arise. They are attitudinal, communication, physical, policy, programmatic, social, and transportation (Centers for Disease Control, 2020). This report focuses on communication, physical, and transportation barriers.

Communication barriers affect people with vision or hearing impairments and disallow them to receive assistance, information, or messages. Communication barriers include the lack of braille text for the blind and auditory messages that cannot be understood by the deaf (Centers for Disease Control, 2020).

Physical barriers are obstacles, natural or manmade, that hinder people with mobility impairments from performing basic human actions (Centers for Disease Control, 2020). Steps are a common obstacle that do not allow a person in a wheelchair to enter a building (Centers for Disease Control, 2020).

Transportation barriers are the lack of accessible and convenient transportation services for people with vision impairments (Centers for Disease Control, 2020). In Iceland, the Strætó bus system provides frequent service in the capital, but other locations often are not accessible and are lack a structured schedule (Strætó, n.d.).

For dietary restrictions, the most common barriers seen are high costs, lack of understanding of their restriction when traveling to a new place, and personal preferences (Stoltzfus, 2022).

2.3 Traveling with Accessibility Needs in Iceland

With a differing landscape, infrastructure, and culture to most other countries, Iceland poses unique challenges to those who live or look to travel there with a disability (Visit Iceland,
For those with accommodation needs, challenges start at the airport. Icelandair, one of the primary airlines to the country, provides accommodations for many needs. The special assistance section of their website details all the specifics for various categories of accommodations and allows prospective users to reach out to the airline ahead of travel. Accommodation includes pre- and post-flight assistance for any blind, deaf, or physically impaired passengers, in-flight help under certain conditions, and attention to medical issues and allergies (Icelandair, 2023). The website also has a list of maximum dimensions for wheelchairs aboard specific jets that Icelandair uses (Icelandair, 2023). Icelandair does allow recognized service animals on their flights at no cost to the passenger, however there are very strict rules regarding the process. Upon arrival in Iceland, all animals are subject to a two-week quarantine to preserve the health of the livestock of Iceland. There is a limit of four animals onboard flights to and from Iceland and layovers with service animals are not permitted (Icelandair, 2023). Icelandic Airports offer MyWay assistance for people with reduced mobility. The service must be requested from the airline of travel 48 hours prior to departure. (Accessible travel in Iceland, 2023). Keflavík International Airport is a 40-minute drive from the capital city of Reykjavík, so there are a few modes of transportation in place. Flybus is a company that operates in connection with all flights that come into the airport and gives direct transportation to Reykjavík. They provide buses which run 45 minutes after each flight to the capital city (Flybus, n.d.). To use Flybus, a booking can be made online through the Flybus website (Flybus, n.d.). Not all the buses owned by Flybus are accessible for someone in a wheelchair, but one can be booked with a reservation (Harrington, 2022).

2.3.1 What is Available for Food?

Much of Iceland’s traditional food revolves around meats and seafood. The rich history of livestock farming and fishing has made it so that fish, lamb, or pork are the traditional backbone of meals (Halldordottir, S. S., n.d.). The dairy product skyr is also a common meal at any time of day. The yogurt-like food has always been a staple of native Icelanders’ diets since when the island nation was first settled (Halldordottir, S. S., n.d.). An increased variety of food options from around the world and a variety of produce, due to greenhouses, is seen in grocery stores (Kushner, A., 2017). For Muslims, most restaurants serve Halal options (Larsson, Sigurdsson, 2014). The Jewish Community of Iceland website provides a detailed list of all the kosher grocery products available in Iceland along with which grocery stores provide each
product (Jewish Community of Iceland, 2023). With the traditional seafood and meat diet, veganism is not a popular practice. Still, vegan options are available at restaurants (Luciano, 2023). For allergies, local supermarkets, Bónus and Heilsuhusid, are cheaper options that cover gluten-free foods and other allergies for those who look to prepare their own meals (Kantzavelos, n.d.).

2.4 Laws and Policies Regarding Accessibility

Universal design has been a crucial factor in the improvement of accessibility in Iceland since the government signed the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2012 (Tunström, M., 2020). At the same time, an action plan was put into place to set goals for the state of accessibility for the disabled in Iceland. This plan was the Parliamentary Resolution on a Plan of Action on Disabled Persons’ Affairs. This action plan was the first policy document for Iceland that contained the phrase “universal design,” and it has had a positive impact on accessibility (Tunström, M., 2020). It was stated that this phrase should be kept in mind and used as a goal to accomplish when planning for any public space. Some of the guidelines highlighted were related to public transport and general access. The document stated that all public transportation should be wheelchair accessible. The action plan stated that a survey should be done regarding access to public buildings, traffic structures, and other places open to the public. It then stated that an improvement schedule should be made to make improvements wherever it was necessary (Althing, 2012).

In 2016, an official act was passed by the government of Iceland called the Act on the Affairs of Disabled People. This act sets some laws regarding disabled people in Iceland. The overall goal of this Act is to “ensure disabled people equality of rights and a standard of living comparable with that of other citizens and to create conditions in which are able to live a normal life” (Government of Iceland, 2016). This act placed the Minister in charge of disabled people’s affairs, saying that they are responsible for policymaking in collaboration with the Association of Local Authorities in Iceland. The local authorities were put in charge of the organization and administration of services to disabled people. Their jobs include maintaining a level of quality of the services and meeting the costs of the services. This act also establishes that disabled people are entitled to services wherever they live. It specifies that they should have access to all ordinary services provided by the government, as well as any services that were created to allow them to live and work in a community with other people (Government of Iceland, 2016). Lastly,
the guidelines provided in the act require that public buildings, facilities, and transport all be accessible to the disabled population (Government of Iceland, 2016).

Iceland does not have any specific rules or regulations pertaining to dietary accommodations; however, it does have limiting factors on what is to be allowed to be brought into the country for food products. If a person were to try and bring food into the country for their dietary accommodation, the quantity of processed food can exceed neither 6.6 pounds nor 90 USD. Raw meat, eggs, and other unpasteurized dairy products are not allowed to be brought into the country. Import duties can be paid if any excess product is brought in. (McMahon, n.d.).

2.5 Accessibility Initiatives in Iceland

Around Reykjavík itself, there has been a rapid improvement in accommodations for the physically impaired since 2021. Icelandic entrepreneur Haraldur Thorleifsson founded and funded the organization Ramp Up Reykjavík to build handicap accessible ramps across Iceland (Römpum upp Reykjavík, 2022). The public transportation company, Strætó, which has 27 routes across Reykjavík and an additional 18 providing access to the rest of Iceland has increased services for the disabled community over the past few years, offering specialized transportation services as well as better access to the publicly scheduled buses over the past few years (Strætó, n.d.). Another option for citizens and tourists visiting Iceland is the application Wheelmap. Wheelmap allows users to document how accessible any kind of public location is for wheelchairs (Wheelmap, n.d.). Other than the efforts of privately funded projects and companies like Strætó, and Wheelmap, Iceland has struggled to make significant progress to the accessibility of the country especially outside of Reykjavík (Ólafsson, 2005).

2.5.1 Ramp Up Reykjavík

Haraldur Thorleifsson founded the Reykjavík Accessibility Fund and the project Ramp Up Reykjavík in 2021. Their goal of 100 ramps across Reykjavík in eight months was accomplished in only four months (Nordiceditor, 2022). Many of these locations were businesses, restaurants, and shops in the downtown district of Reykjavík, Laugavegur, allowing for the public to freely go about activities that they otherwise were not able to participate in. (Accessible travel in Iceland, 2023). As of 2023 there are approximately 800 ramps in Reykjavík and the rest of Iceland (Römpum upp Reykjavík, n.d.). Ramp up Reykjavík and the Reykjavík mayor announced in 2022 that they plan to have a total of 1500 ramps across Iceland by the end of 2026 (Römpum upp Reykjavík, 2022).
2.5.2 Strætó’s Efforts

Every bus owned by the public transportation company, Strætó, has a wheelchair ramp and space for a wheelchair within the confines of the Reykjavík area. Outside of the city wheelchair access can only be granted on certain routes listed on the Strætó website and the buses must be requested in advance (Strætó, n.d.). Strætó also provides a special service called Pant specifically for the elderly and disabled that requires an application and approval from the municipality of residence. However, only the four major municipalities in the Reykjavík metropolitan area are served by Pant. The rest of the country must use the publicly scheduled buses that run on 10–15-minute intervals during major business hours, and 30-minute intervals the rest of the day. (Strætó, n.d.).

2.5.3 Wheelmap

A useful option for citizens and tourists visiting Iceland is the application Wheelmap. Wheelmap is a public mobile phone application and website created by the German non-profit SOZIALHELDEN. It is used across the world and available in thirty-two different languages (Wheelmap, n.d.). Wheelmap allows users to document how accessible any kind of public location is for wheelchairs. There are three different categories: fully accessible, partially accessible, and not accessible at all. The locations are marked much like a traffic light; green, yellow, and red respectively (Wheelmap, n.d.). While the most Wheelmap locations are marked in Reykjavík, there are hundreds more across Iceland (Accessible travel in Iceland, 2023). The app also allows the user to attach images to locations and make notes on specific points to give an in-depth analysis for anyone with impairments that might visit (Wheelmap, n.d.).
2.5.4 Other Initiatives Implemented

The National Confederation of Physically Disabled People, Sjálfsbjörg, has a published database giving citizens and tourists access to the tourism industry companies that have improved their accommodations for the needs of those with physical impairments (Accessible Travel in Iceland, 2023). Namely, the tour company Iceland Unlimited specializes in trips for disabled travelers (Accessible travel in Iceland, 2023). Their website knowledge center is categorized into transportation, restaurants, banquet halls, outdoor activities, culture, and general accessibility information. Each section lists the companies that can provide accommodations as well as specifics on what they can offer regarding individuals confined to wheelchairs as well as other mobility impairments (Sjálfsbjörg, 2016). Their website also lists over forty organizations that are a part of the Confederation. These organizations cover a variety of different accessibility needs that someone might have (Sjálfsbjörg, 2016).

3.0 Methodology

Our team examined through observation, assessment, and documentation, which aspects of traveling, working, and residing in Iceland are accessible to those with physical impairments or dietary needs and developed a dynamic inventory resource for the Reykjavík Project Center. The following objectives were critical in accomplishing that goal:

1. Examine public establishments and points of interest in Reykjavík to determine the level of accessibility.

2. Organize the data and display it in a dynamic resource for the Project Center Director or a prospective traveling IQP student to easily access and determine if a student could meet their individual needs.

3.1 Determining the Essential Activities for an IQP Student at the Iceland Project Center

Our group sent out a survey (see Appendix B) via Google Forms to prior IQP students who have visited Iceland to understand the processes and activities they undertook to travel and live there. Once a week, we also surveyed the project groups accompanying us in Iceland (see Appendix A) to determine accessibility levels of travel and activities involved in their project. In addition, our team observed two other project groups while in Iceland to get a firsthand understanding of the accessibility levels of their day-to-day undertakings.
3.2 Gathering Information on the State of Accessibility in Iceland

Our project team gathered information on the state of accessibility of places in Reykjavík that an IQP student from WPI would likely visit at some point during their stay in Iceland. This was accomplished through daily observation, personal experiences, and meticulous photographic and written documentation. To declutter the data when compiled into the inventory resource, our group developed subsections of the city deemed to be the most heavily traversed by the IQP students. The five zones were the Downtown Reykjavík Apartments Zone (DRA Zone), the Main Tourism Zone, the University of Iceland Library Zone, the Kringlan Mall Zone, the City Library Zone, and a category for places of interest to IQP students. Each location observed was done so while keeping the following inventory requirements in mind.

- Ramps at entrances or doorways flush with the ground
- Doorways wide enough for wheelchairs
- Elevators in instances of multiple floors
- Wheelchair accessible bathrooms
- Wheelchair accessible showers (student housing specific)
- Accommodation for blind and/or deaf individuals (braille, QR codes, enhanced crosswalks, etc.)
- Sheltered bus stops
- Options for various dietary needs on menus and in local grocery stores

Within each zone, the various locations were broken into three rough categories: local businesses/public points of interest, student housing, and accessways.
All restaurants, shops, and grocery stores that we observed within the capital area of Reykjavík were considered local businesses or public points of interest. We inspected a total of 100 establishments in this category. Our group focused on the aforementioned zones and then included other crucial places from the surrounding city area. Direct observations of all these locations were conducted to gather information in line with the relevant above-mentioned inventory requirements.

The only district where student housing was applicable was the Downtown Reykjavík Apartment zone. Direct observations were conducted to gather information about the above-mentioned data points that were relevant to the apartment complex. Our team made observations and took pictures in accordance with the relevant inventory requirements provided above.

The accessways our group included were crosswalks, bus stops, and the existence of bus routes within the five districts. Direct observations were conducted to gather information about the relevant above-mentioned inventory requirements.

3.3 Contacting Strætó
To get a better understanding of the challenges or accommodations commonly seen by individuals with impairments or restrictions on public transit, we reached out to Strætó. We emailed our contact, Sigurborg Þórarinsdóttir, looking for some of the comments and complaints they receive regarding their buses to get an understanding of the accessibility level of their system as perceived by the public.

3.4 Developing a Deliverable as a Resource for Accessibility Information
Once information on the accessibility levels of Reykjavík was collected, the next step was to formulate a way to display the data, so it was accessible to the project center director and prospective IQP students. Our team researched two options for data compilation and determined the pros and cons of each before finally selecting Microsoft SharePoint as the better option for our project. SharePoint is a Microsoft application that allows users to create and organize documents within sites and site collections. WPI owns a SharePoint collection that contains all the sites created by WPI students and faculty. Our team created a SharePoint site within this collection as a repository for storing the information in an organized manner. We decided to use the Microsoft Lists, document libraries, and SharePoint page features to display our findings. Microsoft Lists allowed us to store and format our data from the locations we observed. The
document libraries allowed us to organize all our list documents into a folder system based on the five observation zones (See Section 3.2). Pages allowed us to assist site visitors with navigating and interpreting the accessibility information.

3.5 Ethical Considerations

Ethical considerations were taken into account for surveys and their questions regarding sensitive topics which can be difficult to talk about for some responders. Our team asked surveyors about their accommodations and experiences that go along with it which may bring up prior trauma in which they do not want to discuss. We understood that surveys could be conducted with vulnerable populations and took that into consideration in the development of questions. Our team has kept names and any other identifying factors confidential. Survey questions and methodology has been reviewed by the WPI Institutional Review Board to minimize any ethical concerns.

4.0 Results

4.1 Direct Observations

Our team split the City of Reykjavík into five different main zones to observe while also considering other major points of interest of the city that were traveled to. These were the places we went out on foot across Reykjavík and documented over 100 locations through photographs and written notes. This data was the building blocks of our inventory resource.

4.1.1 Downtown Reykjavík Apartments Zone

The WPI students stayed in three apartments at the Downtown Reykjavík Apartments (DRA), a four-story apartment complex. This zone included DRA and the surrounding area, as seen in Figure 4.1. DRA’s main entrance, shown in Figure 4.2, had a ramp leading up to the wide sliding door. The back entrance had a small set of steps that lead down to it. All three student apartments were on the second and third floor. An elevator provided direct access to all five floors (0-4) in the apartment. The elevator had grab bars along one
wall of the interior, braille buttons, and a floor space of approximately 25 ft². Braille was not found anywhere else in the apartment complex. All doors leading to apartment entrances and the individual apartment doors had a threshold lip measuring two and a quarter inch tall. Each apartment had two bathrooms. These bathrooms lacked shower grab bars, a wheelchair transfer seat in the shower and grab bars at the toilet. However, there was a designated wheelchair accessible restroom located in the basement that could be accessed using the elevator. The bedrooms varied in size, and many rooms were tight and compact with not much room to move around the two beds. The living area and kitchen was a large common area with a couch and dining table taking up most of the space in these areas but left enough room for a wheelchair to navigate to any room in the apartment. The laundry room was in the basement of the apartment next to the elevator and a mobile app, Airwallet, was required to operate the machines.

The nearest grocery store was the Bónus on Skipholt 11-13 which was a 0.3-mile walk from DRA. This Bónus location was the grocery store of choice for many of the IQP students due to its proximity, low prices, and wide selection. The store’s entrance featured a ramp and a wide automatic sliding door. The aisles in the store and the checkout area were spacious and had room for wheelchair maneuverability. This Bónus had a wide selection of meat-free and plant milk products from brands such as Anamma, Tofurky, Linda McCartney, Sojade, Dream, Oatly. This Bónus also had a selection of gluten-free pasta and bread products all from the brand Semper.
The 10-11 was a convenience store which was 0.2 miles from DRA. 10-11 had an automatic sliding entrance, but there was a large step leading up to the door. The store aisles were spacious, and the checkout area either self-checkout or cashier checkout. 10-11 had plant-based dairy products such as Naturli’ almond milk, Oatly oat milk, Heiða oat milk, and Violife vegan sliced cheeses. The only vegan protein products they offered were Yipin tofu and a “Tasty vegan wrap.”

The EuroMarket was a small grocery store with less total food option, 0.15 miles from DRA. The Entrance was a manual swinging door entrance, and some aisles were very close together. The checkout area was a cashier checkout lane located in a wide-open section of the store.

Our team observed eight restaurants in the area surrounding the Downtown Reykjavík Apartments. The observed restaurants were Nana Thai Mixed Restaurant, Devito’s Pizza, 2Guys, Reykjavík Roasters, Reykjavík Kitchen, Pho Vietnam, Istanbul Kebab, and Mai Thai Bistro. Devito’s Pizza, 2Guys, and Mai Thai Bistro all had stairs up from the sidewalk into the restaurant and each had no other entrance. Reykjavík Roasters and Reykjavík Kitchen both had small lips on the door. Pho Vietnam and Istanbul Kebab had doors flush with the sidewalk, and the doors to each were an automatic sliding door and a propped open manual door, respectively. Nana Thai Mixed Restaurant was fully wheelchair accessible with a ramp to the entrance and a motion activated automatic sliding door. Out of the eight observed restaurants, six of them had marked vegan options on their menus. The restaurants that lacked clearly marked vegan options were Reykjavík Kitchen and Istanbul Kebab. None of the restaurants had any information on their menus regarding allergies.
One of Reykjavik’s food halls, Hlemmur Mathöll, was located down the street from the Downtown Reykjavík Apartments. This food hall contains seven different restaurants. Five of the restaurants had vegan options available on their menus. All the restaurants either had clearly marked allergies or had more information available by asking the restaurant employees. All the menus are printed on paper and no braille was available. The main entrance doorway and the back entrance doorway are both opened using a button next to the door. The third entrance on the picnic table side of the building was manual. Inside the building, there was enough space for a person in a wheelchair to move throughout all parts of the food hall, except along one side of the food hall where the tables are too close to the chairs at the countertop. The options for seating included high top bar seats, high top table seats, and low picnic tables. The door to the restrooms area can be opened automatically by pushing a button, but the doors to the actual bathrooms are manual. In the bathroom, there was a large accessible stall without grab bars.
Outside of Hlemmur Mathöll, there was a bus hub where 12 bus routes passed through. There was no braille writing on any of the signs and no tactile paving at this bus hub. There were three large metal shelters at the bus hub with benches provided in each. One of these shelters is shown in Figure 4.5. The area of the sidewalk where the bus stops were located has multiple ramps leading up to it. There were no raised sidewalks streetside.

In addition to the bus stops located at Hlemmur, seven other bus stops were observed in this zone. The bus stop closest to the Downtown Reykjavík Apartments was Rauðarárstígur, which was about a 30 second walk from the main entrance of the apartment building. All the observed bus stops had a shelter with enough space for a wheelchair to fit in and a bench except for the northbound stop at Rauðarárstígur, the eastbound stop at Meðalholt, and the westbound stop at Kjarvalsstaðir, which each only had a bench and no shelter. Only the bus stops at Klambratún and Kjarvalsstaðir had tactile pavement as a guide for the visually impaired that lead into the shelter or to the bench at the stop. The Eastbound stop at Kjarvalsstaðir with the tactile paving is shown in Figure 4.6. The main crosswalks near Flókagata, Langahtið, and Klambratún all had both tactile and auditory crossing signals. The crosswalks near Kjarvalsstaðir had only the tactile crossing signals. One of the crosswalks near Pjöðskjalasafnið had only the tactile crossing signal, while the other crosswalk near the bus stop had only the audible crossing signal. The crosswalks near Meðalholt and Rauðarárstígur had neither tactile nor auditory crossing signals. The platform of the shelter at the northbound stop at Langahtið was raised slightly more than an inch above the sidewalk with no ramp up to it, but this bus stop was out of the way and not frequented.

Figure 4.5: Metal bus stop shelter at Hlemmur

Figure 4.6: Eastbound Kjarvalsstaðir bus stop shelter
by the IQP students. This bus stop was also down the road from the Flókagata bus stop. It could be used instead of Langahtíð.

4.1.2 Main Tourism Zone

We chose the main tourism area of Reykjavík, which included Hallgrímskirkja, the Red Road, Rainbow Road, and its surrounding area, as one of the zones we observed due to its multitude of shops and restaurants that were visited by many cohort members.

In total, we observed 66 different buildings in the zone and 23 menus at any food related locations. We split the locations observed into the following categories: food places, food places menus, clothing stores, souvenir stores, bars and nightclubs, and other stores like barbershops and tourist centers. Food places encompassed restaurants, cafes, grocery stores, and corner markets.

In total, 27 food locations were observed, 21 of which provided accessible entrances, either being ground level or having a ramp up to the entryway. Six locations had some sort of lip or staircase to its entryway. For clothing stores, only four were found to be accessible and six had inaccessible entrances. The four accessible locations were Iceland’s chain clothing stores; IceWear and 66° North, and the inaccessible locations were thrift stores like Spúútnik. Souvenir stores did not prove to be accessible either, with only two being accessible out of eight locations. These accessible souvenir stores were located on the Red Road. For bars and nightclubs, three locations were observed: The Drunk Rabbit, Dillon Whiskey Bar and Bankastræti Club. Nine
other stores like barbershops and tourist centers were observed. Two of these places had lips or staircases.

In total, of the 25 menus observed, nine had some sort of dietary markings on them and 16 had no markings. It should be noted that even though most locations had no markings, a waiter or other member of staff at the restaurant can still be asked about any restrictions or allergies that one may have.

Strætó serviced five bus stops across the zone providing access to the locations observed along the Red Road. All bus stops observed had shelters and a bench except for the Eastbound stops of Þjóðleikhúsið and Bíó Paradís. However, these stops as well as Barónsstígur had elevated sidewalks at the location to provide easier access onto the bus for wheelchairs. Approximately a quarter of the crosswalks in the area provided auditory and visual signals. Bump strips were not commonly seen at crosswalks and appeared at only about a quarter of those observed.

4.1.3 City Library Zone

The City Library Zone was chosen as one of the zones we observed due to it being a common work area for project groups, and a great place for students to eat and hang out at any of the surrounding restaurants. The main entrance to the library was a double wide automatic sliding door leading to the first floor. The first floor had many open work areas for groups of students to use. Two sets of elevators provided access to the first, second, and fifth floors used by the
library. Bathrooms were located on each level of the library near the elevators at the back of the library. The elevators located near the back provided braille on the buttons and were wide enough for wheelchair movement. The one near the front entrance provided neither. The second and fifth floors had similar layouts with many group work areas scattered around each floor in and around the bookcases. Eating was not permitted throughout the entirety of the library complex.

Restaurants and food shacks are in the nearby area, many of which are in Ingólfur Square. Five locations were observed, in which three had vegan and vegetarian options, and two provided no dietary markings on their menus. Only the food locations within a two-to-three-minute walk were observed.

The closest bus stop was Hafnarús. The bus stop provided shelter and seating area and was a five-minute walk from the library. The sidewalk was not raised in this area. Notably, the bus only stops going westbound at this stop, so a different bus stop would be needed on the way back to DRA. Lækjartorg was the next closest bus stop, a ten-minute walk from the library, which provides service in both directions. The streets around the library contained bump strips and crosswalks had auditory and visual signals as well.

4.1.4 Kringlan Mall Zone

The Kringlan Mall was chosen as one of the zones our group observed due to its popularity among cohort members and proximity to the Downtown Reykjavík Apartments. It is a three-story shopping mall with a wide range of businesses. It had over 150 stores and the third floor primarily housed a 15-restaurant food court called Kumen and a movie theater. It was a 1.2 mile walk from DRA entirely on designated sidewalks or pedestrian paths and the terrain was mostly flat.
There were four Strætó bus stops located around the Kringlan mall. Kringlan, Versló, and Borgarleikhúsl were the stops within a two-minute walk of an accessible entrance to the mall. The fourth stop, Kringlumýrarbraut, was the furthest from any of the entrances. In addition, getting to the mall from the Southbound Kringlumýrarbraut stop required crossing the major Kringlumýrarbraut highway.

The mall had entrances on all sides. On Google Maps, Kringlan is oriented North to South. Our team based the naming of the entrances on this orientation. Three of the seven entrances were within a two-minute walk of the recommended bus stops. They were the North first floor entrance, South first floor entrance, and the third-floor entrance. The other four entrances required either a significant walk or were not flush with the designated path. They were the East, Southeast, Worldclass, and North second floor entrances. The East entrance was only accessible via stairs and the Southeast entrance required stairs from the Versló and Borgarleikhúsl stops or a longer walk from the Kringlan bus stop. The Worldclass entrance was a five or more-minute walk from every stop. The North entrance on the second floor was only accessible via the second floor of the parking garage. The first and second floor North entrances had interactive screens with mall floor plan maps and establishment lists in clear
view, but they did not have any audio features for individuals with visual impairments. Every other entrance had a floor map within view of the door.

Within Kringlan, the walkways along the inner parts of the mall were easily traversable as they are wide and flush with most store entrances. Of the over 150 stores, businesses, and restaurants, approximately 1/3 had a small “ramp” covering a lip into the establishment. Throughout the mall, there were three large elevators that serviced all three floors. One serviced the North entrances. One was located centrally within the mall. The last elevator was situated near the Bónus grocery store within the southern section of the mall. All three were capable of fitting at least one wheelchair at a time, but it would not have been possible to turn one while inside the elevator by Bónus. There were bathrooms on all three floors indicated on maps. A specific wheelchair accessible bathroom with grab bars and extra space was located on the third floor near the Kumen food court, and the elevator by Bónus.

The Kumen food court had 15 different fast food and small sit-down restaurants. The seating area entirely consisted of four-seat tables. Seven of the restaurants had vegan or vegetarian options and all of them advised customers to make their server aware of any allergies or restrictions. The menus can be found on the Kumen website or our group’s inventory SharePoint site (See Section 4.4).

4.1.5 University of Iceland Library Zone
The University of Iceland Library, Landsbókasafn Íslands – Háskólabókasafn, was chosen as one of the zones due to its popularity amongst our cohort for group work, and it being the location of our weekly advisor meetings. The zone consisted of the library, the café on the second floor of the library, and two bus stops. The library was oriented with the main entrance facing directly South so that any individual that enters is facing

![Figure 4.16: University of Iceland Library Zone Map](image-url)
North. The second floor of the library, the main floor, had an open floor plan with collaborative working areas. The third and fourth floors had layouts consisting primarily of individual desks and bookshelves. Speaking, eating, and/or drinking were not permitted on the third or fourth floor. With the second floor of the library being the main floor, accessibility for the physically impaired was the main concern of our group. Behind the primary entrance’s imperial staircase there was an elevator that provided direct access to the second-floor entry bridge. The third and fourth floors could be accessed via an elevator in either the Northeast or Northwest corners of the library or the main staircase in the Southeast corner. However, it should be noted that both elevators were small, and a wheelchair could not have been turned while inside.

Across all floors of the library, the restrooms were situated in the corners. They were next to the elevators on the North side, on either side of the main staircase in the Southeast corner, and next to the emergency exit on the Southwest side. There was a handicap accessible bathroom in the Northeast corner of the fourth floor. It was the only one with space to move around or grab bars. All bathrooms were accessed through two sets of doors. Apart from the staircase bathrooms, all the doors had standard turn handles which, according to the Centre for Excellence in Universal Design, they tend to be easier to use due of the ability to open them with elbows or with weakened limbs (What is Universal Design 2007). The second floor did not have any restrooms on the West side as the Northwest corner housed offices and the Southwest corner had a small student food court. The menu had a wide range of lunch and snack options including vegan sandwiches and salads.
It is important to note that the University of Iceland library was approximately 1.4 miles from the Downtown Reykjavík Apartments along a path that led up and down steep city streets and along uneven sidewalks. For someone with a physical or visual impairment the quickest mode of transportation to and from this library was the Strætó bus system. The two bus stops nearest to the city library were Þjóðarbókhlaðan and Þjóðminjasafn. Both stops were a similar distance to the library, at roughly a two-minute walk, and had shelters and benches. However, only the Þjóðarbókhlaðan stops had tactile paving installed. It should be noted that the sidewalks around the library, including the path taken from either of the bus stops, were old and the concrete had been chipped or broken in multiple places.

4.1.6 Places of Student Interest

Other areas were also observed across the city that were deemed potential places of student interest.

The Icelandic National Teams’ Stadium, Laugardalsvöllur, provided accessible entrances and seating for those in a wheelchair (See Figure 4.21).

The Perlan museum provided an accessible entrance, exhibits, bathrooms, and a café. All five floors could be reached via the central elevator. Perlan’s indoor glacier cave is accessible. The employees had a plan to bring anyone confined to a wheelchair, or others with mobility impairments, in through the entrance of the glacier tunnel and back out the same door rather than travelling up a flight of stairs. The employees made everyone aware of that plan before allowing anyone to enter the tunnel. The closest Strætó bus stop was at least a six-minute walk from Perlan’s entrance and directed travelers up the side of the wooded hill the museum sat on.
The Harpa concert hall had automatic entrances wide enough for wheelchairs, multiple spacious elevators, and wheelchair accessible bathrooms. The elevators did not provide braille buttoning. The main concert halls could not be viewed at the time due to being blocked off by security.

The Hallgrímskirkja Church provided a dual door entrance into the main hall. There was also an elevator to the top viewing deck in which a wheelchair could fit, but not turn. At the top of the Church there were tiny windows to view out of, but the main viewing area had a set of stairs up to it. There were no bathrooms located within the church.

The Sundhöllin swimming pool has a revolving door entrance, an elevator, accessible bathrooms, and a wheelchair lift for the pool. There is an alternate swinging door entrance beside the revolving door. No photos were allowed to be taken inside Sundhöllin so we only included an entrance photo in the inventory SharePoint site (See Section 4.4).

4.1.7 Strætó Bus System

While observing the rest of Reykjavík, our group used Strætó buses weekly. We made our own observations of the buses we rode, and we reached out to Strætó via email and received comments they often get specifically regarding the accessibility of their buses. We noted the section in the front half of the bus that was designated for a wheelchair (See Figure 2.1) and equipped with a specialized seatbelt to hold one in place. We observed the designated space being used on two occasions by an individual with a wheelchair. When we observed one of these individuals disembarking from the bus, the bus driver did not move to activate the wheelchair ramp every Strætó bus is equipped with. The bus driver tried to pull away from the bus stop while pedestrians attempted to help the individual. This fell in line with one of the comments Strætó frequently received, “The bus driver is unhelpful” (See Appendix D). Other comments Strætó received included “Ramp is broken” and “The bus stops too far away from the edge so it’s hard to enter with strollers or wheelchairs” (See Appendix D). All these quotes and our direct observations indicate that, while Strætó’s buses can provide accommodations for an individual
with a mobility impairment, their needs are not always considered or accommodated by the bus drivers. Our group also observed the accommodations Strætó has in place for individuals with auditory and visual impairments. For those with auditory impairments, all buses have an LED display (See Figure 4.22) at the front of the bus that indicates in Icelandic, what bus line it is, what the upcoming stop is, and whether the bus will be stopping at the next bus stop. To accommodate visually impaired individuals, all buses are equipped with a sound system capable of being heard from all parts of the bus. It starts all announcements with an unmistakable chime and immediately informs all riders what the upcoming bus stop is. A second, noticeably different, chime is played when someone on the bus has pressed one of the “stop” buttons located at every seat. This informs riders that the bus will be stopping at the next bus stop. The “stop” button at every seat is colored red, labeled with the word “stop” in braille and English. The button must be pressed to notify the bus driver to stop at the upcoming bus stop.

4.1.8 Iceland Experiences

Our group had the opportunity to participate in multiple experiences outside the city of Reykjavík including a South Coast tour, a Safari Quads ATV tour, a visit to the Blue Lagoon, and a visit to the Sky Lagoon.

The South Coast tour had three locations that were partially accessible to individuals with mobility impairments: Skógafoss, Seljalandsfoss, and the Dyrholaey arch. Our tour guide informed us that a wheelchair accessible tour bus could be booked in advance.

The Safari Quads ATV tour company informed potential customers on their website that they cannot accommodate severe mobility impairments such as those that require a wheelchair.
They did offer two seated ATVs, so in the event someone was incapable of driving an ATV, someone else could have driven while the impaired individual rode behind. Safari Quads also had a specific handicap bathroom on the first floor of their building.

Blue Lagoon was able to accommodate mobility, visual, and auditory impairments. The changing area had an elevator up to it and allowed someone in need of assistance to bring a care person free of charge in to assist with preparation and entrance into the lagoons. The entrance into the lagoon was ramped and the Blue Lagoon website informed potential customers that specialized wheelchairs could be requested on arrival. The deepest part of the Blue Lagoon is 4.7 feet (Accessibility at blue lagoon – blue lagoon iceland 2019).

Sky Lagoon’s main entrance was an automatic sliding door, and there were no other restrictive doorways. The changing area was spacious and had a handicap specific bathroom with toilet grab bars and clearance beneath the sink. In the shower area, there were accessible roll-in showers stalls. The entrance into the water was a set of stairs, but there was a wheelchair lift as well. The deepest point of the Sky Lagoon is 3’11” (Sky Lagoon Iceland: Frequently asked questions, n.d.)

We also hiked twice outside the city. The Reykjadalur Hot Spring Thermal River hike was steep and, while the trail was well maintained and relatively even, it was not accessible to wheelchairs. A member of the Iceland A23 cohort with a knee impairment successfully completed the hike by watching their footing and going slow. The Mount Esja hike had very loose footing and was steep. A wheelchair would not have been able to traverse the rocky landscape the trail consisted of.

4.2 Surveys

The data from our Reykjavík IQP student surveys was used by our team to assist with forming and writing the “What Should Students be Prepared For?” section of our SharePoint site (See Section 4.4). See Appendix A for the weekly survey questions and Appendix B for the prior Iceland IQP student questions.
4.2.1 Current Iceland IQP Students

This weekly survey helped us understand what aspects of other groups' projects and daily life were accessible or not. Surveys were sent out on the Monday of each week asking questions about their prior week, transportation used, and anything relating to accessibility they noted. In total, four surveys were sent out, with an average of eight and a half responses per week, giving us a 42.5% response rate. The first question asked was regarding how much time was spent a day travelling for project work as seen in Figure 4.23. Whilst Downtown Reykjavík Apartments was a viable location for doing work, many groups spent time doing work at other locations or would have to travel to meet with their sponsors or advisors. As seen in Figure 4.23, most of the students required no more than three hours a day of travelling. We also recorded what methods of transport groups would use to travel around. With scooters not being allowed at the project site, the other modes of transport used were walking and the Strætó bus system. We then asked why these methods of transport were chosen over others. The most common answers seen were that walking and Strætó are free or cheaper than any other mode of transit. The other most common answer was that Strætó took them to locations that were not reachable by walking. Specifics included rides to the nearby Mount Esja, Sky Lagoon and more. Other reasons stated were that walking provided

Figure 4.23: Time spent per day traveling for project work

Figure 4.24: Why modes of transport were chosen
exercise and that walking was easier than trying to navigate Strætó’s bus system, either due to its bus schedules or no English being provided at bus stops or on the bus. When asked whether these modes of transport were accessible some responses stated that sidewalks tend to get worse in condition further from the main areas of the city and it would be difficult to outside of Reykjavík without the bus.

Out of all the surveys sent out, it was determined that four individuals had some sort of dietary restrictions, and two had some sort of physical impairment. Out of the four dietary restrictions, one was vegetarian, one was allergic to peanuts, one was allergic to tree nuts, and one was allergic to some fruits. All noted they had no difficulty in finding food that would work for them and did not feel like their experience in Iceland was diminished in any way. For the two physical impairments, both had sustained prior injuries to their legs, and noted that the constant walking around the city would make their injuries sore. Both also noted the main difficulties of walking on cobbled sidewalks or through construction zones which made them have to be more mindful of where they were stepping.

4.2.2 Prior Iceland IQP Students
This survey helped us understand what life was like for an IQP student in Iceland previously and how accessible the activities they did were. It allowed us to gauge the difference in accessibility levels from 2019 to 2023. The responses to this survey were factored into the feelings on the “what Should Students Be Prepared For?” page of our inventory. In total, thirteen responses were collected varying across the different years traveled to Iceland.
Of the 13 responses, six stated the student was travelling multiple times a week to conduct research or go to meetings, with the rest of the responses indicating some level of travelling. Only one student indicated they never traveled.

A particular response from a student that visited Reykjavík in 2022 indicated that the individual had a medical operation on their leg prior to flying to Iceland. This made walking long distances and stairs difficult while they recovered. Ultimately, the apartments were accessible for this student because Downtown Reykjavík Apartments had an elevator. We received nine comments mentioning that weekend activities often consisted of exploring the city or hiking for long periods of time, both of which were noted as not ideal for someone with a physical disability. We also received feedback from two students that, although they were vegetarian or vegan, did not struggle to find options while out to eat or at the grocery stores within the city. It simply required some extra research as well as awareness of menus.

4.3 Project Group Observations

Our group observed fellow project groups accompanying them to Iceland if they knew said project groups had a heavy day of travel, observation, or other activities that may have been difficult for someone with an accessibility need. The information from these observations was used to develop our group's feelings of accessibility levels of Reykjavík.

4.3.1 Observation of Strætó Bus Group

Two members of our group accompanied the Strætó bus group to their sponsor meeting with Strætó on Wednesday, September 13th. Through direct observation, it was determined that all accessibility needs could have been accommodated in the project group’s activities.

4.3.2 Observation of Scooter Group

Two members of our team accompanied the Scooter project group in their process of observations throughout the city on Tuesday, September 19th. The observations were conducted in the main tourism zone of Reykjavík, particularly the areas surrounding the Red Road and Rainbow Road. Through observation, it was determined that those with major physical
impairments and those who are blind would not have been able to participate or would have struggled greatly with traveling across the city. The bumpy sidewalks, hilly environment and lack of bump strips were all contributing factors to reach this conclusion.

4.4 Dynamic SharePoint Inventory of Accessibility in Reykjavík

The SharePoint site is structured so that either the project center directors can access the information required to answer any questions posed by interested students or those students could find information regarding their specific needs themselves. Within the home page of the SharePoint site, there are six hyperlinks, each of which correspond to one of the observation zones discussed in Section 3.2. These links are shown in Figure 4.27. Each of these hyperlinks leads to a different folder where the Microsoft Lists containing our observations are stored.

![Figure 4.27: List of hyperlinks on SharePoint site home page](image-url)
Inside the Microsoft Lists, each observation, referred to as a list item, has its own information card. For example, in the bus stop list for each zone, every bus stop has its own card. The information cards display details about the list item. Every information card has an image, the name of the list item being displayed, key features of the list item, important details that a student should know, and the date the observation was made. The date is important as it ensures the data in the card is relevant and useful, so when a student uses the SharePoint site, they know that the information is up to date. For example, Figure 4.28 is the Klambratún bus stop from the DRA zone. The image on the card shows the red tactile paving in front of the bus shelter and the features section indicates the bus stop has tactile paving. The important details for a bus stop contain information regarding the surrounding area. In this case, Klambratún had tactile paving and auditory indicators at the adjacent crosswalks. This card also shows what bus lines run through the stop. That date shown at the bottom lets a student know that the information specific to the Klambratún stop is accurate as of the fall of 2023.

Below the observation zone hyperlinks on the main page of our SharePoint site is a link to a separate page titled “What Should Students Be Prepared For?”. The data we gathered from our observations and surveys allowed us to construct summaries of both the challenges and accommodations a student can expect upon traveling to Iceland. This page is separated into the impairments and restrictions we researched rather than the observation zones. The first section seen after opening the page is
the mobility impairments section shown in Figure 4.29. This page allows our project sponsors to answer questions interested students pose to them without having to sift through the detailed information within each of the observation zone folders.

A student could receive an answer to their questions and be directed to SharePoint to check out the “What Should Students Be Prepared For?” page and the zone folders to see for themselves all the accommodations each zone has to offer. Ultimately, our SharePoint is a tool a student can use to make their own decision regarding whether they can meet their own personal accessibility needs while abroad in Reykjavík, Iceland.

5.0 Conclusion & Recommendations

Our team’s primary project objective was to evaluate the overall level of accessibility of Reykjavík without making definitive judgements on what qualifies as accessible or not. This approach was taken due to the wide range of physical impairments and dietary restrictions prevalent among students at Worcester Polytechnic Institute. Data was collected in five separate zones in Reykjavík, as well as other locations of student interest. Our zones consisted of places where we worked, stores and restaurants we visited, and other activities we took part in throughout our time abroad. All data was organized into a Microsoft SharePoint site as a resource for future IQP students looking to travel to Iceland to determine whether the Reykjavík Project Center can meet their accessibility needs.

To make our research as widely available to the WPI community as possible, we recommend that the project center directors update the Reykjavík Project Center eProjects page to include a shareable link to our SharePoint inventory site. In addition, we recommend that the project site directors continue to keep the SharePoint site as up to date as possible through future project groups. The WPI Office of Accessibility Services expressed interest in other needs being examined while we were in Iceland, however, due to time constraints, we made the decision to limit ourselves to the four we researched. Potential future IQP teams could expand on the SharePoint inventory by researching and examining the accessibility levels of other needs and updating the data we collected. The only way future students can obtain accurate information to make their own accessibility decisions would be to see the ever-changing city landscape updated on the inventory as it develops year-to-year.
References


Sjálfsbjörg. (2016). *Domestic Travel*. Ferðalög innanlands. Retrieved April 10, 2023, from https://www.sjalfsbjorg.is/%C3%BEekkingarmi%C3%B0st%C3%B6%C3%B0/a%C3%B0gengi/fer%C3%B0al%C3%B6g-og-samg%C3%B6ngur/fer%C3%B0al%C3%B6g-innanlands/


Appendices

Appendix A: Current IQP groups going to Iceland Weekly Survey/Questionnaire
- How much time per day did you spend traveling to meet with sponsors, conduct research, and/or travel to and from work sites?
  - Possible responses: Less than 1 hour, 1-3 hours, 3-5 hours, greater than 5 hours
- What methods of transportation did you or your group use this week?
  - Possible responses: Strætó sus system, walking, other
- Why did you choose this option(s)?
- If you have a mobility or sensory challenge, were you able to be accommodated by said modes of transport?
  - Possible responses: No, if yes then explain
- Aside from working on your IQP, what activities have you partaken in?
- Is there anything you have partaken in that you wouldn't have been able to do with a mobility or sensory impairment or dietary restriction?
  - Possible responses: Yes, no
- Do you have any dietary needs (allergy/restriction) that you are comfortable sharing?
  - Possible responses: Yes, no
- If yes to the previous question, what is your dietary need?
  - Possible responses: Vegetarian, vegan, halal, kosher, gluten allergy/intolerance, peanut allergy/intolerance, tree nut allergy/intolerance, fish/shellfish allergy/intolerance, other
- Have you been able meet your personal needs while Iceland?
  - Possible responses: Yes, no

Appendix B: Prior Iceland IQP Students Experience Survey/Questionnaire
- What academic school year did you travel to Iceland for IQP?
  - Possible responses: A18, A19, A21, A22
- How often during the work week did you travel to meet with sponsors or conduct research?
  - Possible responses: Never, once a week, multiple times a week, every day
- Week to week, how often did you eat out as opposed to cooking your own major meals?
- Possible responses: Scale from 1 (very little – one or two meals a week) to 5 (all the time – two meals a day)

- Aside from working on your IQP, what activities did you take part in?
  - Possible responses: open response

- To the best of your ability, can you remember anything you partook in whilst in Iceland that you wouldn't have been able to do with a physical or sensory impairment or dietary restriction?
  - Possible responses: No, if yes then explain

- Did you have any dietary needs (allergy/restriction) or temporary physical or sensory impairment that you are comfortable sharing?
  - Possible responses: Dietary need, physical or sensory impairment, both, neither

- If comfortable sharing, what is your dietary need?
  - Possible responses: Vegetarian, vegan, halal, kosher, gluten allergy/intolerance, peanut allergy/intolerance, tree nut allergy/intolerance, fish/shellfish allergy/intolerance, other

- Were you able to meet your needs in Iceland?
  - Possible responses: Yes, no

- If comfortable sharing, what is/was your physical/sensory impairment?
  - Possible responses: Physically disabled, partially or fully blind, partially or fully deaf, other

- To the best of your ability, what were some of the obstacles you faced whilst in Iceland?
  - Possible responses: open response

Appendix C: Transcription of Interview with Taylor Rohena
Interviewee: Taylor Rohena (Assistant Director of the OAS)

Interviewers: James Carroll

Scribe: Nicolas Valentino

Date of Interview: 4/12/2023

Location of Interview: Unity Hall

Acronyms: TR=Taylor Rohena, JC=James Carroll
JC: So, what is the most common struggle that you tend to see with disabled students?

TR: Yeah. So, I think physical accessibility and physical barriers such as like buildings that don’t necessarily have elevators or something like that. So physical barriers are a huge one.

A big piece of accessibility currently in college is like executive functioning. So, what that means is like motivation, task initiation, kind of keeping track of time management and organization, a large population, whether you're on the autism spectrum, you have ADHD, really struggle with executive functioning challenges and then the other big one is, fortunately or unfortunately, mental health. That subset of students that either have an anxiety kind of diagnosis or depression, or really anything on the mental health spectrum that can also qualify as a disability, especially if it’s disabiling enough that it's affecting them in the classroom. So, think hard to take tests because you're so anxious, hard to focus and take notes, if you're feeling anxious. Depression can kind of come into play if you're not able to get to class. So, needing attendance flexibility and things like that. So, it's really like the most prevalent things for me right now are the executive functioning challenges, mental health and we're really duking it out on physical barriers that come up. That can include, just think if it's a student in a wheelchair, what can they access? Are there stairs to get into things? Are there curb cuts on curbs? So, it's stuff like that.

JC: Of those prevalent things, what do you do to solve them day-to-day? What is done for those specifically?

TR: So, we obviously provide accommodations. We work with students with executive functioning challenges on academic coaching, but we also are providing accommodations
especially for the mental health piece. So, attendance, flexibility, extensions on assignments, extended time on exams.

And then with the physical barriers, specific accommodations will relocate students out of Stratton Hall so that they're not going up four flights of stairs, making sure people have accessible transportation. So, if you broke your leg tomorrow, you'd be in touch with my office because I'd make sure that you could get from your residence hall to your classroom each and every day, we actually use the campus police transport for that. So, campus police comes and picks you up in a cop car and brings you to class.

Then it's just things like- think of the accessible push buttons. If those don't work, we're we are navigating how to repair them. So, it's really anything and everything.

[00:03:20]

JC: Are there anymore niche struggles that people don't usually talk about when they think of accessibility for disability that you sometimes have to work with for students at WPI?

[00:03:38]

TR: I think people kind of forget what all disability kind of encompasses. So, it's not only physical barriers. It's not only just having ADHD or a learning disability, it's also mental health. It's also chronic illnesses. I think there's a whole subset of students that really have struggled with chronic illnesses or diabetes, and having flare ups, that are having to navigate flexibility in their classroom. Me personally, I have a chronic illness, so I totally understand that within students that navigating that, even in a work setting can be challenging, let alone a classroom setting.

[00:04:32]

JC: So, our project is slightly more like mobility impairment focused. I think we are going to touch on some like hard of hearing and blindness issues in Iceland, but have there been any instances where you've noticed something in any of the campus buildings that might affect a student with a mobility impairment that isn't fully solved?
TR: So, Stratton Hall period. And they're working on it this summer. This coming year, it's going to be completely renovated to put in an elevator, because even though that was an old building, and technically it met ADA code, that's not really a good kind of opportunity. Say you're in a math class or you want to meet with your math professor on the 2nd floor and you have a wheelchair. What do you do? You have to navigate by yourself now and that's not necessarily fair or just, in my opinion. So, I think we're fixing that. There’s always things to be done. I would love to see more accessible push buttons on doors, while all of our doors do meet code because they are that lever style that people can push down or use a wrist or some type of mobility aid, I'd love more push buttons, because that's not requiring you to use a hand, a wrist, or a mobility aid. So those are few and far between, but I'd love to see more. And then I think just the doors that don't work sometimes are quite the challenge.

[00:06:25]

JC: So sometimes they are just not working because it's technology?

[00:06:27]

Yeah. So, in unity, the hard ones are this wave function. It's not a push button, it's a wave function. It doesn't work, no. Then the innovation studio, because of the way it's positioned, it's such a wind tunnel-ish area. Sometimes those doors just won't open and we'll get a few other kind of requests to have them fixed.

Non-accessible, like non-working, push buttons is so problematic because then you're literally preventing someone from getting in a building, you know, especially unity because people are needing access from lower campus to upper campus and if they can't get in the building, they're not getting up to campus. That make sense?

[00:07:16]

JC: Yeah, absolutely.
JC: You've talked about a lot of resources that this office provides. Are there any other resources that this office provides to disabled students that we haven't touched on yet?

TR: We provide all types of accommodations. I think the other piece of, not necessarily a resource, but we do a lot of disability awareness. So, kind of educating the masses about what disability looks like, what microaggressions you shouldn't use, and that type of communication, so not necessarily a resource. And there's plenty of resources on campus and we would direct kind of based on what they needed. So, if it was a health condition, student health services, mental Health, SDCC, that type of thing.

JC: I have one final question. Has there ever been a student who hasn't been able to go on an IQP site because of their disability being too difficult to accommodate?

TR: I don't know how to answer that politically. There are sites that are inherently more accessible, right? So, Iceland is a perfect example more accessible than say, Thailand. There's no curb cuts and there's not a lot of elevators and stuff like that in Thailand. So, we've had to have really intentional conversations with students about what's realistic based on your disability. So that's why I think what you're doing for Iceland is absolutely fantastic, to ensure that any student with kind of any concerns can go.

No one that- I'm trying to think of like deaf or hard of hearing or blind. The students have gone on their projects I think.

For mobility and physical accessibility, there's no ADA in other countries. There's no Americans with Disabilities Act in Thailand. They're not held to the same standards that America is.
JC: ADA, the Americans with Disabilities Act, what is that act all about?

TR: So, it's preventing discrimination based on disability. We follow the ADA in terms of providing accommodations, making sure that professors and peers and people on campus aren't discriminating students against on based on disability. But it's also ADA code for like building code. There's building code that needs to be present for all types of buildings. Yes, places can be grandfathered in because of like historical value or whatever. Our buildings have to have a certain level of accessibility because we are equal opportunity and don't want to discriminate based on disability. Unfortunately, other countries are not in the same place that we are. If that makes sense.

JC: One last thing. Our project delves slightly into how feasible it is for a WPI IQP student to be going to Iceland in the future for how accessible it is for the experience of an IQP student. So, for disabled students that have gone to IQP, how have you had to prepare the students that were able to get to the place that they wanted to go? How have you had to work with them to enable them to go on their IQP?

TR: So, we work very, very closely with the Global Experience Office to find out from either their office or the project center advisor that will be there what's feasible. So, we have conversations about like, think, transportation. You all are booking your flights, but then once you get off that flight, is the transportation, is the bus, is the car accessible? So, it's things like that. Is the housing that you're going to stay at accessible, physically accessible? Does it have accessible bathrooms? Are there curb cuts? Are there ramps, elevators? that type of thing. We also talked to them about like sponsored activities. Is the project itself, like where you're going to be going every day, is that an accessible location? Or if you all are going to go see the Northern
Lights and some ice castle, probably not accessible, probably isn't the best idea. Could you all do that on your own as like a subset of the group? Sure, but if it's WPI sponsored, we need to ensure that it's accessible for everyone, mobility aid or not. So it's a lot of talking.

[00:13:09]

JC: Well, that's all the questions I had.

[End Transcript 00:13:13]

Appendix D: Strætó Customer Feedback Email

From: Sigurborg Þórarinsdóttir
To: James Mieszczanski
Cc: gr-AII-D23

Hello,

Unfortunately I don’t have any statistics regarding that but our feeling is following:

- Ramp is broken
- No ramp in the bus
- The bus driver is unhelpful
- The bus stops too far away from the edge so it’s hard to enter with strollers or wheelchairs.
- In wintertime is too much snow at bus stations that it’s hard to pass through
- Passengers want to be informed if the bus stop is out of order.

Hopefully this helps.

Best regards,

Sigurborg Þórarinsdóttir