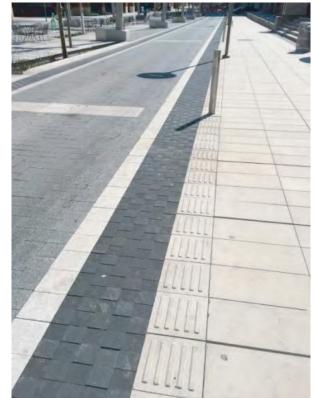






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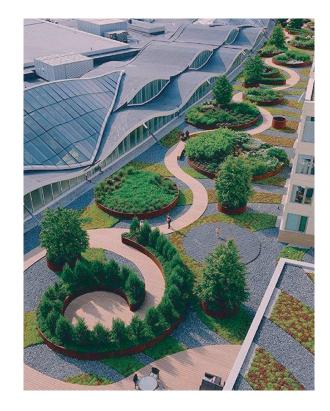
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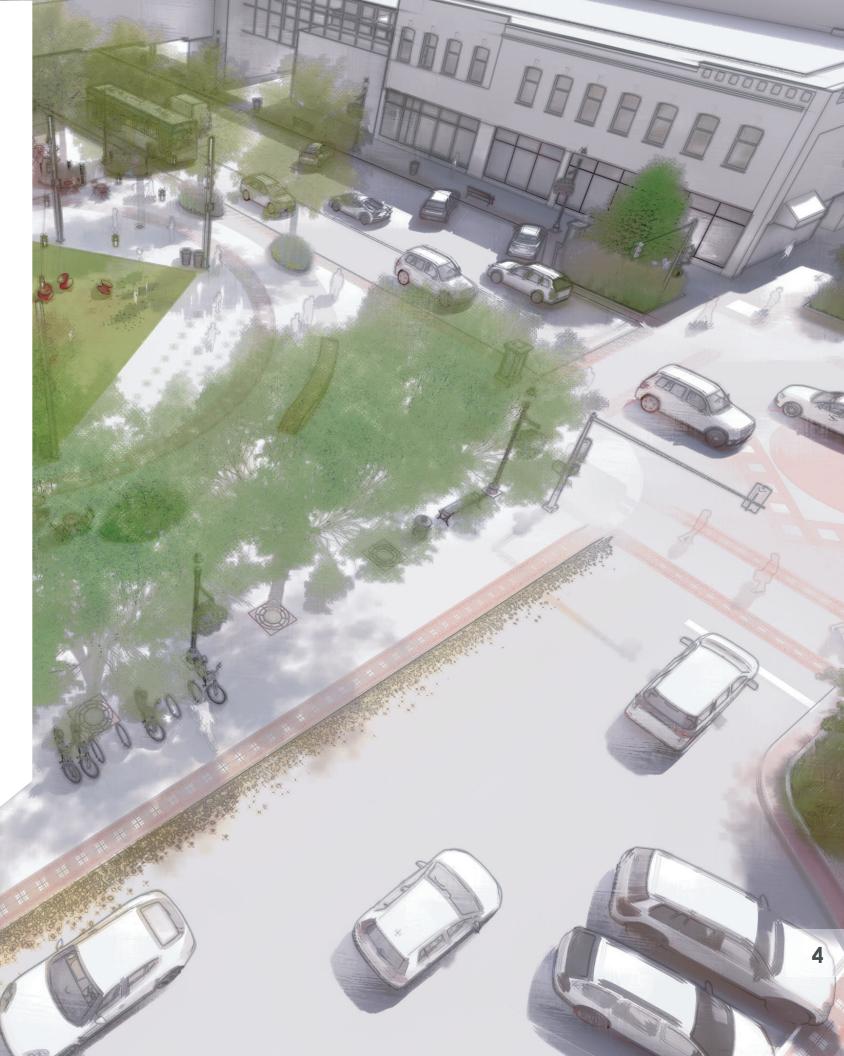


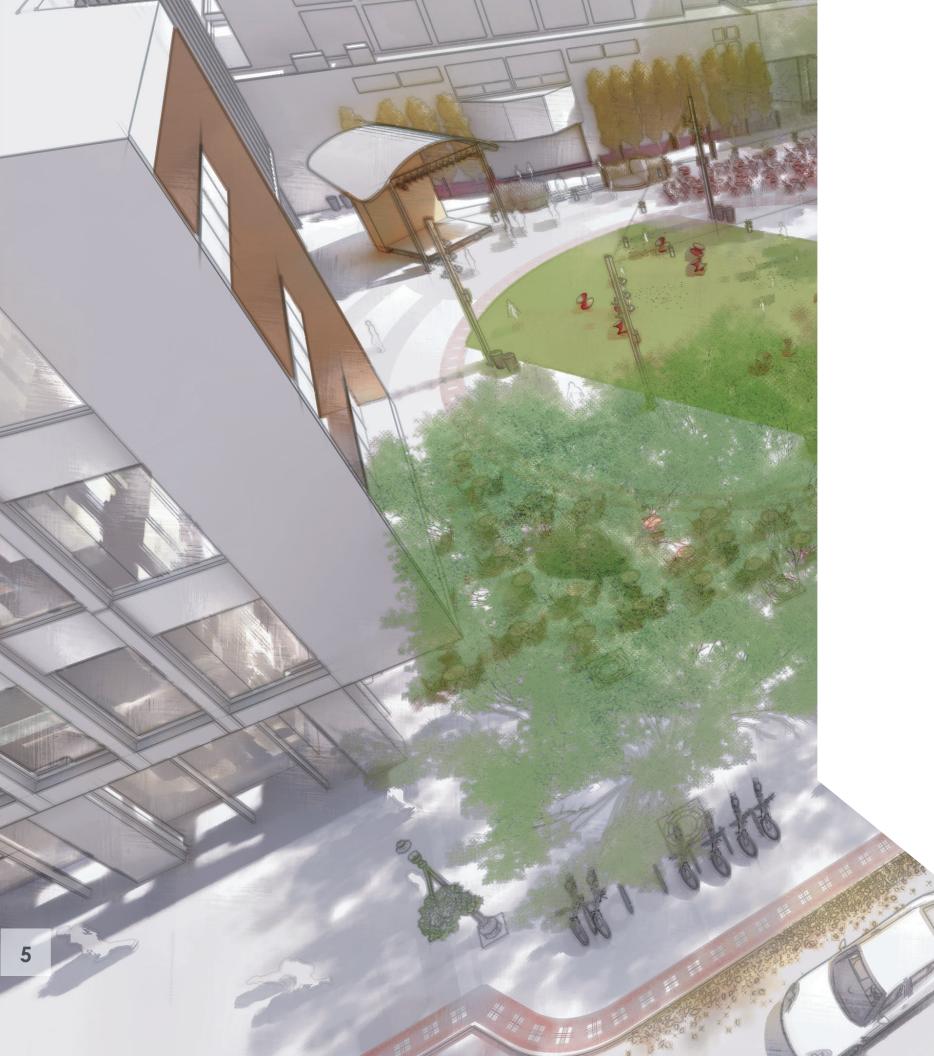
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Thesis Abstract:

The purpose of this study is to find and realize solutions to the lack of inclusion of People with exceptionalities. To create interaction between streetscapes, parks, naturalistic landscapes, and people with exceptionalities. People with exceptionalities include people with a range of disabilities such as blindness, autism, and cerebral palsy. ADA compliance has gone a long way in giving opportunity of access to people with exceptionalities. These collective groups of people may have access to streetscapes, and parks, but the interactions in these spaces are slim to none. People with exceptionalities deserve the opportunity to interact with the surroundings as all other people do. The research of this Thesis study is based on not only case studies, scholarly articles and journals, but also interviewing people with exceptionalities and their acquaintances. This methodology allows the personal perspectives of the people that will use these spaces. The resulting research is defined in the adaptive design of different streetscapes, parks, and naturalistic landscapes. These findings prove as precedent of more inclusive and interactive landscape designs to come.





Thesis Narrative

This study aims to address the lack of inclusion of people with exceptionalities in streetscapes, parks, and naturalistic landscapes, which has been a long-standing challenge in urban design. People with exceptionalities, including those with disabilities such as blindness, autism, and physical disabilities, often face limited opportunities to interact with their surroundings, which can have a significant impact on their physical and mental well-being. While the American Disabilities Act (ADA) has improved access for people with exceptionalities, interactions in these spaces remain limited, and there is a pressing need to explore new strategies for promoting inclusivity and interaction.

To address this challenge, this thesis study employs a methodology that includes case studies, scholarly articles, and interviews with people with exceptionalities and their acquaintances, with the aim of gaining personal perspectives on the issues faced by this community. By engaging with the experiences and perspectives of people with exceptionalities, the study aims to identify practical solutions that can enhance accessibility and inclusivity in urban landscapes.

The research findings suggest that the adaptive design of different streetscapes, parks, and naturalistic landscapes can enhance inclusivity and promote interaction for people with exceptionalities. The proposed adaptive design provides a precedent for more inclusive and interactive landscape designs that can benefit everyone, regardless of their abilities or disabilities. Moreover, the study argues that promoting inclusivity and interaction in urban landscapes can have broader social and economic benefits, such as promoting community cohesion, fostering creativity and innovation, and promoting sustainable urban development.

Thesis Narrative

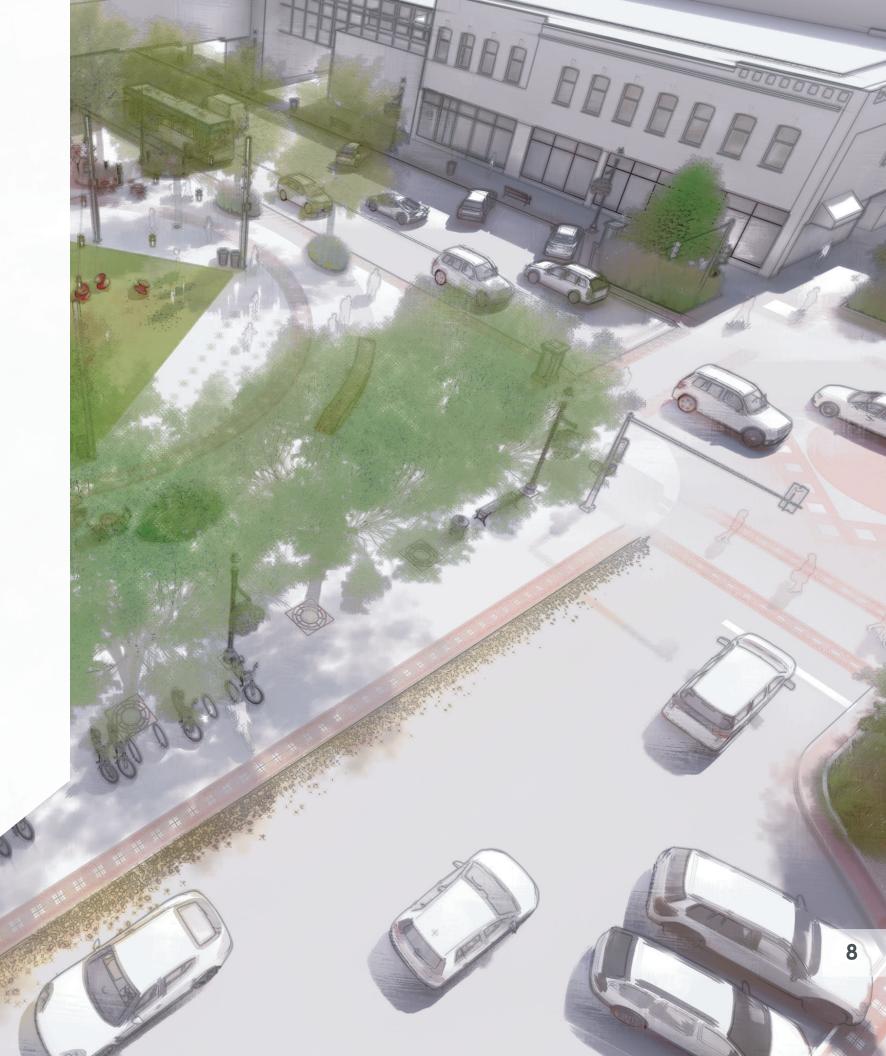
Premise for Investigation:

This thesis focuses on the lack of inclusion and interaction of people with exceptionalities in urban landscapes, such as streetscapes, parks, and naturalistic landscapes. The thesis seeks to find solutions to this problem by exploring the adaptive design of these spaces, which can enhance accessibility and inclusivity for people with exceptionalities, and promote social interaction among all community members. The research methodology includes case studies, scholarly articles, and interviews with people with exceptionalities and their acquaintances, providing personal perspectives on the issues faced by this community. The findings of this study serve as a precedent for more inclusive and interactive landscape designs, and contribute to the discourse on inclusive urban design.

Context:

The thesis narrative is situated within the broader context of urban design and accessibility. Urban landscapes are complex systems that include a range of physical elements such as streetscapes, parks, and naturalistic landscapes, as well as social and cultural factors that influence how people interact with these spaces. However, people with exceptionalities often face significant challenges in accessing and navigating these environments, due to physical and social barriers.

The context of the thesis narrative is also informed by the American Disabilities Act (ADA) passed in 1990, which has been instrumental in improving the lives of people with exceptionalities by providing legal protections and promoting accessibility. However, the thesis narrative argues that more needs to be done to promote social interaction and inclusivity in urban landscapes.





Thesis Typology:

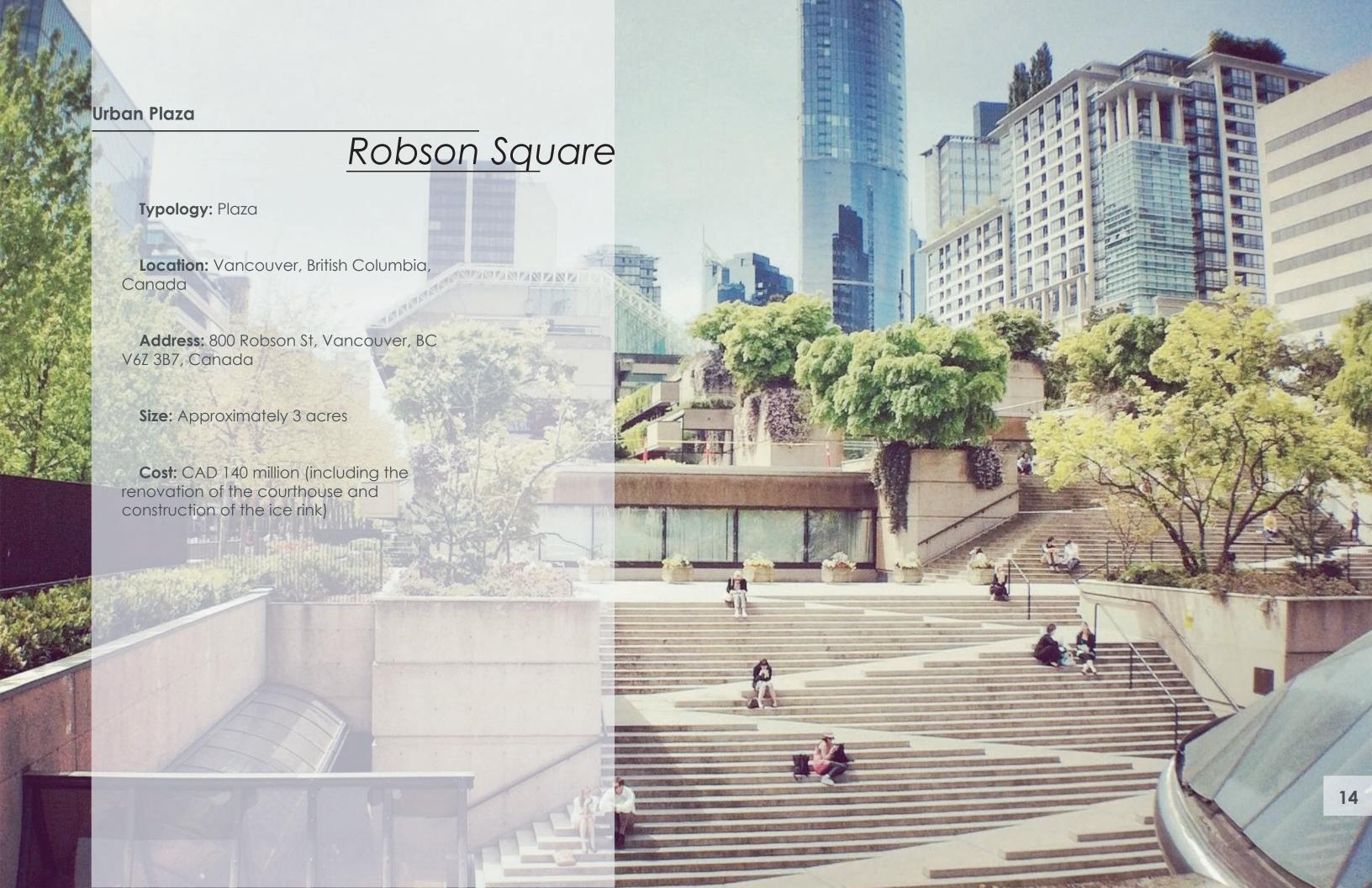
- 1. Sidewalks: Sidewalks are a crucial element of urban landscapes and play a significant role in promoting pedestrian mobility and accessibility. However, people with exceptionalities often face challenges in accessing and using sidewalks due to uneven surfaces, obstacles, and inadequate width. The design of sidewalks can be adapted to improve accessibility for people with exceptionalities, such as incorporating tactile paving, providing sufficient width, and minimizing obstacles.
- 2. Crossings: Pedestrian crossings, such as crosswalks and signalized intersections, are critical components of urban streetscapes that facilitate safe pedestrian movement. However, people with exceptionalities face challenges in using crossings due to insufficient crossing time, inadequate signalization, and unclear signage. The design of crossings can be adapted to improve accessibility and safety for people with exceptionalities, such as increasing crossing time, providing audible signals, and improving signage visibility.
- 3. Plazas: Plazas are open public spaces that provide opportunities for social interaction and community engagement. However, people with exceptionalities often face barriers in accessing and using plazas due to uneven surfaces, inadequate seating, and limited sensory features. The design of plazas can be adapted to improve inclusivity for people with exceptionalities, such as incorporating tactile seating, providing shade, and introducing sensory features like fountains or planters.
- 4. Parks: Parks are naturalistic landscapes that offer a range of recreational opportunities and ecological benefits. However, people with exceptionalities often face challenges in accessing and using parks due to limited path networks, inadequate seating, and insufficient sensory features. The design of parks can be adapted to improve accessibility and inclusivity for people with exceptionalities, such as providing accessible paths, incorporating inclusive play equipment.

Typological Research:

Things to Consider:

- 1. Accessibility: How can the design of each typology enhance accessibility for people with Exceptionalities? For example, how can sidewalks be designed to accommodate wheelchair users?
- 2. Safety: How can the design of each typology ensure the safety of people with Exceptionalities? For example, how can crossings be designed to reduce the risk of accidents for people with visual impairments?
- 3. Interaction: How can the design of each typology promote interaction between people with exceptionalities and the surrounding environment? For example, how can plazas be designed to encourage socializing among people with different abilities?
- 4. Inclusivity: How can the design of each typology promote inclusivity for people with Exceptionalities? For example, how can parks be designed to provide equal opportunities for people with and without disabilities to enjoy recreational activities?
- 5. Aesthetics: How can the design of each typology contribute to the overall aesthetics of the urban environment while still considering the needs of people with Exceptionalities?
- 6. Sustainability: How can the design of each typology incorporate sustainable practices to minimize environmental impacts and promote long-term accessibility and inclusivity?
- 7. Maintenance: How can the design of each typology be maintained to ensure long-term accessibility and safety for people with Exceptionalities? For example, how can sidewalks be maintained to prevent uneven surfaces that can be hazardous to wheelchair users?





Urban Plaza

Robson Square

Cornelia Hahn Oberlander's design also incorporated a number of sustainable features. The plaza is built on top of an underground parking garage, which helps to reduce the urban heat island effect and provides an efficient use of space. The design also includes a rainwater harvesting system, which collects and reuses rainwater to irrigate the plants and trees on the site. This sustainable approach has helped to reduce the plaza's environmental impact and demonstrates the potential for landscape architecture to address both social and environmental issues.

Since its completion in 1983, Robson Square has become an iconic public space in Vancouver and a model for inclusive and sustainable urban design. The plaza has hosted numerous events and activities, including art installations, cultural festivals, and ice skating in the winter months. The success of the plaza has also inspired similar projects in other cities, highlighting the importance of public space in promoting community engagement and social cohesion.



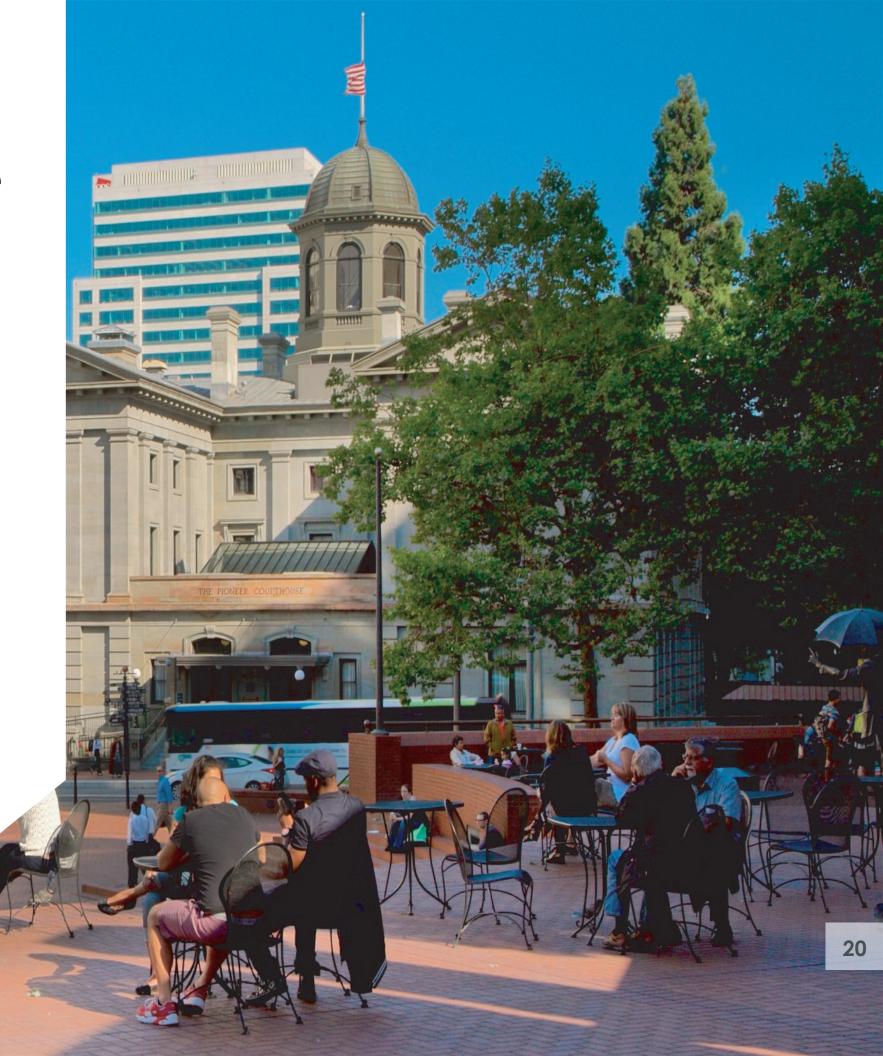


Civic Gathering Space

Pioneer Courthouse Square

Pioneer Courthouse Square, also known as "Portland's living room," is a public plaza in downtown Portland. The square was designed with universal design principles in mind, including accessible pathways, integrated seating areas, and a range of accessible amenities. The square also includes a range of cultural and performance spaces, which are designed to be accessible to people with disabilities. These features help to create an inclusive and welcoming space for all visitors, including those with exceptionalities.

Pioneer Courthouse Square is also known for its sustainability features, such as its use of permeable paving and rainwater harvesting system. The square's design incorporates greenery and trees, providing a natural space for people to gather and relax. The square's popularity and success have also spurred the development of other public spaces in Portland that follow similar design principles, promoting inclusivity and accessibility for people of all abilities. Pioneer Courthouse Square is a prime example of how universal design principles can be applied in the design of public spaces, creating welcoming and accessible places for everyone to enjoy. Its success serves as an inspiration for landscape architects and urban planners to prioritize accessibility and inclusivity in their design work.





Historic Park

Union Square

Union Square is a public plaza in downtown San Francisco that was recently renovated with a focus on accessibility and inclusivity. The plaza now includes a number of universal design features, including accessible pathways, integrated seating areas, and a range of accessible amenities. The design of the plaza also incorporates a range of sustainable features, such as rainwater harvesting and solar panels. These features help to create a welcoming and inclusive space for all visitors, regardless of their mobility or disability status.

The renovation of Union Square also included the installation of public art pieces and a new stage for performances and events. The plaza's redesign took into consideration the needs and desires of the community, with input from residents and local businesses. The new design has helped to revitalize the plaza, making it a popular gathering place for tourists and locals alike. Union Square is a prime example of how urban design can promote accessibility and inclusivity while also incorporating sustainable and community-oriented features.





Typological Research

Takeaways:

- 1. Inclusive design principles can be applied to a range of typologies, from sidewalks to public plazas and parks.
- 2. Universal design features, such as accessible pathways and integrated seating areas, can enhance the inclusivity of public spaces for people with exceptionalities.
- 3. Cultural and performance spaces can be designed to be accessible to people with disabilities, contributing to the overall inclusivity of public plazas and parks.
- 4. Sustainable features, such as rainwater harvesting and solar panels, can be incorporated into the design of public plazas and parks to create more environmentally friendly and resilient spaces.
- 5. Case studies of successful inclusive public spaces can serve as models for other cities and communities looking to improve accessibility and inclusivity in their urban environments.

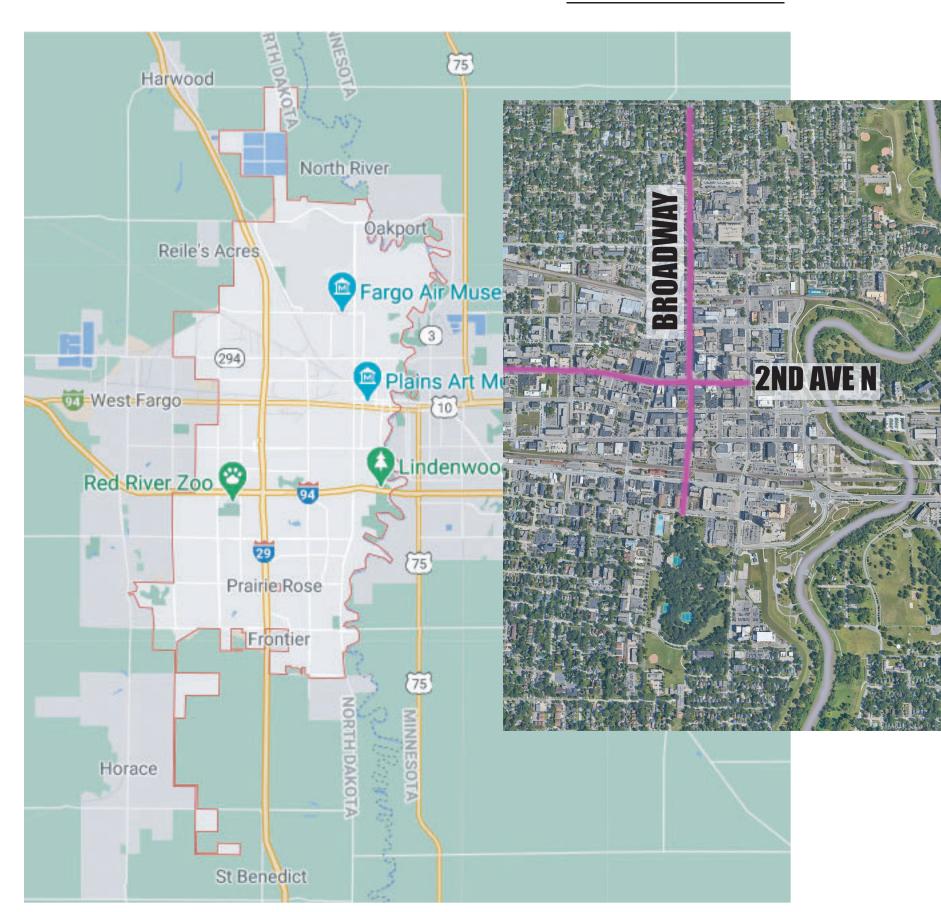


Major Project Elements:

- 1. Designing inclusive and accessible streetscapes, plazas, and parks in downtown Fargo that cater to people with exceptionalities.
- 2. Conducting research on the needs and experiences of people with exceptionalities, such as those who are blind, amputees, wheelchair-bound, on the autistic spectrum, and hearing-impaired.
- 3. Developing design guidelines and recommendations for streetscape elements such as pathways, seating areas, signage, and amenities that cater to the needs of people with exceptionalities.
- 4. Working with local organizations, such as the North Dakota Association of the Blind, to get input and feedback from people with exceptionalities.
- 5. Collaborating with NDSU's IRB to properly create contracts and interview people with exceptionalities in an ethical and respectful manner.
- 6. Developing a pilot project for a redesigned and inclusive streetscape, plaza, or park in downtown Fargo that could serve as a model for future projects.
- 7. Evaluating the effectiveness of the pilot project through user feedback, data collection, and analysis.

Overall, the thesis project would aim to create a more inclusive and accessible public realm in downtown Fargo that caters to people with exceptionalities and improves their overall quality of life.

Regional Map:



Fargo

Far More

Region:

The region surrounding Fargo is largely rural and agricultural, with vast expanses of farmland and prairie. The area is characterized by a relatively flat topography, punctuated by occasional hills and river valleys. The Red River of the North flows through the region, providing a vital source of water for agriculture and industry. The region is also home to a variety of wildlife, including deer, coyotes, and a variety of bird species.

City:

Fargo is a city in North Dakota with a rich history and vibrant cultural scene. Known for its friendly residents, Fargo offers a range of activities and attractions, from outdoor adventures to museums and theaters. With a thriving economy and diverse population, Fargo continues to grow and evolve as a destination for both residents and visitors alike.

Demographics:

Population: 126,949

Land Area: 49.33 square miles (127.63 km²)

Districts: 19

Median Age: 32.9

Disabled People: 12.8% or ~16,270 people

County: Cass County Density (mi2): 2,605 Racial Makeup: - White: 88%

- Asian: 4.8%

- African American: 3.5%

- Hispanoc or Latino race: 2.7%

- Other race: 1%

Fargo

Far More

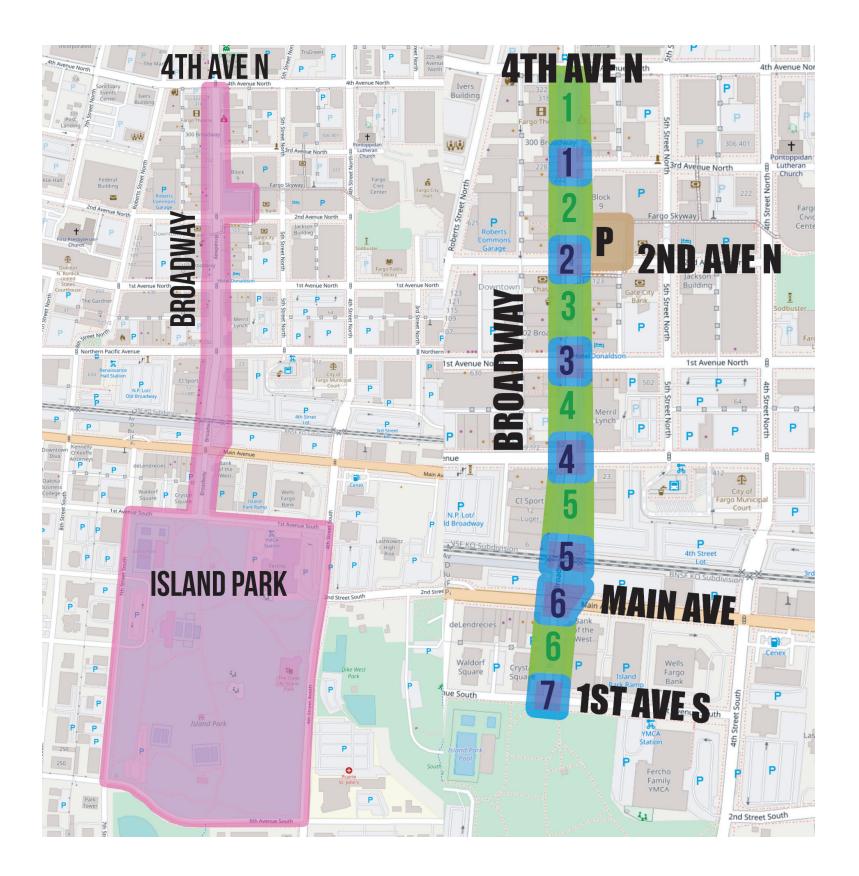
Site Selection:

Downtown Fargo ND is a good site selection to represent designing for people with exceptionalities because it has recently undergone a significant revitalization effort with a focus on making the area more accessible and inclusive. This effort includes the addition of accessible public transportation, curb cuts, and the renovation of existing buildings to meet accessibility standards. Compared to other urban areas, downtown Fargo is also relatively compact, making it easier to navigate and creating a more cohesive and integrated public space. Additionally, the area has a relatively flat topography, which can make it easier for people with mobility impairments to navigate the streets and sidewalks.

The downtown Fargo area, particularly the core strip from 4th Ave N on Broadway into Island Park, presents a unique and ideal site selection to represent designing for people with exceptionalities for several reasons. Firstly, the area is highly walkable, with a compact layout that promotes pedestrian traffic and accessibility. The streets and sidewalks are generally well-maintained, with curb cuts, accessible pedestrian crossings, and other features that make the area accessible to people with different mobility levels.

In addition, downtown Fargo has a diverse mix of businesses, cultural institutions, and public spaces that cater to a broad range of interests and needs. This diversity makes the area inclusive and welcoming to people of all backgrounds, including those with exceptionalities. Moreover, the area has undergone several revitalization efforts in recent years, which have resulted in the development of new parks, public art installations, and other amenities that promote social interaction and community engagement.

Finally, the core downtown strip from 4th Ave N on Broadway into Island Park is a hub for public transportation, including bus and train services. This makes the area easily accessible to people from different parts of the city and beyond, further enhancing its potential as a site for designing for people with exceptionalities.





Notable Organizations:

Blind people:

North Dakota Association of the Blind ND Vision Services/School for the Blind Fargo Lions Club

Amputee:

Amputee Coalition of America Hanger Clinic Prosthetics & Orthotics Limbs for Life Foundation

People on the Autistic Spectrum:

Autism Society of Minnesota Autism Society of North Dakota

People Confined to a wheelchair:

The Wheelchair Foundation
The Christopher & Dana Reeve Foundation
National Multiple Sclerosis Society - Upper Midwest Chapter

Hearing impaired:

Hearing Loss Association of America ND Association of the Deaf

Physically Disabled:

United Spinal Association
Paralyzed Veterans of America
The National Council on Independent Living

NDSU IRB

Institutional Review Board

The Institutional Review Board (IRB) is an important body responsible for ensuring that research studies are conducted in an ethical and responsible manner, with the welfare and rights of participants protected. As a researcher conducting interviews with people with exceptionalities, it is crucial to obtain IRB approval before beginning any data collection activities.

To work with NDSU's IRB, you would need to first submit an application that outlines the purpose of your study, your research methods, and how you will protect the privacy and confidentiality of participants. The IRB will then review your application and may request revisions or additional information before granting approval.

Once your study has been approved, you would then need to develop a consent form that clearly explains the purpose and nature of your study, the risks and benefits of participation, and how participant data will be stored and used. This consent form should be written in plain language and tailored to the specific population you will be working with, taking into account any communication or cognitive needs they may have.

It is also important to work closely with any community organizations or advocacy groups that represent the population you will be studying. These groups can provide valuable insights into the needs and experiences of people with exceptionalities, and can also help to recruit participants for your study. By collaborating with these organizations and following ethical guidelines set forth by the IRB, you can ensure that your research is conducted in a responsible and respectful manner.



NDSU > Research and Creative Activity > For Researchers > Research Integrity and Compliance > Institutional Review Board (IRB)

Institutional Review Board (IRB)

For the protection of human research participants

NDSU's Commitment

Duration may vary depending on the interviewee. Place of Interview preferably would be in persor within the Fargo area but may also be online if needed.

Version date: 11/28/22

North Dakota State University is committed to protecting the rights, safety and welfare of all individuals participating in NDSU research projects. Research with human subjects is conducted in accordance with regulations of the Dept. of Health & Human Services, Food and Drug Administration, and other applicable agencies (see 🔑 NDSU Policy #345). These protections ensure that: risks to participants are minimized, risks are reasonable in relation to benefits, recruitment procedures are fair, subjects are sufficiently informed and able to make a voluntary choice, their privacy and confidentiality are respected, and extra protections are in place for vulnerable groups.

orks to protect your rights and welfare. If

hane Ensz argo, ND 059;759-8538 ENSZ890@gmail.com	What are the risks and discomforts? It is not possible to identify all potential risks in research; however, reasonable safeguards have been taken to minimize known risks. If new findings develop during the course of the research which may change your willingness to participate, we will tell you about these findings."	What are my rights as a research participant? You have rights as a research participant. All research with human participants is reviewed by a committee called the Institutional Review Board (IRB) which works to protect your rights and welfa you have questions about your rights, an unresolved question, a concern or complaint about this research you may contact the IRB office at 701.231.8995, toll-free at 855-800-6717 or via email (ndsu.in/ghdsu.edu).	
Creating Interactive Streetscapes, Plazas, and Parks for People with Exceptionalities his study is being conducted by: Shane Ensz Key Information about this study: his consent form is designed to inform you about the study you are being asked to participate in. Here ou will find a brief summary about the study; however you can find more detailed information later on the form. Participant Criteria: 18 hi age Experience in: Plazas, Streetscapes, and Parks A person with Exceptionalities Someone who assists those with exceptionalities	What are the expected benefits of this research? Individual Benefits: If the participant will directly benefit from the research, include a description of the potential benefits here (e.g., "You will receive access to XYZ by participating in this research). Compensation (monetary or other compensation) should NOT be described in this section. Societal Benefits: Describe the expected societal benefits, or the expected scientific advances. Do I have to take part in this study?	Documentation of Informed Consent: You are freely making a decision whether to be in this rese 1. you have read and understood this consent form 2. you have had your questions answered, and 3. you have decided to be in the study. You will be given a copy of this consent form to keep.	arch study. Signing this form means tha
	Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled. Instead of being in this research, you may choose not to participate.	Your signature Your printed name	Date
People with Exceptionalities are: Blind Deaf Physically Disabled Amputee Autistic Why am I being asked to take part in this study?	How will my information be used? NOTE: Research collecting identifiable private information and must state that: • Collected data may be given to another investigator for future research without additional consent, OR • Collected data will not be used or distributed for future research, even if de-identified.	Signature of researcher explaining study Printed name of researcher explaining study	Date
o give feedback as to how Landscapes like Plazas, Streetscapes and Parks can more inclusive and rovide more accessibility and interactive for people with exceptionalities Vhat will I be asked to do? ou will be asked to be part of an interview where you will talk about your experiences in Plazas, treetscapes, and Parks as a person with exceptionalities. Questions in the interview are related to nding out your satisfaction with existing standards, accessibility and interactive in said areas. Vhere is the study going to take place, and how long will it take?	Can my participation in the study end early? Yes, besides opting of study from your own fruition, Interviews may end early due to outside factors. These outside factors may include physical emergencies or scheduling difficulties. What if I have questions? Before you decide whether you'd like to participate in this study, please ask any questions that come to mind now. Later, If you have questions about the study, you can contact Shape Fozz at (605)-759-8538.		

Version date: 11/28/22

People with Exceptionalities Experiences

Demographics

Blind:

12 individuals
6 males and 6 females
Age range: 22-68 years old

Racial breakdown: 50% White, 25% African American, 15% Hispanic, 10%

Asian

Amputee:

5 individuals 4 males and 1 female

Age range: 29-55 years old

Racial breakdown: 80% White, 20% African American

People who Assist people with exceptionalities:

6 individuals

3 males and 3 females

Age range: 25-52 years old

Racial breakdown: 33% White, 33% African American, 17% Hispanic, 17%

Asian

People confined to wheelchairs:

5 individuals

3 males and 2 females Age range: 31-57 years old

Racial breakdown: 60% White, 20% African American, 20% Hispanic

People on the autistic spectrum:

4 individuals

2 males and 2 females

Age range: 18-27 years old

Racial breakdown: 75% White, 25% Asian

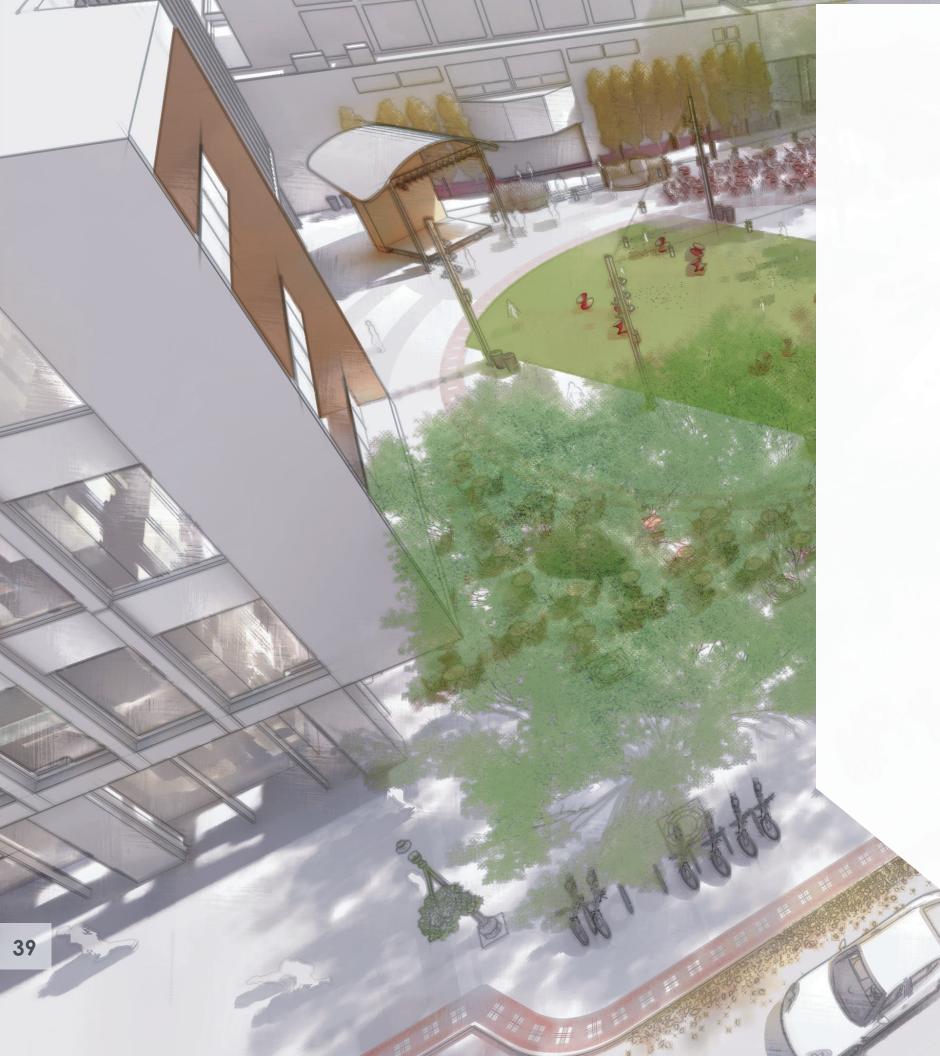
Hearing Impaired people:

3 individuals

2 males and 1 female Age range: 19-44 years old

Racial breakdown: 100% White





Thesis Objectives:

Accessibility:

Ability to access the site and navigate it with relative ease.

Activity:

Using different senses to interact with the site and could participate in activities.

Adaptability:

Ability to design and change the site regards to time and cost and without complete reconstruction.



Analysis Rubric

Accessibility:

Material: does the material lend itself to a good texture, and tactile while remaining smooth?

Path Width: Minimum and Maximum width of circulation area

Path Constant: how consistent is the path, does it change direction and width?

Condition: how well maintained is the site, does it have substantial problems?

Activity:

Sight: (for those who can Participate) is the purpose/function of the site understandable through sight?

Touch: does the sight have tactile and reachable materials/structures? Do they encourage participation from everyone?

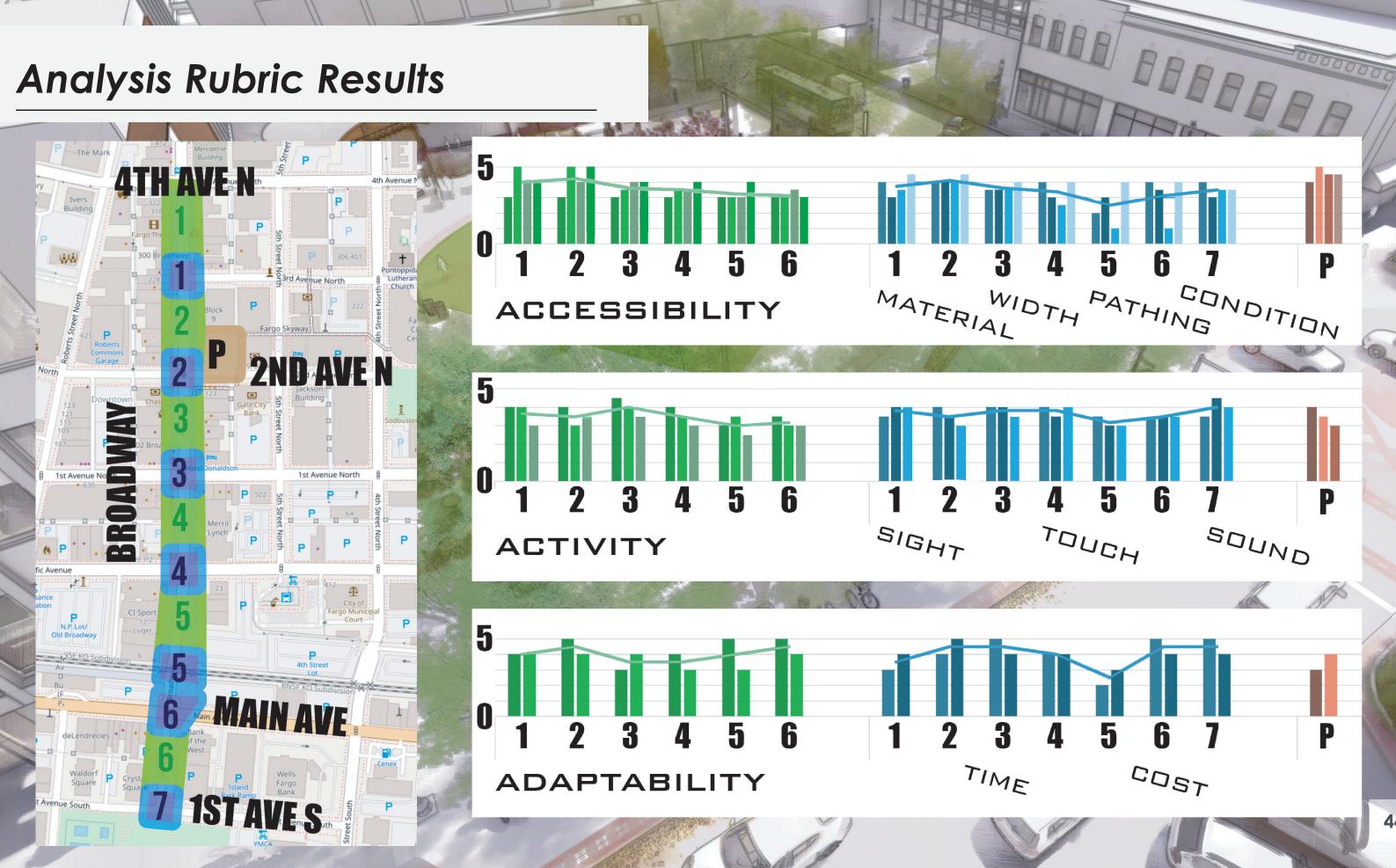
Sound: are the sounds well heard but not overbearing? Do they help people use the space or are they just noise?

Adaptability:

Time: How much time would it take to redesign and reconstruct the site to better server people with exptionalities? Are there factors that would slow the process? (Different land owners, easements, etc.)

Cost: does the cost of constructing and adapting the site for better use cost more than the change is perseveringly worth, or is the cost 'minimal'? Would funding be possible?

Analysis Rubric Results



What did I learn?

Was I Successful?

I learned a lot through both my research and the design process. Overall I learned to see the landscape through a different perspective. Interviewing especially opened my eyes to how a sidewalk, plaza, or park can seem perfect to one person, but completely unusable or at the very least, flawed for someone else. I learned how even when we try to make things more accessible and inclusive it doesn't always work. I didn't have time to design in detail the entire original project site of the Broadway strip; and if given that time I would like to continue doing that work. Now knowing the amount of time and effort it takes to design for People with Exceptionalities; I feel that it was the right decision to confine my site for the time given, but I would like to have done a different portion of the site.

Through this process, I have learned about some of the many challenges faced by people with exceptionalities in navigating urban environments, as well as the design elements and strategies that are most effective in creating inclusive and accessible public spaces. I also have gained insights into the importance of community engagement and collaboration in the design process, and the ways in which designers can work with stakeholders to ensure that their needs and perspectives are represented in the final design. Finally, I feel that I have developed a deeper understanding of the social and ethical dimensions of landscape architecture, and the role that designers can play in promoting equity, diversity, and inclusion in the built environment.

