

Research

Project Goals

1. Through design, encourage vibrancy through human interaction with the environment and each other.
2. Through building material and orientation, create a comfortable neighborhood for residents that responds to climate.

3. Encourage walking and outdoor activity using street design and urban planning.
4. Make design decisions within Grand Forks that can be implemented in other small winter cities

Winter City Design

Cities with neighborhoods in colder climates have their own unique characteristics just like any other city in the world, but some seem to lose that character in the winter months and in turn become desolate places. A once vibrant downtown neighborhood or shopping center in the months of May through September can seem almost abandoned the rest of the year. Creating a more vibrant neighborhood by establishing a sense of place, connecting the built environment to nature, and making comfortable micro-climates will sustain a thriving character during the winter season.

Block Harsh Winds

Walkable Streets, Coniferous Tree Coverage

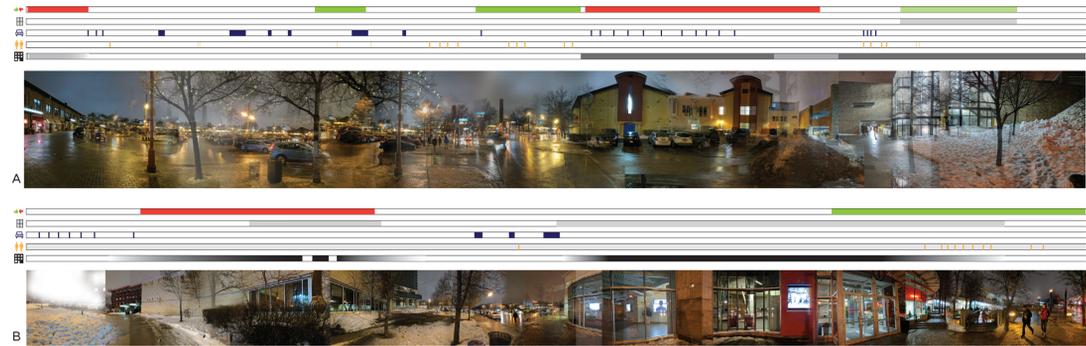
Use of Dynamic Lighting Outdoors

Increase the Southern Daylight Exposure

Increase Density

Increase Seasonal Recreation
Example: Edmonton Freeway

Precedent Analysis: The Forks



1. Canadian Museum for Human Rights
2. Sledding Hills (very popular with families)
3. Parking
4. Market Place (indoor shopping center)
5. Skating Areas (including river)

High Amounts of Human Activity

This semester, I was privileged enough to visit The Forks, a city park and community gathering space in Winnipeg, Manitoba. I analyzed this area through panoramic images, trying to determine why people experienced this place during winter. I concluded that areas with high transparency, dynamic lighting, and breaks in a building facades attracted the most amount of people. I also concluded, through observation, that people are attracted to the river, areas of high interest (such as a museum), and outdoor activity (such as sledding hills).

Hygge (hue-gah)

noun

1. a quality of presence and an experience of belonging and togetherness. It is a feeling of being warm, safe, comforted and sheltered.
2. an experience of selfhood and communion with people and places that anchor and affirm us, give us courage and consolation.
3. a feeling of engagement and relatedness, of belonging to the moment and to each other; it is about being not having



Belonging:

We have lost our ability to make meaningful connections, and need to find alternative ways to consume and connect. Hygge introduces the ideas of humanity and warmth back into society.



Shelter:

The pleasure and intimacy of sheltering is charged by the sounds of life revolving around us. These places are islands of respite rather than refuge, pause not escape.



Comfort:

Like animals returning to the familiar texture of a lair, we relax more easily in an enclosed, softly illuminated place. The quality of material that surrounds us is essential.



Wellbeing:

The contentment we feel when we walk down our local street, stopping to talk to familiar passerby, is hygge; to experience a sense of intimacy and basic trust in the good intentions of others.



Simplicity:

It's cardinal virtues are practicality, simplicity and quality. Calmness of form can encourage calmness of mood. It's not about style, but feeling and atmosphere.

Other Potential Small Winter Cities



1. **Bend, Oregon**
Pop: 81,236
Average Lowest Temperature: 23° F
2. **Yakima, Washington**
Pop: 93,257
Average Lowest Temperature: 21° F
3. **Billings, Montana**
Pop: 109,059
Average Lowest Temperature: 15° F
4. **Rapid City, South Dakota**
Pop: 70,812
Average Lowest Temperature: 12° F
5. **Bismarck, North Dakota**
Pop: 67,054
Average Lowest Temperature: 2° F
6. **Mason City, Iowa**
Pop: 27,704
Average Lowest Temperature: 7° F
7. **Petoskey, Michigan**
Pop: 5,756
Average Lowest Temperature: 13° F
8. **Watertown, New York**
Pop: 27,823
Average Lowest Temperature: 9° F
9. **Bangor, Maine**
Pop: 32,673
Average Lowest Temperature: 6° F

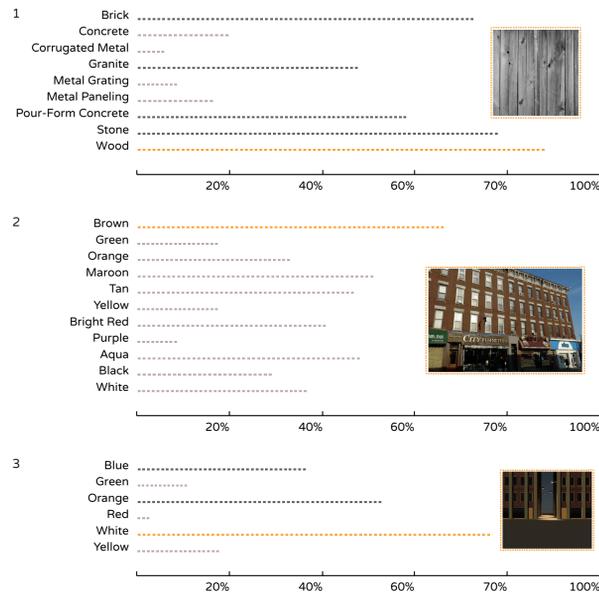
Survey: Comfort and Winter Perceptions

This semester I was able to conduct a survey with Red River Valley residents on their winter perceptions and views on comfort. The survey was taken by 120 participants from multiple cities and towns in the Red River Valley. It was my hope that with this research I would be able to learn more about northern people's preferences in the built environment during winter.

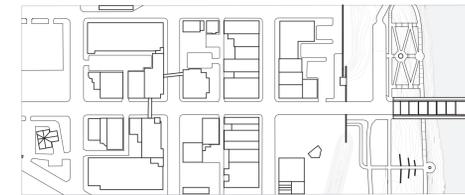
willing to walk outside during winter, but spent less time with friends outside of their homes. There were also key elements that they found to be missing from their neighborhoods:

Below you will find some questions from the survey that I was able to draw conclusions from. One conclusion is that the participants generally liked "warmer" materials, such as brick and wood. Color's ability to be viewed as comfortable was based on personal preference, but participants specifically found orange and white light comforting. Participants were

1. Winter Outdoor Activities
2. Winter-Specific Festivals and Events
3. Areas of Shelter
4. River Use in Winter
5. Tree Coverage
6. Closer Access to a Mixture of Venues
7. Community Gathering Spaces



Site Analysis



Existing Site

My analysis of the existing site includes a shadow analysis to provide information on where outdoor public space should be placed, wind analysis to inform where blockage needs to be made, traffic to see where improvement needs to be made, and living zones. The living zones are four types of activities that people do every day; using this information I was able to see what was missing in my site.



Urban Morphology

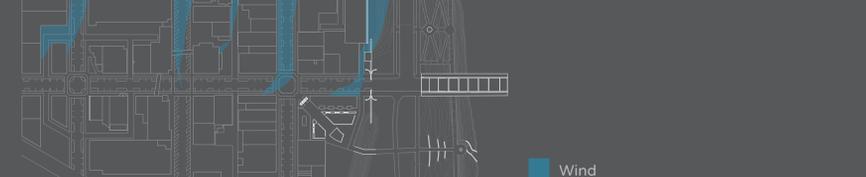
Urban Transportation



Proposed Buildings



Wind Blockage



Winter Sun Exposure

