breach

building integrated flood protection, addressing the inadequate response to the flood of 1997 by the city of Grand Forks

Tanner Naastad
A Design Thesis Submitted to the Department of Architecture and Landscape Architecture of North Dakota State University by Tanner Mark HJ Naastad in Partial Fulfillment of the Requirements for the Degree of Master of Architecture.

[Signature]
Primary Thesis Advisor

[Signature]
Thesis Committee Chair
table of contents
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title and Signature Page</td>
<td>3</td>
</tr>
<tr>
<td>List of Tables and Figures</td>
<td>6</td>
</tr>
<tr>
<td>Thesis Abstract</td>
<td>8</td>
</tr>
<tr>
<td>Narrative of the Unifying Idea of the Thesis</td>
<td>10</td>
</tr>
<tr>
<td>Typological Research</td>
<td>12</td>
</tr>
<tr>
<td>Major Project Elements</td>
<td>30</td>
</tr>
<tr>
<td>User/Client Description</td>
<td>34</td>
</tr>
<tr>
<td>The Site</td>
<td>38</td>
</tr>
<tr>
<td>The Project Emphasis</td>
<td>58</td>
</tr>
<tr>
<td>Goals of the Thesis Project</td>
<td>60</td>
</tr>
<tr>
<td>A Plan for Proceeding</td>
<td>62</td>
</tr>
<tr>
<td>Definition of Research Direction</td>
<td></td>
</tr>
<tr>
<td>Documentation of the Design Process</td>
<td></td>
</tr>
<tr>
<td>Thesis Project Schedule</td>
<td>82</td>
</tr>
<tr>
<td>Process Documentation</td>
<td></td>
</tr>
<tr>
<td>Previous Studio Experience</td>
<td>140</td>
</tr>
<tr>
<td>Personal Identification</td>
<td></td>
</tr>
<tr>
<td>Thesis Appendix</td>
<td>142</td>
</tr>
<tr>
<td>Reference List</td>
<td></td>
</tr>
</tbody>
</table>
list of tables and figures

01. Security Building, Grand Forks
02. Flood Wall, Grand Forks
03. dike from river, Grand Forks
04. Rotterdam elevations
05. Rotterdam flood
06. Winnipeg recreation
07. Winnipeg flood
08. Winnipeg river-front
09. The BIG U
10. The BIG U2
11. The BIG U3
12. The High Line
13. The High Line2
14. The High Line3
15. Pike Place
16. Pike Place addition
17. Pike Place addition
18. Ghat
19. Ghat2
20. Ghat3
21. Brownstones corner
22. Brownstones street
23. Current corner
24. Current street
25. 3rd St
26. Site Macro
27. Site Downtown
28. Site Zoning
In response to The Flood of 1997, the city of Grand Forks, ND constructed a flood wall along the river. It protected the citizens from the seasonal floods but it was an inadequate solution. It created a physical, visual, and emotional disconnect from the river front. The properties along the river front, some of the most valuable in the city, were predominantly rendered useless by the wall. Thus, peace of mind was achieved but at great cost. This thesis project will investigate alternative flood protection methods that could potentially provide a more thoughtful solution to flood protection than a flood-wall and dike.
The flood of 1997 violated the city of Grand Forks and its residents; erasing the past and creating doubt about the future. In response, the city constructed a $409 million flood-wall and dike along the river. It protected the citizens from the seasonal floods but it was an inadequate solution. Peace of mind was achieved, but at what cost? Emotionally, when people feel violated they tend to put up walls. These walls resist the process of healing and cause wounds to fester. An integral question underlying this thesis is how to tear down physical and emotional walls and create a mindful solution based on embrace and healing. Fiscally, a flood-wall provides the city
with minimal value on a massive investment. Other than the peace of mind that the wall will hold back floodwaters, a dike and a wall inject zero value into the economy. In fact, it renders valuable riverfront properties useless. Aesthetically, the wall is just that, a wall. It blocks panoramic views of the most beautiful landscapes in the city. The visual connection to the river is integral to the city of Grand Forks as the river is the only reason the city exists in the first place. By reconnecting to the river, physically and visually, this thesis project can inject greater value into the riverfront properties and promote a healthy relationship with the river and the residents.

The use of building integrated flood protection solves the issues created by the wall. It brings people closer to the river again while providing flood protection. It also injects new value into the riverfront properties that line the city by creating physical and visual connections. This is achieved through the design of 3 major elements: 2 mixed use buildings that bridge dry-side and wet-side of the safe flood elevation. The third element is a boardwalk, and series of "ground-elements" in the form of sloping floors, ramps, and paths that gracefully transition from street "dry-side" elevation to the top of the protective flood plain elevation and then down to the numerous grade elevations on the wet-side or river-side. The sloping ground elements are placed on top of and adjacent to the current dike/flood wall, and host a variety of functions, such as the town's farmers market, winter carnival, holiday celebrations, music festivals, weddings, etc.
typology research
Rotterdam, NED

This Dutch city lies below sea level and has a long history of battling the water while trying to live alongside it in harmony. They have a massive flood wall but also use a series of floodable parks around the city that can take pressure off of the wall in times of high water.
Winnipeg, CAN

Winnipeg is a Canadian metropolis that was hit nearly as hard by the Flood of 1997 as Grand Forks. They responded by constructing a $1 billion diversion. Winnipeg is a great example of a city that learned to adapt to a river that often flood and still maintain a strong communal connection to its riverfront.
The BigU
New York, NY

NYC is a cautionary tale that is becoming the norm for large coastal cities. They are vulnerable to rising seas and the stakes could not be higher. There is a controversial proposal by Bjarke Ingels Group to build a flood wall that wraps around the city. Their proposed "wall" seamlessly incorporates countless outdoor community functions into the flood protection.
The High Line in New York City is a great example of how to meld hard urban context with the softness of vegetation. The High Line has forever changed the way New Yorkers interact with their city and has injected a much needed touch of nature into the concrete jungle.
13. The High Line 2

14. The High Line 3
Pike Place
Seattle, WA

Pike Place is a cultural institution for Seattle. As a community center and tourist destination, it underwent a $65 million expansion in 2017. The expansion is a good example of integrating the new with the old but is a complete failure with how it addresses elevation change through stairs.
Ghats
Varanasi, India

The Ghats in Varanasi are great examples of how the built environment can adapt to changing water levels while retaining their functionality. They also show how a program can be more successful by being less specific. The steps can support a multitude of functions for a variety of situations.
Elite Brownstones
Grand Forks, ND

These luxury condos are a great example of post-flood development failures in Grand Forks. The injection of premium condos into the downtown fabric was great. However, the lack of street level retail or commercial space means the condos are a hindrance to downtown street level activities. Additionally, ground level residential experiences are uncomfortable at best due to a lack of privacy.
22. Brownstones street
Current Apartments
Grand Forks, ND

Another example of post-flood development failure, the Current Apartments provide much needed low income apartments to downtown Grand Forks. Much like the Elie Brownstones though, the Current Apartments lack street level retail space. Instead they offer street level residential space where blinds are constantly drawn and downtown energy is missing.
major project elements
large
mixed use buildings
boardwalk

small
individual unit layouts
small areas of contemplation/relaxation
unit facade conditions
framing views
medium

residential unit plans
commercial space plans
public space plans
structure
landscape elements
Primary- Residents of mixed use buildings and people who are in downtown Grand Forks often.
Secondary - Residents of the Greater Grand Forks area
Tertiary - Any visitors of downtown Grand Forks

Primary Audience Needs- mixed use buildings, transition from street level to boardwalk, a boardwalk, transition from boardwalk to riverfront, a community area with connection to the river, flexible community spaces that can hold a variety of functions and meet their unique needs.
Secondary Audience Needs- see primary needs
Tertiary Audience Needs- see secondary needs
Population in 2014: 56,057 (100% urban, 0% rural). Population change since 2000: +13.7%

Males: 28,764 (51.3%)
Females: 27,293 (48.7%)
Median resident age: 29.2 years
North Dakota median age: 35.0 years

Grand Forks Zip Code Map
Estimated median household income in 2016: $46,988 (it was $34,194 in 2000)
Grand Forks: $46,988
ND: $60,656

Estimated per capita income in 2016: $27,562 (it was $18,395 in 2000)

Grand Forks city income, earnings, and wages data

Estimated median house or condo value in 2016: $203,477 (it was $90,100 in 2000)
Grand Forks: $203,477
ND: $184,100

Mean prices in 2016: All housing units: $204,246; Detached houses: $226,995; Townhouses or other attached units: $191,116; In 2-unit structures: $62,299; In 3-to-4-unit structures: $136,695; In 5-or-more-unit structures: $97,823; Mobile homes: $20,061
Median gross rent in 2016: $767.

http://www.city-data.com/city/Grand-Forks-North-Dakota.html#ixzz5Esy4lF3f
48,192 - 83.8% White alone
2,280 - 4.0% Hispanic
2,174 - 3.8% Black alone
1,729 - 3.0% American Indian alone
1,591 - 2.8% Two or more races
1,526 - 2.7% Asian alone
37    - 0.06% Other race alone
18    - 0.03% Native Hawaiian and Other Pacific Islander alone

For population 25 years and over in Grand Forks:
High school or higher: 93.8%
Bachelor's degree or higher: 35.0%
Graduate or professional degree: 12.4%
Unemployed: 4.3%
Mean travel time to work (commute): 13.6 minutes

For population 15 years and over in Grand Forks city:
Never married: 42.1%
Now married: 41.3%
Separated: 2.7%
Widowed: 4.3%
Divorced: 9.6%
the site
the site is located at the intersection of Demers Ave and 3rd St S in Grand Forks, ND. There is a medium scale urban context surrounding the site with many old masonry buildings. The site wraps around a series of 3 story mixed use buildings.
26. Site Macro
27. Site Downtown
28. Site Zoning
29. Site Vegetation
30. Site Traffic
31. Site Noise
32. Site Parks
33. Site Bar Circulation
34. Site Micro
35. Site Micro
http://suncalc.net/#/47.9223,-97.0664,16/2017.12.20/23:40

36. Site Sun

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record high °F (°C)</td>
<td>52  (11)</td>
<td>87  (19)</td>
<td>83  (23)</td>
<td>100 (36)</td>
<td>105 (41)</td>
<td>105 (41)</td>
<td>109 (43)</td>
<td>104 (40)</td>
<td>103 (39)</td>
<td>95  (35)</td>
<td>75  (24)</td>
<td>68  (14)</td>
<td>109 (43)</td>
</tr>
<tr>
<td>Mean maximum °F (°C)</td>
<td>39.2 (4)</td>
<td>42.0 (5.6)</td>
<td>54.2 (12.3)</td>
<td>78.1 (25.6)</td>
<td>67.2 (20.7)</td>
<td>90.3 (32.4)</td>
<td>92.3 (33.5)</td>
<td>93.5 (34.2)</td>
<td>89.1 (31.7)</td>
<td>76.3 (24.6)</td>
<td>57.4 (14.1)</td>
<td>40.3 (4.6)</td>
<td>96.0 (35.6)</td>
</tr>
<tr>
<td>Average high °F (°C)</td>
<td>16.5 (−6.6)</td>
<td>21.9 (−5.6)</td>
<td>34.2 (1.2)</td>
<td>53.9 (12.2)</td>
<td>68.0 (20)</td>
<td>76.1 (24.5)</td>
<td>81.0 (27.2)</td>
<td>80.2 (26.8)</td>
<td>89.8 (20.9)</td>
<td>54.3 (12.4)</td>
<td>35.1 (−1.7)</td>
<td>20.3 (−6.5)</td>
<td>51.1 (10.6)</td>
</tr>
<tr>
<td>Average low °F (°C)</td>
<td>−3.1 (−19.5)</td>
<td>2.1 (−16.6)</td>
<td>16.1 (−8.8)</td>
<td>30.0 (−1.1)</td>
<td>41.5 (5.3)</td>
<td>52.0 (11.1)</td>
<td>55.3 (13.5)</td>
<td>54.0 (12.2)</td>
<td>44.2 (6.8)</td>
<td>31.9 (−0.1)</td>
<td>17.0 (−8.3)</td>
<td>2.6 (−16.3)</td>
<td>28.9 (−1.7)</td>
</tr>
<tr>
<td>Mean minimum °F (°C)</td>
<td>−25.4 (−31.9)</td>
<td>−21.4 (−29.7)</td>
<td>−8.2 (−22.3)</td>
<td>16.2 (−6.8)</td>
<td>27.6 (−2.4)</td>
<td>40.3 (4.6)</td>
<td>46.0 (7.8)</td>
<td>41.3 (5.2)</td>
<td>30.1 (−1.1)</td>
<td>17.3 (−8.2)</td>
<td>−2 (−19)</td>
<td>−18.9 (−26.3)</td>
<td>−29 (−34)</td>
</tr>
<tr>
<td>Record low °F (°C)</td>
<td>−43 (−42)</td>
<td>−42 (−41)</td>
<td>−36 (−38)</td>
<td>−9 (−23)</td>
<td>5 (−15)</td>
<td>28 (−2)</td>
<td>30 (−1)</td>
<td>30 (−1)</td>
<td>11 (−12)</td>
<td>−9 (−23)</td>
<td>−35 (−37)</td>
<td>−37 (−36)</td>
<td>−43 (−42)</td>
</tr>
<tr>
<td>Average precipitation inches (mm)</td>
<td>0.55 (14)</td>
<td>0.52 (13.2)</td>
<td>0.96 (24.4)</td>
<td>1.01 (25.7)</td>
<td>2.68 (68.1)</td>
<td>3.48 (88.4)</td>
<td>3.15 (80)</td>
<td>2.88 (73.2)</td>
<td>2.05 (52.1)</td>
<td>1.97 (50)</td>
<td>0.95 (24.1)</td>
<td>0.61 (15.5)</td>
<td>20.81 (528.7)</td>
</tr>
<tr>
<td>Average snowfall inches (cm)</td>
<td>10.7 (27.2)</td>
<td>6.6 (16.8)</td>
<td>7.2 (18.3)</td>
<td>2.6 (6.6)</td>
<td>0.1 (0.3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>trace</td>
<td>1.5 (3.8)</td>
<td>7.7 (19.6)</td>
<td>10.7 (27.2)</td>
<td>47.1 (119.6)</td>
</tr>
<tr>
<td>Average precipitation days (≥0.01 in)</td>
<td>8.1</td>
<td>6.6</td>
<td>7.5</td>
<td>7.0</td>
<td>10.6</td>
<td>11.6</td>
<td>10.5</td>
<td>9.1</td>
<td>8.3</td>
<td>8.5</td>
<td>6.9</td>
<td>8.5</td>
<td>103.2</td>
</tr>
<tr>
<td>Average snowy days (≥0.1 in)</td>
<td>10.1</td>
<td>7.1</td>
<td>5.5</td>
<td>1.9</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.3</td>
<td>5.6</td>
<td>9.8</td>
<td>41.5</td>
</tr>
</tbody>
</table>


37. Site Climate
38-48. Site Visit 1
49-57. Site Visit 2
1. Design of a system of mixed use buildings and sloped walking paths that create a welcoming condition where the current town square sits. The new project must support all current functions of the town square and also be able to support additional functions.
2. Reconnect the downtown urban context to the river.
3. Foster a more healthy relationship between the people of Grand Forks and the river.
Define a new way of addressing flood protection for developed urban landscapes. Find an innovative way to deal with the elevation change between the street level and top of the flood wall. Explore a new relationship between buildings and riverfront. Create a cohesive site experience between multiple buildings and a boardwalk. Integrate landscape elements and the built environment.
plan for proceeding

Tools: site visits, Enscape, sun analysis, wind analysis, precedence studies.

Outcomes: innovative solution for flood protection with building integration, how a building and boardwalk can become a community epicenter.
Design Methodology

1. Obtain a grasp of what the site has to offer
2. Consider an underlying metaphor
3. Explore graphically with sketches and massing models
4. Create a massing representation of the program
5. Synthesize program massing with graphic explorations
6. Mass modeling and Sketchup modeling
7. Revit modeling and analysis
8. Renderings using Enscape and possibly a Lumion video
Documentation of the Design Process

1. Sketches and notes in sketch books and on trace paper
2. Pictures of models
3. All digital files saved together and backed up via GoogleDrive
4. Thesis book updated as needed
5. Documentation of research material and sources
Figure 78.1 Thesis schedule
December

January

February

March

April

May

coract

metaphor

spatial massing

analyze

synthesize

present

explore models

floor plans

computer model

sustainability

structure details

rendering and boards

| 67 |
unifying idea research

"Landmarks with human dimensions are being torn down to be replaced by structures that appear never to have been touched by human hands. There seems to be a talent today for picking the most beautiful and personal places to destroy." (Lacitis, 2017) This quote by Artist Mark Tobey in 1950 is greatly relevant to this thesis, not so much in that this project is about not tearing down buildings but in that the construction of a flood-wall in Grand Forks destroyed the most beautiful part of the city by placing it out of sight.
It has been my personal experience that downtown Grand Forks would benefit greatly from a better connection to the river. Upon many site visits it becomes clearer that the wall truly separates the city from its genesis. The city was founded because of the river's very existence, and now they may as well be two ships passing in the night. Not only is the wall a barrier but it has a dominating presence in an otherwise pleasant context. The lush greenery of the riverfront contrasted with the rich tones of the old downtown masonry buildings is a thing of beauty, or at least it was.

The proposal of flood protection that is more than a wall is supported by BIG architects and their “Big U” proposal for New York City. “The proposal was conceived as 10 continuous miles of protection tailored to respond to individual neighborhood typology as well as community-desired amenities. The proposal breaks the area into compartments: East River Park; Two Bridges and Chinatown; and Brooklyn Bridge to The Battery. Like the hull of a ship, each can provide a flood-protection zone, providing separate opportunities for integrated social and community planning processes for each.
Each compartment comprises a physically separate flood-protection zone, isolated from flooding in the other zones, but each equally a field for integrated social and community planning. The compartments work in concert to protect and enhance the city, but each compartment's proposal is designed to stand on its own." (BIG Team, 2017)

The concept of community functions and flood protection to be a seamless melding of two distinctly different entities is fundamental to the successfulness of this thesis project and any major flood protection project in the future. By combining the two, a community can avoid the mistakes made by many communities which act too hastily to find an efficient solution instead of one that is mindful and holistic. The value, both monetarily and socially are equally as important to the long term success of the flood protect and the health of the city.
The flood of 1997 violated the city of Grand Forks and its residents; erasing the past and creating doubt about the future. In response, the city constructed a $409 million flood-wall and dike along the river. It protected the citizens from the seasonal floods but it was an inadequate solution. Peace of mind was achieved, but at what cost?
Emotionally, when people feel violated they tend to put up walls. These walls resist the process of healing and cause wounds to fester. An integral question underlying this thesis is how to tear down physical and emotional walls and create a mindful solution based on embrace and healing. Fiscally, a flood-wall provides the city with minimal value on a massive investment. Other than the peace of mind that the wall will hold back floodwaters, a dike and a wall inject zero value into the economy. In fact, it renders valuable riverfront properties useless. Aesthetically, the wall is just that, a wall. It blocks panoramic views of the most beautiful landscapes in the city. The visual connection to the river is integral to the city of Grand Forks as the river is the only reason the city exists in the first place. By reconnecting to the river, physically and visually, this thesis project can inject greater value into the riverfront properties and promote a healthy relationship with the river and the residents.
This project is important at this stage of my career because it will demonstrate my competency in a wide variety of architectural applications. I also feel it is important and valuable that a thesis project not only tackle important questions but, at the very least, attempt to do so in an innovative way.

This project will improve my architectural knowledge because I have never worked on a project that involved as many variables as this one. Not only is it two mixed use buildings for one projects but it is also the boardwalk that connects them while also connecting the downtown to the river and the river to the downtown. Not only that, but this project will be highly relevant to me professionally in the future since I plan on working in the area of my site.

This project is important to the profession because the batter with water is only just beginning. With rising seas on coastal communities, the need to develop flood protection that can incorporate beauty and community functions together is essential. It will also provide a realistic solution to a problem that also faces many smaller communities that are located along rivers.
Additionally, architects in general seem to care minimally about accessibility when designing spaces. This is not only for people in wheel chairs but it also affects able bodied people, for example a parent with their young children in a stroller is restricted in the same ways as a person that is confined to a wheel chair. The use of stairs as a means of elevation change is common and generally lazy. There are more thoughtful ways to make an elevation change that is also entirely inclusive and I believe that to be as important as any issue facing architecture today. As a result I will strive to make any elevation change fully accessible to all but using as few stairs as possible.
historical context

Post flood developments in Grand Forks have been inadequate to say the least. The Elite Brownstones and The Current Apartments appear to be short sighted at best in their attempt to fill lots left vacant from the fire that ravaged the downtown during the flood. Both projects reject the notion that a downtown should be busy and vibrant. Instead they forcefully block any and all flow from business to business by filly their street level space with residential units. Not only is this highly uncomfortable for
the residents as they have to live with their blinds drawn 24/7 to maintain their privacy but it removes the opportunity for more businesses to grow into the downtown tapestry. These two developments do provide much needed residential space, both premium condo and low income apartments, but they could aid the downtown growth and vibrancy as well as improve their own residential conditions if they would utilize the street level space for commercial uses.

The city of Rotterdam provides a very extreme and modern example of how a community can deal with the threat of water. For hundreds of years the city and its people have attempted to live in harmony with the sea while a majority of the city lies beneath sea level. The most effective strategy for flood prevention is permeability as it allows the water to be less constrained and gives the earth an opportunity to absorb the vast majority of it. Unfortunately in most western cities true permeability is not an option as infrastructure would be completely ruined and rebuilding entire cities is unrealistically expensive. The Dutch skirted this issue by constructing a system of floodable parks around the city that can be fully submerged in times of high water.
“We’re really planning ahead”, says Alexandra van Huffelen, Rotterdam’s vice mayor in charge of sustainability. “The Dutch have lived below the sea level for centuries and are used to dykes and barriers. But today we’re experiencing heavier and more unpredictable rainfalls, so behind the barriers we’re turning the city into a sponge.”

A crucial sponge. Surrounded by water on four sides, this delta city of some 600,000 people can’t flush the sudden stormwater away. Instead, it has embarked on a climate change adaptation strategy that turns every conceivable area into water storage. “We have squares that are set lower than the surrounding streets and pavements that will function as water plazas and fill themselves up with water”, explains van Huffelen.

“We’ve also built water storage facilities, for example an underground parking garage with a basin the size of four Olympic swimming pools. And we’ve introduced more green areas, including green roofs and green facades, that will be able to absorb water as well.” (Braw, 2013)
space allocation

retail space - 25,000 sf
commercial space - 45,000 sf
residential space - 77,000 sf
boardwalk - 50,000 sf
project process documentation
process sketches

58. section sketch

59. form sketch
61. home sketch 2
62. home sketch 3
62. home sketch 3

63. home sketch 4
68. music form 4
69. river section

70. plan sketch
71. process sketch 1
73. music as form iterations

74. music as form iterations 2
77. pocket park sketch 1

78. pocket park sketch 2
79. pocket park sketch 3
form studies

plug and play form iterations

81. 3d printed form iterations
91–94. shou sugi ban test
103-110. final model
Can building integrated flood protection provide a more mindful and holistic response to the flood of 1997 by Grand Forks, ND?
The use of building integrated flood protection solves the issues created by the wall. It brings people closer to the river again while providing flood protection. It also injects new value into the river front properties that line the city by creating physical and visual connections. This is achieved through the design of 3 major elements: 2 mixed use buildings that bridge dry-side and wet-side of the safe flood elevation. The third element is a boardwalk, and series of "ground-elements" in the form of sloping floors, ramps, and paths that gracefully transition from street "dry-side" elevation to the top of the protective flood plain elevation and then down to the numerous grade elevations on the wet-side or river-side. The sloping ground elements are placed on top of and adjacent to the current dike/flood wall, and host a variety of functions, such as the town's farmers market, winter carnival, holiday celebrations, music festivals, weddings, etc.
111. exhibit
112. section model
113. models
117-120. flood levels
124. atrium render
125. pocket park render 1
126. from river night render
127. from sloped paths
from sloped paths to concert
129. busy
130. pocket park 2
131. winter
previous studio experience

Tanner Naastad
Grand Forks, ND
218-791-6602
tanner.m.naastad@gmail.com
2nd year
Fall - Cindy Urness
   Tea House - Fargo, ND
   Minneapolis Boat Club - Minneapolis, MN
Spring - Darryl Booker
   Montessori School - Fargo, ND
   Birdhouse - Fargo, ND
   Dwelling - Cripple Creek, CO

3rd year
Fall - Steve Martins
   Firehouse - Dell Rapids, SD
   Duluth After School - Duluth, MN
Spring - Regin Schwaen
   Basic Competition - Nekoma, ND
   Kür Reborn - Berchtesgaden, DE

4th year
Fall - Don Faulkner
   Highrise - San Fransisco, CA
Spring - Ron Ramsay
   Marvin Windows Competition - Fargo, ND
   Furniture Design - NDSU Wood-shop

5th year
Fall - Mark Barnhouse
   Wetland Research Facility - Hawley, MN
Spring - Malini Srivastava
   Thesis - Grand Forks, ND
