



Undergraduate Portfolio

Benjamin Boswick
Environmental Design Landscape + Urbanism
Selected Works

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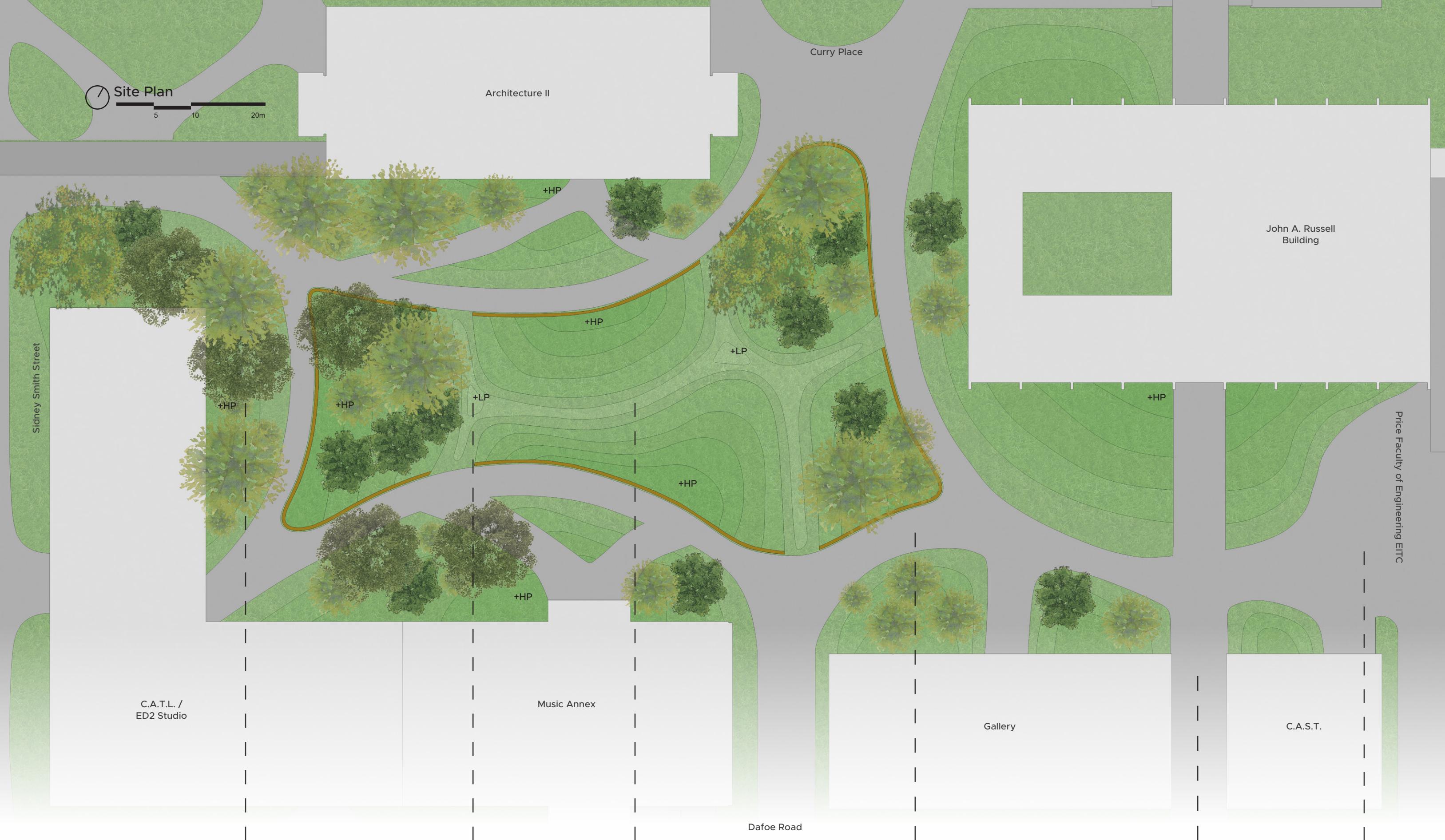
Design Precinct

Term Winter 2020 **Class** EVLU 3008 Studio 4

Instructor(s) Brenda Brown **Duration** 6 Weeks

Programs Modelling, Photoshop, Illustrator + Rhino3D

The premise of this project was to design a new “precinct” for the Faculty of Architecture at the University of Manitoba, with input provided from members of the faculty, staff, and students. With this data in mind, sketch models were created to explore the space further. This particular layout was inspired by a plasticine and cardboard model, with the final model being constructed out of Architectural Butter Board and Preserved Reindeer Moss.



This portion of the landscape is intended to have a higher density canopy, this will also take longer to grow in over time

This area of the topography dips down to allow the site to retain more water

Central portion of topographic area is left clear of trees to provide a different experience

The approach to the John A. Russell Building is framed and linked to the central space through the trees

The entrance to the John A. Russell Building is framed by the Gallery and C.A.S.T.

Vehicle access from Dafoe Road is maintained

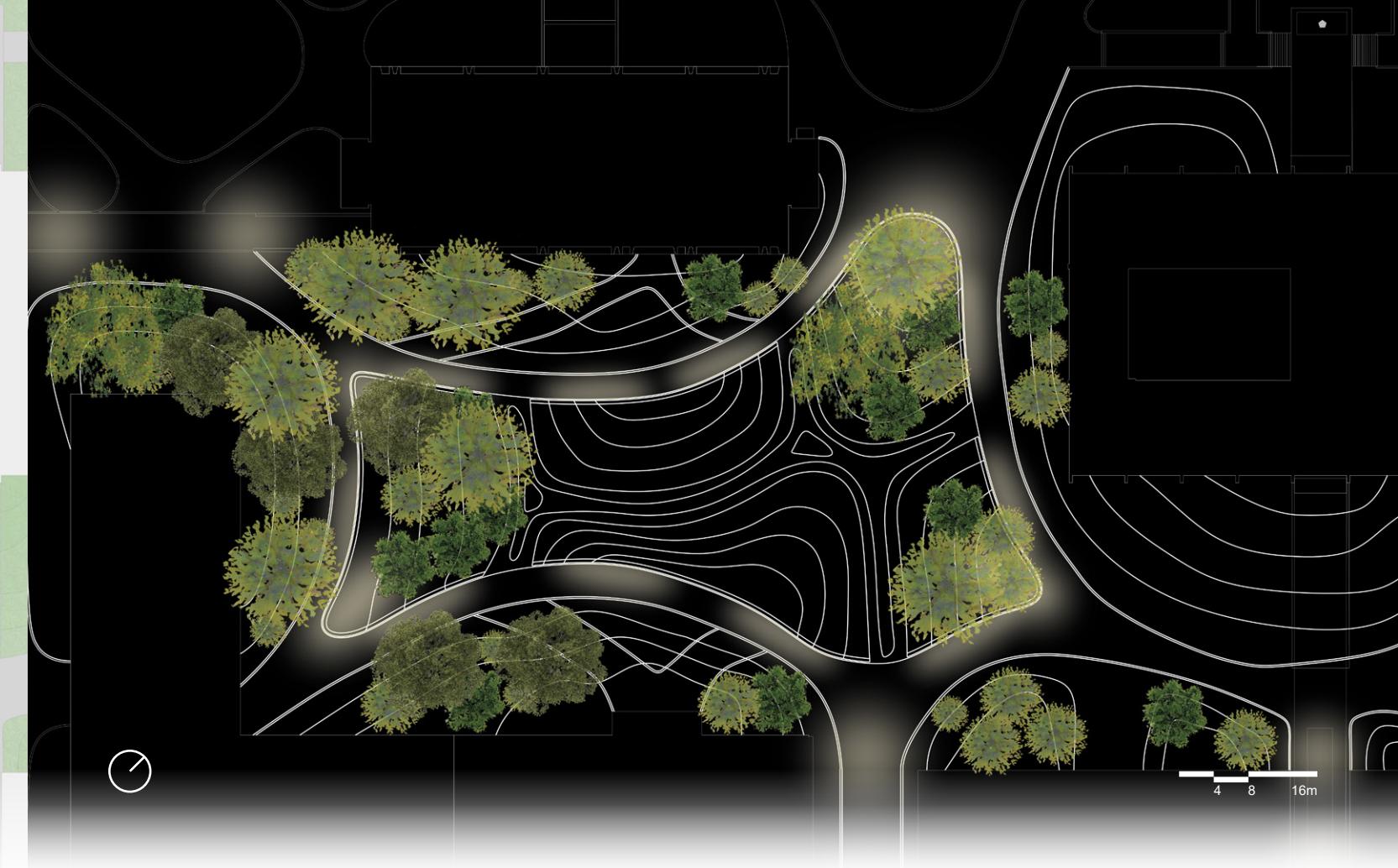


Site Planting Plan

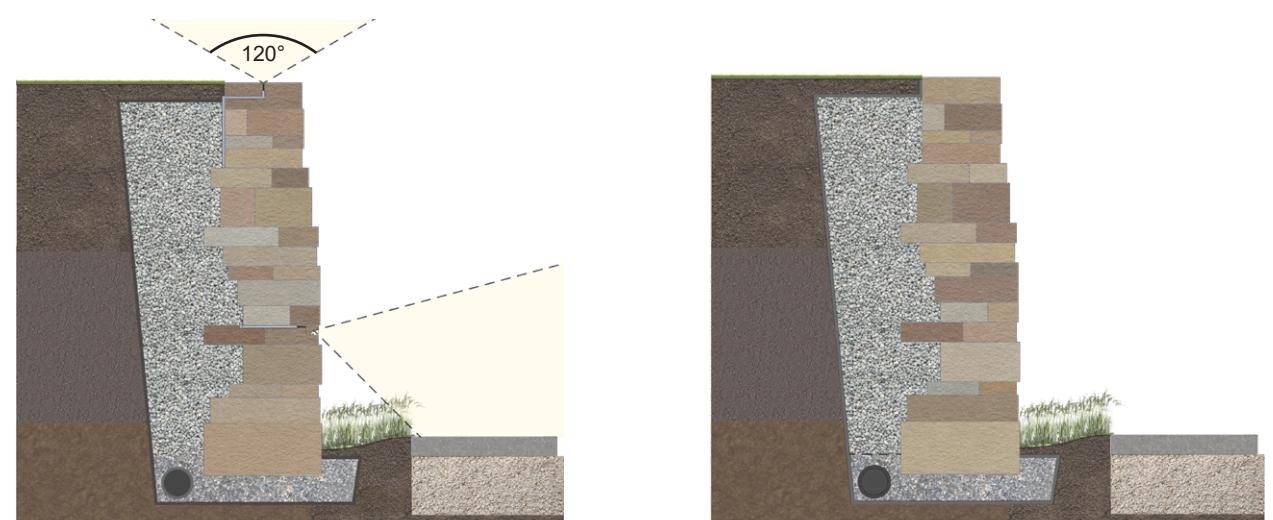


Tree Species Information

Common Name	Scientific Name	Soil Type	Max. Height	Max. Canopy Size	Seasonal Gradient
American Linden (Basswood)	<i>Tilia americana</i>	Well-drained, Moist	80' (24.4 m)	40' (12.2 m)	
Amur Maple	<i>Acer ginnala</i>	Well-drained, Moist	20' (6.1 m)	18' (5.5 m)	
Dropmore Linden	<i>Tilia x flavescens 'Dropmore'</i>	Well-drained, Moist	25' (7.6 m)	18' (5.5 m)	
Golden Willow	<i>Salix alba 'Vitellina'</i>	Moist, Any	50' (15.2 m)	40' (12.2 m)	
Manitoba Maple (Boxelder)	<i>Acer negundo</i>	Moist, Deep	45' (13.7 m)	20' (6.1 m)	
Silver Maple	<i>Acer saccharinum</i>	Well-drained, Moist	80' (24.4 m)	15' (4.6 m)	

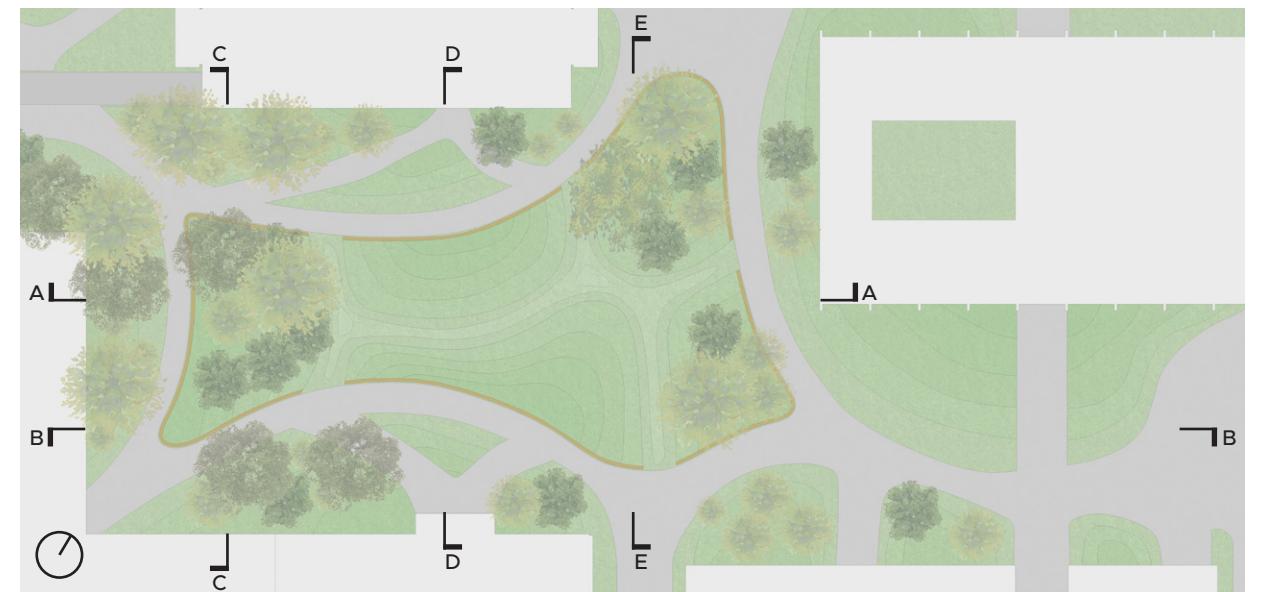


Site Lighting Plan



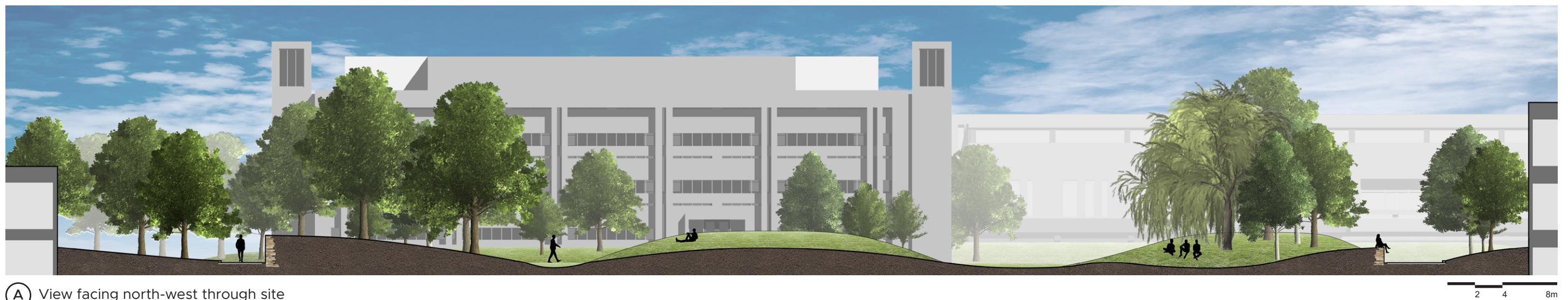
- Flexfire LEDs (Dynamic Tunable) would be used within the retaining walls to provide under-lighting to the trees along curves, and to certain stretches of pathway
- The LEDs have a beam angle of 120° which is similar to a Wide Flood
- This particular type of LED is IP65 graded and would run at 4200K

- A standard form of drainage would be used for the retaining walls specifically
- A strip of grass would be allowed to grow between the wall and pathway which will allow for water flow off the pathway
- While spring time may cause the site to be more heavily saturated, the main portion of lawn will be allowed to retain water



Sectional Perspectives

The purpose behind these sections is to communicate the spatial experience and the scale of the individual within the site. Elevations of the undulating central landscape are also communicated here, with people for scale.





(C) View of southern portion of central topography space



(D) View of central topography space with retaining walls



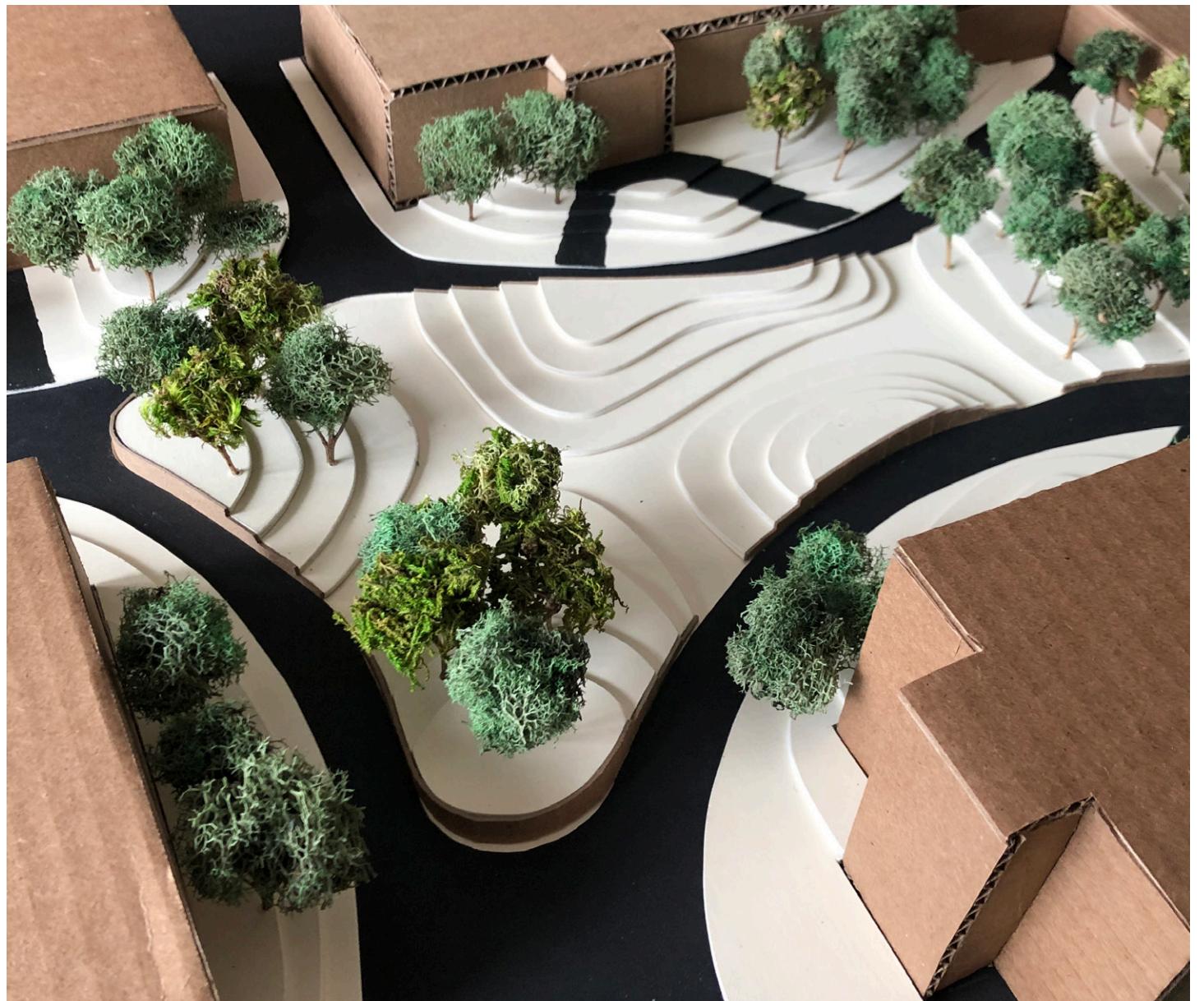
(E) View of northern portion of central topography space



Perspective facing North



Perspective facing Northeast



Perspective facing South



Perspective facing Southwest

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Operational Strategy

Term Fall 2019 **Class** EVLU 3006 Studio 3
Instructor(s) Leanne Muir + Dr. Richard Perron
Duration 3 Weeks **Programs** Photoshop + Illustrator

This section is an amalgamation of two consecutive projects which involved exploring different environmental strategies and applying them to an urban context. The first portion involves the idea of conserving green space within the precinct. The focus was put on the preservation of green space when it was realized that Lord Roberts has a lack of green space based on the overall area of the precinct. The goal is to increase the amount of green space by preserving it on existing lots that will thread through the precinct to connect the existing spaces. The second portion involves a similar idea but applied to a whole block within the precinct. The site for this part of the project was Berwick Place, which had a unique street shape, unlike the surrounding gridded streets. In this case, the street was turned into a large apple orchard, which was meant to bring out community involvement and strengthen Winnipeg's urban forest.

Growing, Growing, Gone!

Lord Roberts Green Space Synthesis



① Lord Roberts Precinct Context

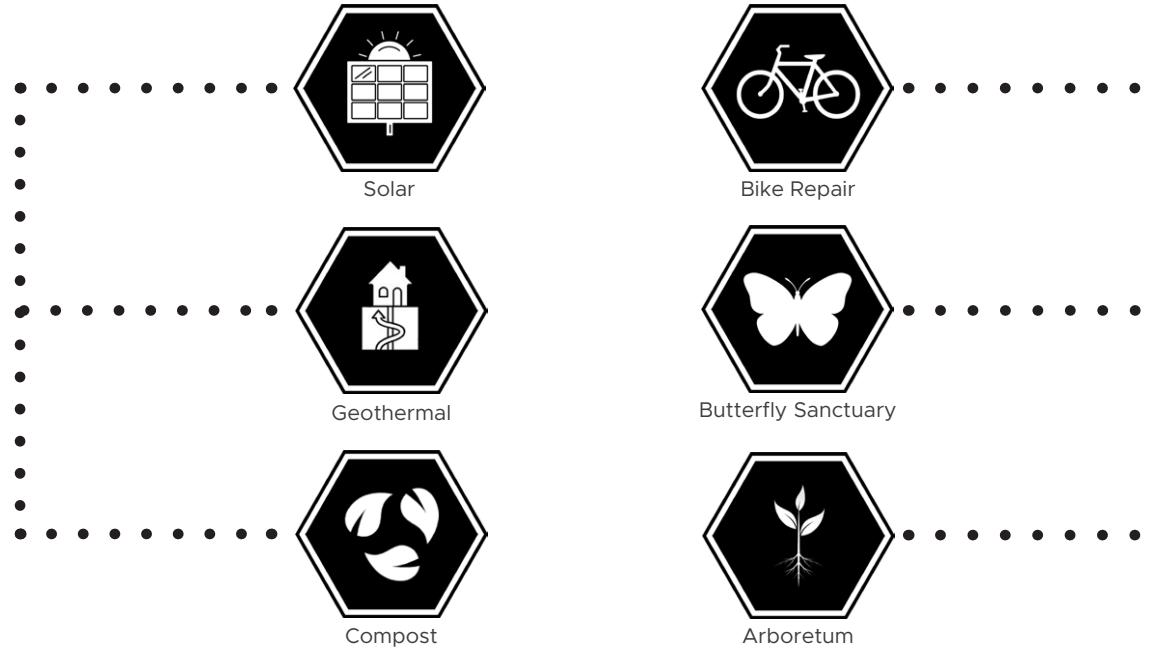


② Green Space Locations

③ Rathgar Avenue Cross Section

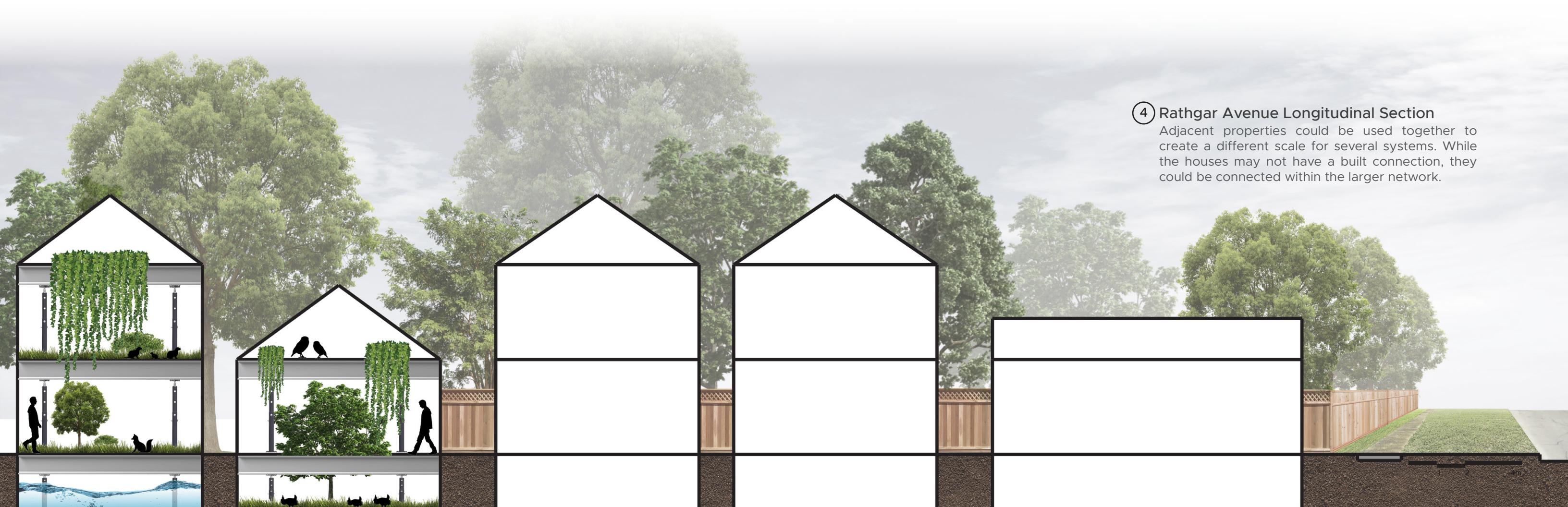
In many cases, within a single property or a cluster of them, these systems could be combined such as in the section below. This is an example of a possibility, combining habitat and water management.





Several opportunities are opened up if the house is removed from the lot. Some options may include a community composting site, a solar garden or geothermal field, or a new neighbourhood playground.

If the house is left on-site, the structure could be repurposed or left to be overgrown and reclaimed by nature. It could be turned into a butterfly sanctuary, a bike recycling and repair shop, or a plant museum showcase.



④ Rathgar Avenue Longitudinal Section

Adjacent properties could be used together to create a different scale for several systems. While the houses may not have a built connection, they could be connected within the larger network.

Urban Orchard

Berwick Place Orchard Integration



① Ecological Context

These zones contain several different mediums and spaces which host several systems including; Habitats, Water Management, Active Transportation, and other Integrated Networks.

② Social Context

These zones combine ecological and community elements. Community Spaces are a major factor in these zones, but Active Transport and Integrated Networks are also present.



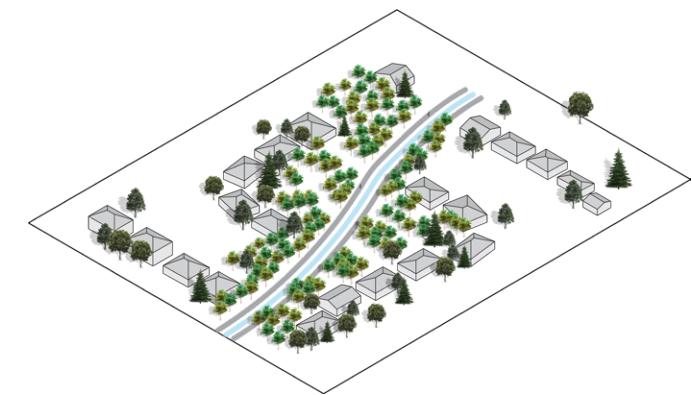
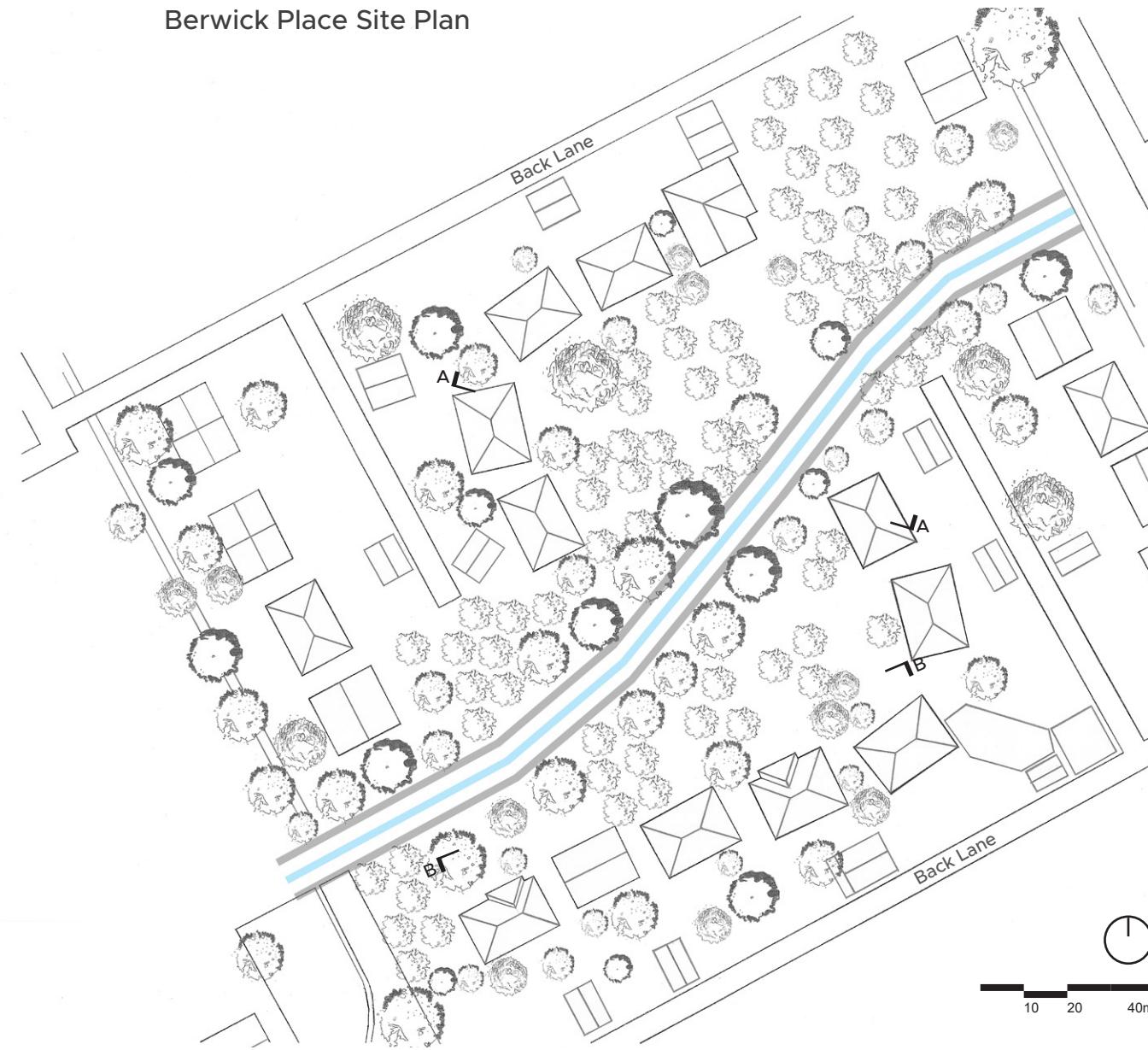
Site Context Parti Diagram

This parti diagram shows the sight-lines from the houses to the central circulation space. Public and private boundaries are created by the houses and yard fences.

Spatial Context

- **Private Space:** Homes and backyards, adjacent public space
- **Public Space:** Existing trees and proposed orchard trees
- **Central Circulation:** Infiltration channel and circulation paths

Berwick Place Site Plan



Existing Density Condition

- Existing canopy is made up of primarily of Green Ash, and some Black Ash
- The infestation of the Emerald Ash Borer is only a moderate concern, management programs are underway to try and prevent the spread

Approximately 10 Years After Planting Orchard

- The city has decided to remove Ash trees from the original canopy, new trees have been planted in the orchard
- The original canopy is now extremely sparse as the Emerald Ash Borer has decimated the population of ash trees within the urban canopy of Winnipeg

Approximately 25 Years After Planting Orchard

- The majority of Ash and Elm trees have been removed from the neighbourhood
- To maintain the density of the orchard, more fruit-bearing trees have been added to the site, some of the original trees have also been replaced

(A) Cross-Path Section

1 2 4m

ORCHARD

EXISTING CANOPY

INFILTRATION CHANNEL

PEDESTRIAN/CYCLIST PATH



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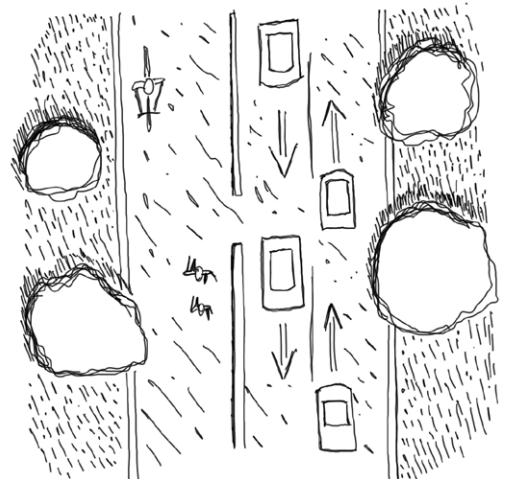
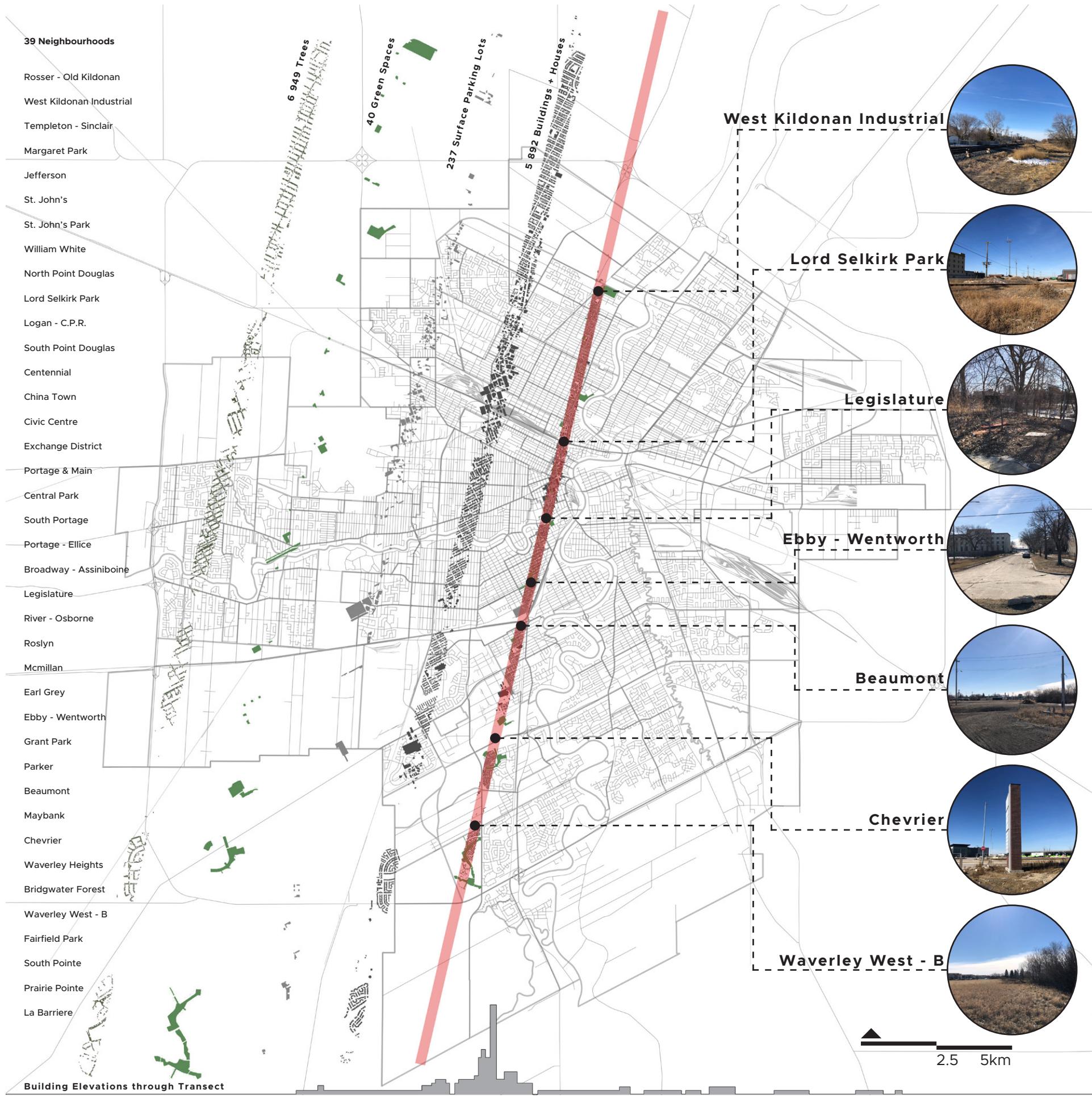
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Reconcile

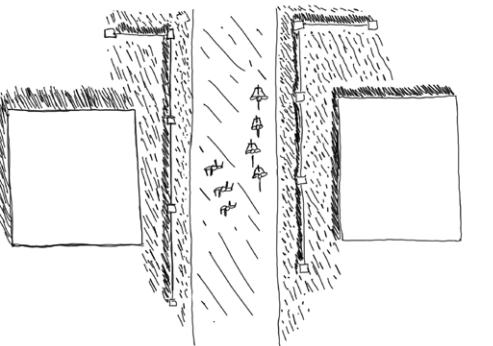
Term Winter 2021 **Class** EVLU 4014 Studio 6
Instructor(s) Marcella Eaton **Duration** 5 Weeks
Programs QGIS, Rhino3D, TwinMotion, Photoshop + Illustrator

Early on in this project a transect through Winnipeg was selected to capture the variety of the environments encountered within Winnipeg. Through this transect, a path is created that will vary in condition based on the environment that it is in. Additionally, three Paradise Gardens were designed in chosen places that address the feelings of a time before, during and after COVID-19. A focus was placed on the design of the after covid (a.c.) garden, located downtown, adjacent to the Logan-C.P.R. railway to the south and Main Street to the East. The design of the garden imagines life after COVID, where people continue to spend their time outside, within a space that affords many uses. The garden is divided naturally with rows of trees that create secluded spaces. Educational and physical activity are characteristics that are encouraged within the proposed programming of the space. With reconciliation in mind, some of these design characteristics are just potential possibilities.

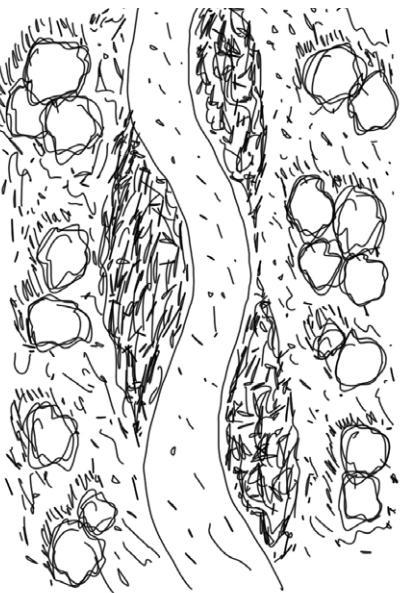
transect trail



road condition
the trail utilizes existing infrastructure to achieve connectivity



neighbourhood/urban condition
additional trails are added creating increased permeability



rural condition
trails in open areas are reinforced with vegetation to define the space

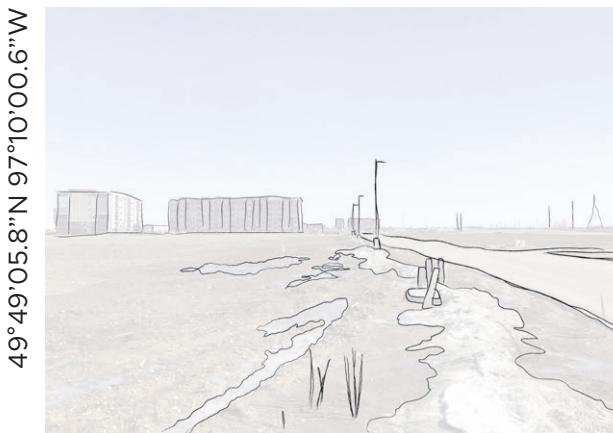
Lord Selkirk Park



Ebby - Wentworth



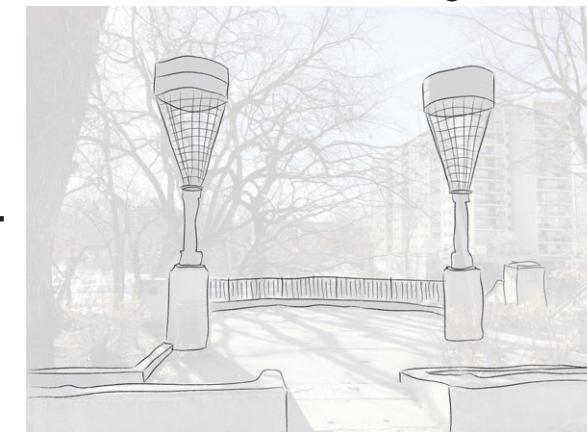
Chevrier



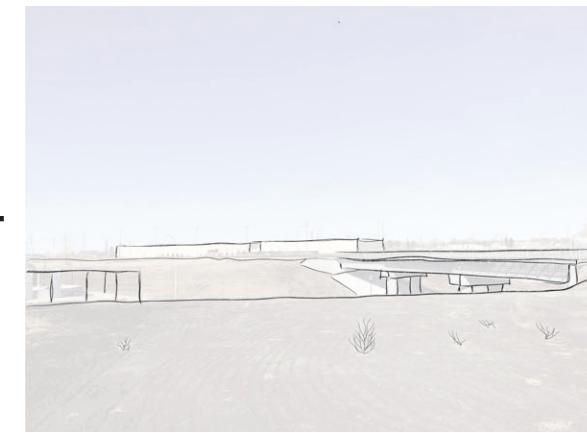
West Kildonan Industrial



Legislature



Beaumont



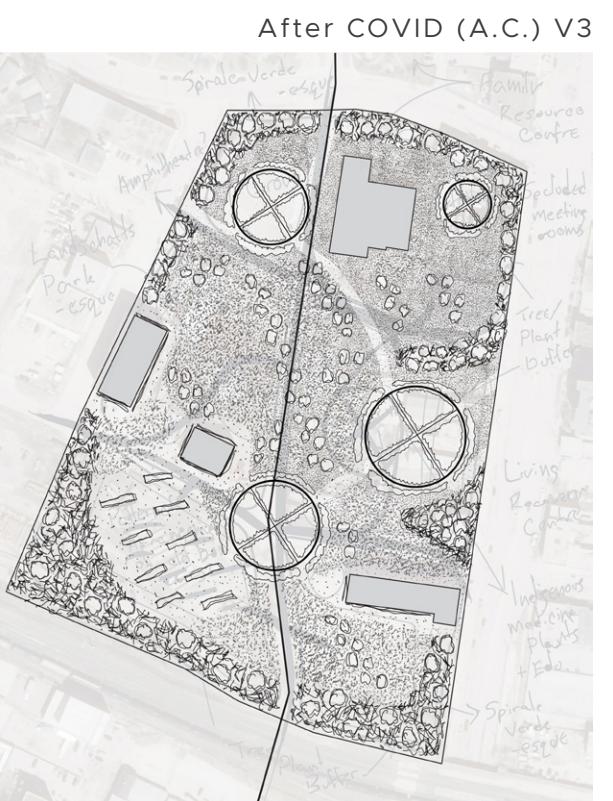
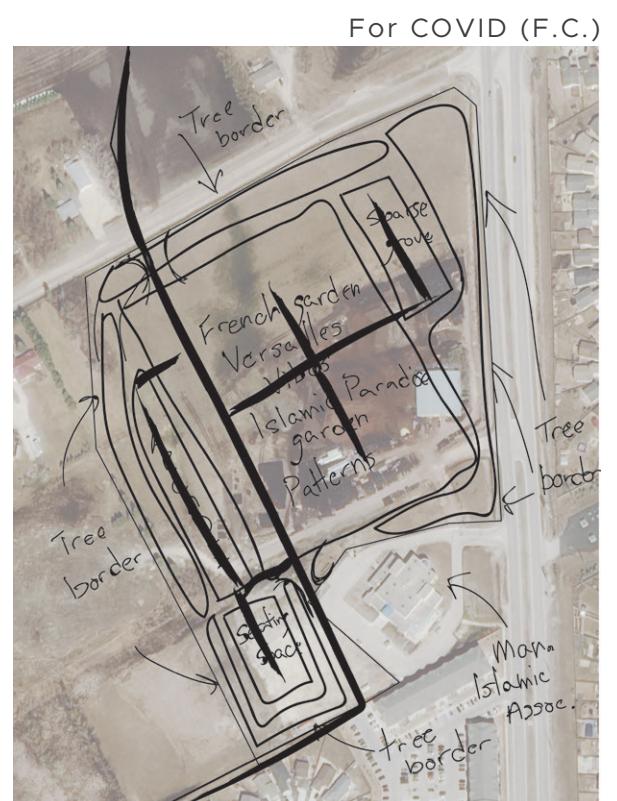
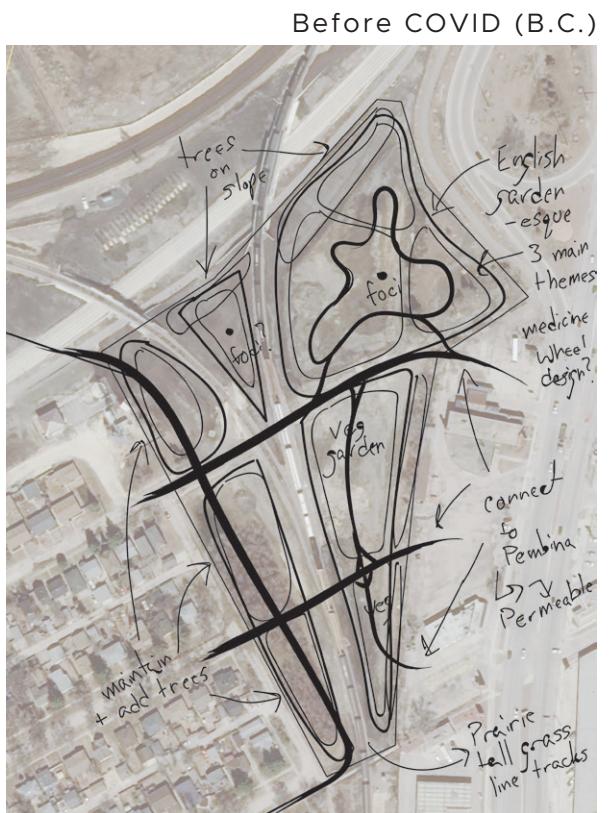
Waverley West - B



After COVID (A.C.)
67 209 m²

Before COVID (B.C.)
38 315 m²

For COVID (F.C.)
87 648 m²



Site Plan Development



For COVID (F.C.) Site Plan

25 50 100m



After COVID (A.C.) Site Plan

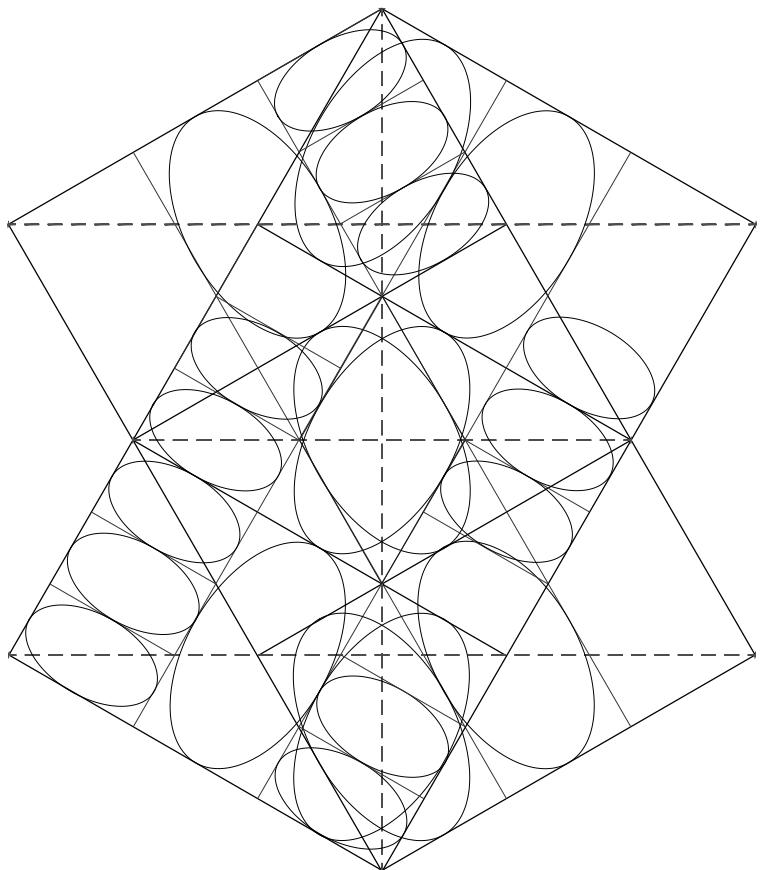
25 50 100m

Geometry of the Design

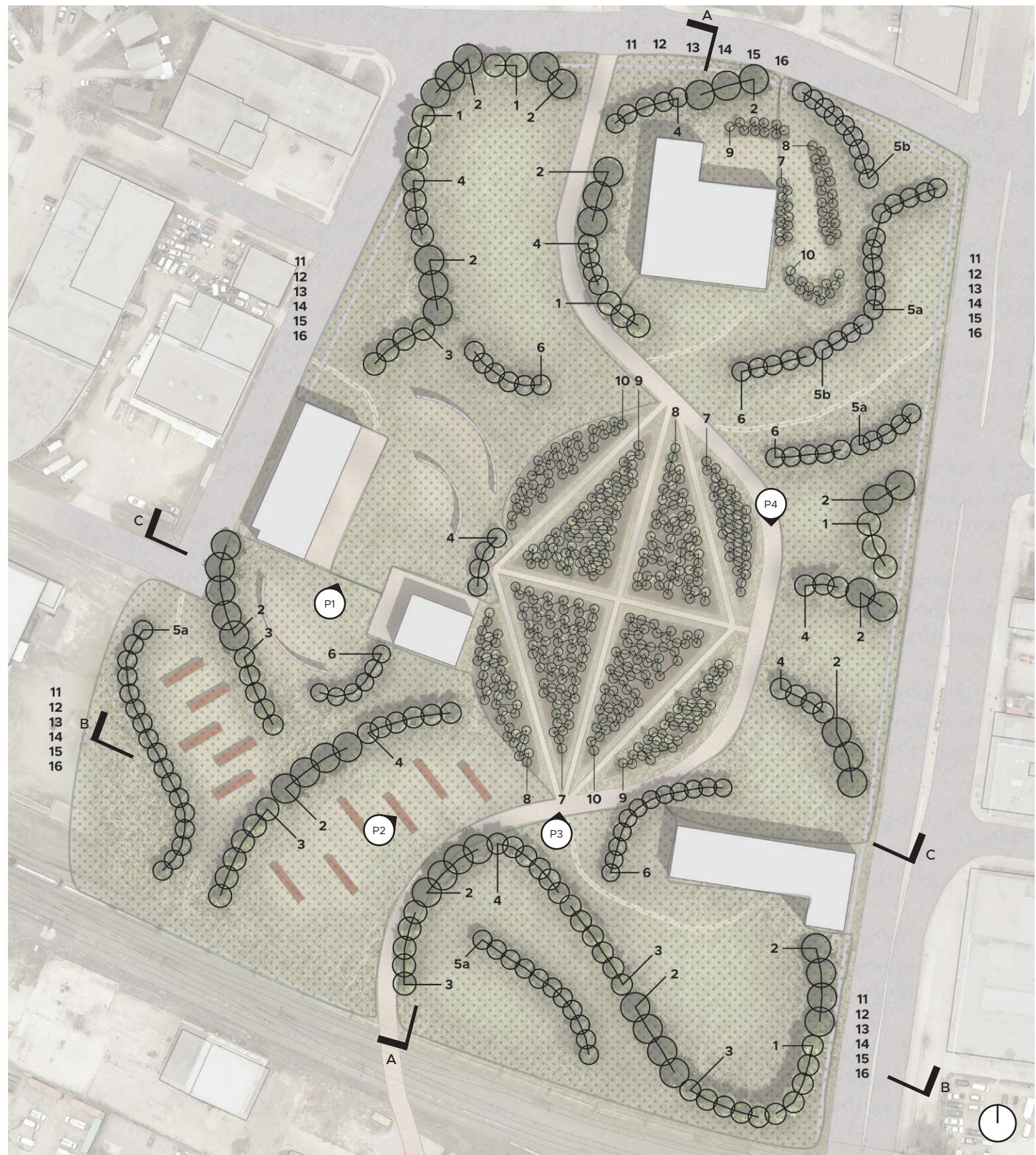
The layout of the garden is based on two overlapping Root Three Rectangles that contain inset Golden Ellipses. These ellipses were used to inform the position of vegetation and spaces within the garden.

The design of the healing garden at the centre of the paradise garden is based on the medicine wheel with equal parts and traditional plantings.

Additional spaces throughout the paradise garden look to educate individuals who may occupy the garden, as well as provide space for recreational activities for all ages.



Deciduous Trees	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
American Linden	<i>Tilia americana</i>	1	16	☀️	💧	12m	25m	As Shown
Bur Oak	<i>Quercus macrocarpa</i>	2	42	☀️	💧	20m	25m	As Shown
Manitoba Maple	<i>Acer negundo</i>	3	31	☀️	💧	12m	15m	As Shown
Trembling Aspen	<i>Populus tremuloides</i>	4	36	☀️	💧	8m	20m	As Shown
Coniferous Trees	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
Colorado Spruce	<i>Picea pungens</i>	5a	44	☀️	💧	8m	20m	As Shown
Eastern White Pine	<i>Pinus strobus</i>	6	34	☀️	💧	12m	25m	As Shown
White Spruce	<i>Picea glauca</i>	5b	13	☀️	💧	6m	20m	As Shown
Deciduous Shrubs	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
Diamond Willow	<i>Salix bebbiana</i>	7	118	☀️	💧	1.5m	4m	As Shown
Coniferous Shrubs	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
Common Sage	<i>Salvia officinalis</i>	8	123	☀️	💧	1m	0.5m	As Shown
Juniper	<i>Juniperus communis</i>	9	122	☀️	💧	4m	2m	As Shown
Perennials	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
Canadian Mint	<i>Mentha canadensis</i>	10	112	☀️	💧	1m	1m	As Shown
Prairie Grasses	Scientific Name	Code	Quantity	Sun	Soil	Spread @ Maturity	Height @ Maturity	Spacing
Indian Grass	<i>Sorghastrum nutans</i>	11	Natural Occurrence	☀️	💧	As Shown	1m	As Shown
Little Bluestem	<i>Schizachyrium scoparium</i>	12	Natural Occurrence	☀️	💧	As Shown	0.6m	As Shown
Prairie Dropseed	<i>Sporobolus heterolepis</i>	13	Natural Occurrence	☀️	💧	As Shown	0.6m	As Shown
Side Oats Grama	<i>Bouteloua curtipendula</i>	14	Natural Occurrence	☀️	💧	As Shown	0.7m	As Shown
Sweetgrass	<i>Hierochloe odorata</i>	15	Natural Occurrence	☀️	💧	As Shown	0.6m	As Shown
Switch Grass	<i>Panicum virgatum</i>	16	Natural Occurrence	☀️	💧	As Shown	1m	As Shown



Planting Plan and Key Plan



A Section cut south to north through site



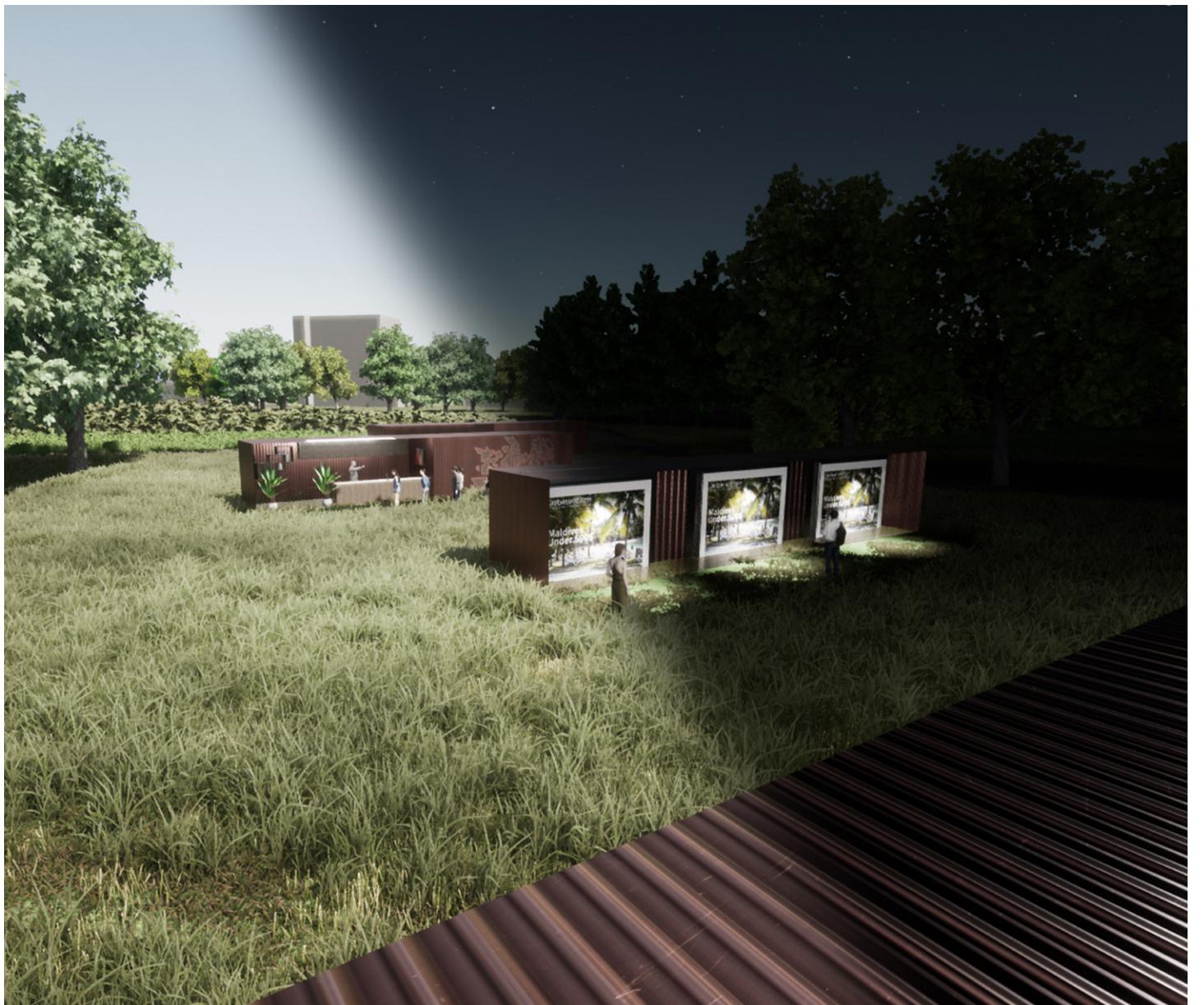
B Section cut through reclaimed shipping containers and clearing



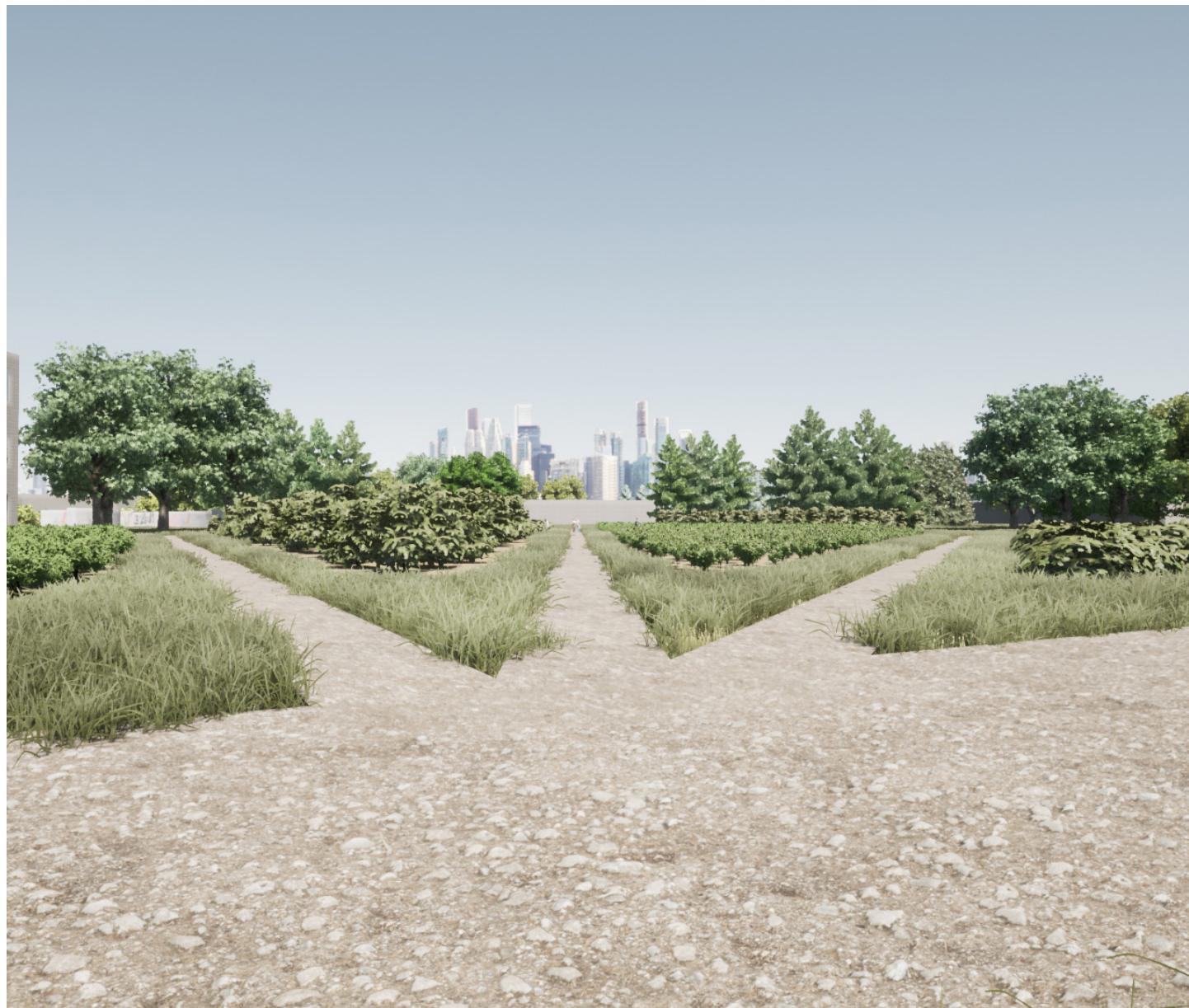
C Section cut through clearing and healing garden



P1 View of clearing between two remaining buildings



P2 View of space around reclaimed shipping containers



(P3) View of healing garden facing north



(P4) View of transect path facing south through site

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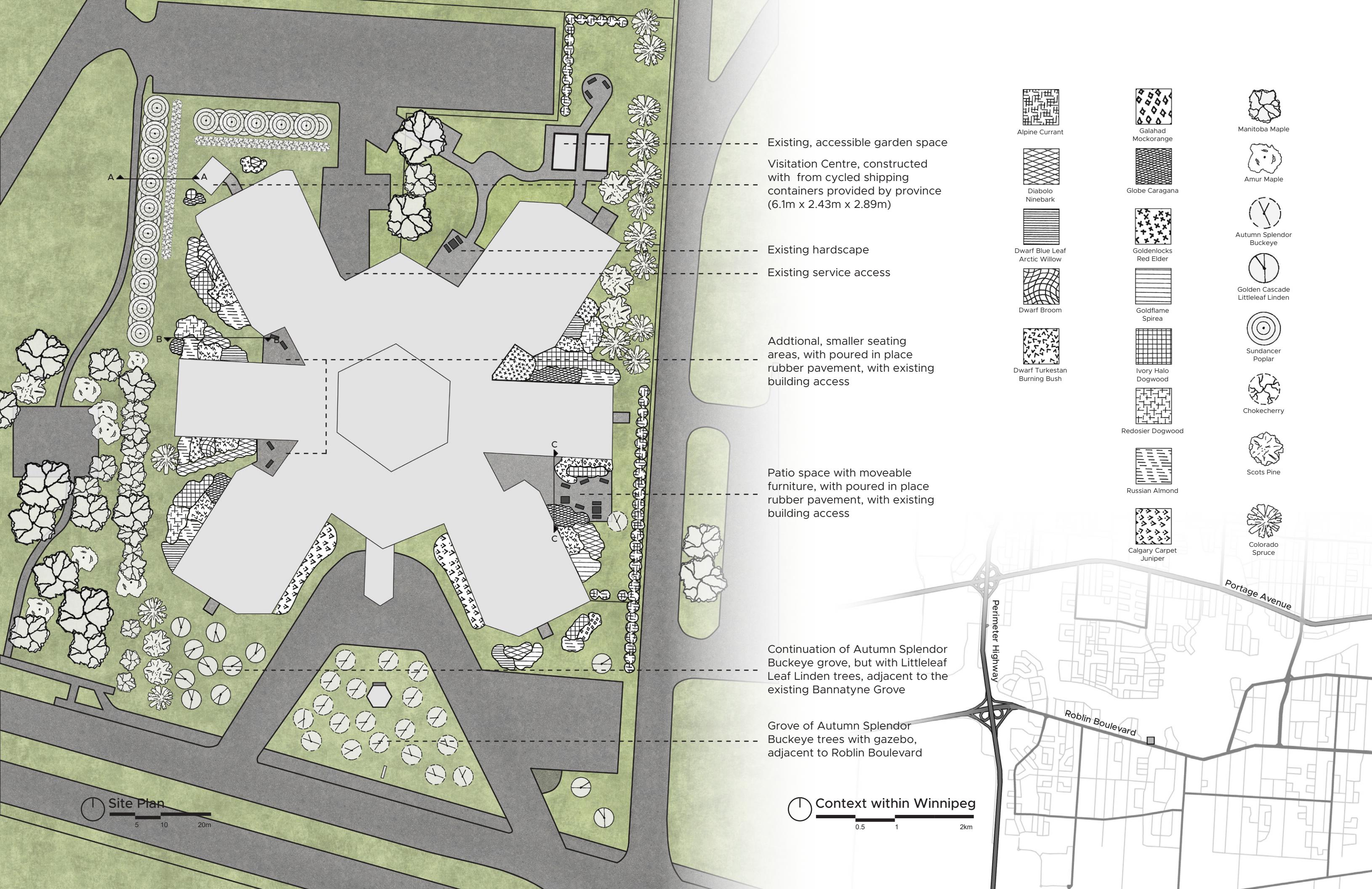
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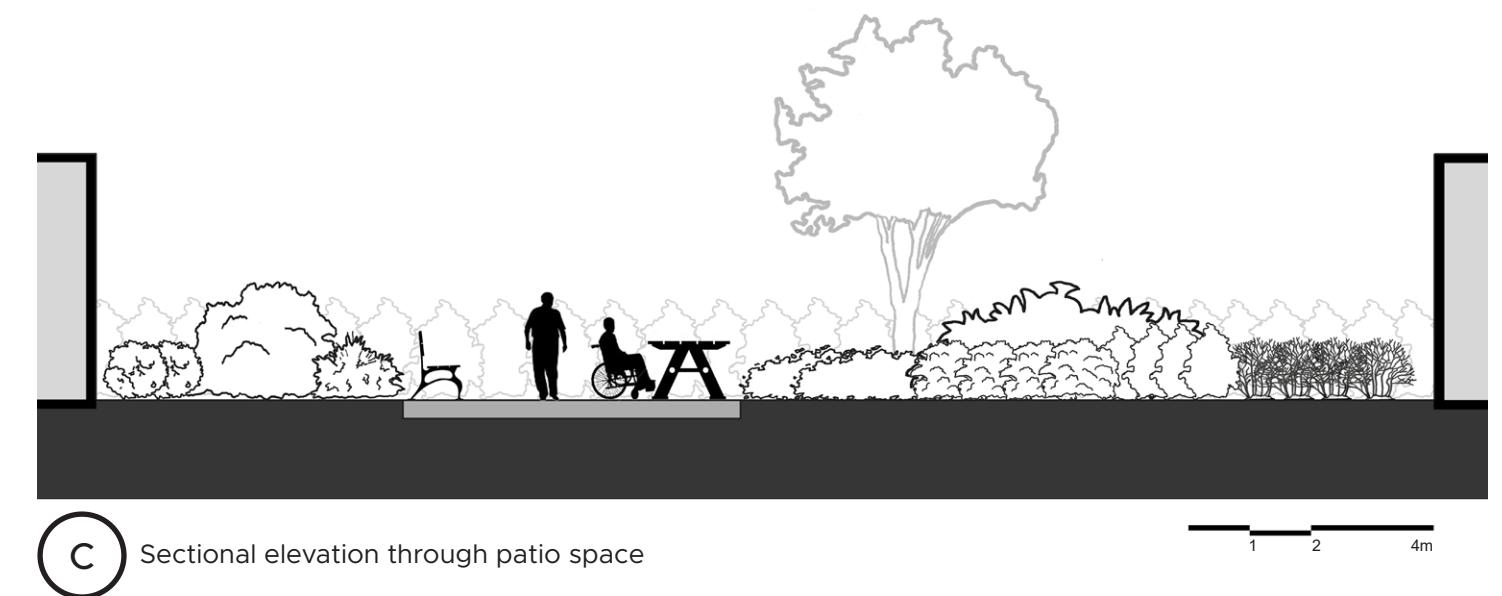
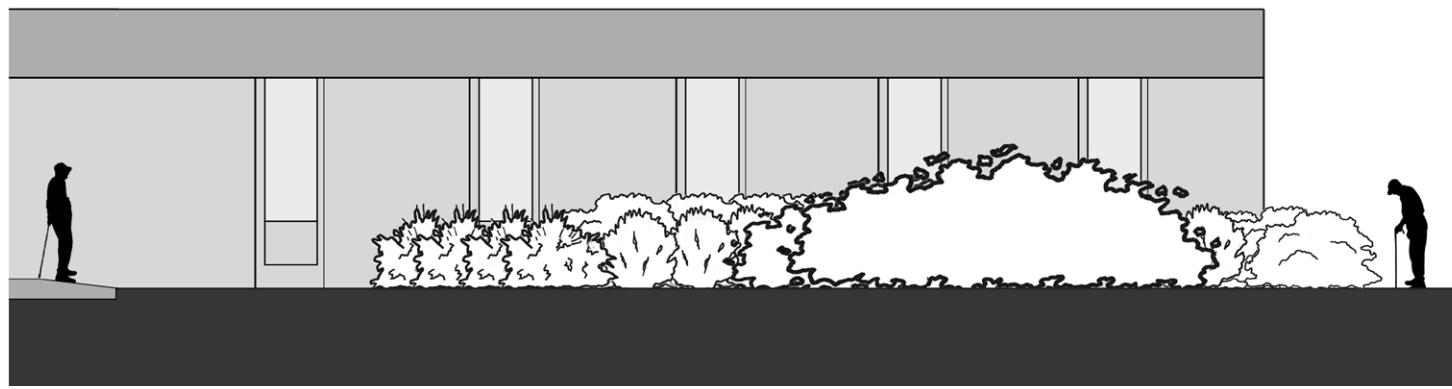
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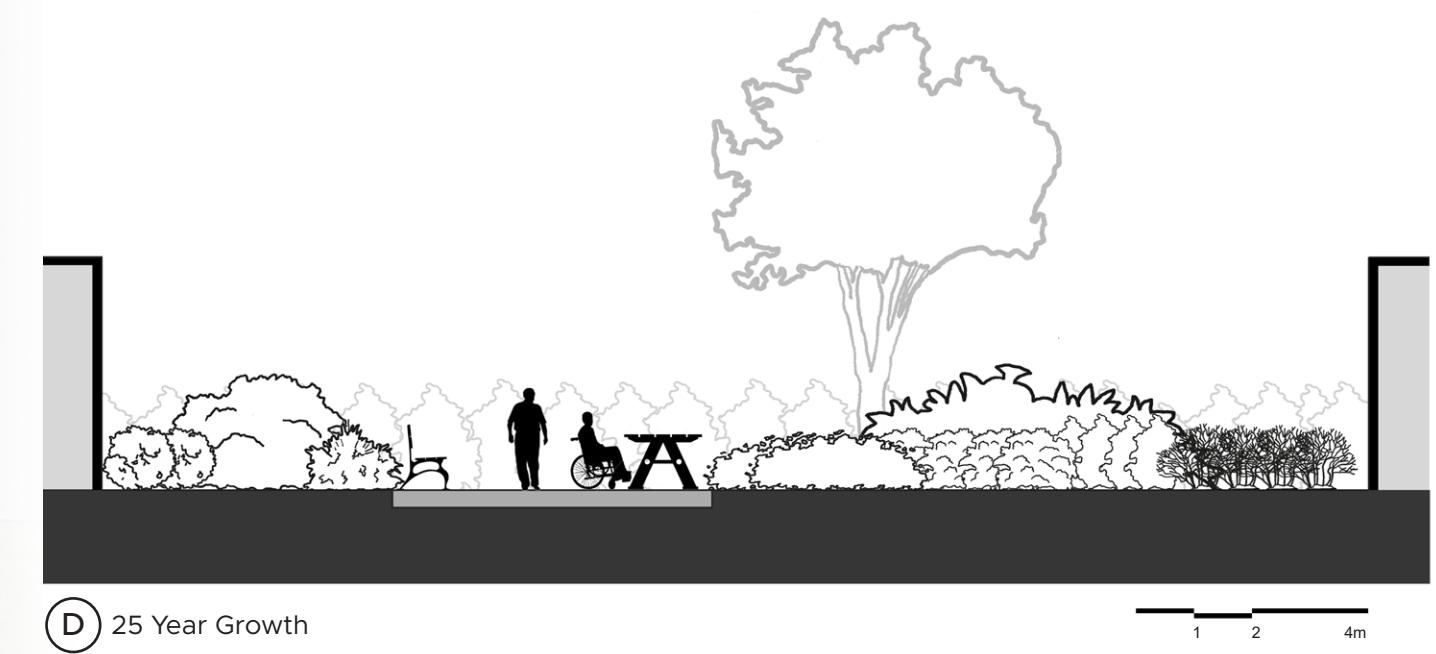
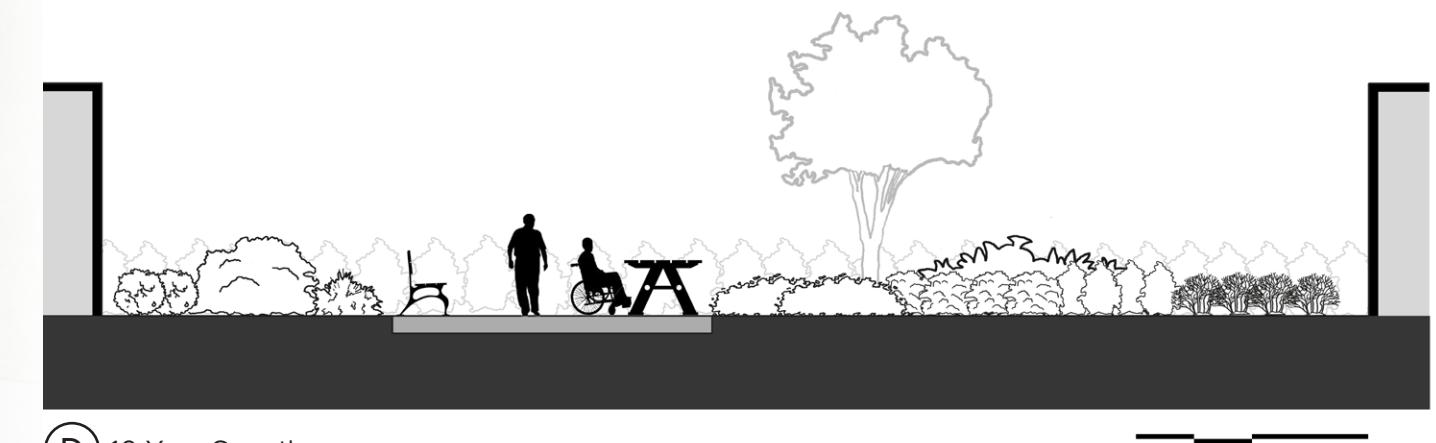
Revera Garden Revival

Term Fall 2020 **Class** EVLU 4012 Studio 5
Instructor(s) Brenda Brown **Duration** 4 Weeks
Programs Hand Drawing, Rhino3D, Photoshop + Illustrator

For this project, a list of select care homes in Winnipeg was provided and it was expected that one would be chosen to be analyzed. Charleswood Revera Care Home on Roblin Boulevard was chosen and a design was developed in response to the landscape around the site. The design intends to enhance the surrounding landscape of Revera Charleswood. An existing park, specifically Bannatyne Grove to the west, was used as inspiration for site development since it was clear that individuals whose windows had a view of the grove tended to open their curtains and take in the views. This is compared to other areas on-site where there was little or no vegetation, where nearly all curtains were closed. Various shrub species are introduced to the site to add visual interest and provide some degree of separation from the adjacent roadways. A new patio space, in addition to the existing northeast recreational area, is also specified. This space allows residents, staff, and potential visitors to experience the landscape up close.







Legend:

- Existing Deciduous Tree
- Existing Coniferous Tree
- Proposed Deciduous Tree
- Proposed Coniferous Tree
- Deciduous Shrub Hatch
- Coniferous Shrub Hatch



Alpine Currant hedge creates a visual barrier between patio space and side road

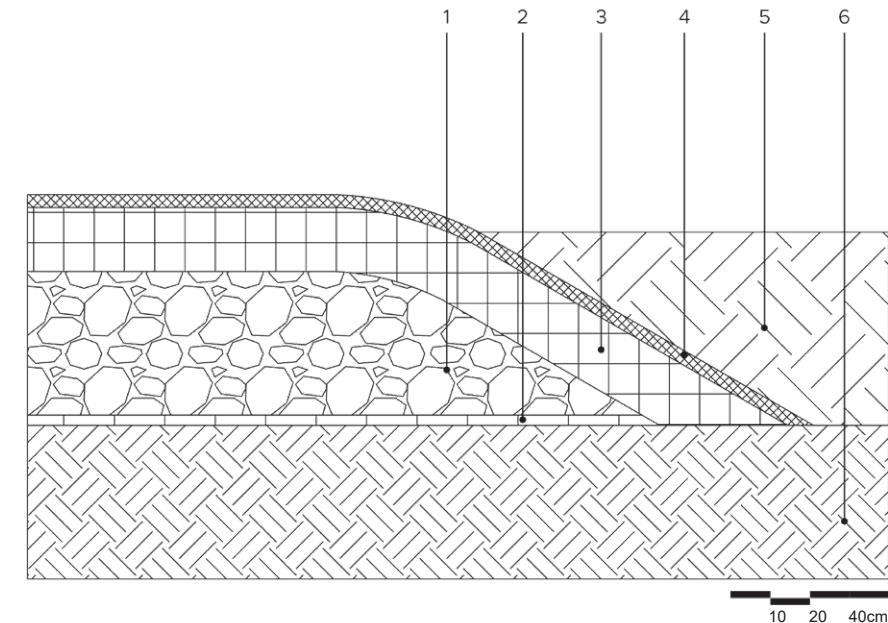
Planted shrub bed provides visual interest to interior and exterior space

Shrubs fill the bed and flow over the paved edge of the patio

Poured in place rubber pavement

Light, moveable patio furniture

Autumn Splendor Buckeye provides shade in the late morning/early afternoon



Pour in Place Rubber Pavement

The top EPDM rubber layer can withstand the typical weather conditions that are experienced in Winnipeg and can flex and move slightly during freezing and thawing periods. The SBR Impact Layer suggested in the drawing above is created at a specific thickness based on a Critical Fall Height.

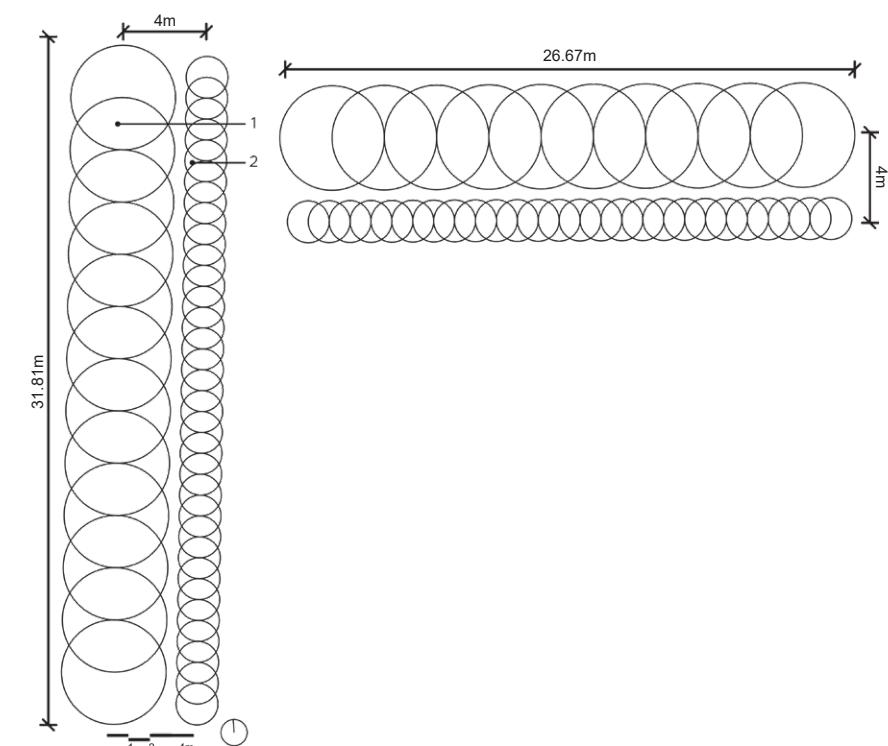
To properly anchor the material and it's base layers, an optional "gutter" may be created to prevent any disruption of the base materials, and ensure a proper seal for the surface layer.

Section of Rubber Pavement Edge

1. Compact Stone Base (15.24 cm)
2. Geotextile Fabric (1 cm)
3. Styrene-Butadiene Rubber (SBR) Buffing Impact Layer (6.35 cm)
4. Ethylene Propylene Diene Monomer (EPDM) Rubber Top Layer (1.27 cm)
5. Compacted Top Soil
6. Compacted Soil

Northwest Shelterbelt

Sundancer Poplar was chosen for the deciduous tree for this shelterbelt based on its mature spread and height. Chokecherry was chosen similarly, for its spread mainly. It also tends to sucker out, so the understory of the shelterbelt should eventually become dense. These two species were also chosen for their fall interest.



Plan of Northwest Shelterbelt

1. Sundancer Poplar (*Populus 'ACWS151'*) (4m mature spread)
2. Chokecherry (*Prunus virginiana*) (2m mature spread)

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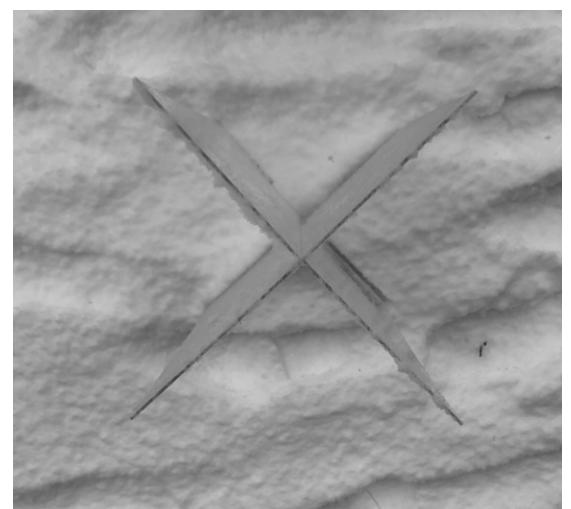
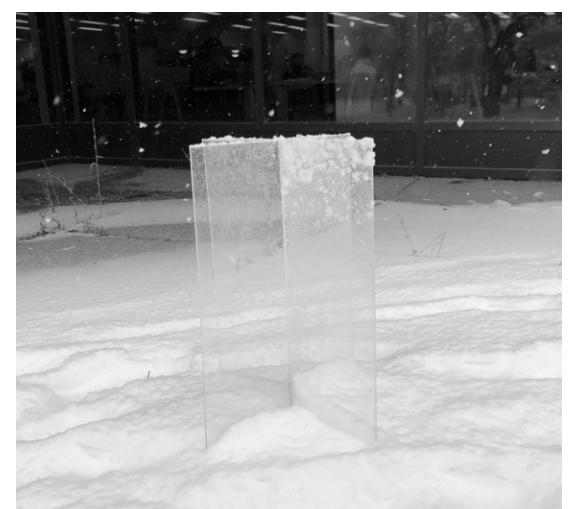
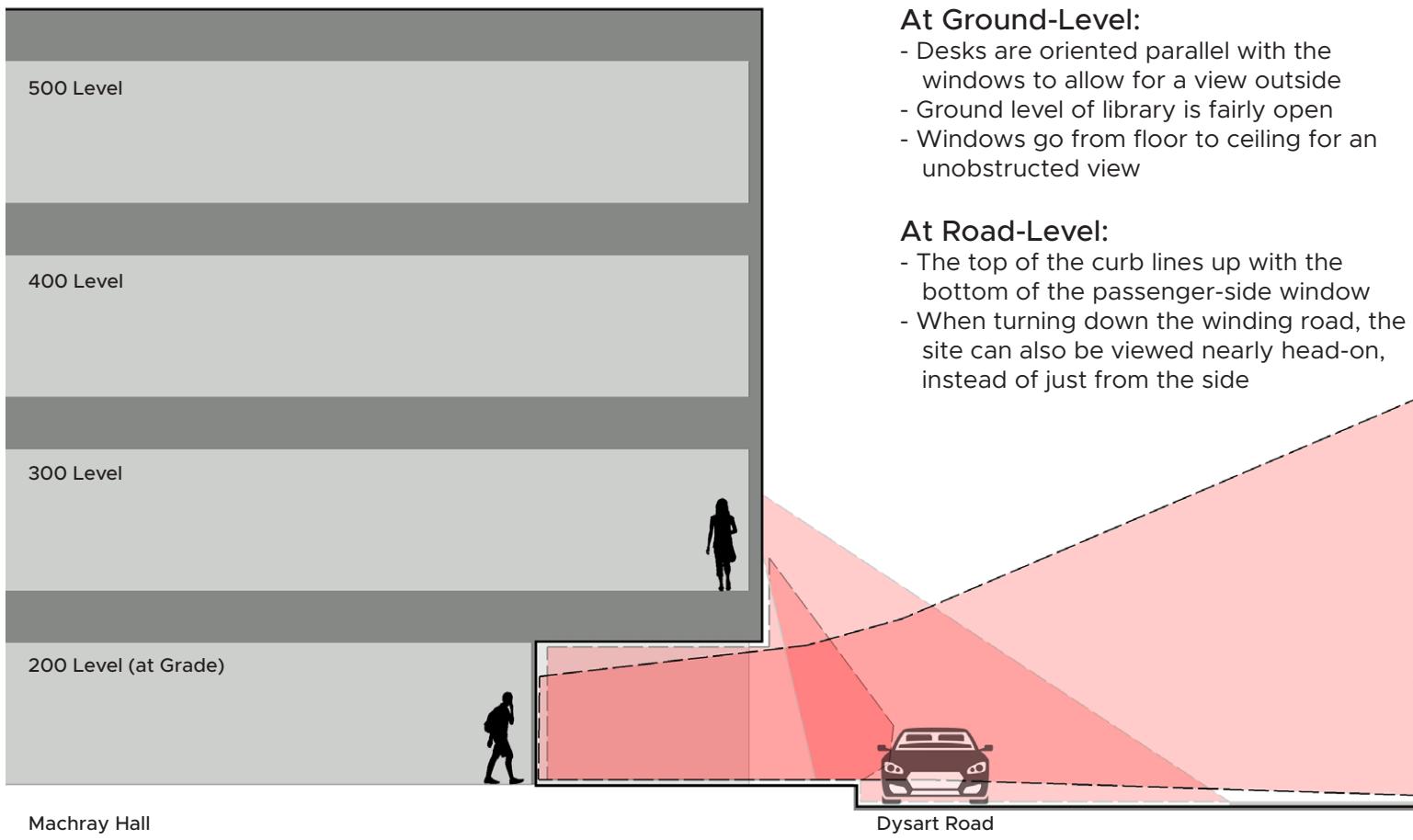
Snow Garden

Term Winter 2020 **Class** EVLU 3008 Studio 4

Instructor(s) Brenda Brown **Duration** 4 Weeks

Programs Modelling, Photoshop, Illustrator, AutoCAD + Rhino3D

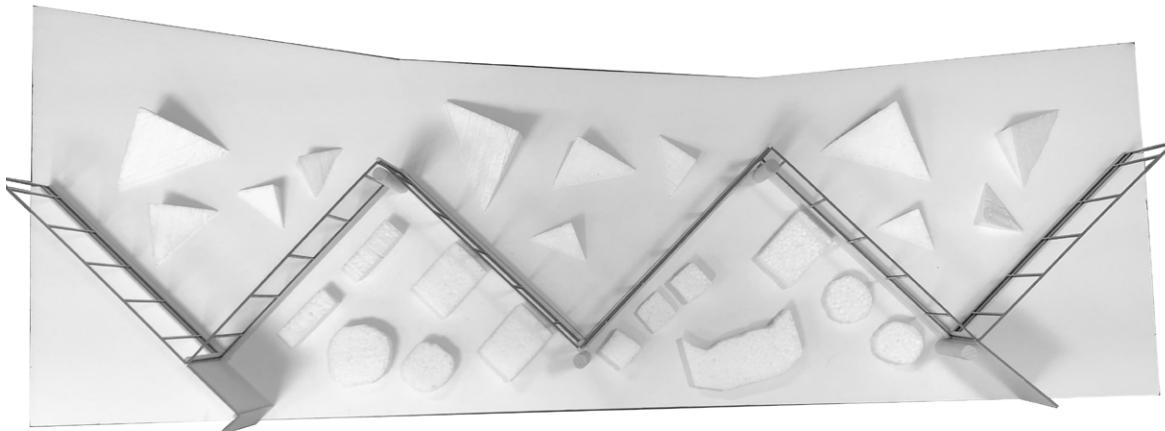
This project began with a rigorous observation and analysis of the interior and exterior environments of our chosen site. Upon constructing a model of the interior portion of the site, a separate exterior portion was added to test layouts of our intervention. Following this, studio reviews were done and a vote was conducted to see which projects would be built. This project was chosen within the first round and was successfully constructed within sixteen hours by a team of three people. This team consisted of Bryce Stovin, Matthew Glowacki, and myself. The shapes were constructed by packing snow into a form that was made using Polystyrene Rigid Insulation. Once the forms were removed the shape was touched up slightly.



Scale 1:5

Scale 1:15

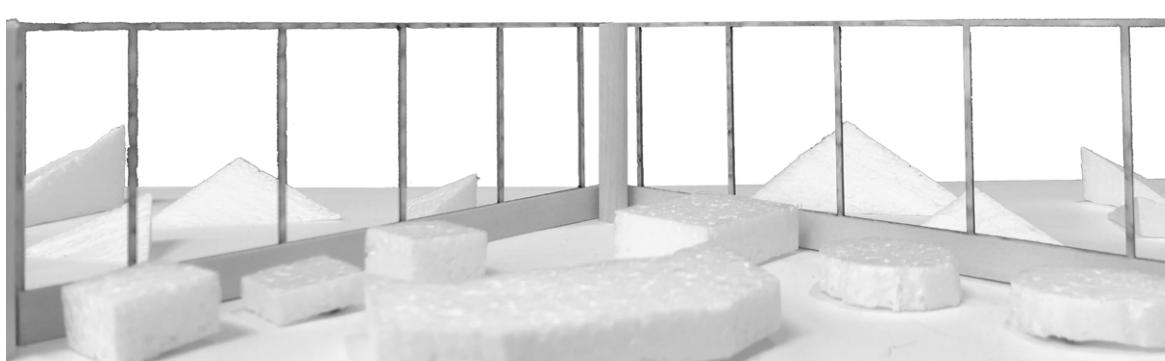
Foam Working Model - Final Layout



Plan view of foam model (1:40)

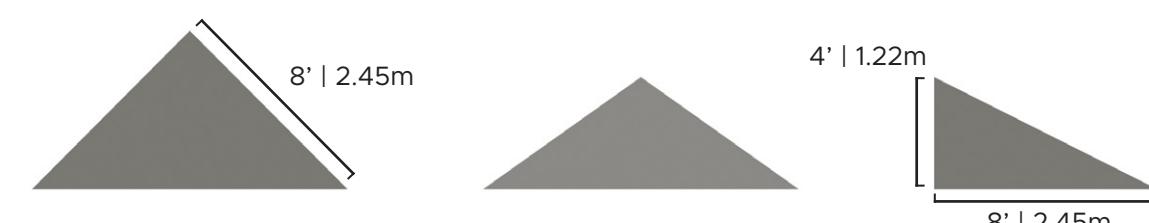


Interior view looking out (Left half)



Interior view looking out (Right half)

Measurements



Construction Plan

Timeline

Snow Gathering - 3 Hours (Total)
Mold Packing - 1 Hour (Individual)
Mold Setting - 1 Hour (Individual)
Total Time for Construction:
Approximately 13 Hours

Required Number of People

(2 Individuals + Myself)
1 Shoveler
1 Packer

Required Materials

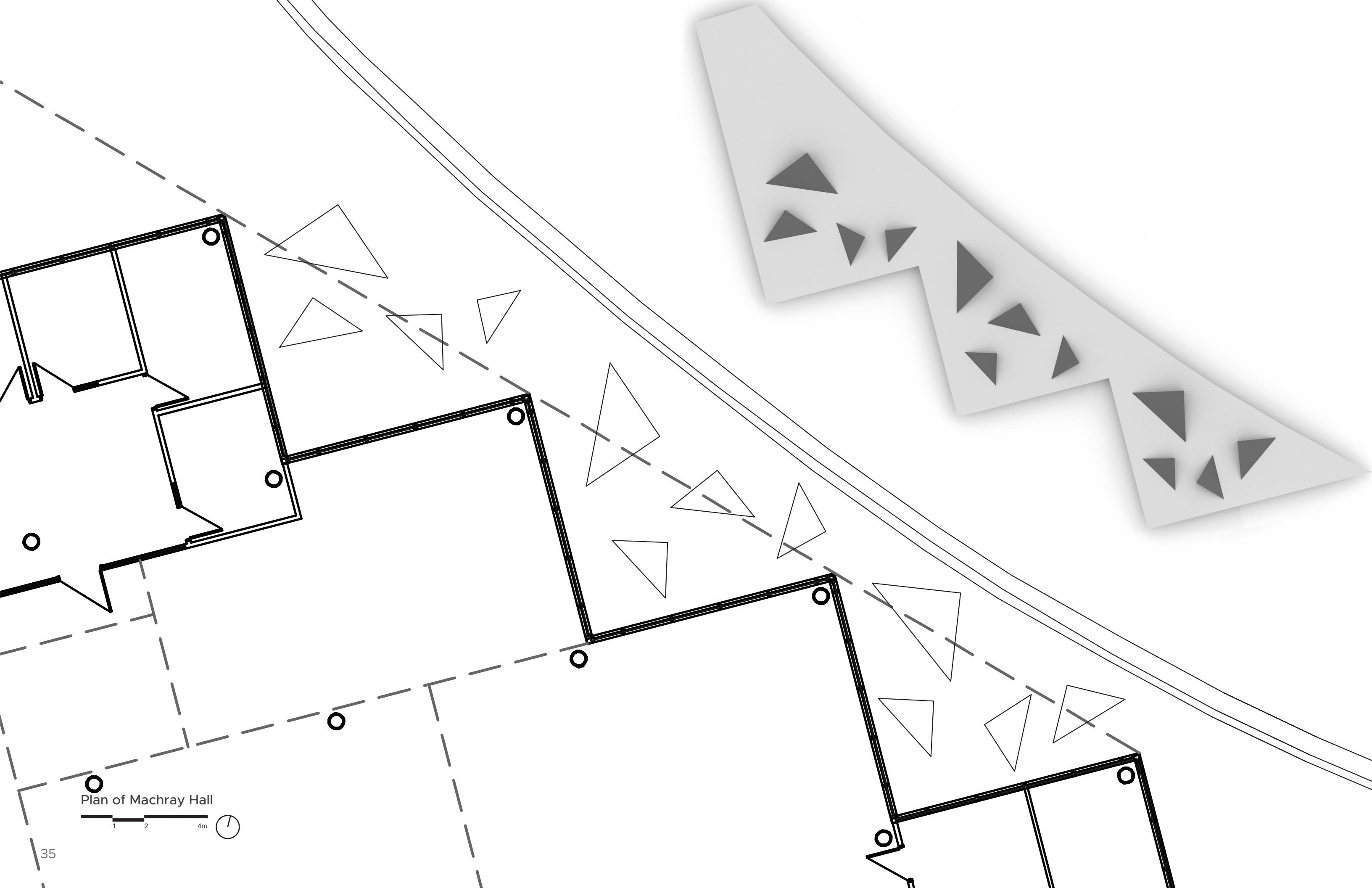
1-1/2 Rigid Insulation 4' x 8' Sheet (4)
1/2" Plywood, 1' x 1' Piece (2)
Constructed Packer (2)

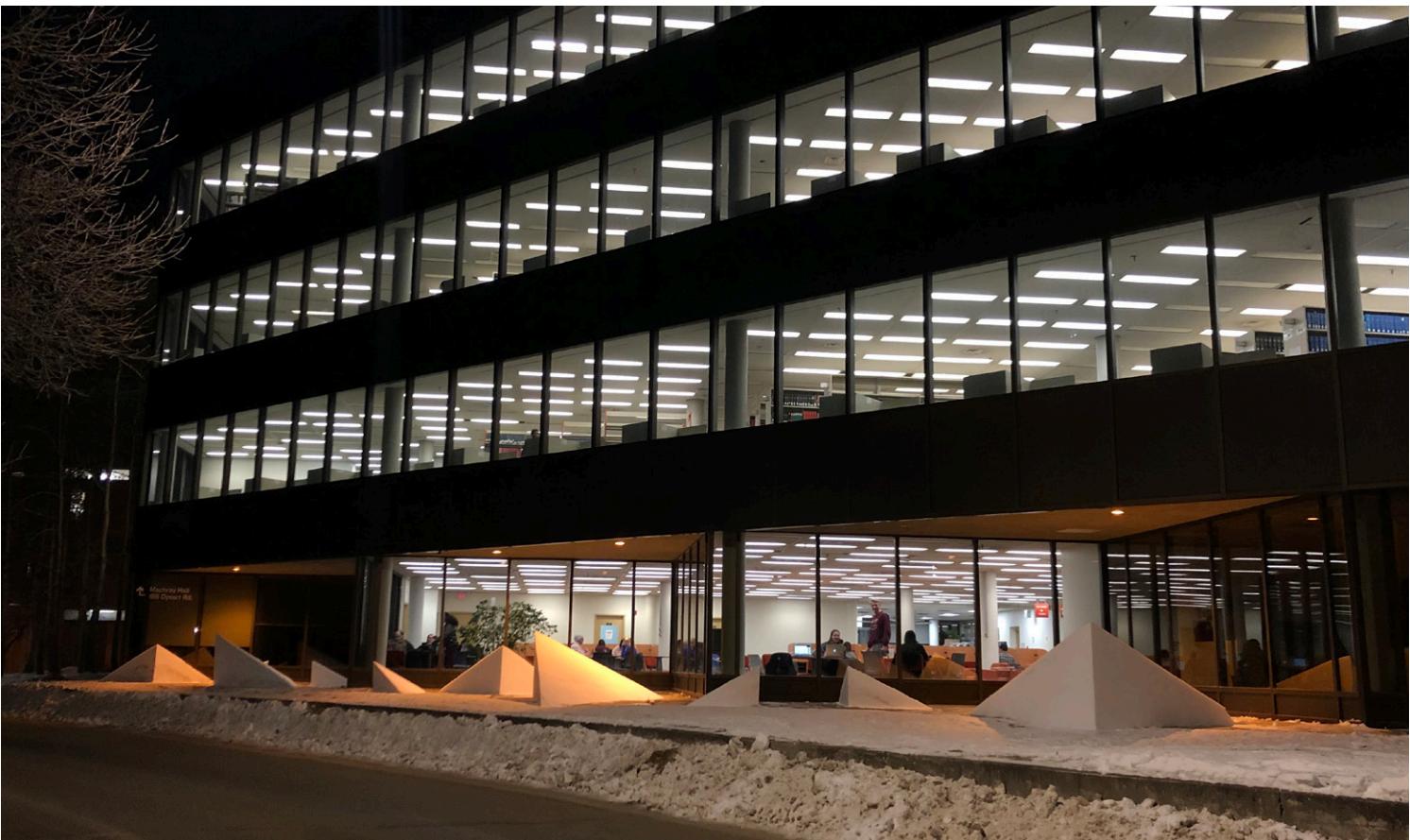
2 Shovels

Arrangement

2' x 4' Shape (5.3 cu.ft)
3' x 6' Shape (18.0 cu.ft)
4' x 8' Shape (42.7 cu.ft)

Total Volume of Snow
Approximately 213.9 Cubic Ft





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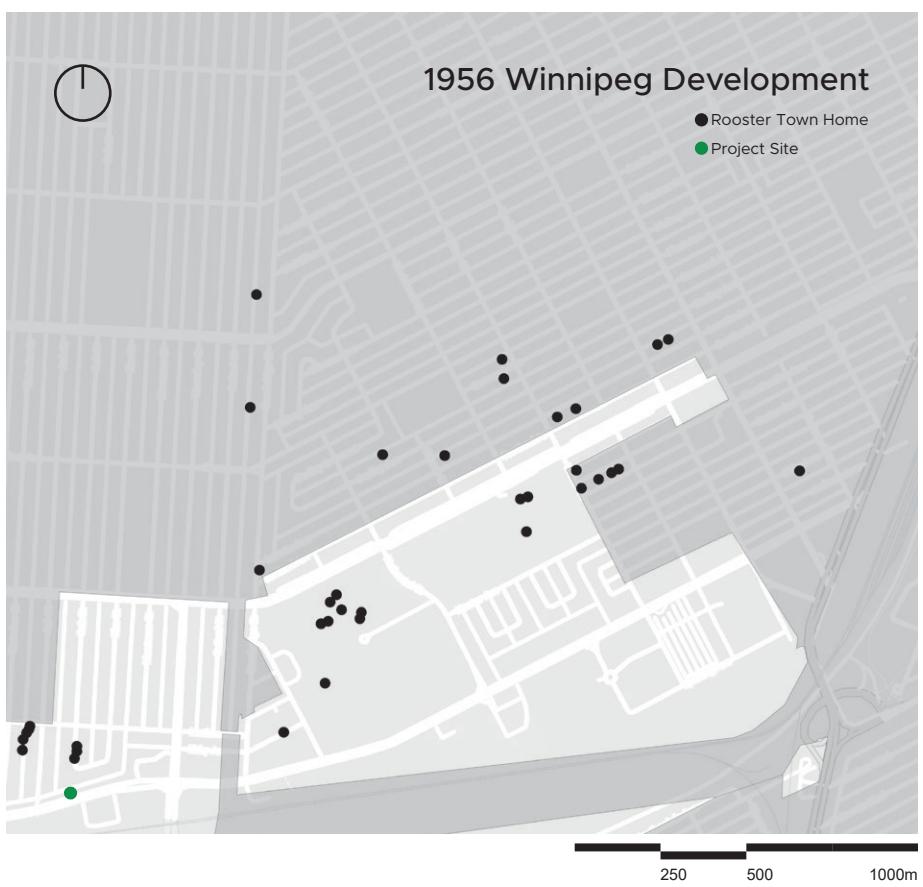
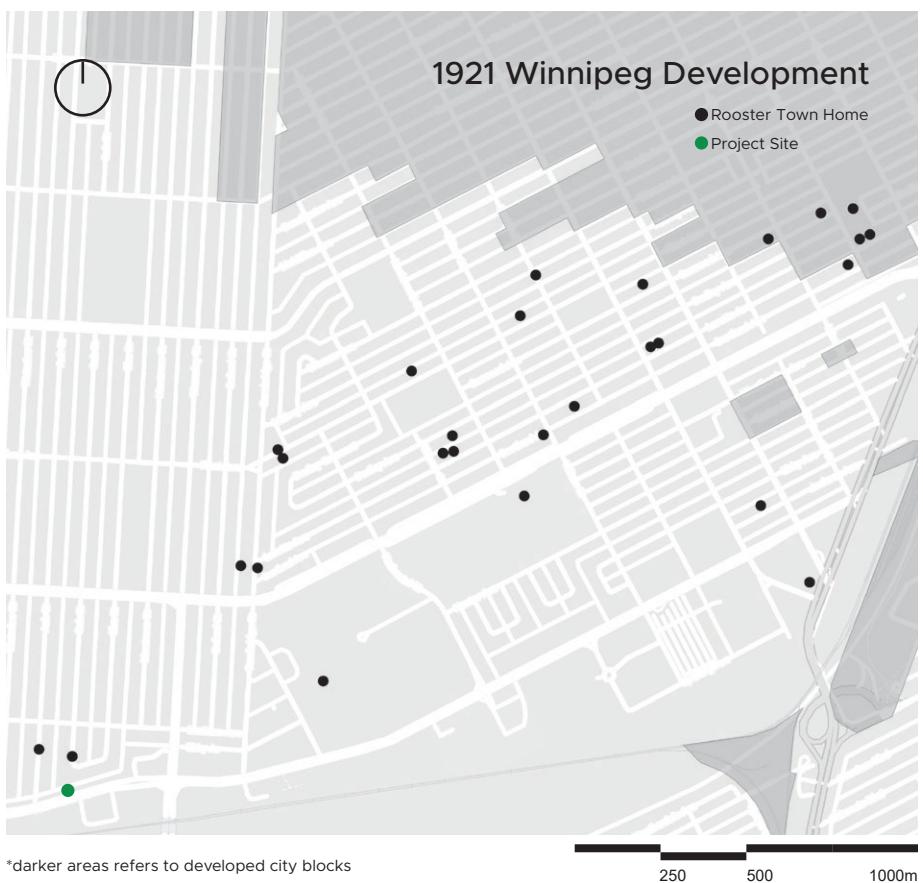
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Hidden Communities

Term Fall 2020 **Class** EVLU 4012 Studio 5
Instructor(s) Brenda Brown **Duration** 2 Weeks
Programs Modelling + Illustrator

The premise for this project was to pick a site within the city, selecting an element from it to emphasize or enhance. The site that was selected was along a buffer boulevard on the north side of Taylor Avenue in South River Heights. This area of Winnipeg is where a previous community of primarily Métis people resided but were slowly pushed away as Winnipeg developed through the 1920s into the 1960s. Inspired by Charles Simonds *Dwellings*, this project is meant to raise a discussion. It is tucked away, somewhat hidden, and meant to create a discussion by those who find it, as to why it is there and what its story is.



Crafting

Sticks and branches were collected from the site. A pinning method was used to keep the walls together. Hemp twine was knotted to link smaller twigs to create the roof.



Photomerge of the three log structures positioned on-site

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Miscellaneous Work

Term Summer 2019, Summer 2020 + Summer 2021

Programs Photoshop, AutoCAD, Rhino3D + TwinMotion

My miscellaneous work focuses on the translation and reimagination of my direct physical environments. This has allowed me to experiment with methods of representation, as well as contribute directly to the design process for several current projects within or adjacent to these environments.

Cottage Deck Extension

Located in the cottage area of Grand Beach Provincial Park, the original cottage was constructed in the 1970s. Two previous additions had been constructed in 1990 - 91 to the west and south sides of the cottage.

Prior to the construction of the original structure in the 1970s, another cottage known as the 'Nifty Inn' had existed in southeast corner of the lot, roughly where the existing shed is located.

This extension of the deck would add approximately 144 sq ft. of deck surface to the south side of the cottage. In addition to the extension, the existing deck area would be screened in.

Material Estimation

Beams

2 x 6 x 12' (2)
2 x 8 x 8' (4)
2 x 8 x 16' (4)

Deck Surface

2 x 3 x 8' (2)
2 x 6 x 8' (12)
2 x 6 x 12' (19)
2 x 6 x 16' (12)

Ledger

2 x 8 x 12' (1)
2 x 8 x 16' (1)

Railing

2 x 4 x 12' (4)

* Front Stairs
are pre-built

Posts and Footings

6 x 6 x 8' Treated Post (1)
18 x 18 x 4 Footing Pad (5)

Joists

2 x 6 x 12' (11)

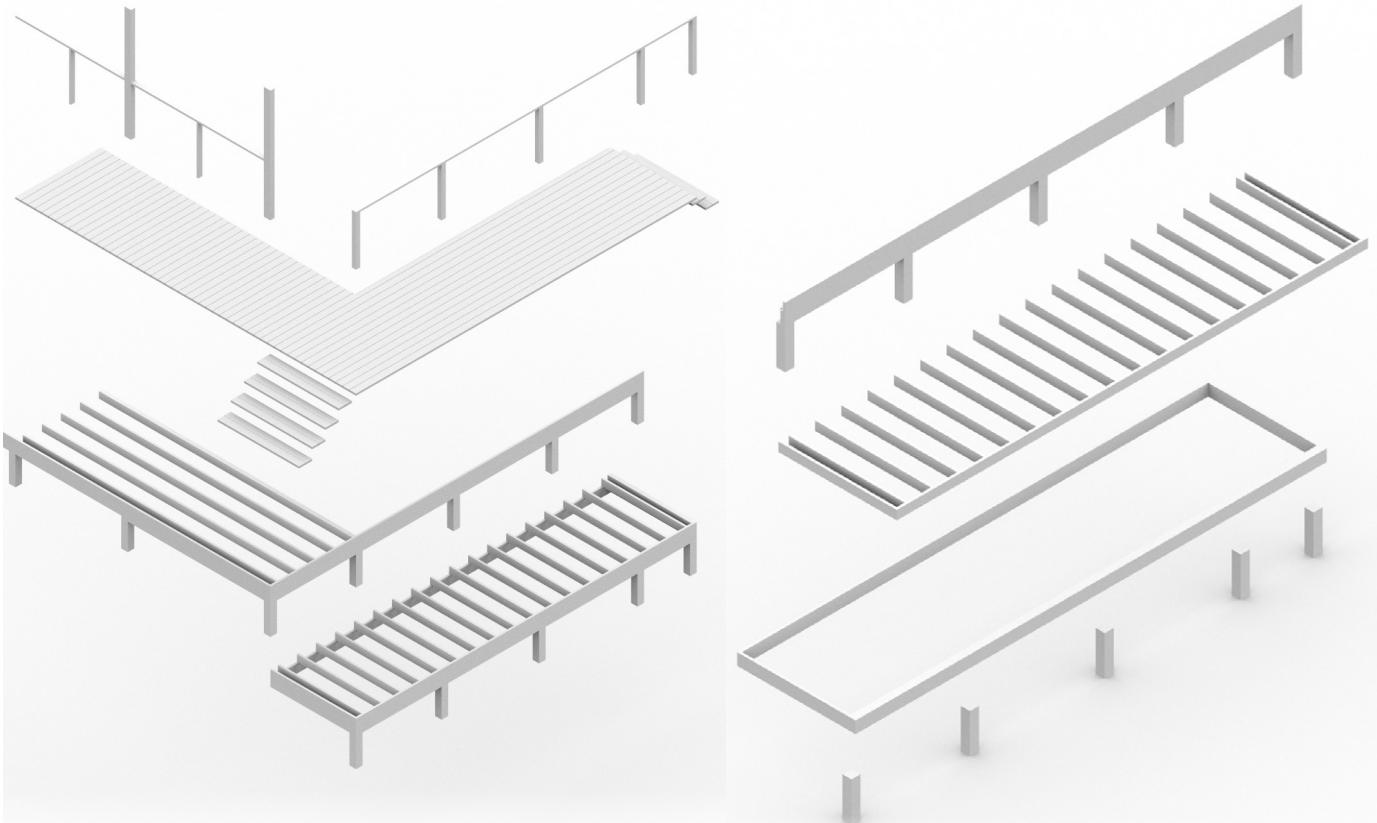
Fasteners

2 x 6 Joist Hangers (19)
2 x 6 - 2 Joist Hangers (1)
1/2" x 5" Galv. Lag Screws (18)
1/2" Galv. Flat Washers (18)
2-1/2" Deck Screws (± 1500)

Back Stairs

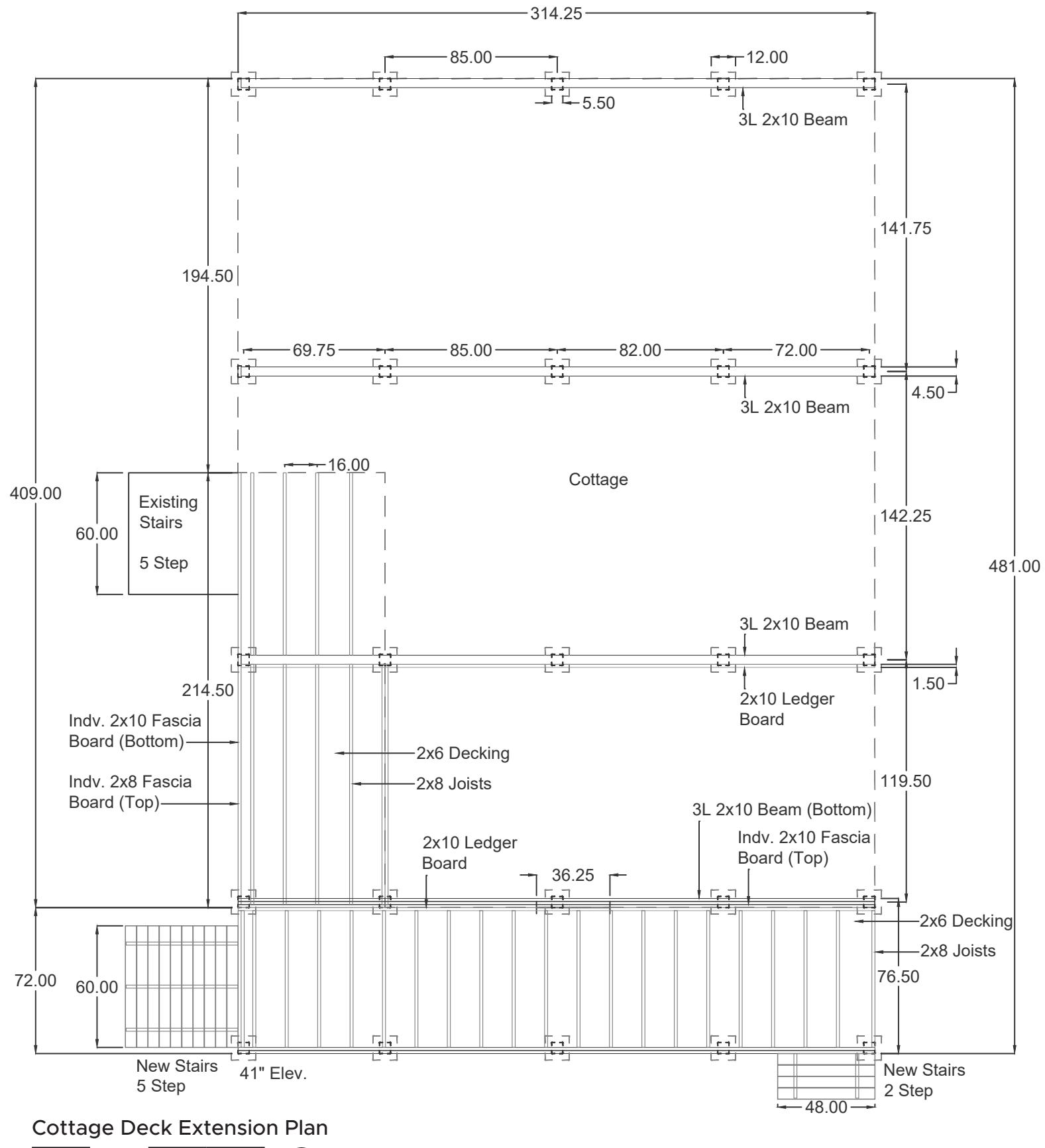
2 Step Metal Stringer (3)
2 x 6 x 12' (2)
3/8" x 2-1/4" Carridge Bolts (24)
3/8" Flat Washer (24)
3/8" Hex Nut (24)

Existing Conditions



Proposed Conditions

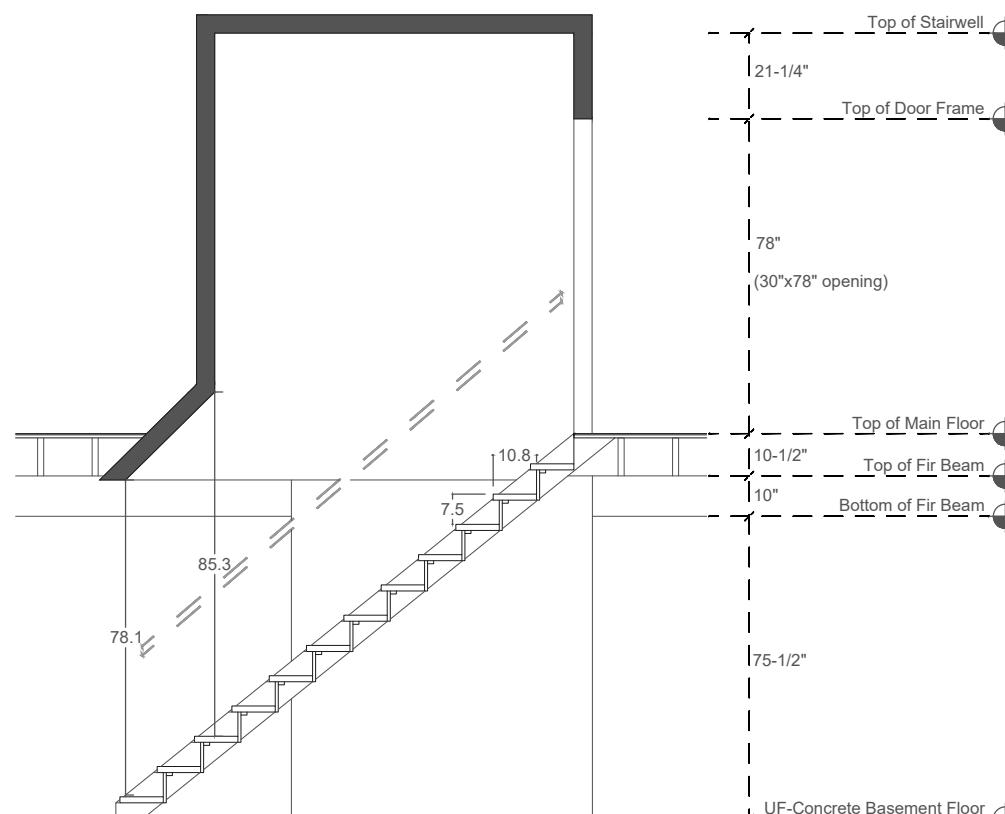




Basement Renovation Plan

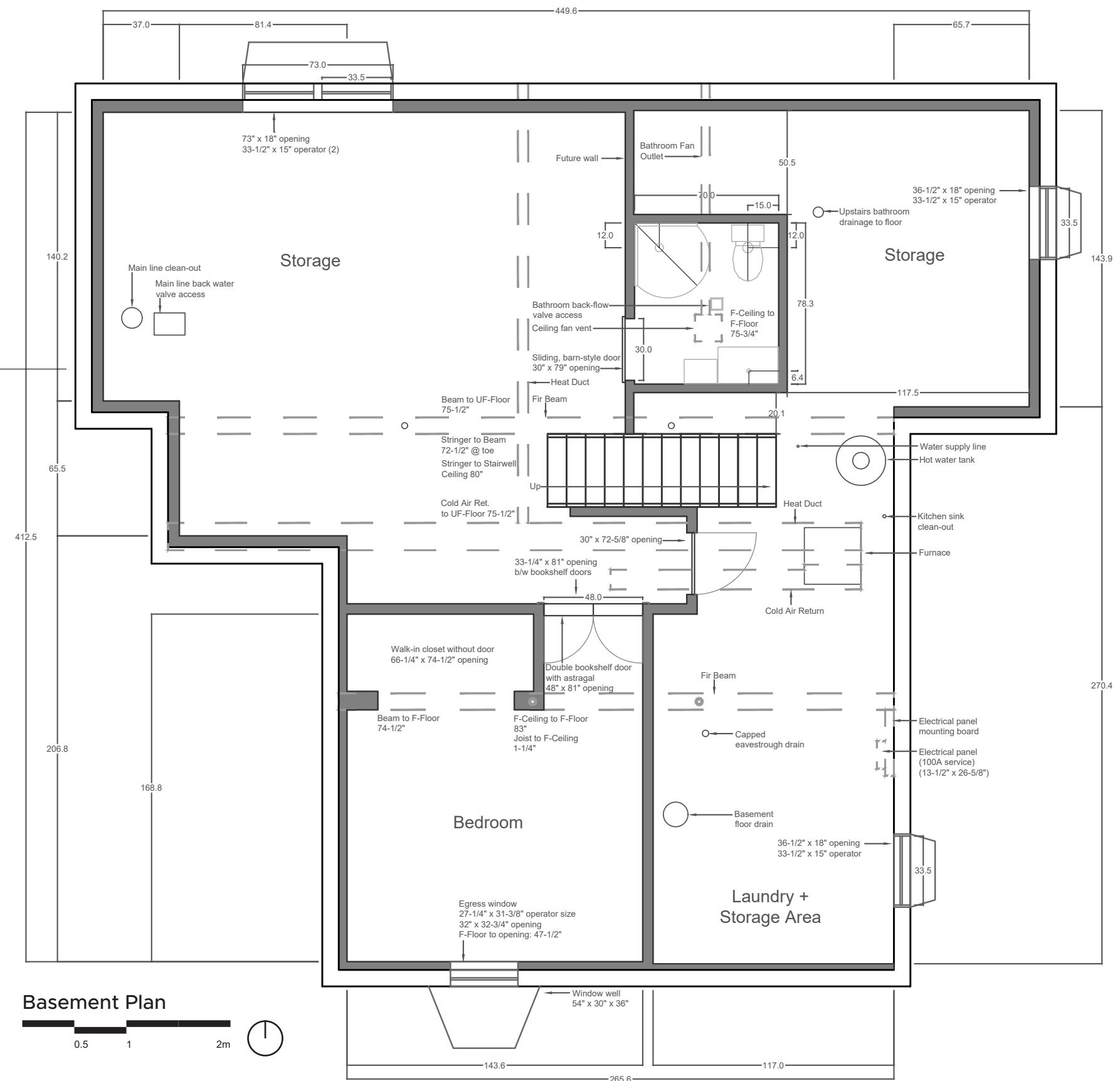
A plan of the basement was created to submit for a permit to complete the bathroom. A section of the basement stairs had been requested to ensure adequate access.

Additional modifications to the plan are going to be made in the future to indicate potential layouts of the entertainment space.



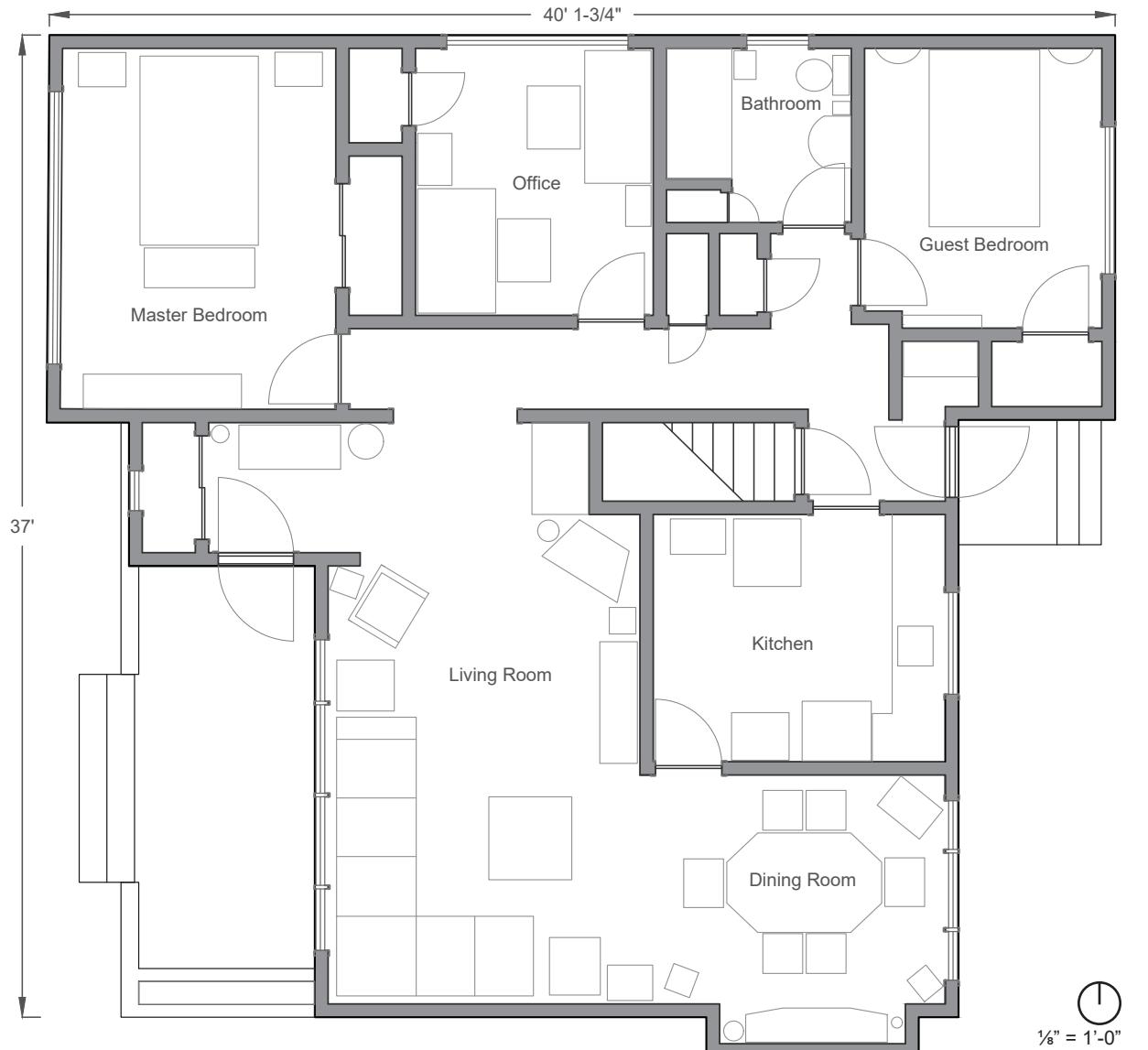
Basement Stairs Section

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Basement Plan

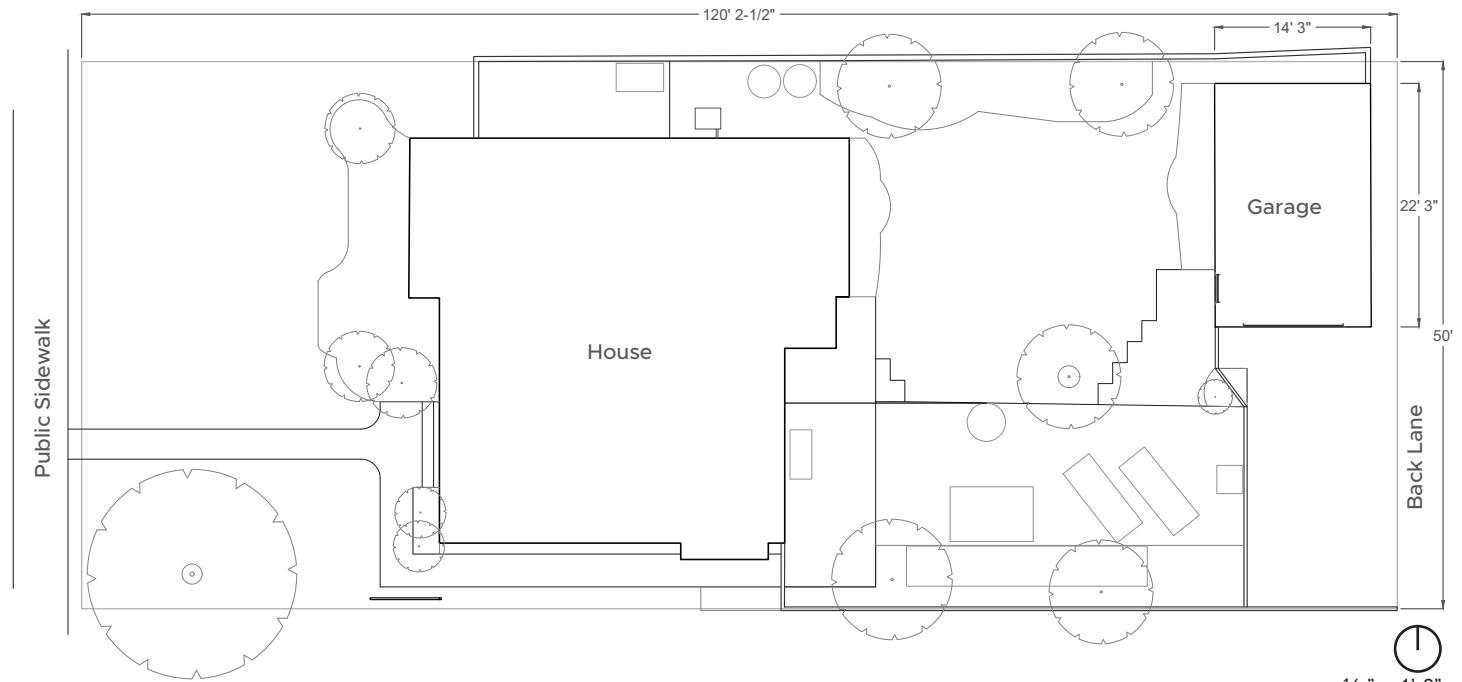
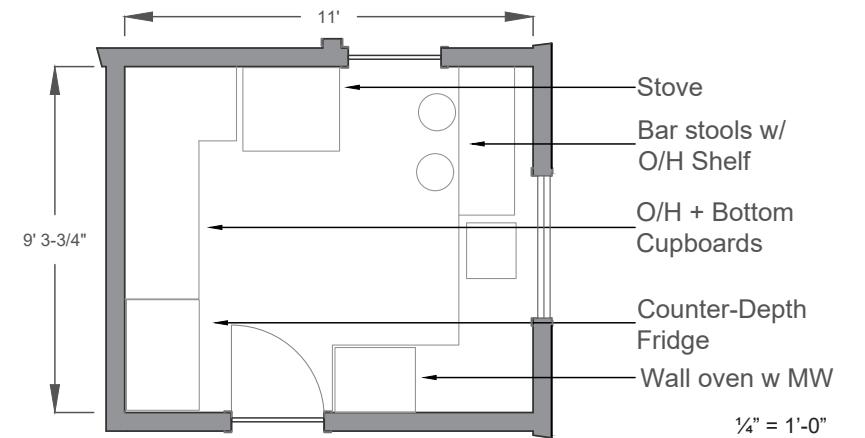
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Kitchen Renovation

This was a planning project that was done to test out possible layouts for a kitchen renovation within a house, based on actual measurements and client requests.

Floor plan measured within $\frac{1}{8}''$ accuracy.



Yard Renovation

This plan drawing and isometric rendering show the current state of the yard after the addition of various elements. These drawings will be used to plan further developments in the future.



