

A young boy with short brown hair, wearing a white short-sleeved shirt, is climbing a large, textured tree trunk. He is looking down and has his hands on the bark. The background is a dense canopy of green leaves, with sunlight filtering through. The image has a painterly, textured appearance.

supportive learning: live, grow.

Ginnie Hausladen







Problem Statement

How can design facilitate and enhance learning for students with autism?



7 Principles of Universal Design:

Equitable use

Flexibility in use

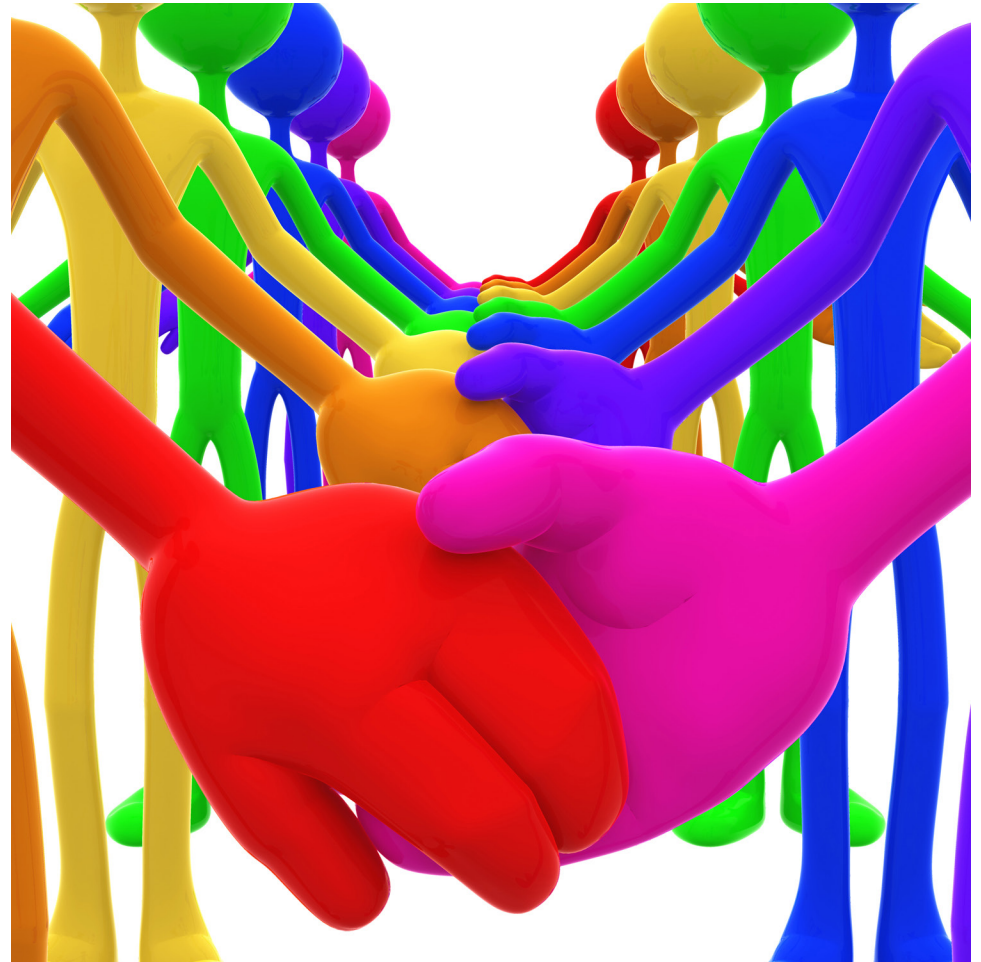
Simple and intuitive function

Perceptible information

Tolerance for errors

Low physical effort for all users

Appropriate size and space for approach, reach, manipulation and use



http://upload.wikimedia.org/wikipedia/commons/0/08/3D_Full_Spectrum_Unity_Holding_Hands_Concept.jpg



Benefits of Play:

Collaborative skills

Confrontation and resolution

Moral understanding

Negotiation

Language and language comprehension

Experimentation

Problem solving

Creativity

Aesthetic appreciation

Fine and gross motor skills

design for children: a child's world



<http://childrenandnature.ning.com/>



Schools

“The school of tomorrow will be a garden city of children; that is to say a place of many shelters – a township, if you will, of small schools built as one community but with every shelter organized as a separate unit designed to meet the needs of children of specific age or stage of life”

– Margaret McMillan, a British pioneer of nursery education in 1928

Robert Owen - 1771-1858

Children as active participants of their education

Friedrich Froebel - 1782 - 1852

Naturphilosophie: stressed children’s need to learn from nature

Froebel play system: embrace the “gifts and occupations of children”

Encourage children to see and create their own interpretations of the world artistically

Coined the term “kindergarten” - school as a metaphorical “garden”

*Rachel and Margaret McMillan - 1859 - 1917,
1860 - 1931*

Fundamental belief that children have a basic need for fresh air and physical games

Nature-based activities encourage socialization



<http://www.lerarenblogs.be/>



Twentieth Century Tendencies

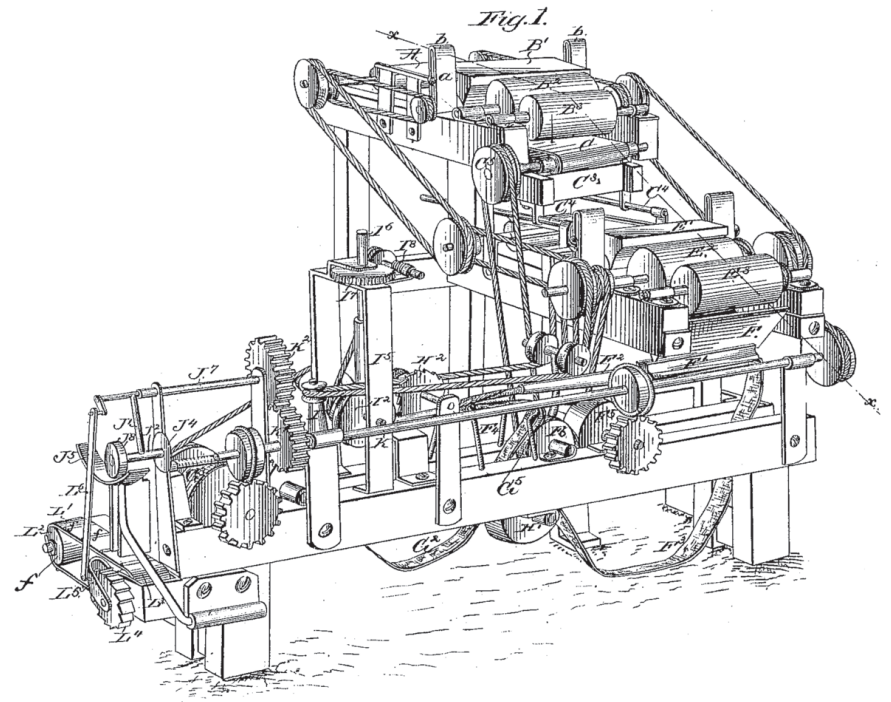
Industrialization - Efficiency and
Machine Aesthetic

Mechanized place of learning

Function

Large, impersonal schools were the
standard

Experts believe large, factory-
style schools detract from a strong
community and individual identity



<p>Failure to develop normal socialization</p>	<p>Do not interact with others well or at all Difficulty understanding and expressing emotion Few or unusual signs of attachment “seem to live in a world of their own”</p>
<p>Disturbances in speech, language, and communication</p>	<p>40% do not speak at all Echolalia common: parrotlike repeating Little to no understanding of symbolic gestures May appear to have little control over pitch or volume Little understanding of social conventions Often become “stuck” on a topic or single-minded</p>
<p>Abnormal relationships to objects and events</p>	<p>“need for sameness” “predictability and routine” Unusual play Little imaginative play With time and treatment, children may learn to use toys or objects for their intended use</p>
<p>Abnormal responses to sensory stimulation</p>	<p>Tendency to “overattend to some stimuli and underattend to others” Difficulty “filtering out” useless stimuli Overstimulation or focus on certain stimuli may cause distress or behavioral issues Fascination with lights, color patterns, logos, shapes, or configuration of letters and words May be preoccupied scratching or rubbing certain surfaces May furiously avoid certain textures or colors May respond to motion or pressure in unusual ways Appear to use taste and smell over hearing and vision to explore</p>
<p>Developmental delays and differences</p>	<p>75% score in the range of mental retardation Poor generalization</p>
<p>Begins during infancy or childhood</p>	<p>Inherent lifelong disability</p>

Social Skills

Engagement, the ability to remain focused and responsive to a person or object

Asking peers for assistance

Waiting turns

Responding to peers when they initiate social interactions

Initiating social interactions

Communication Skills

Using alternative communication systems i.e. sign language or pictures

Using one-, two-, three-word sentences

Basic attending skills i.e. eye contact

Master concepts of recurrence, negation, and affirmation

Using objects and/or action words

Imitating others' actions, words, sounds

Self-Help Skills

Cooking and meal preparation

Caring for one's belongings i.e. making the bed, washing clothes

Grooming and personal hygiene

Dressing and undressing

Using the toilet

Motor Skills

Riding a tricycle

Catching and throwing a ball

Tying shoes

Cutting with scissors

Balance

Folding paper

Issues to address

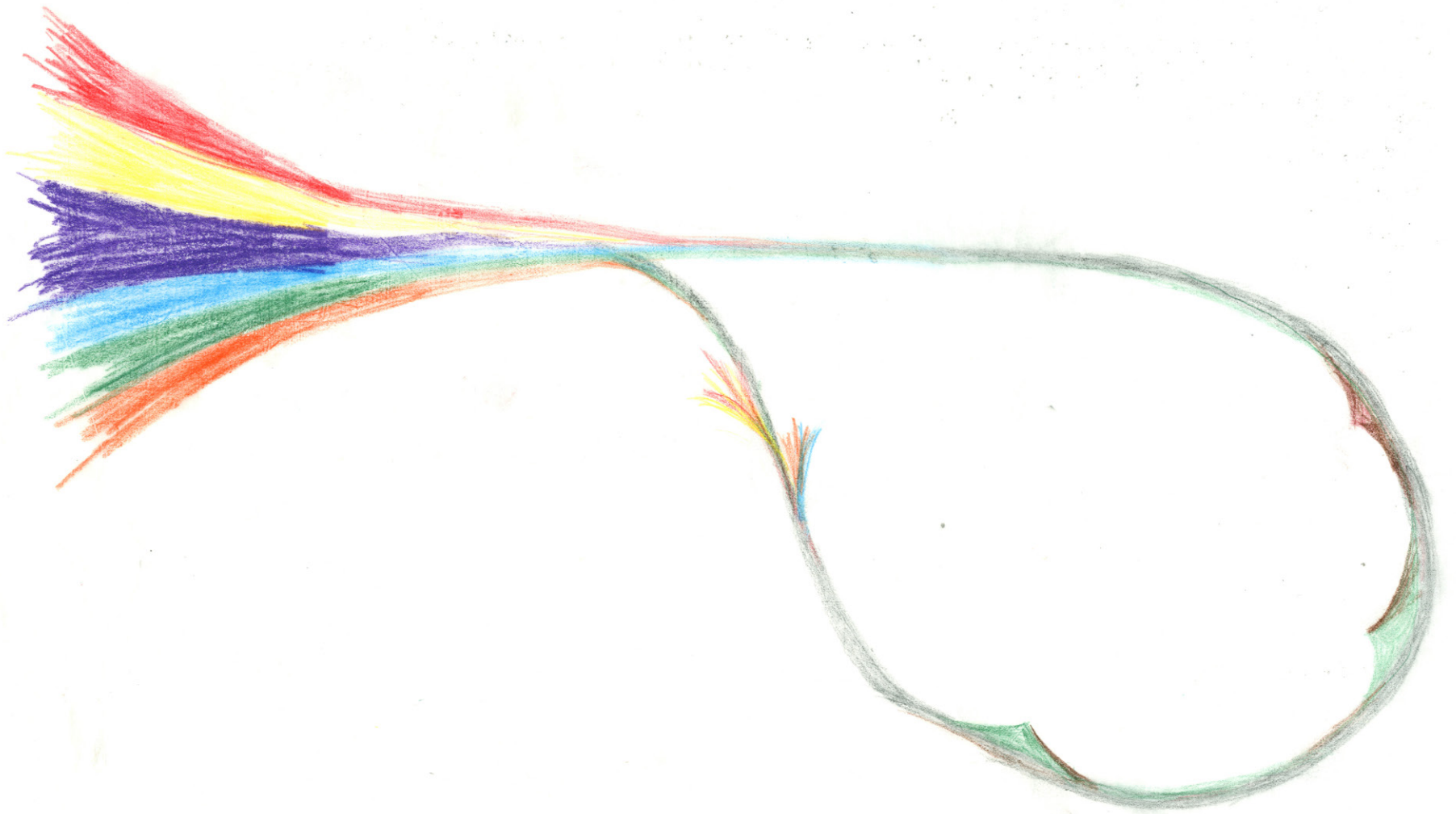
Unique responses to sensory stimulation - typically over-sensitivity

Poor generalization: the inability to use the same skills in different areas, places, situations or with different people

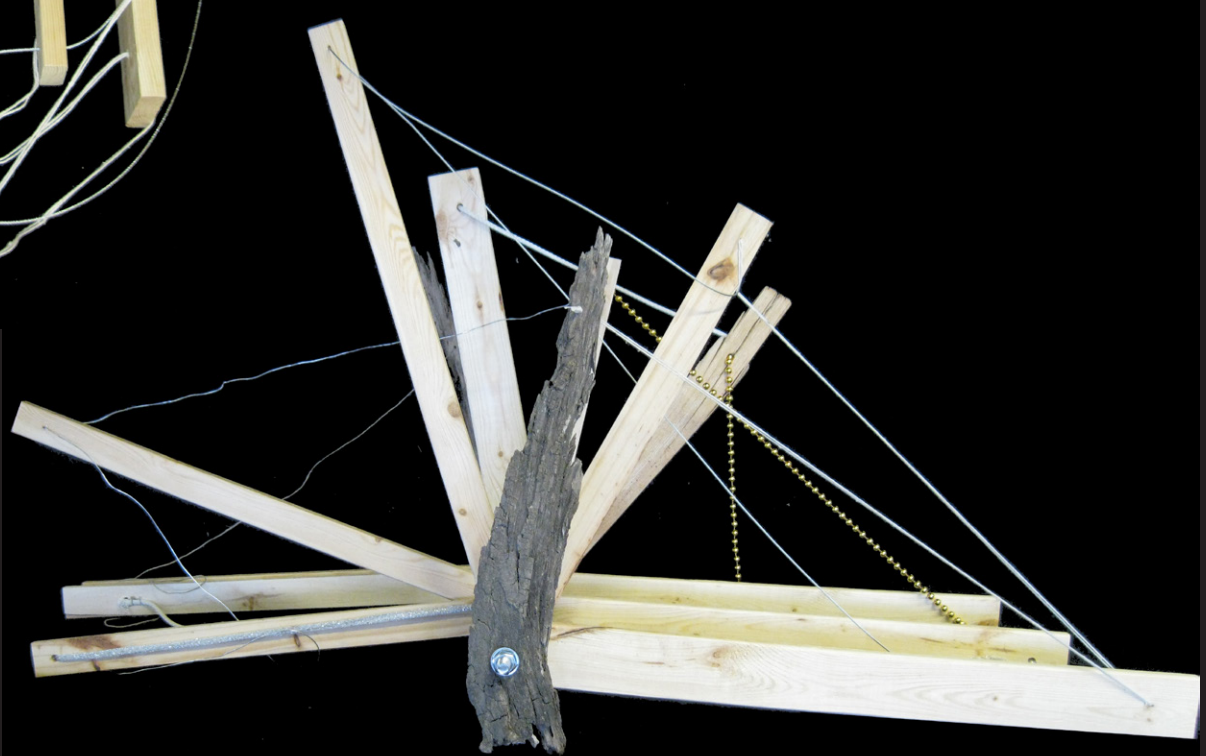
Poor communication and social skills



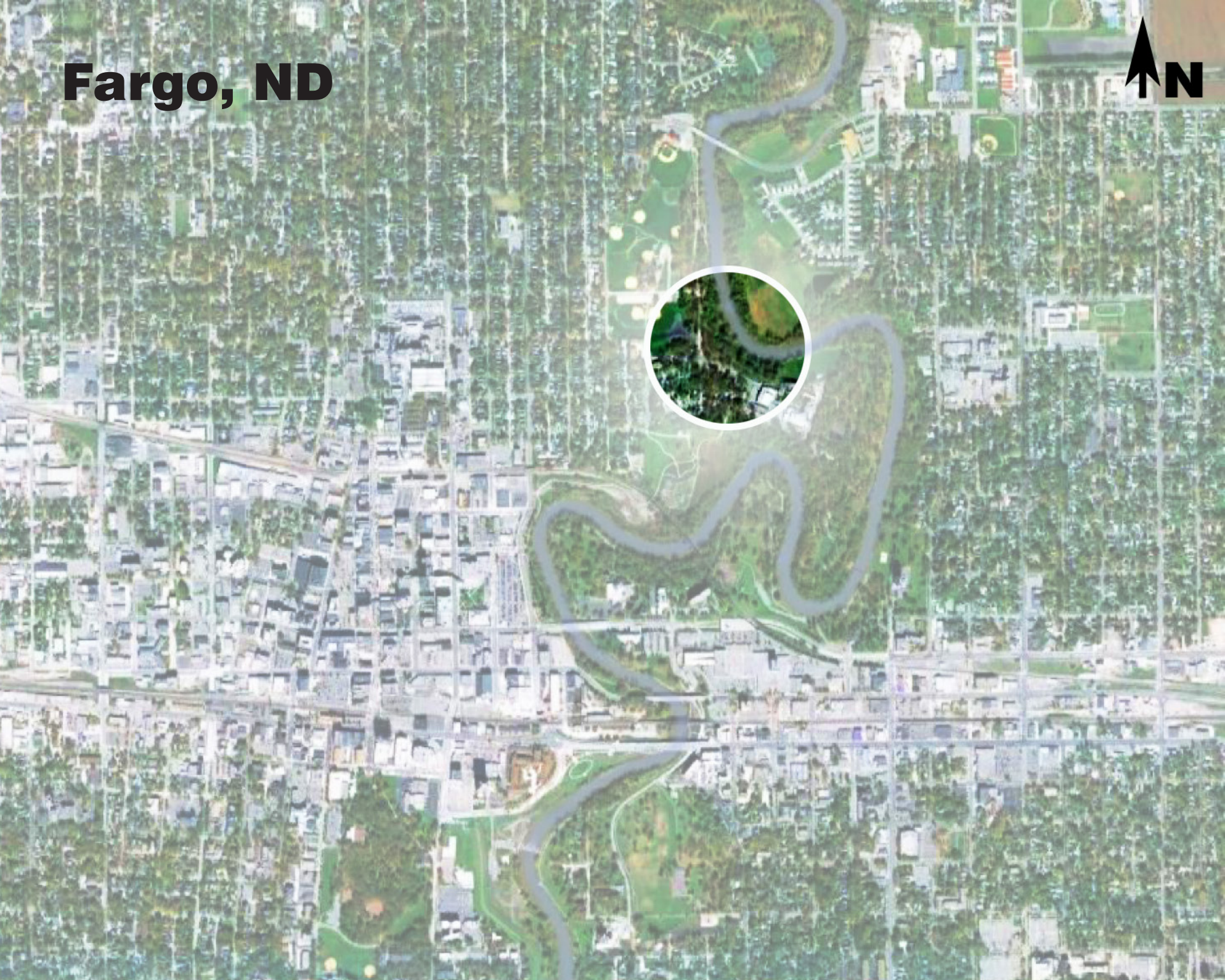
Theories: Balance Neuro-Typical and Sensory-Sensitive



Parti



Fargo, ND

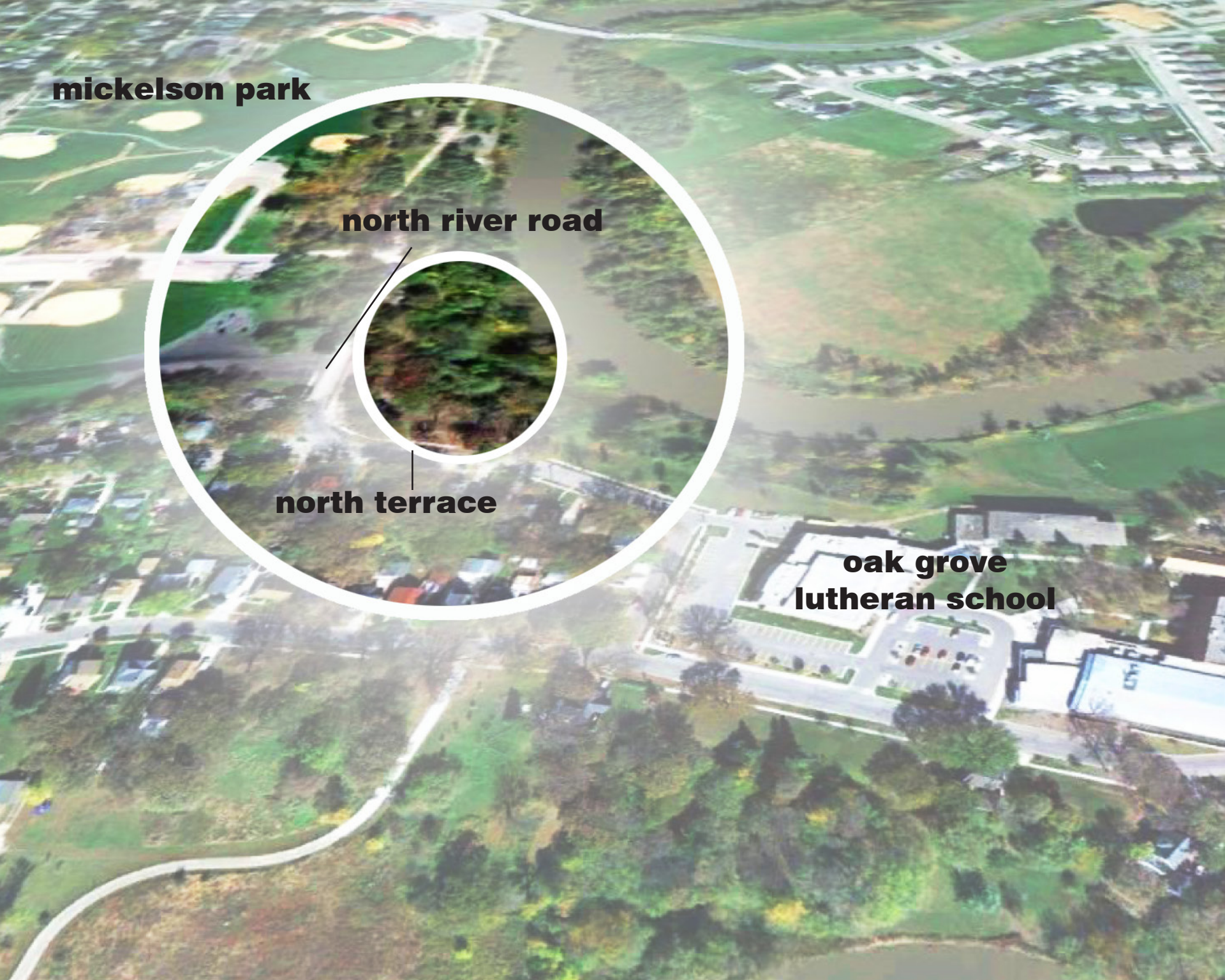


mickelson park

north river road

north terrace

**oak grove
lutheran school**



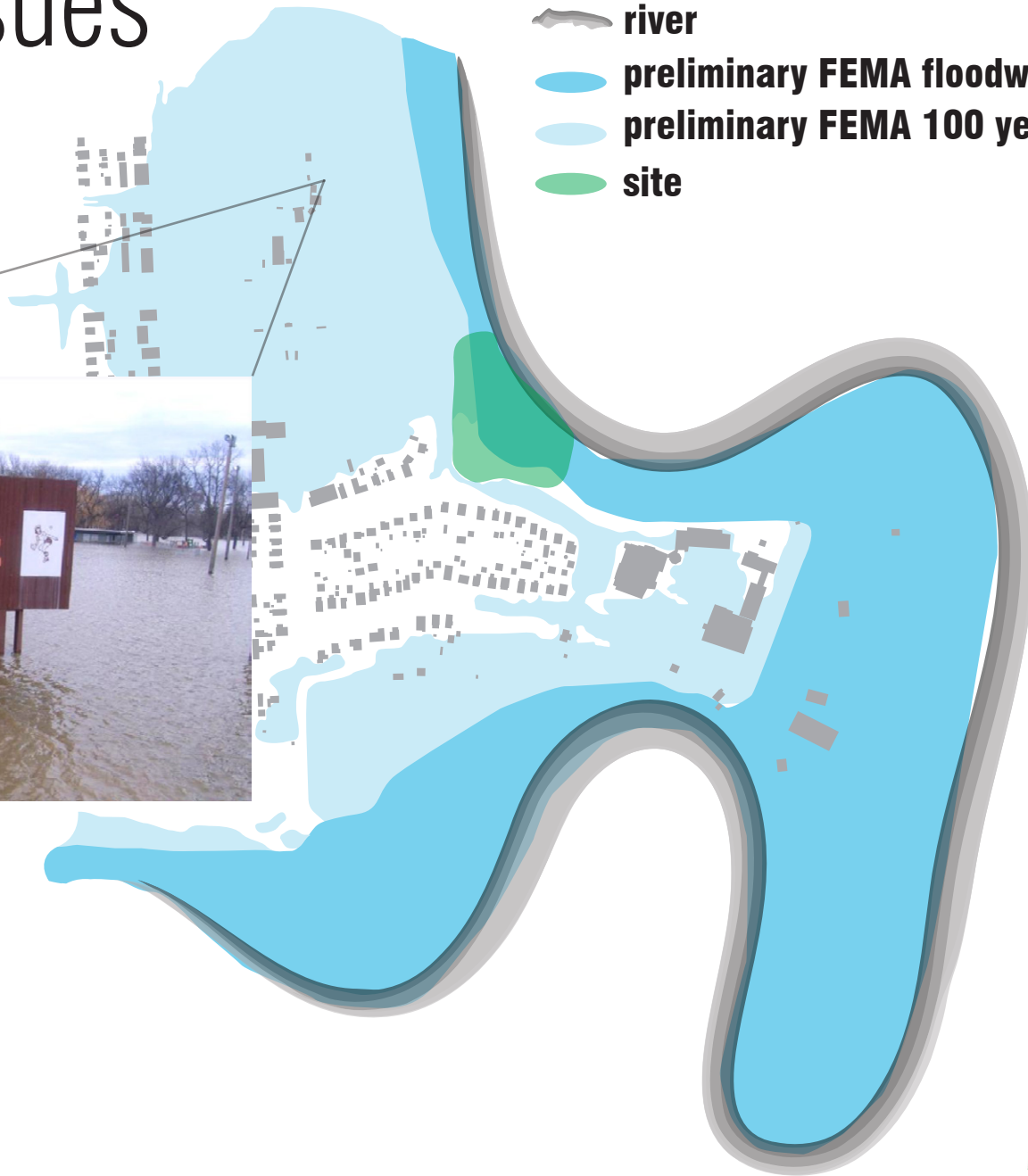


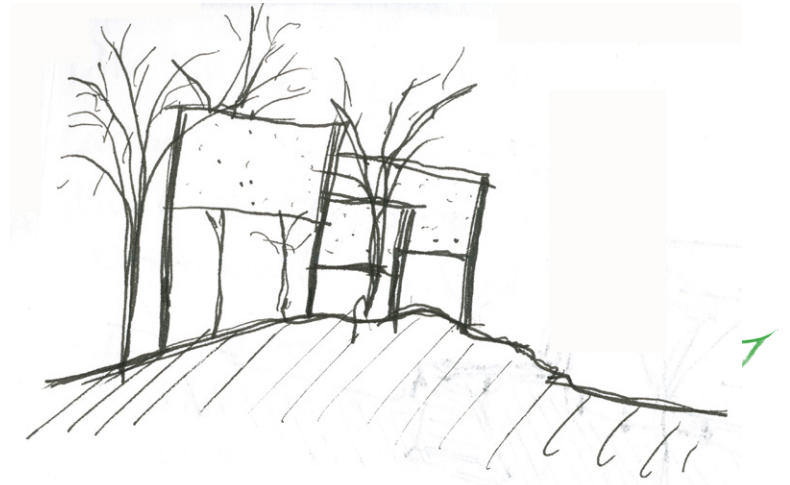
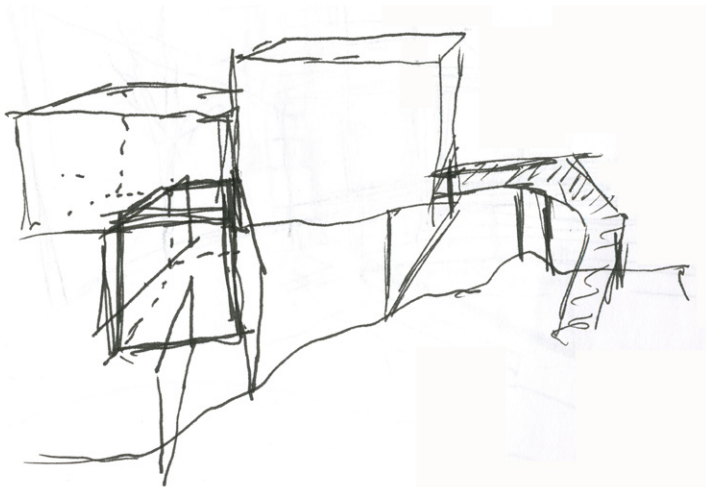
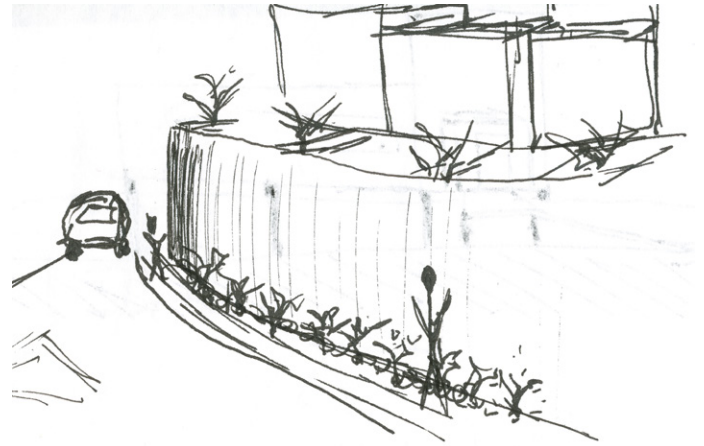
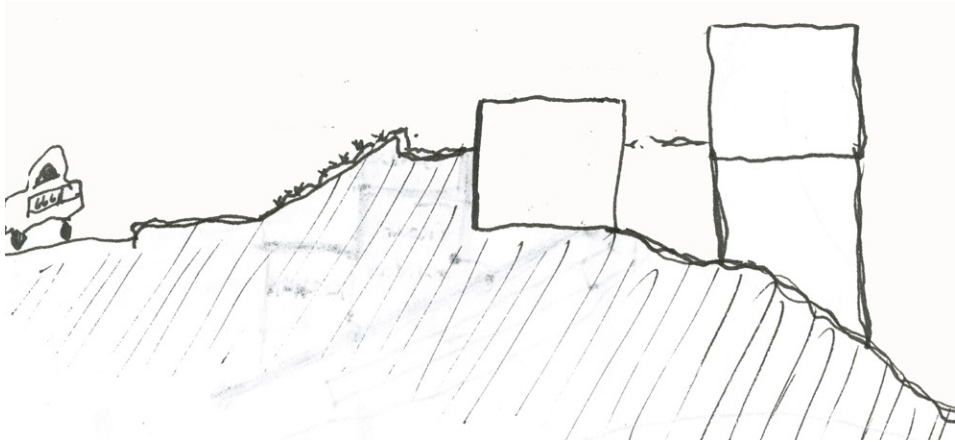
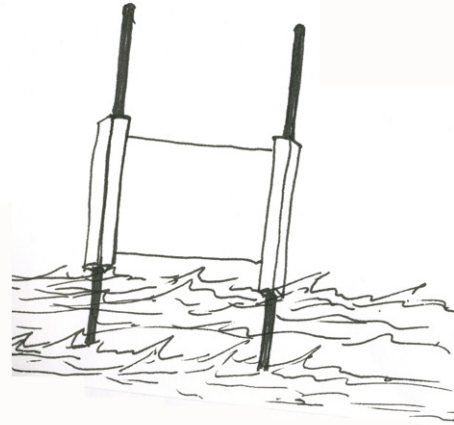
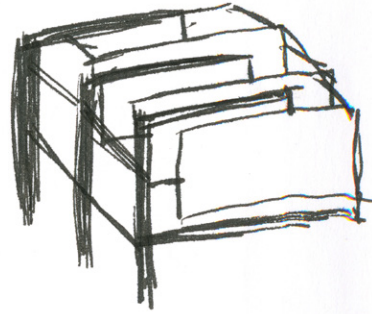
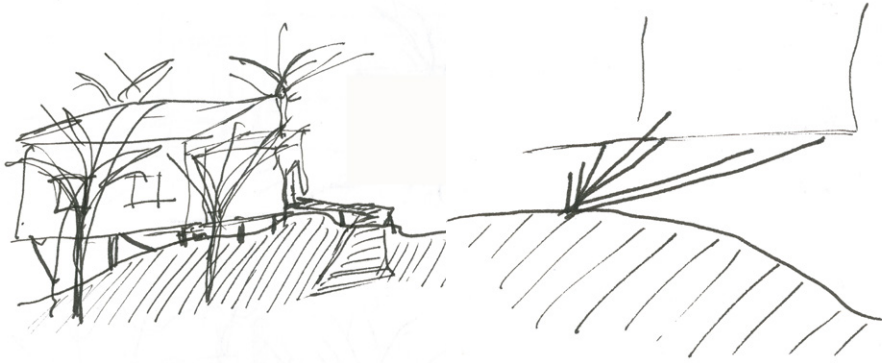


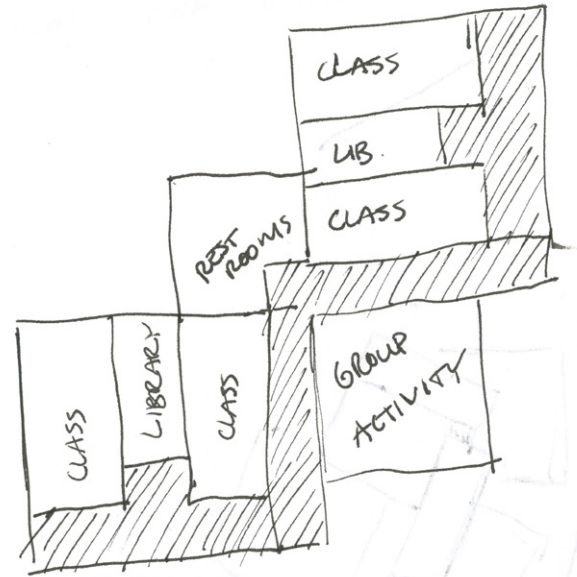
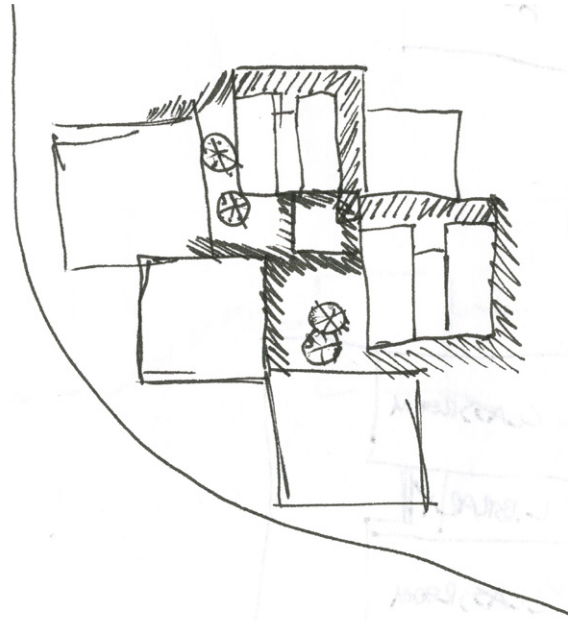
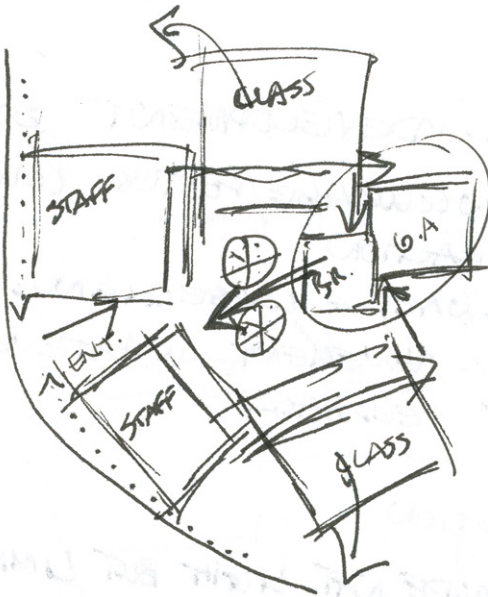
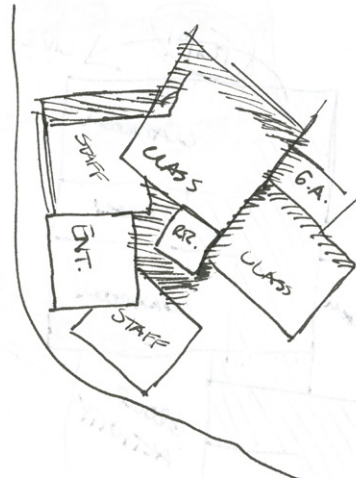
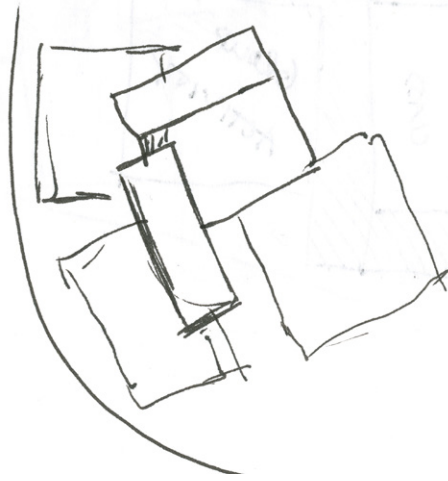
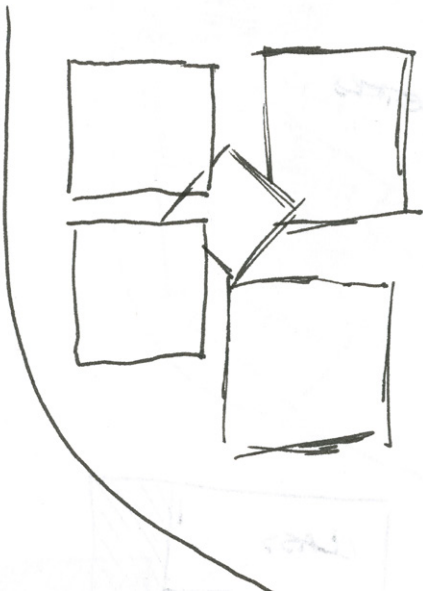


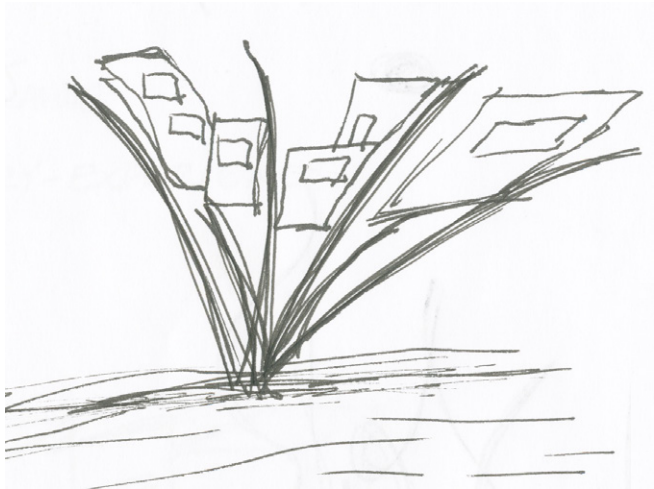
Flood Issues

-  river
-  preliminary FEMA floodway
-  preliminary FEMA 100 year floodplain
-  site



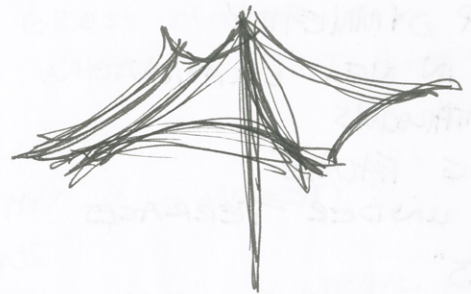
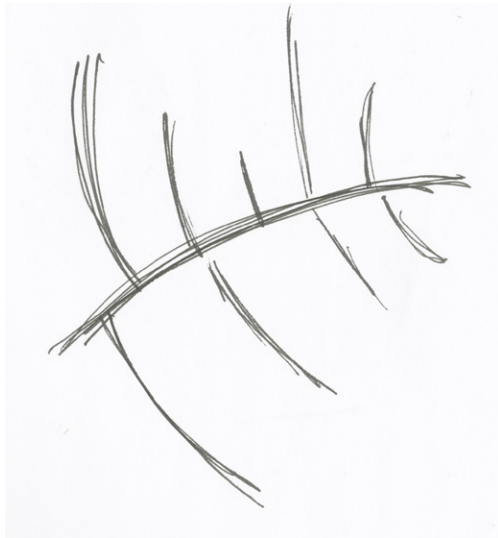
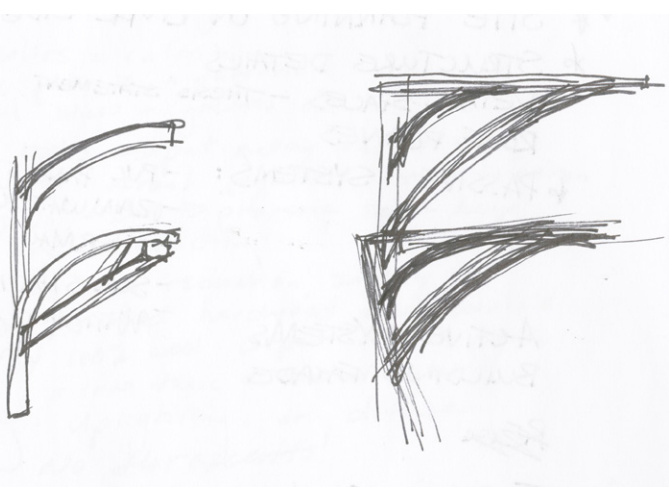
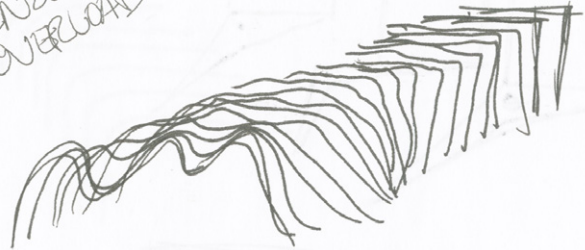


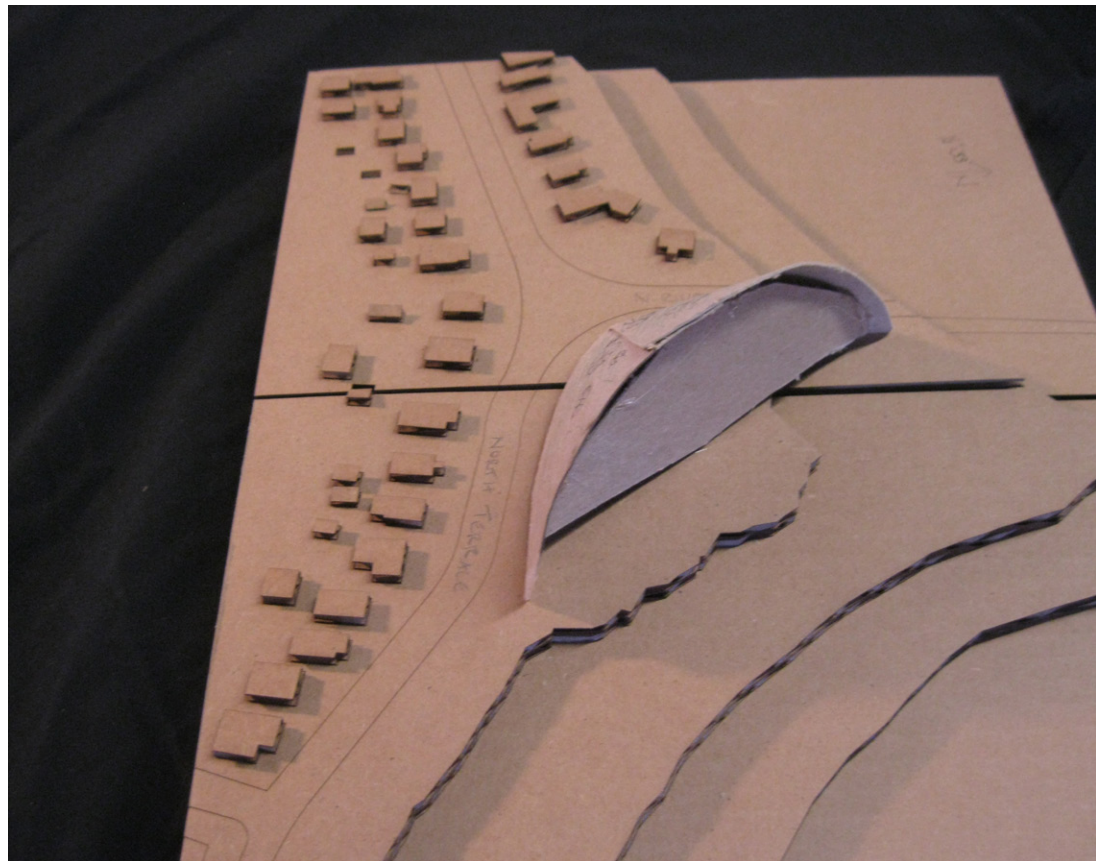
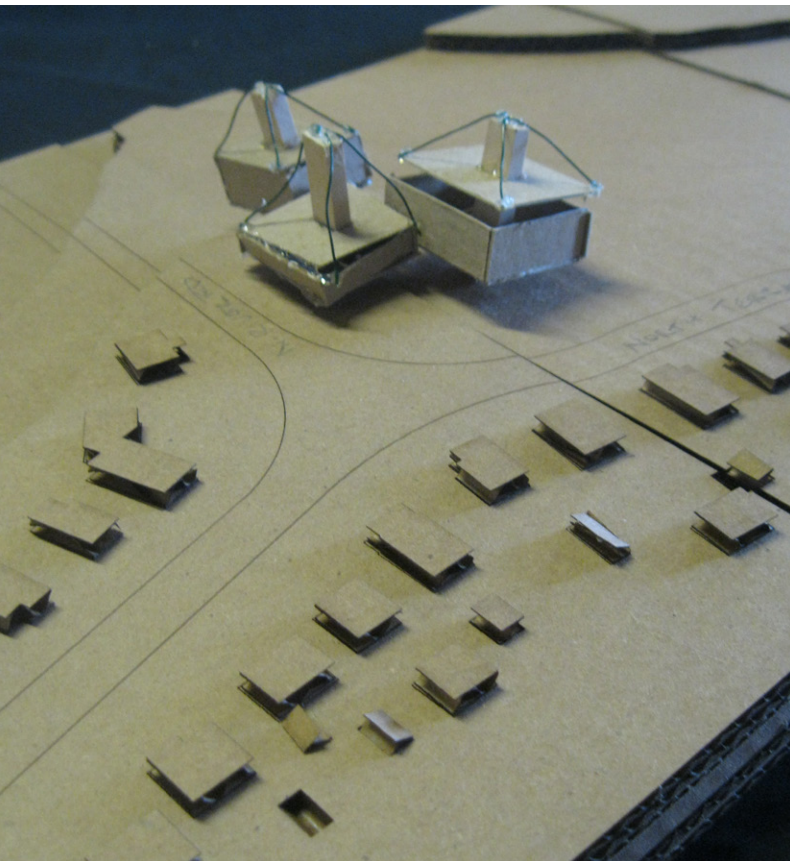
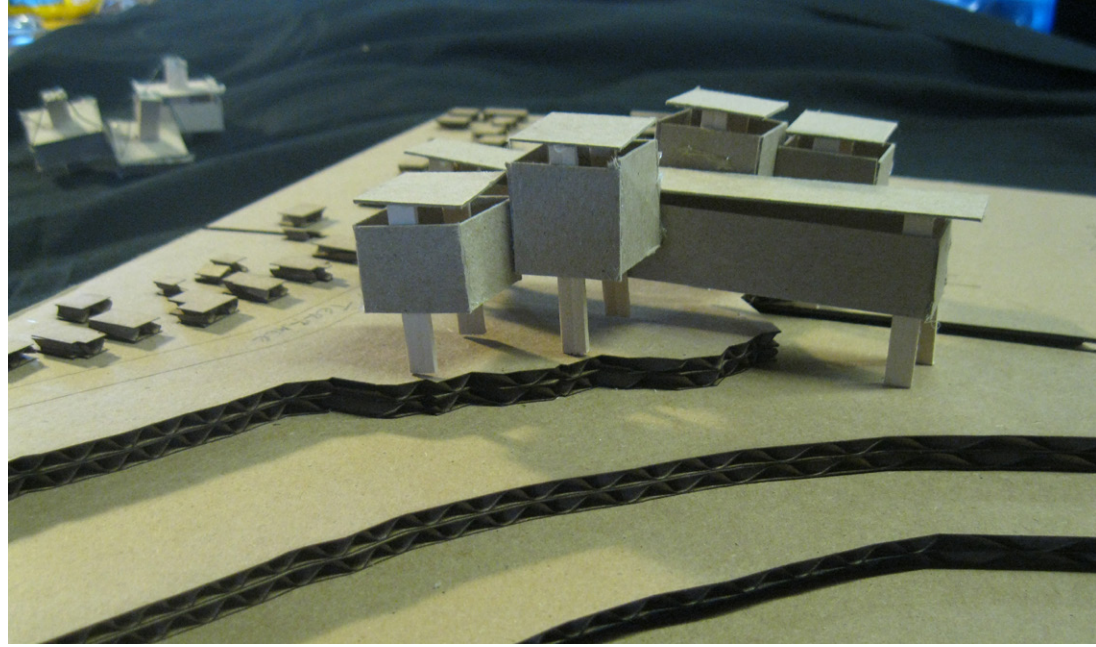
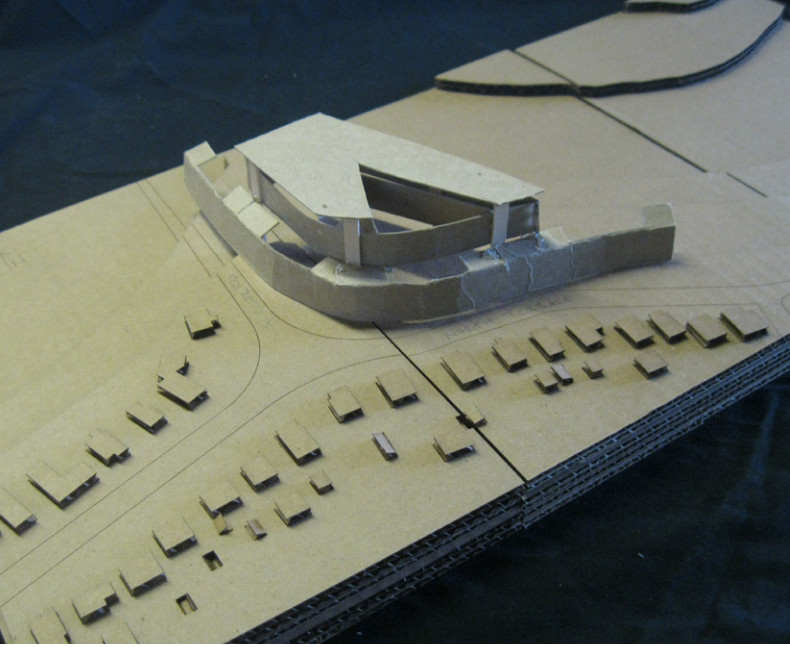


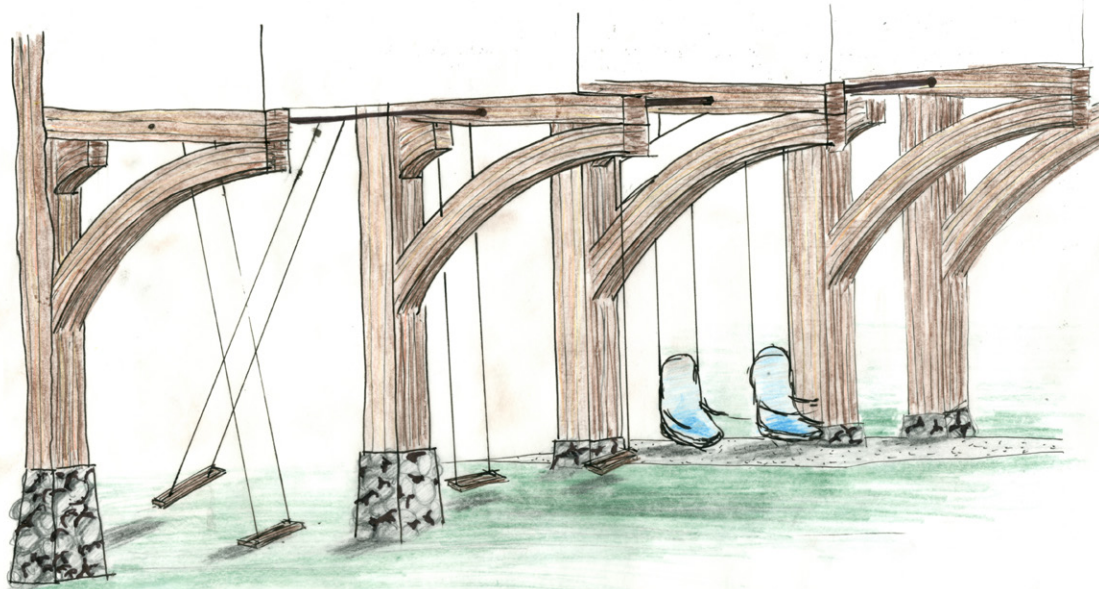
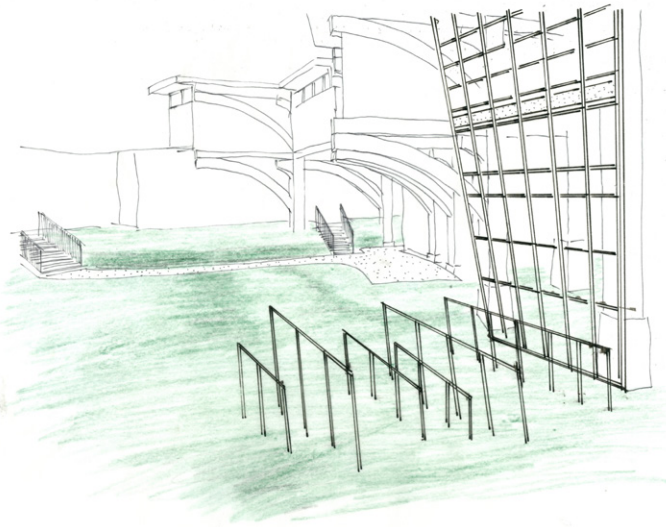
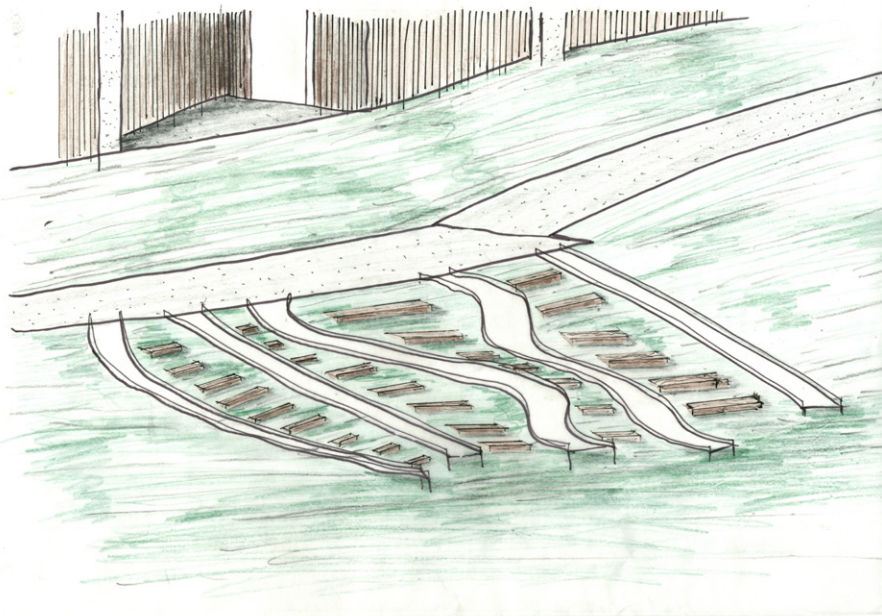


SENSORY
OVERLOAD

EASIER
TO LEARN
CALM
CONTROLLED

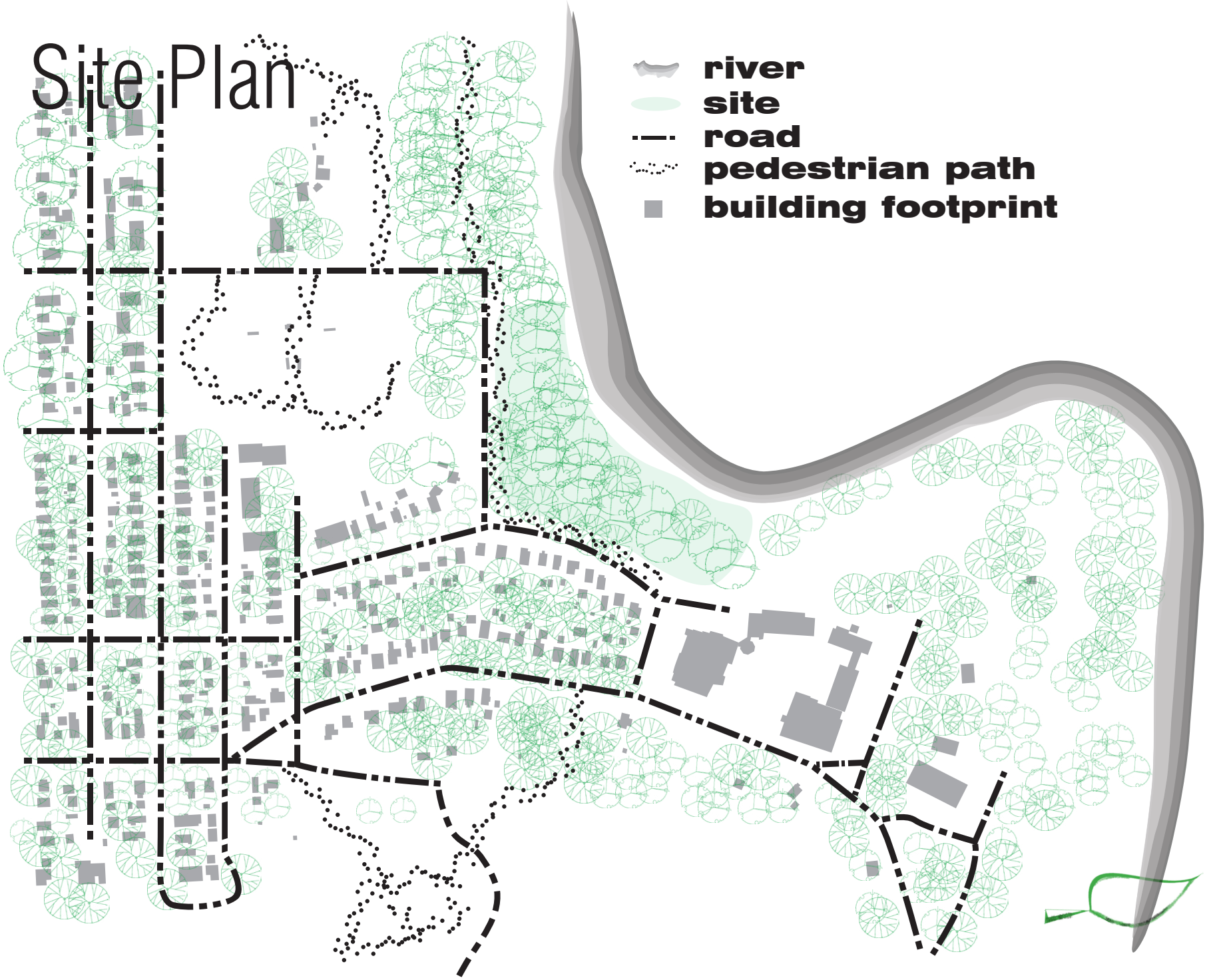






Site Plan

-  **river**
-  **site**
-  **road**
-  **pedestrian path**
-  **building footprint**





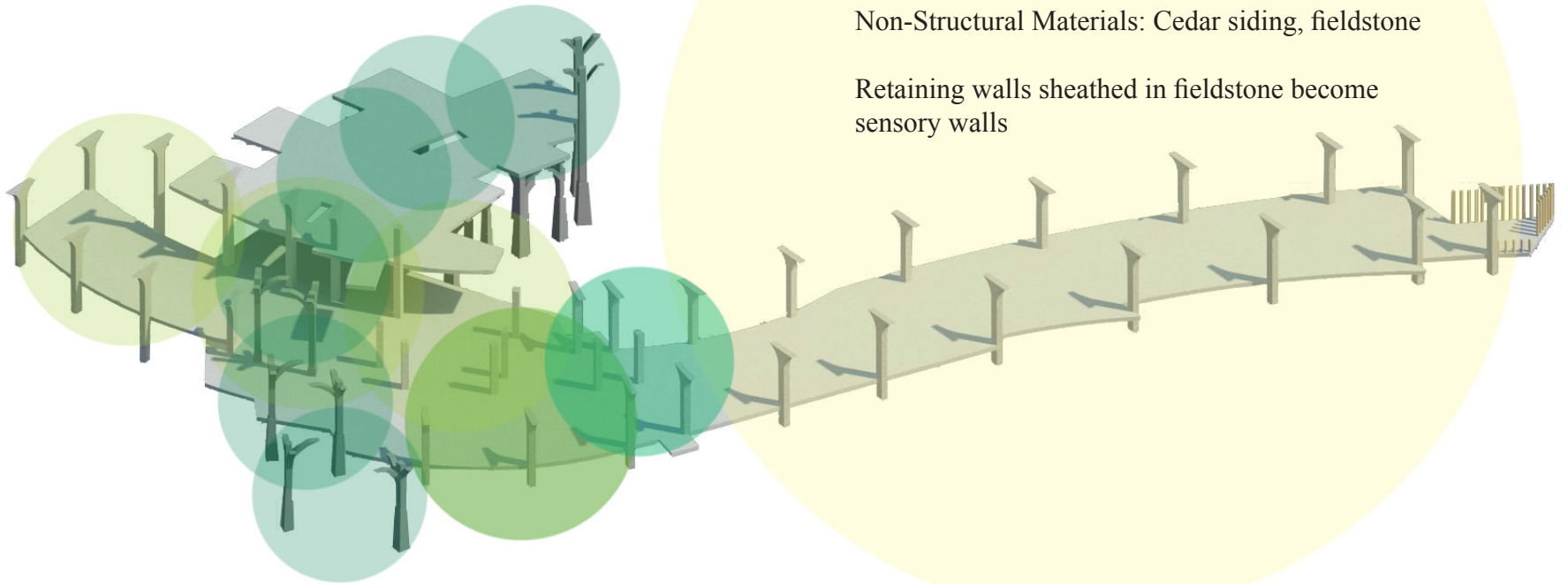
Structure

Overall Structure: Concrete Columns,
Timber Columns, Two-Way Concrete Slabs

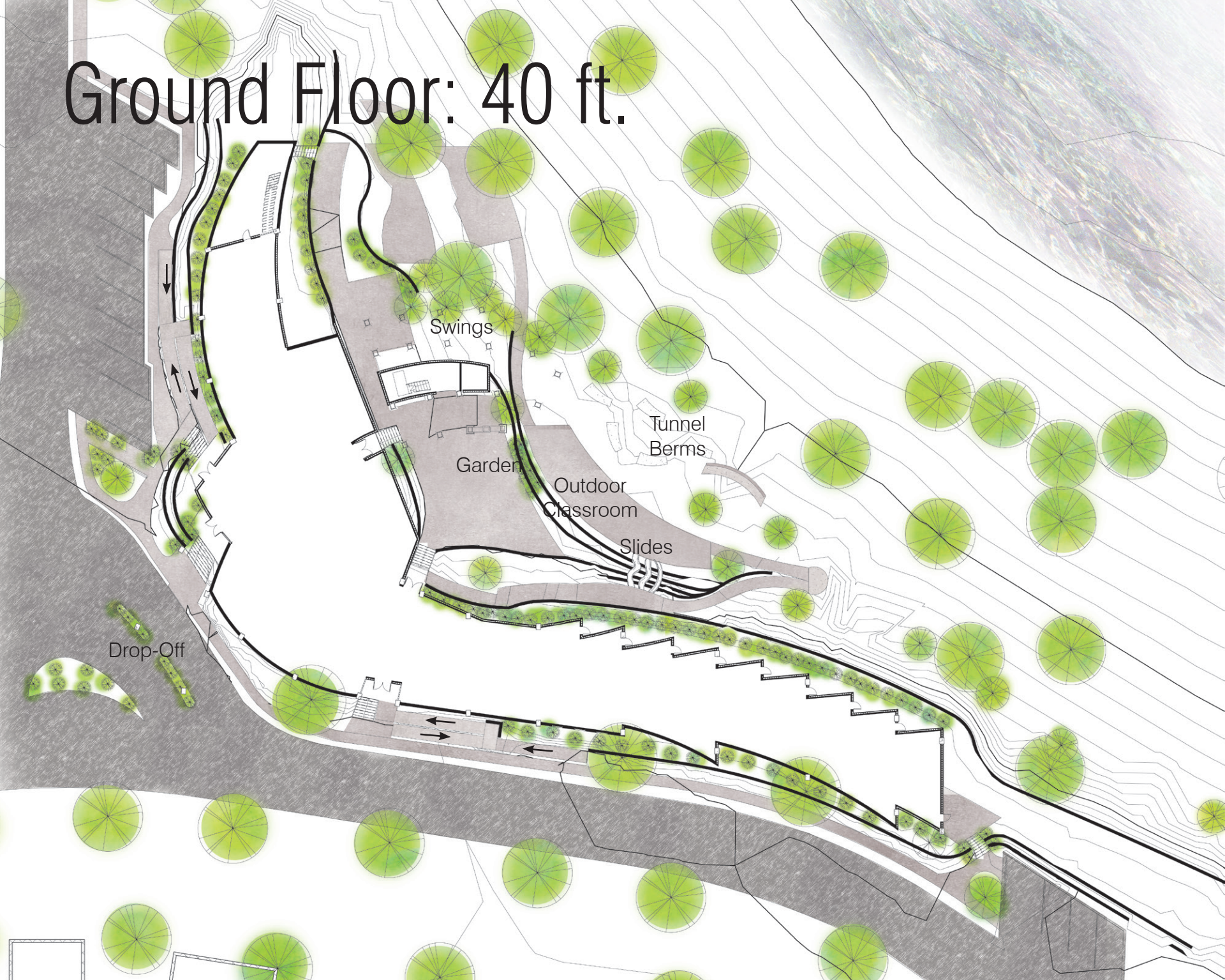
Wall Structure: CMU base, steel studs

Non-Structural Materials: Cedar siding, fieldstone

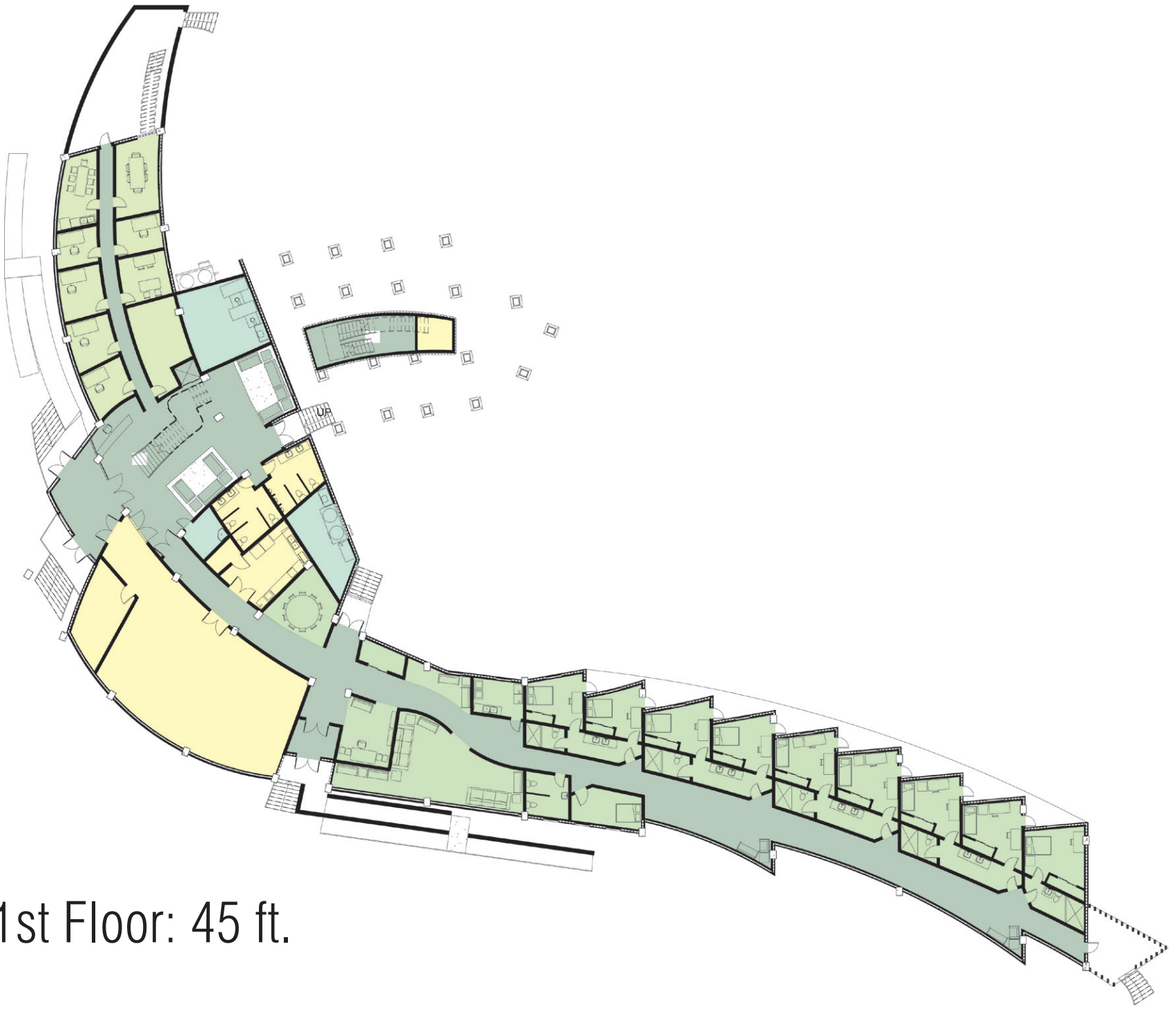
Retaining walls sheathed in fieldstone become
sensory walls



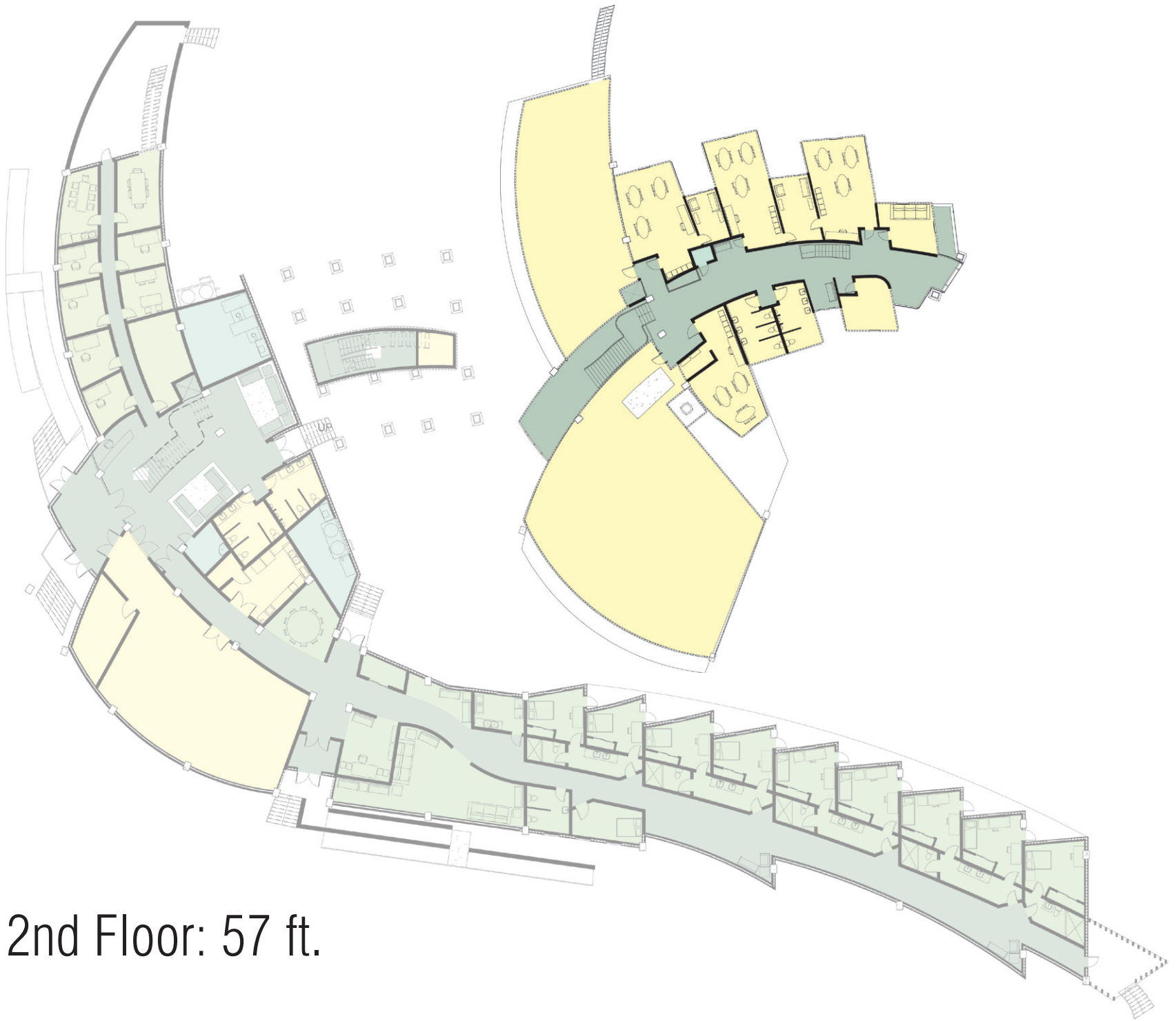
Ground Floor: 40 ft.







1st Floor: 45 ft.

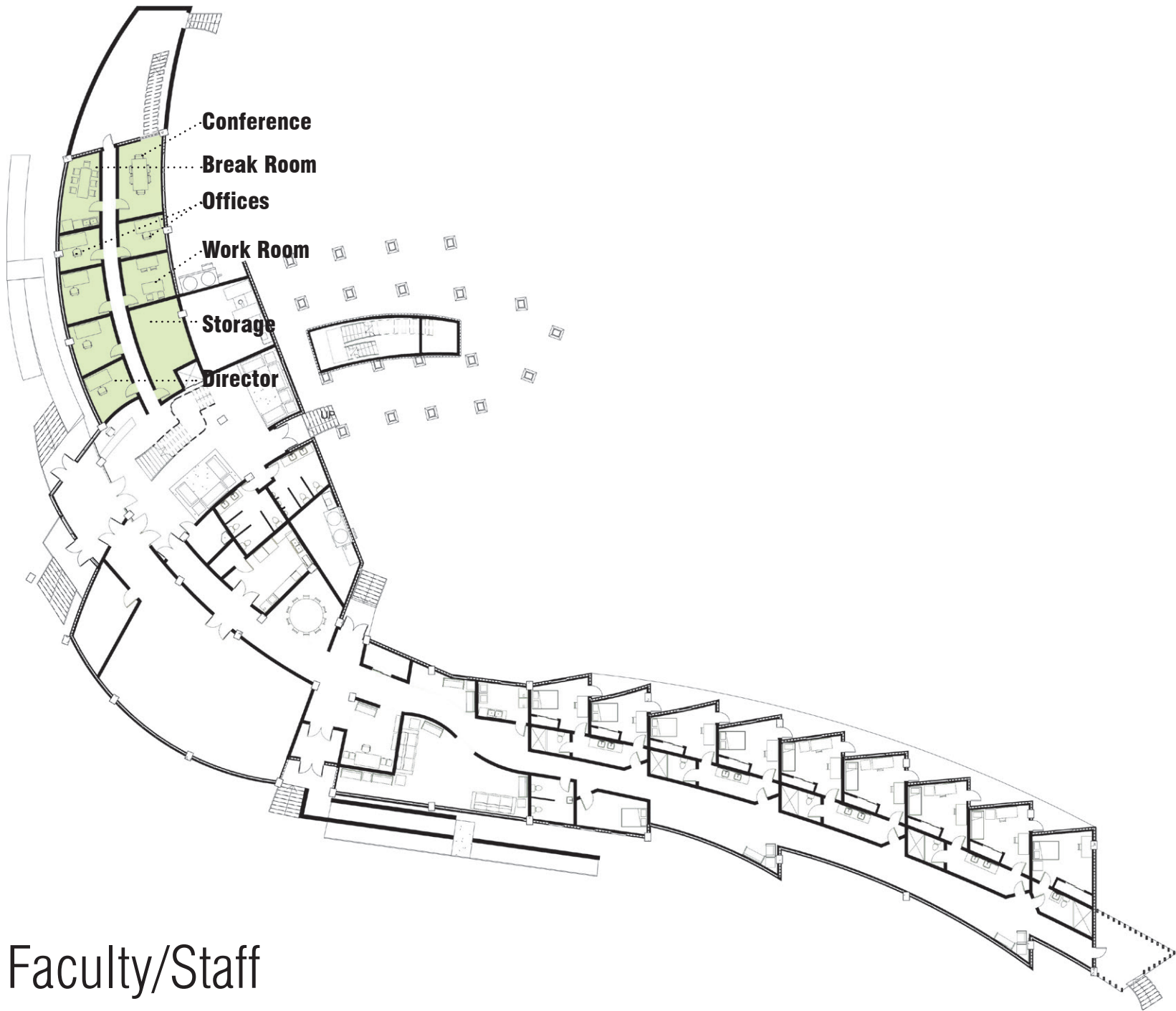


2nd Floor: 57 ft.



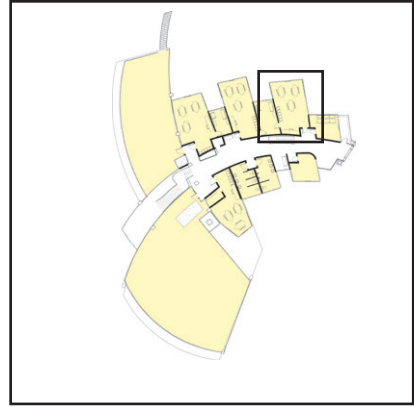
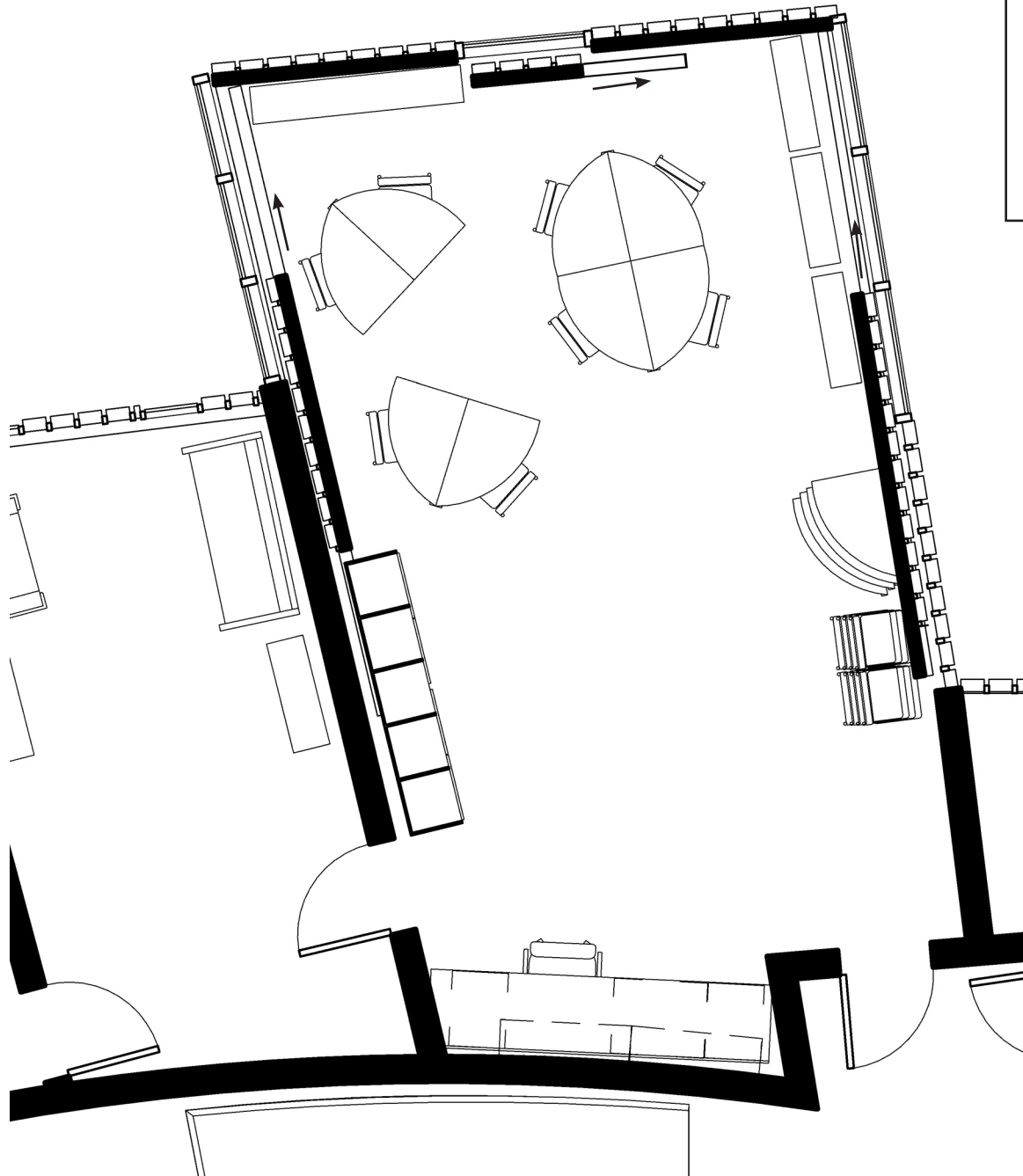
Circulation





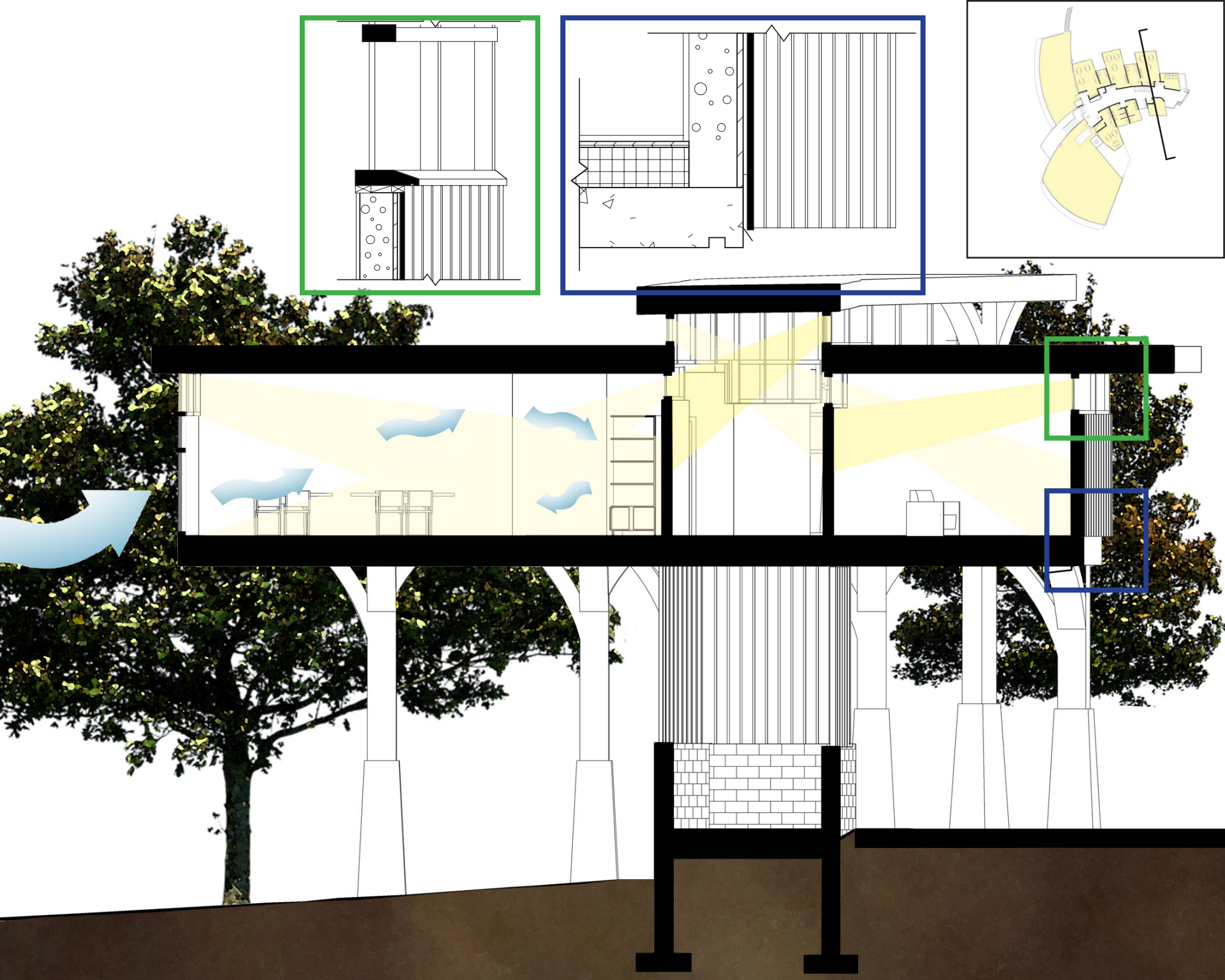
Faculty/Staff









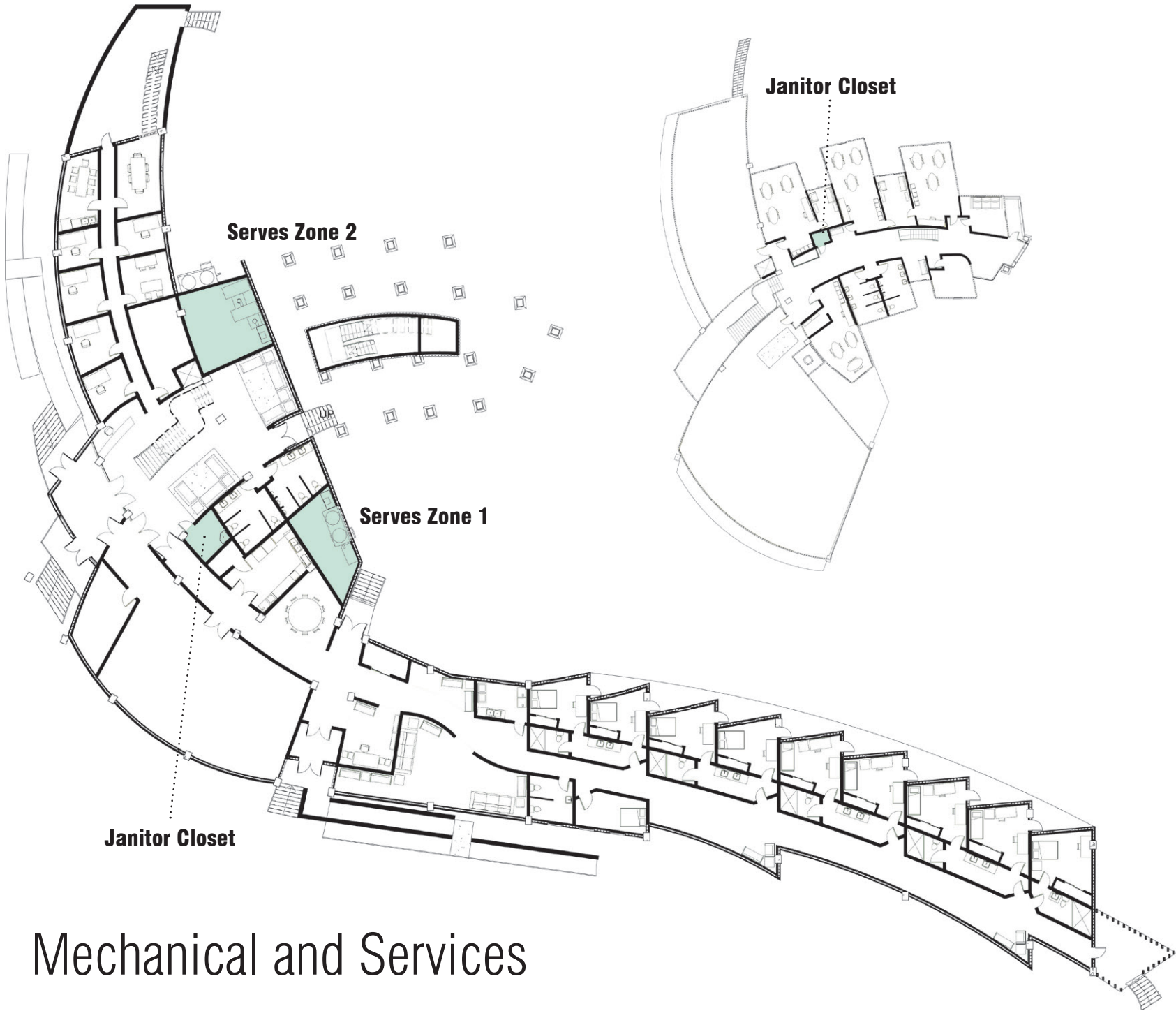




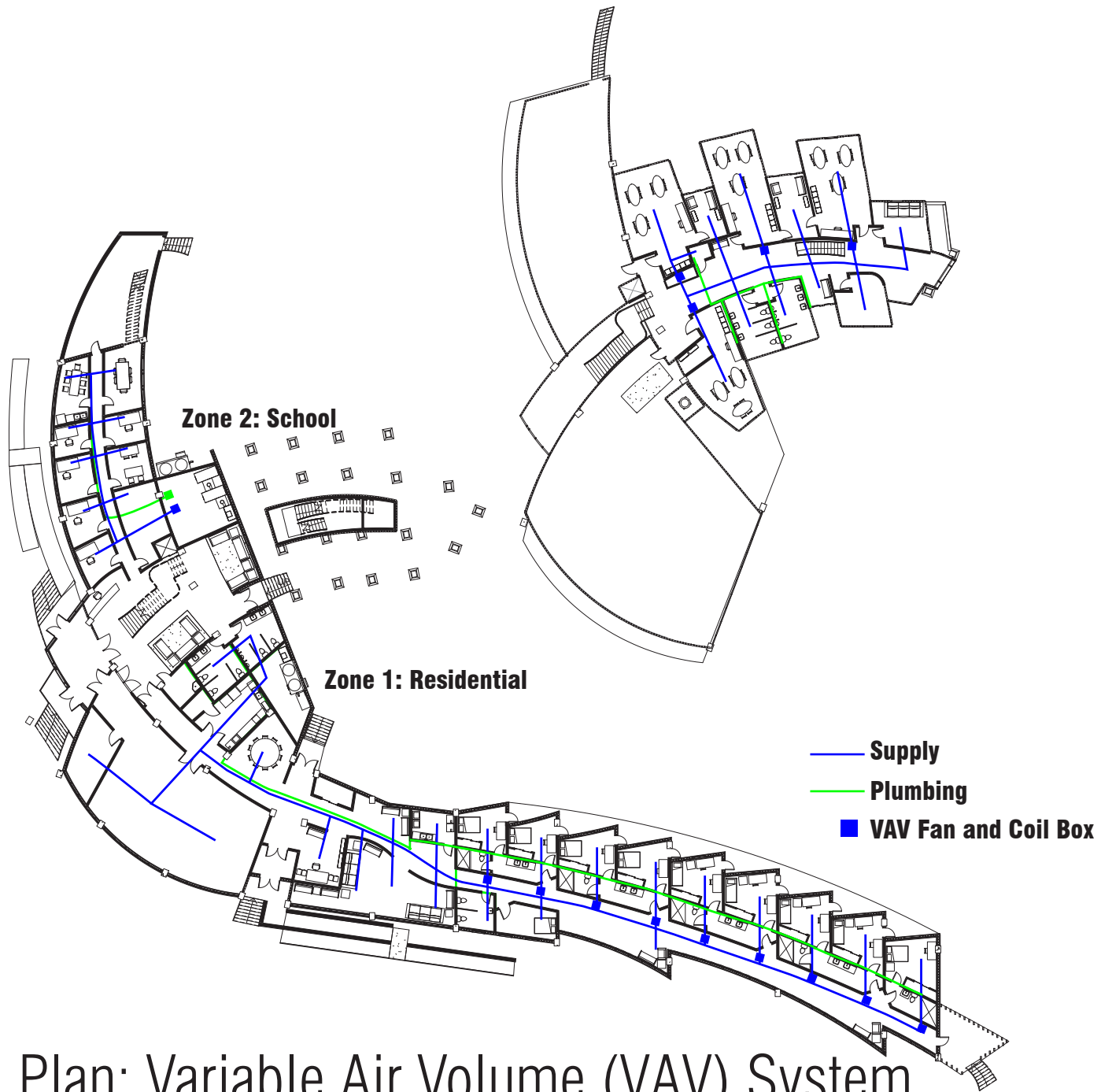


Air Return |
Air Supply |
VAV Box |
Hot Water Heating |
Cold Water Cooling |



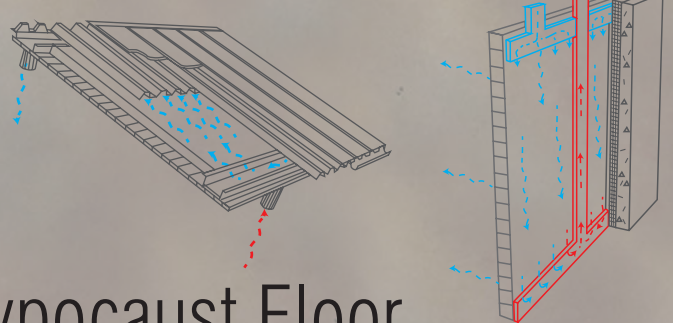


Mechanical and Services

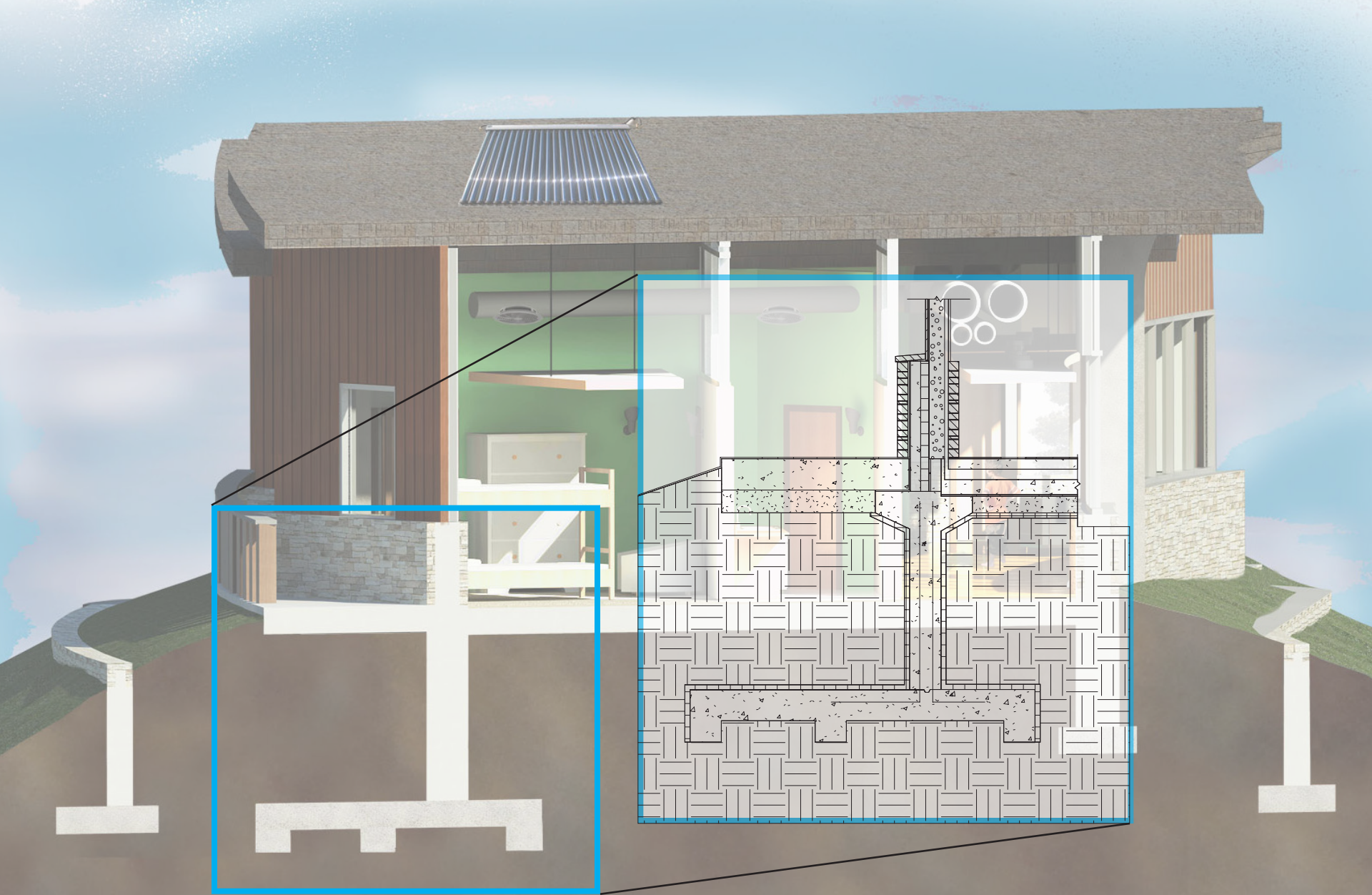


HVAC Plan: Variable Air Volume (VAV) System

Solar Collector

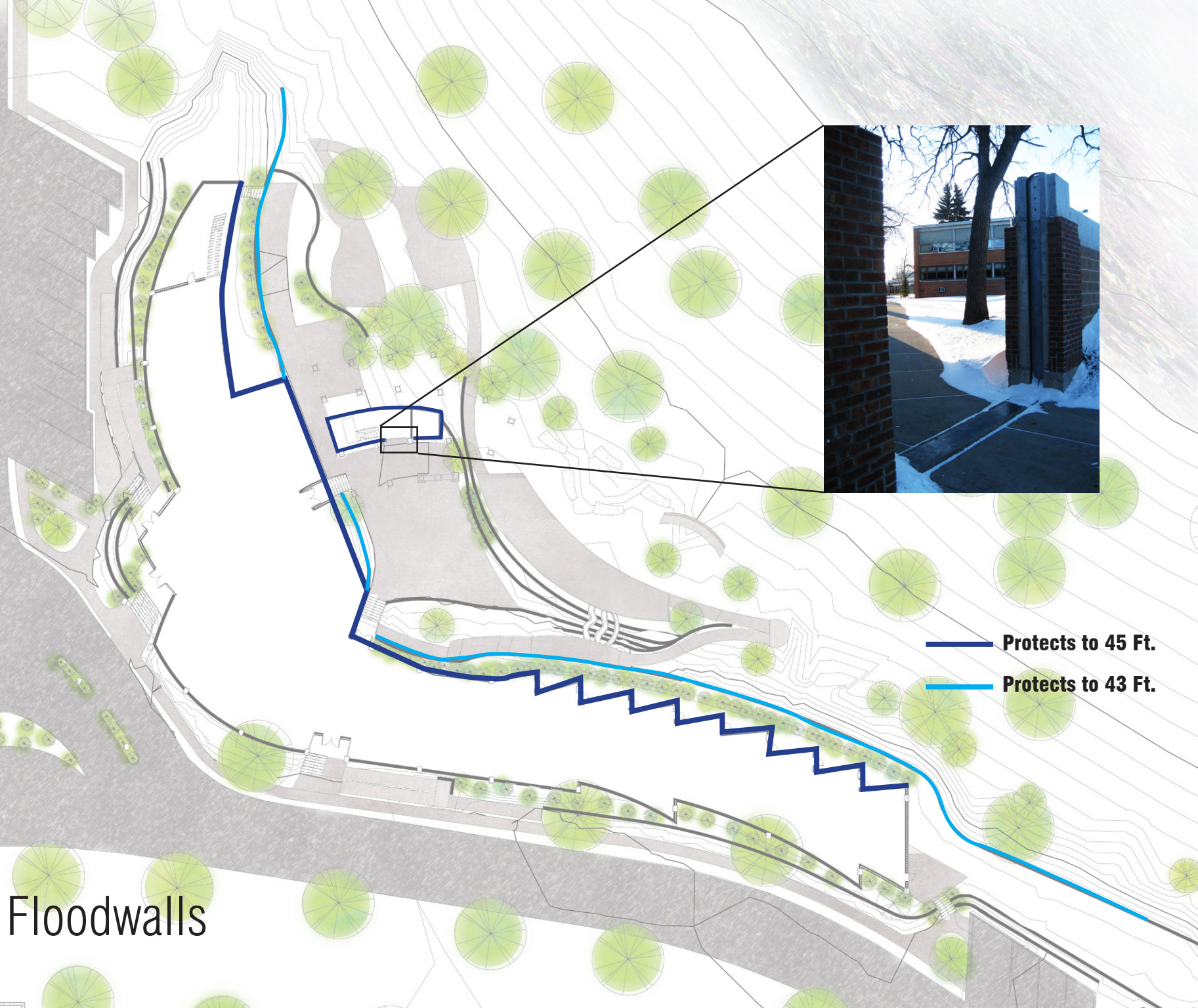


Murocaust Wall and Hypocaust Floor



Flood Foundation

Floodwalls

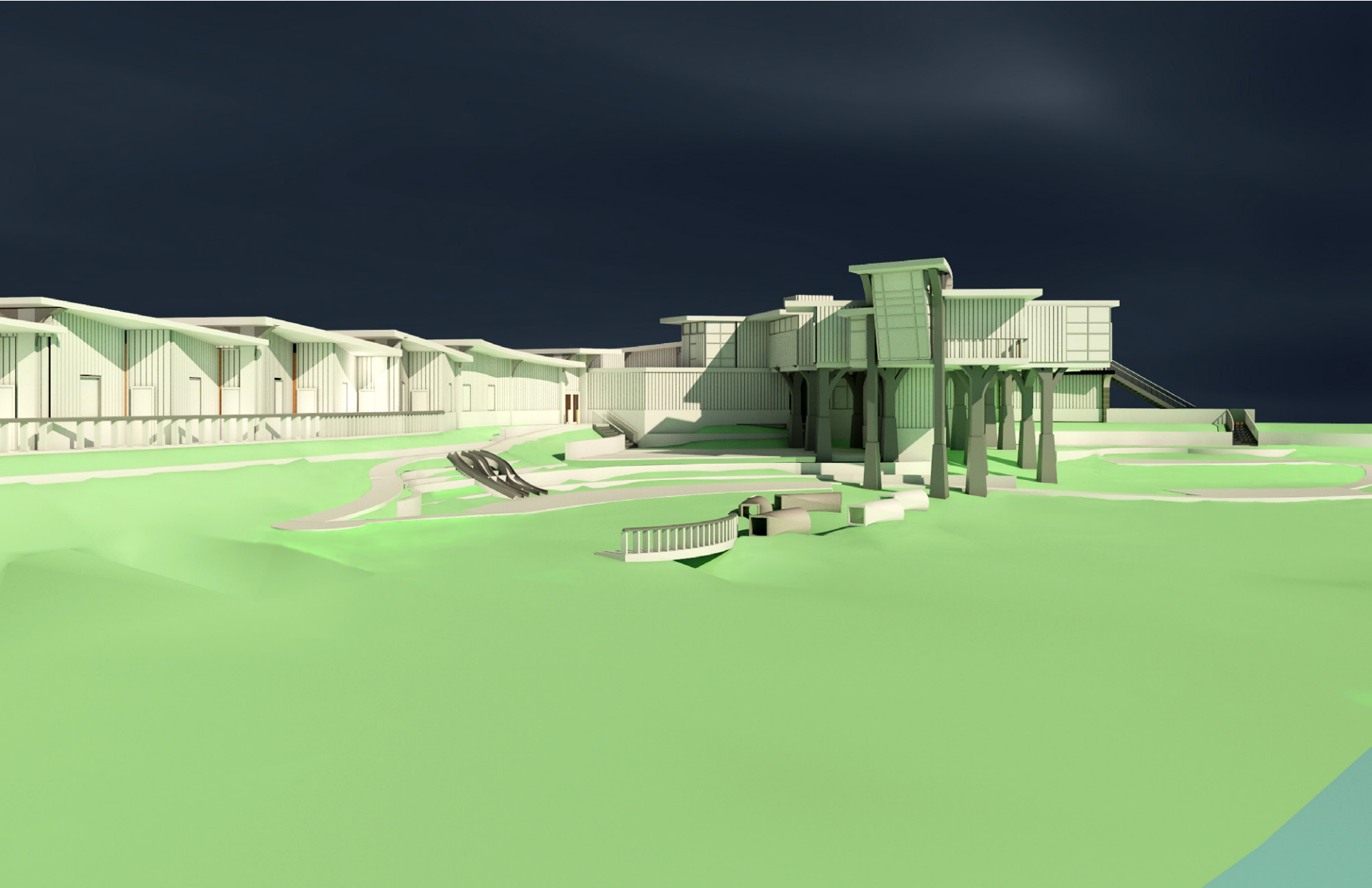


Protects to 45 Ft.

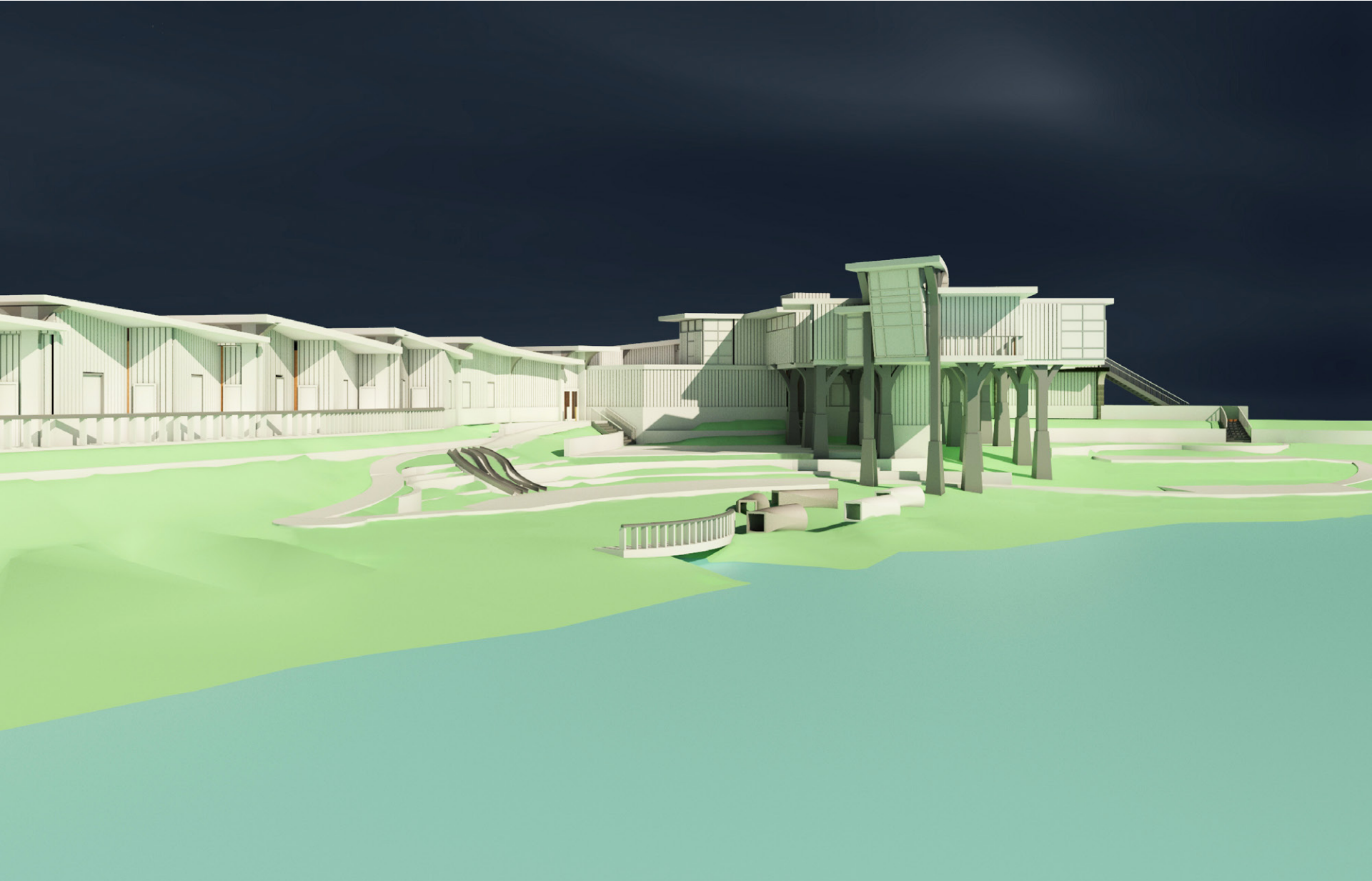
Protects to 43 Ft.



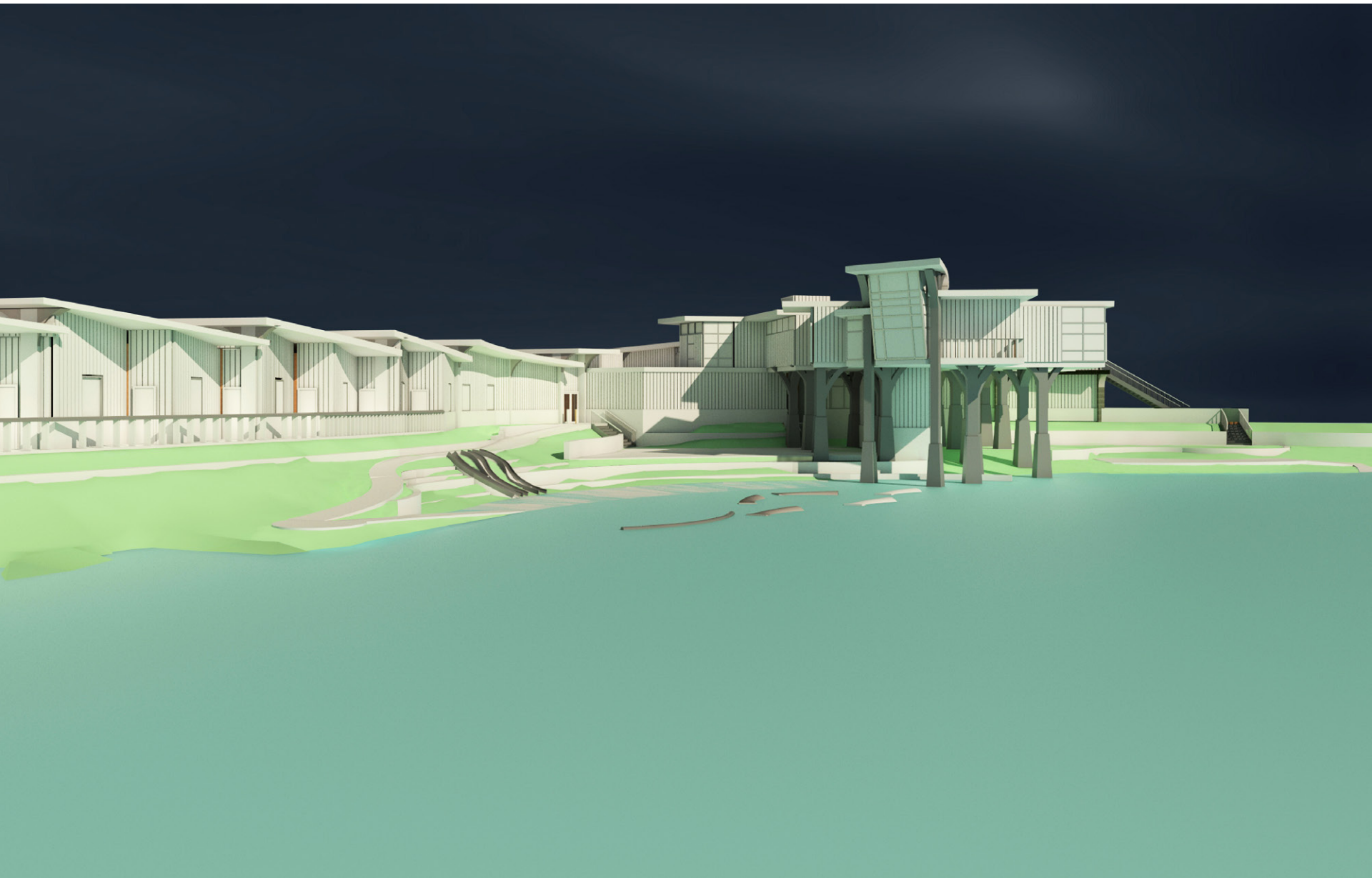
26 Feet



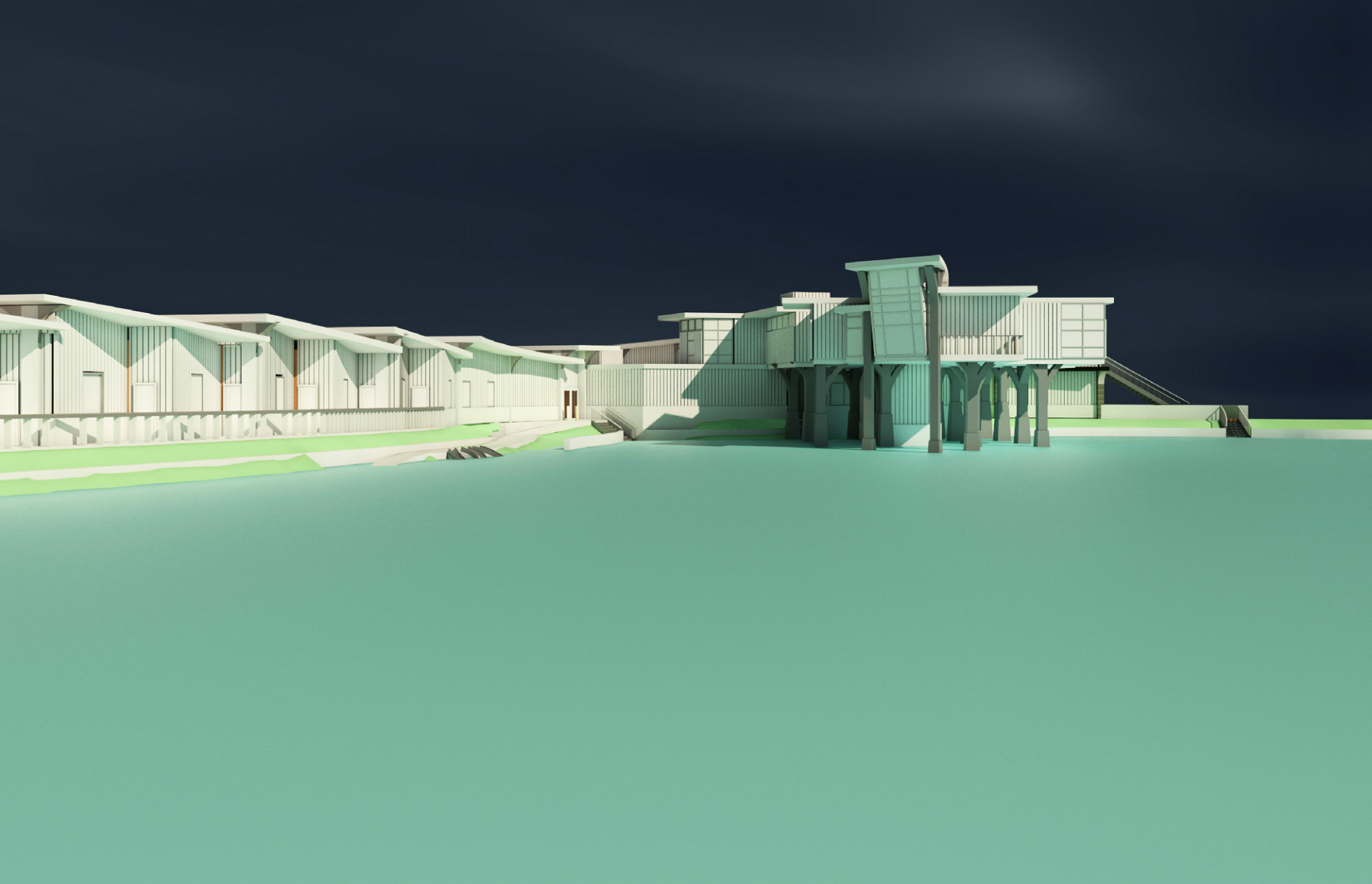
31 Feet



36 Feet



40 Feet



Ground Floor: 40 ft.

