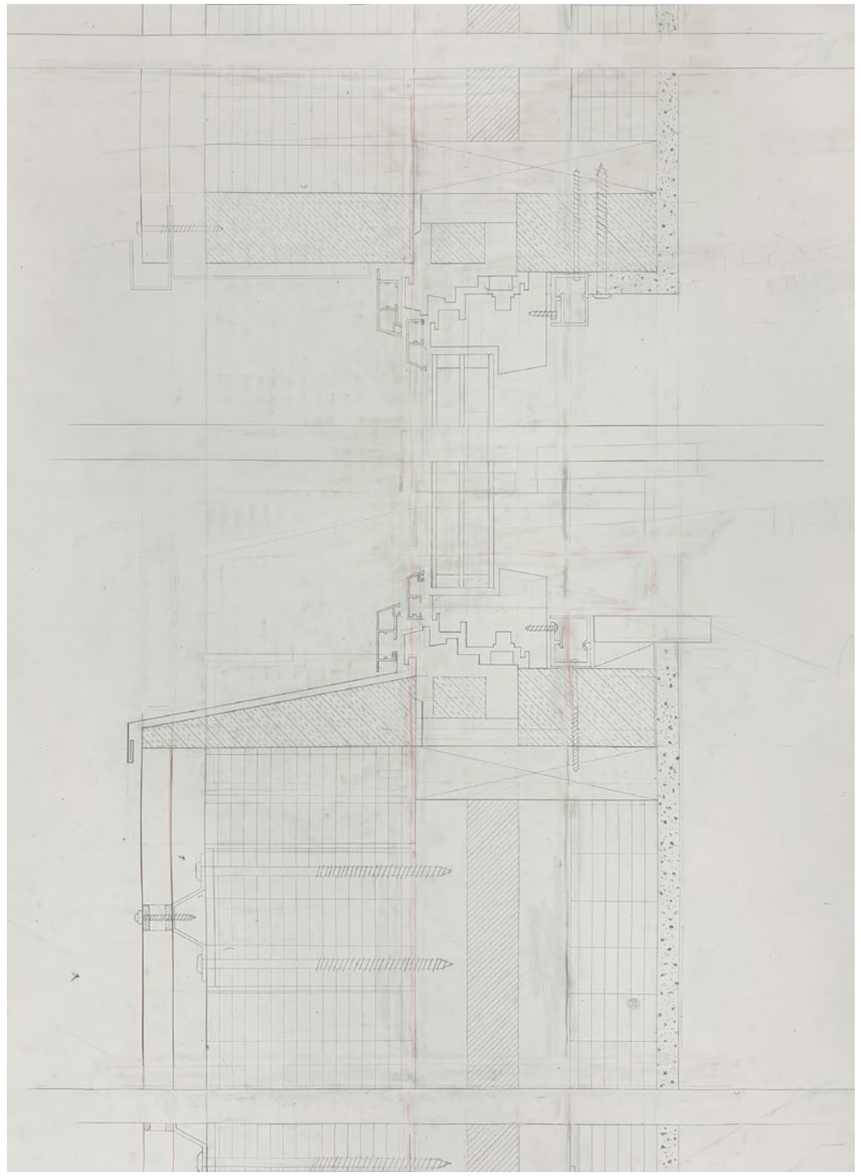
NAOMI KERN
PORTFOLIO
2025

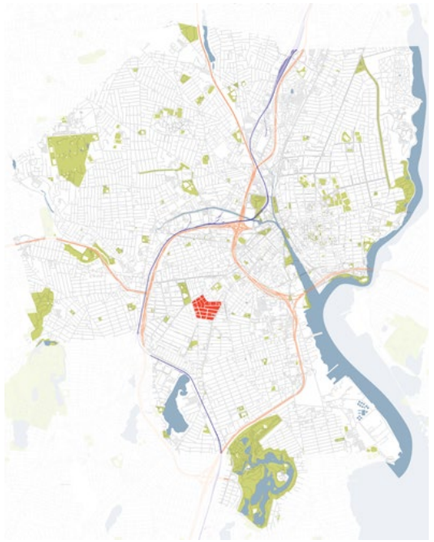


The West End Neighborhood Project reconsiders a block in Providence to prioritize ecological renewal and strengthen social relationships among neighbors. While the residential buildings themselves are preserved, the construction of shared spaces between them both eliminates the physical need for fencing and encourages cooperation and shared responsibility between inhabitants. The property boundaries are reappropriated on all sides, creating three distinct opportunities for social interaction.

MAY 2024

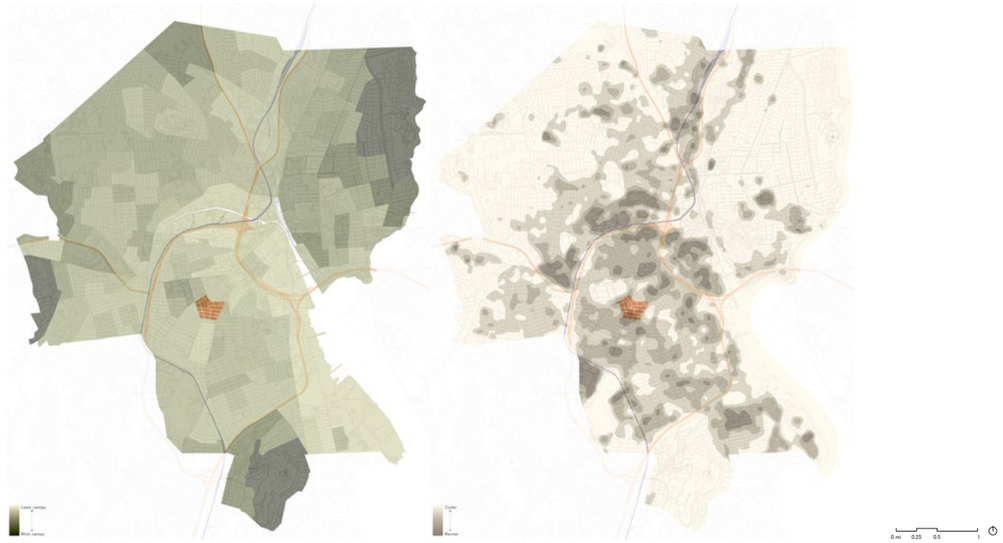
WEST END NEIGHBORHOOD PROJECT

ELEVATION COLLAGE



The West End is a lower-income neighborhood in southwestern Providence, Rhode Island. It has a poverty rate of 28% (1.4x the Providence figure), and less than one third of adults hold a bachelor' s degree. The average household size is 2.6 people. 36% of households are headed by a married couple, while a near-equal 35% have a female head. 85% of residential structures are multi-unit, and 85% of all occupied units are rented, not owned, by residents. Nearly half of residents are Latin American immigrants, and the median age is 33.

(Data from US Census ACS 2023 5-year Estimates)



Tree canopy and air temperature are inversely correlated throughout Providence. Relative to the rest of the city, the West End ranks lower in canopy and higher in temperature.

The selected block features extensive paving and fencing, as well as sparse and uneven tree canopy. Heavy paving exacerbates urban heat and increases local stormwater runoff. Fencing between plots delineates clear boundaries of ownership, precluding the creation of spatial opportunities for shared responsibility between neighbors. Most structures are multi-unit residential, indicating a high percentage of renters and medium-dense population.

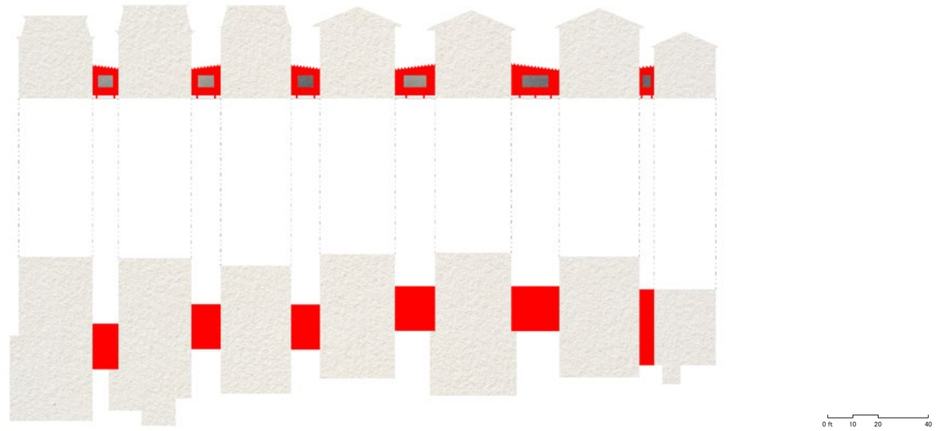
PHASE 1: ENCLOSED PORCHES, OUTDOOR LIVING ROOMS

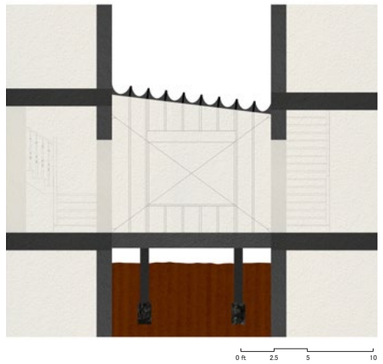
"Good fences make good neighbors," says the neighbor in Robert Frost's "Mending Wall." For the American single-family detached house, they also visualize the outer boundary that allows the isolation of the nucleus. Each lot looks inward onto itself.

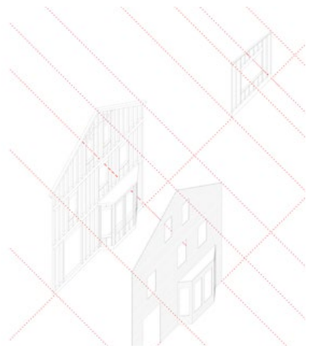
The residential structures on the selected block all take the form of the single-family detached house, and the vast majority of them were erected between 1860 and 1925. Since then, most of their interiors have been divided into several distinct dwelling units. The illusory nuclear shell contains, in reality, a collection of hearths.

In response to these notions of multiplicity and densification, Phase 1 proposes a serious of uninsulated infill structures that thicken the lateral boundary lines into habitable spaces to be shared by residents of adjacent lots. These new constructions impose minimal footprints and allow the ground beneath to remain pervious. All existing asphalt on the block is removed.

BLOCK PLANS







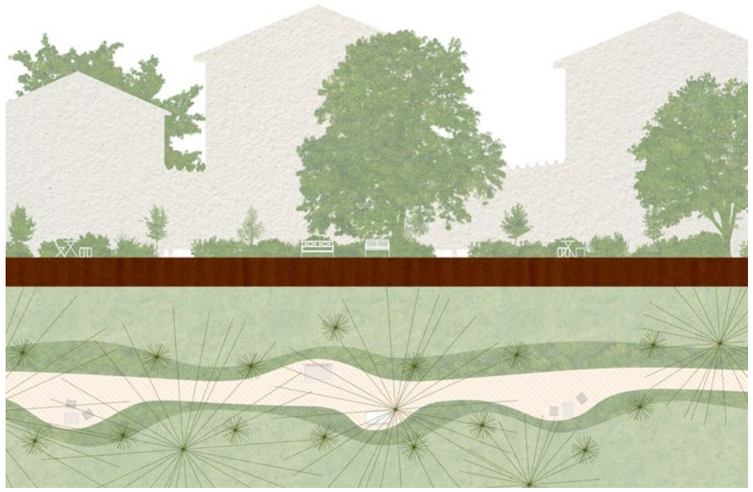
ELEVATIONS + SECTION + EXPLODED AXONOMETRIC

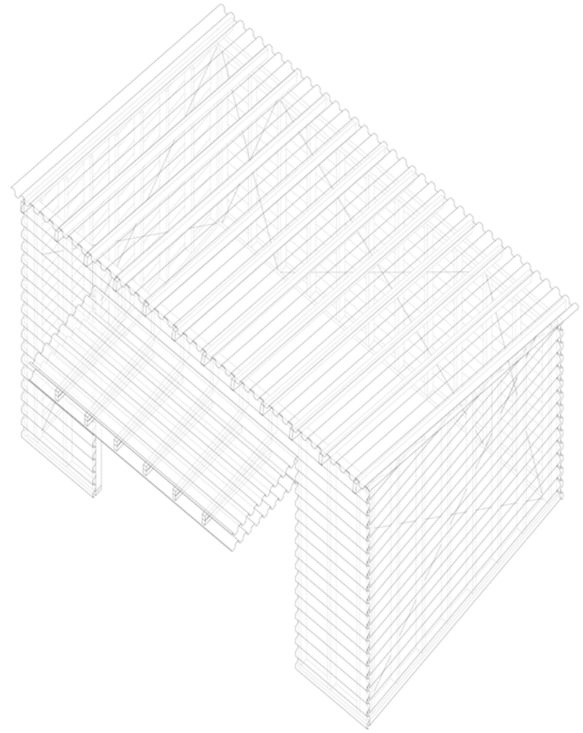
PHASE 2: A CONTRIBUTED PATH

Simple idea: A series of individual contributions generate the emergence and maintenance of something larger and shared.

The rear boundaries of the lots form a spine that follows a midline through the block. For almost its entire length, this spine is traced with chainlink or wood-panel fencing. Newly de-paved backyards occupy the space between the house and the fence.

Phase 2 continues the pursuit of the thickened boundary, here in the form of a walking path. Through an incentive-based program, property owners and tenants can contribute a desired portion of the rearmost area of their yards to the creation of a communal path. The unit of the tile allows the path to remain malleable to residents' changing desires over time, and a shared landscaping tool shed supports increased agency and encourages cooperative responsibility over this outdoor space. Native saplings and shrubbery are planted along the path to densify tree cover and carry over the visual privacy previously afforded by fencing.





PHASE 3: WORKSHOP–MEETING ROOM–PLAYSPACE

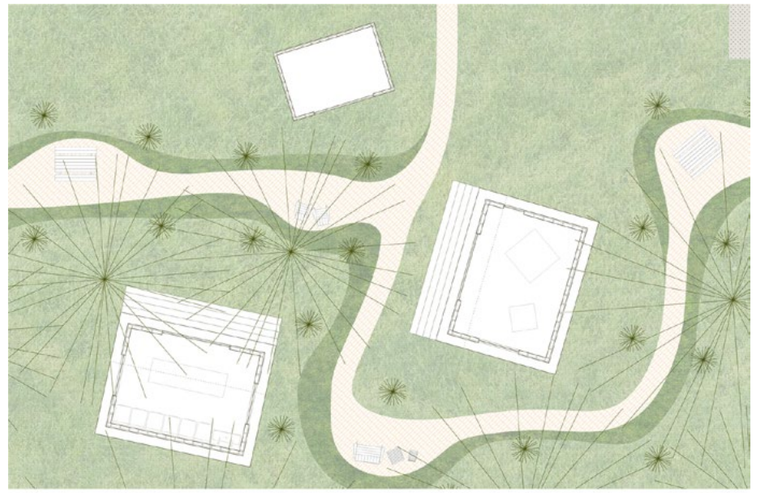
The spatial overlap of labor and socialization is a central aspect of domestic life. In the nuclear ideal, all domestic work is performed within the walls of the house it serves.

In contemporary, low–income neighborhoods in the US, this is hardly possible. A high proportion of single–parent family structures and low–paying job opportunities mean that adults are spread thin across their professional and domestic responsibilities. One remedy for this phenomenon is the sharing of domestic work between two or more families.

Phase 3 proposes two additional workshop structures: one for laundry and another for childcare. These two categories of work are already often performed outside of the house. As lower–cost rental properties frequently lack washers and dryers, residents rely on a single laundromat that serves the entire neighborhood. Childcare is often only available on weekday afternoons through underfunded and overwhelmed public school programs.

Together, the three structures provide tools and space for mutual support, shared accountability, and domestic work efficiency. Their proximity to the houses they serve saves time for busy parents, and cooperatively organized childcare gives residents vital access to the otherwise unaffordable service. The medium–small scale of the block allows neighbors to work together and rely on one another, bolstering communal trust and social ties.

BLOCK PLAN

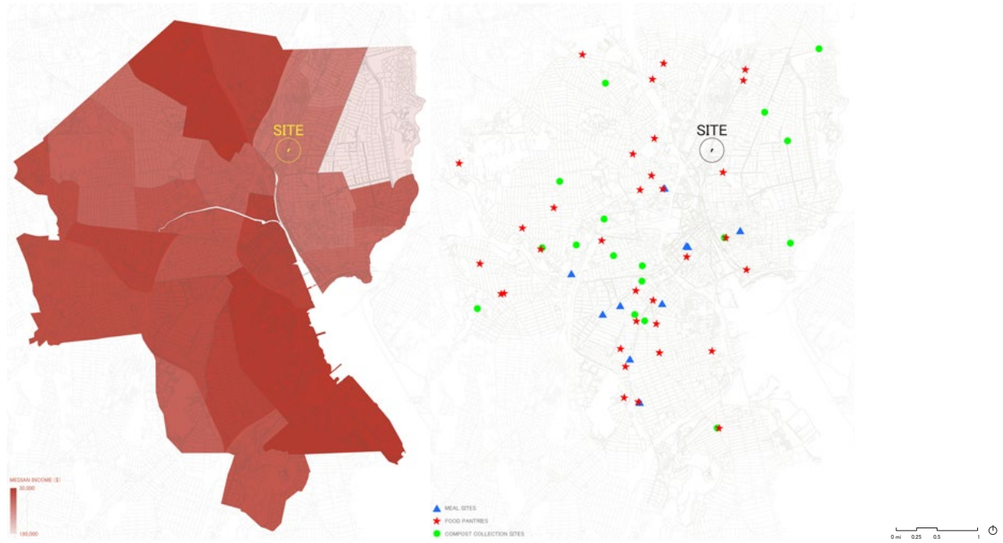


PATH PLAN + ELEVATION COLLAGES + AXONOMETRICS

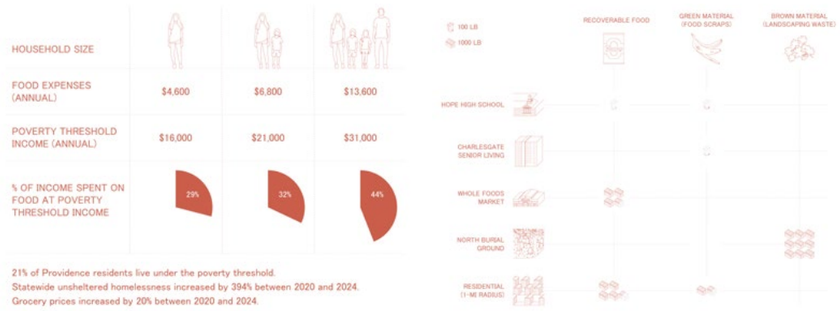
COMMUNITY COMPOST CENTER

This hybrid-program community center is sited in the Mount Hope neighborhood of Providence, RI. Combining a small-scale industrial compost facility with a dining hall and public food pantry, it simultaneously serves to absorb ultra-local food waste (thus redirecting it from its methane-producing fate in the Johnston, RI landfill), produce nutritious finished compost for soil remediation projects across the city, provide access to free groceries and affordable fresh-cooked meals, offer employment and fair wages to job-insecure locals, and knit the community together across socioeconomic divisions.

PERSPECTIVE

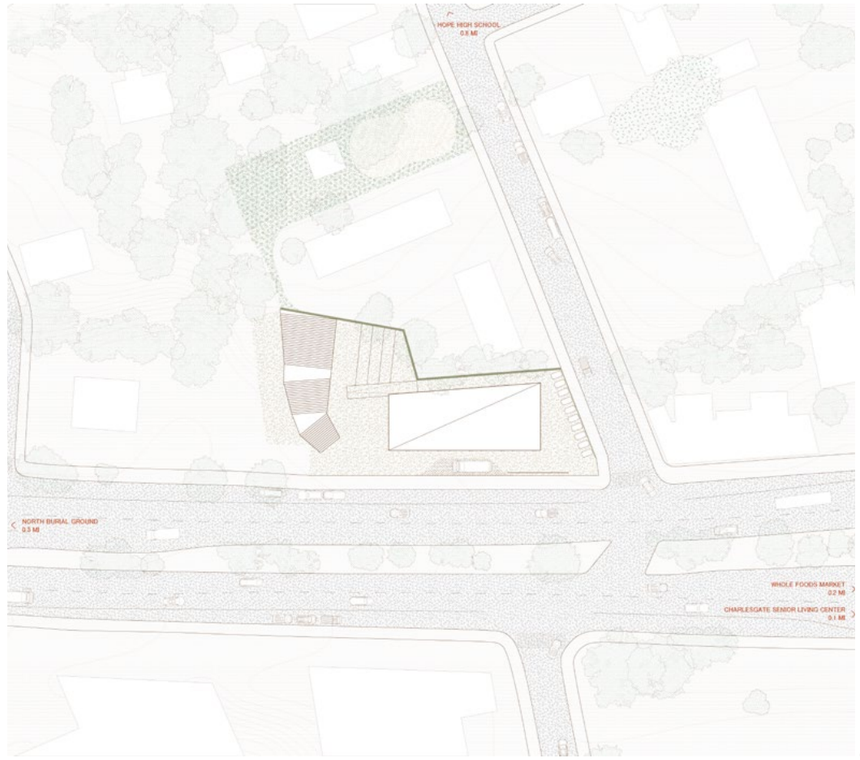


The selected site integrates into existing city-wide networks of meal sites, food pantries, and compost collection centers. Its location in Mount Hope is surrounded by neighborhoods of varying wealth levels, facilitating informal socialization between residents across socioeconomic groups.

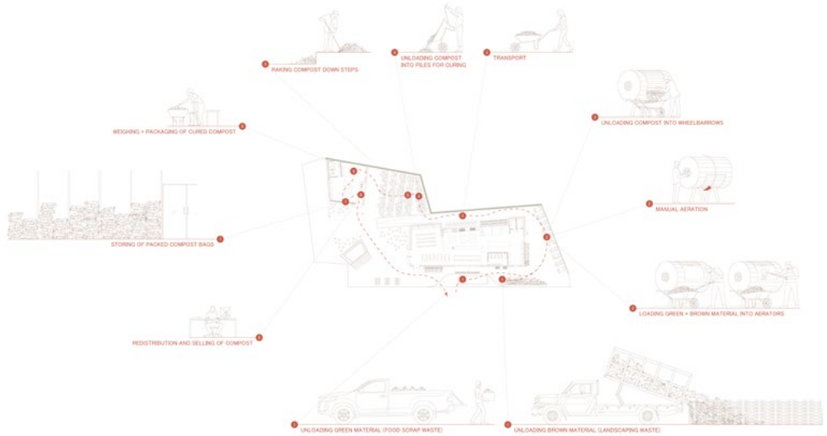


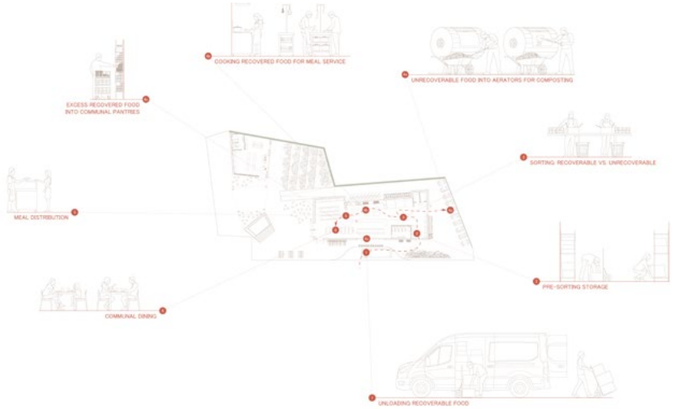
Compost production requires both “green” (nitrogen-rich, i.e. food scraps) and “brown” (carbon-rich, i.e. landscaping waste) material. Through the participation of four local partners and the local residential community, both types of compost ingredients are taken in daily.

Recoverable food (“unsellable” but perfectly edible grocery items) is also collected for on-site meal preparation to serve the communal dining hall. Excess recovered food is used to stock the food pantries.



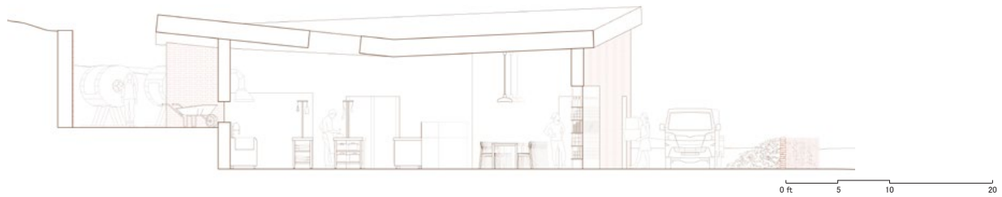
The proposal centers on the two systems of compost production and edible food recovery. Both processes are spatially arraged as loops, with the compost production tracing the perimeter of the site and the food recovery cycling within the main building. The stepped roof provides direct pedestrian access to the nearby park, while the stepped ground for the compost piles allows for easier aeration between curing phases. All residential, municipal, and commercial partners are within 1 mile of the site.

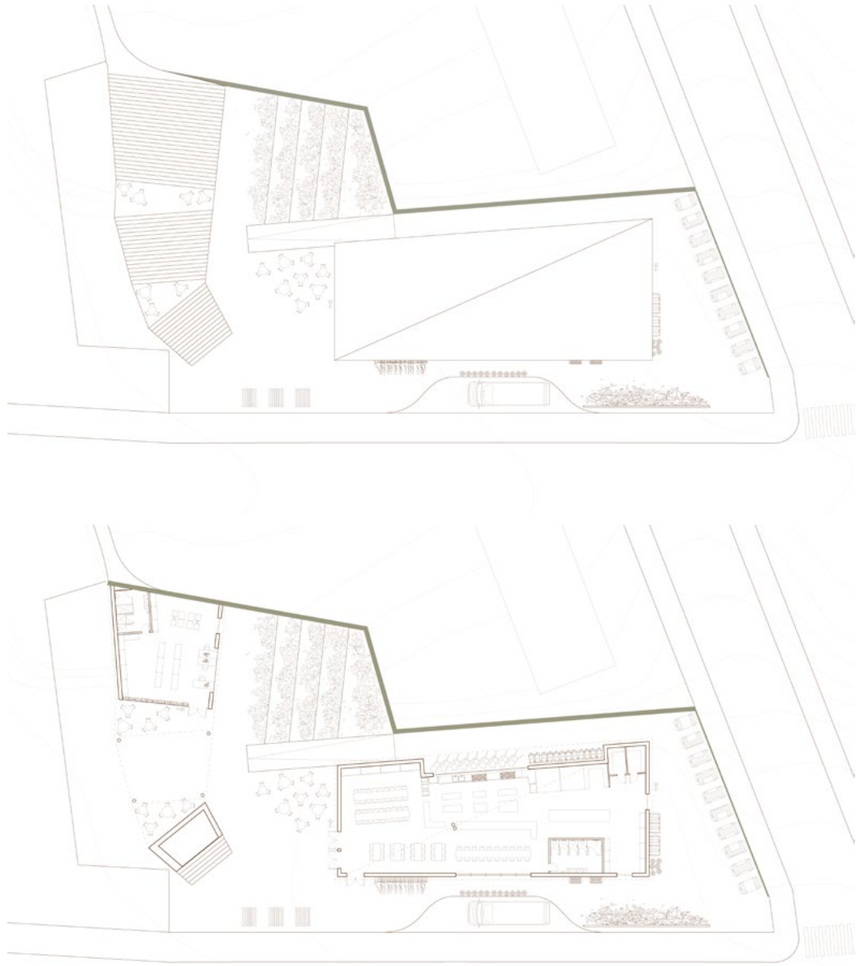




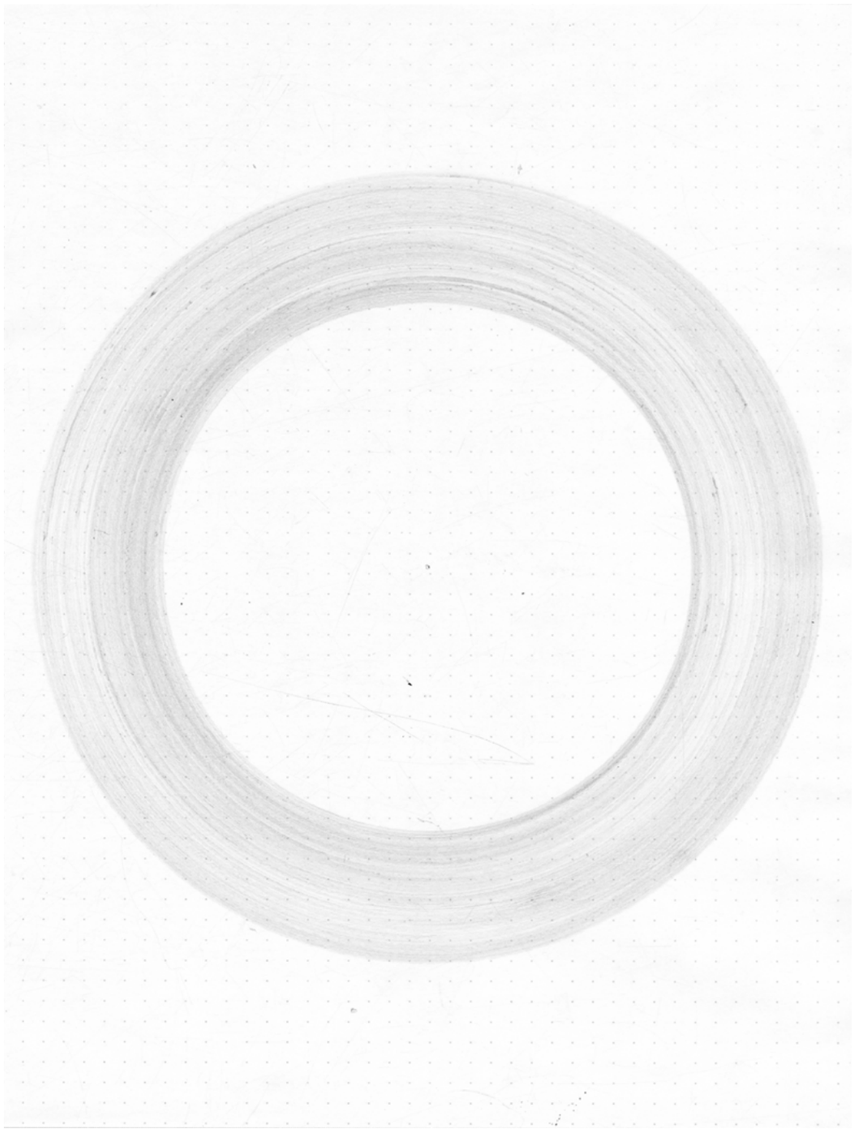
DEC. 2023

SYSTEMS FOR COMPOST PRODUCTION AND EDIBLE FOOD RECOVERY





SECTION + ROOF PLAN + PLAN



KEEPING THE HOUSE: MEMORY, FUTILITY, LABOR

The practice of domestic cleaning is one that binds notions of memory, futility, and labor. It also carries close associations with the medium of the textile, both as a tool for cleaning and a thing to be cleaned in and of itself. Memory is sustained, in part, through physical traces and "ghosts" of some event, and in cleaning, the cloth often carries these traces. The three-dimensional body of the cloth allows it to absorb and hold foreign matter; simultaneously, its fibrous makeup allows it to shed parts of itself without coming apart completely.

Traces can be direct or indirect. Direct traces might be stains, impressions, or folds that result from the event itself. Indirect traces are those that result from the labor that succeeds the event; the fiber damage that results from laundry fits into this category.

Labor, here, is the reaction to memory. It is the physical effort in service of restoring (remembering, reenacting) some previous state or forgetting some undesirable event. Sometimes, it seeks to achieve both of these objectives; the results vary. These efforts to remember or forget are inevitably futile. Domestic cleaning endeavors to restore "like new"-ness and erase, undo, or render inert any blemish, but in reality, it usually leaves its own traces. In removing a stain, for instance, one damages the fiber, effectively trading one type (and scale) of evidence for another. Because the stain is more visible to the naked eye, its erasure is prioritized over the preservation of the fiber. Human sensory perception, primarily through sight, thus sets the parameters of scale and the hierarchy of objectives.

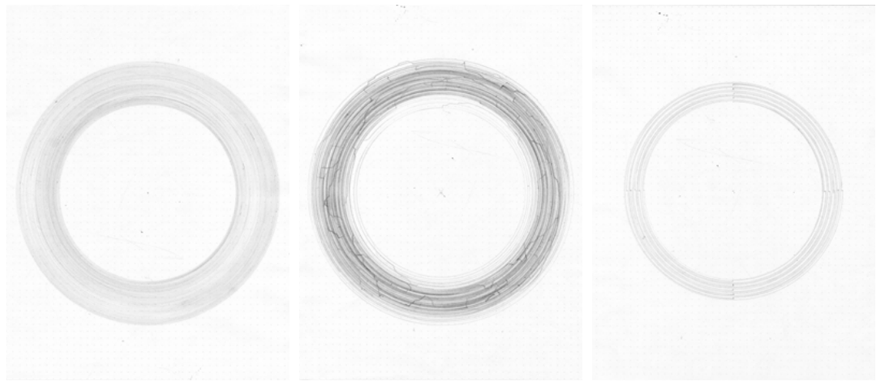
There emerges, thus, a linear trajectory of material degradation through the cyclical rhythm of use, restoration, use, restoration—each stage leaving something behind in the cloth. The ideal product of cleaning, of course, is not this linear trajectory, but rather a kind of perfect circle, where the starting state and the ending state are indistinguishable from each other.

The impossibility of this pursuit reveals this futility and absurdity. The practices of soaking, scrubbing, wringing, and rinsing become almost tragicomic; all that time and sweat, and what does one have to show for it? Is it the absence of matter? The absence of dirt, stain, evidence?

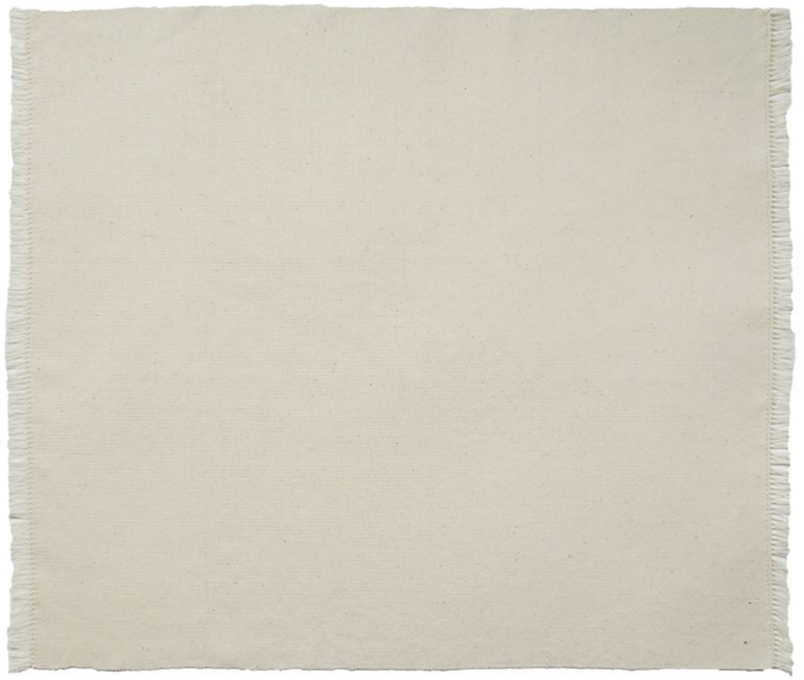
Four dishcloths woven of 16/2 undyed cotton; four households engaged in a weekly rhythm of use and restoration.

each 19.25 x 23.75 in.

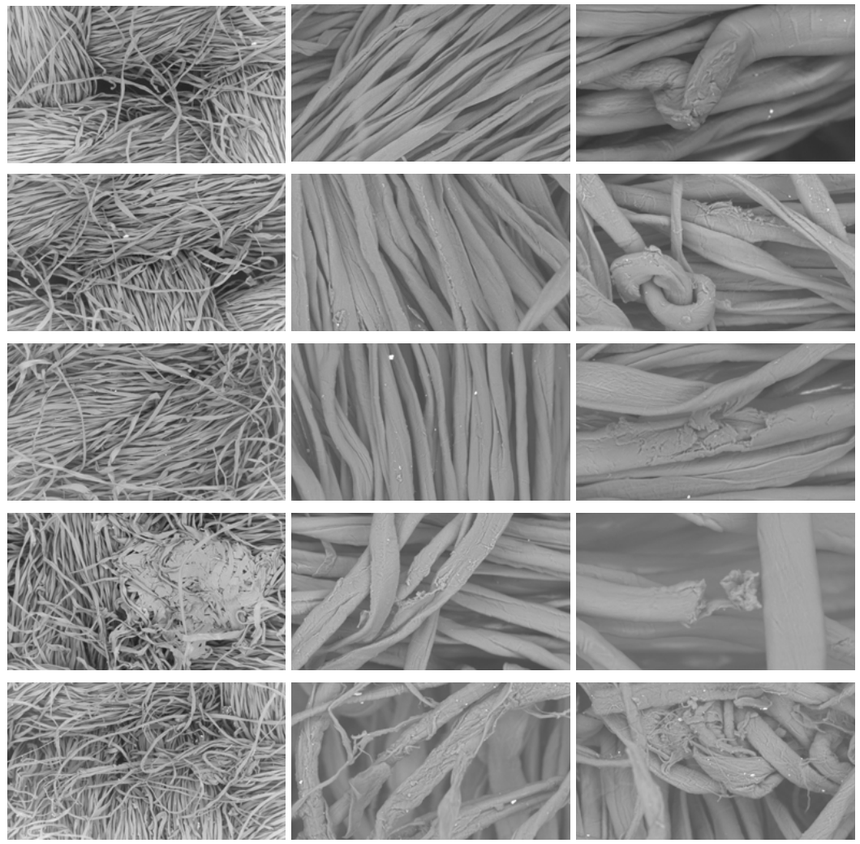
10 x 16 in.



each 8.5 x 11 in.



MAY 2025



Two cloths woven of 16/2 undyed cotton, printed, and then unraveled and rewoven.
Attempting (to no real avail) to preserve the original image in the reconstruction.

CLOTHS: WOVEN, PRINTED, PARTIALLY UNRAVELED

CLOTHS: FULLY UNRAVELED, REWOVEN + DIAGRAMS

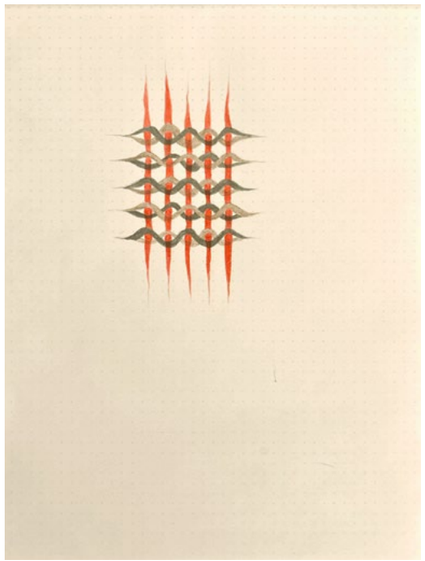
```python
import numpy as np
import matplotlib.pyplot as plt
from PIL import Image
import random

class plainweave:
    def __init__(self, ends, picks):
        """
        Initialize the warp and weft of the cloth with the given ends and picks (in pixels).
        """
        self.ends = ends
        self.picks = picks
        self.warp = np.zeros((ends, picks))+255
        self.weft = np.zeros(picks*ends)+255
        self.woven = False
        self.image = None

    def weave_weft(self):
        """
        Convert 1D weft array into 2D array
        """
        if self.woven:
            print("The weft is already woven.")
            return
        else:
            forward = True
            woven_weft = []
            for i in range(self.picks):
                slice = (i*self.ends, (i+1)*self.ends)
                if forward:
                    woven_weft.append(self.weft[slice[0]:slice[1]])
                else:
                    woven_weft.append(self.weft[slice[0]:slice[1]][::-1])
                forward = not forward

            self.weft = np.array(woven_weft)
            self.woven = True

    def unravel_weft(self):
        """
        Convert 2D weft array into 1D array
        """
        if not self.woven:
            print("The weft is already unraveled.")
            return
        else:
            forward = True
            unraveled_weft = []
            for row in self.weft:
                if forward:
                    for r in row:
                        unraveled_weft.append(r)
                else:
                    for r in row[::-1]:
                        unraveled_weft.append(r)
                forward = not forward

            self.weft = np.array(unraveled_weft)
            self.woven = False

    def imprint(self, image):
        """
        Imprint the cloth with the given image, converting it to grayscale and resizing it to the
specified dimensions.
        """
        # Check that warp is woven
        if not self.woven:
            print("The weft is not woven yet.")
            return

        img = Image.open(image)
        grayscale_img = img.convert('L')
        resized_img = grayscale_img.resize((self.ends, self.picks), Image.Resampling.LANCZOS)
        img_array = np.array(resized_img)
        self.image = img_array

        on_warp = True
        for row in range(len(img_array)):
            on_warp = not on_warp
            for column in range(len(img_array[0])):
                on_warp = not on_warp
                if on_warp:
                    self.warp[column, row] = img_array[row, column]
                else:
                    self.weft[row, column] = img_array[row, column]

    def twist_weft(self):
        """
        Randomly make half of the weft pixels white
        """
        if self.woven:
            print("The weft must be unraveled to twist.")
            return

        for i in range(len(self.weft)):
            if random.choice([True, False]):
                self.weft[i] = 255
            else:
                continue

    def twist_warp(self):
        """
        Randomly make half of the warp pixels white
        """
        if self.woven:
            print("The warp must be unraveled to twist.")
            return

        for i in range(len(self.warp)):
            for j in range(self.picks):
                if random.choice([True, False]):
                    self.warp[i][j] = 255
                else:
                    continue


    def virgin_warp(self):
        """
        Clear the warp (use a virgin warp) by setting all pixels to white
        """
        self.warp = np.zeros((self.ends, self.picks))+255

    def add_constant_weft_offset(self, offset):
        """
        Add an 2x offset number of white pixels to the weft array
        """
        if self.woven:
            print("The weft must be unraveled to add offset.")
            return
        self.weft = np.append(np.zeros(offset*2)+255, self.weft)[:self.ends*self.picks]

    def add_random_weft_offset(self, likelihood):
        """
        Add a random amount of white pixels to the weft array with some likelihood
        """
        if self.woven:
            print("The weft must be unraveled to add offset.")
            return

        for i in range(len(self.weft)):
            if random.random() < likelihood:
                self.weft = np.insert(self.weft, i, 255)
            else:
                continue
        self.weft = self.weft[:self.ends*self.picks]

    def show_weft(self):
        if not self.woven:
            print("The weft must be woven to show.")
            return
        plt.figure(figsize=(20, 20))
        plt.axis('off')
        plt.imshow(self.weft, cmap='gray', vmin=0, vmax=255)
        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')

    def show_warp(self):
        plt.figure(figsize=(20, 20))
        plt.axis('off')
        plt.imshow(self.warp, cmap='gray', vmin=0, vmax=255)
        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')

    def show_cloth(self):
        # Check that warp is woven
        if not self.woven:
            print("The cloth is not woven yet.")
            return
        woven_cloth = np.zeros((self.picks, self.ends))

        on_warp = True
        for row in range(len(woven_cloth)):
            on_warp = not on_warp
            for column in range(len(woven_cloth[0])):
                on_warp = not on_warp
                if on_warp:
                    woven_cloth[row, column] = self.warp[column, row]
                else:
                    woven_cloth[row, column] = self.weft[row, column]

        plt.figure(figsize=(20, 20))
        plt.axis('off')
        plt.imshow(woven_cloth, cmap='gray', vmin=0, vmax=255)
        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')
```

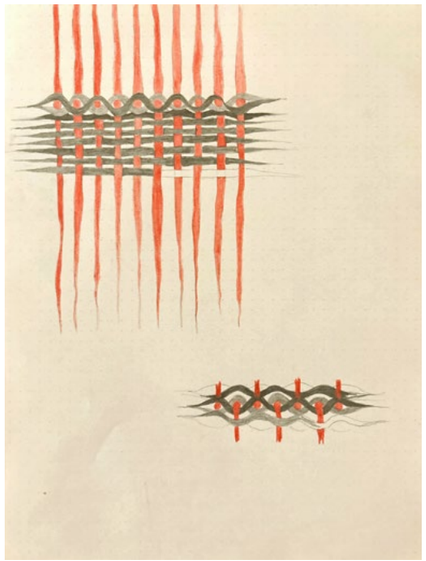
```python
cloth = plainweave(350, 460)
cloth.weave_weft()
cloth.imprint(r"C:\Users\naomi\Desktop\Code\Reweave01_me washing\Reweave01_01_original photo.png")

cloth.unravel_weft()
cloth.virgin_warp()
cloth.add_random_weft_offset(0.01)
cloth.add_constant_weft_offset(50)
cloth.twist_weft()
cloth.twist_warp()
cloth.show_weft()
cloth.show_warp()
cloth.weave_weft()
cloth.show_cloth()
```


PYTHON CODE RETROACTIVELY WRITTEN TO DESCRIBE PHYSICAL PROCESS

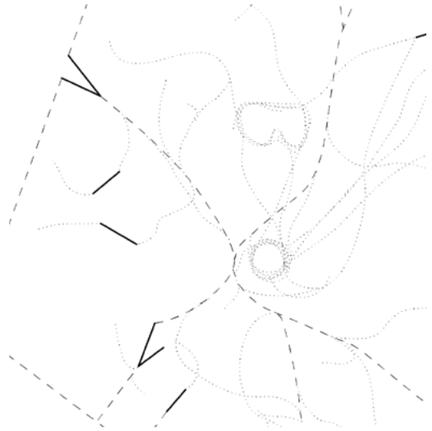
COMPUTER-GENERATED IMAGE OF REWOVEN CLOTH GRAPHIC + REWOVEN CLOTH

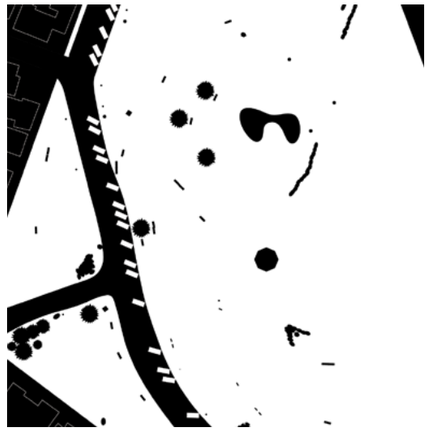
Performance piece spanning 1 hour 43 minutes. Frame constructed of 2x6 members, dowels, plywood; cloth woven of undyed cotton.

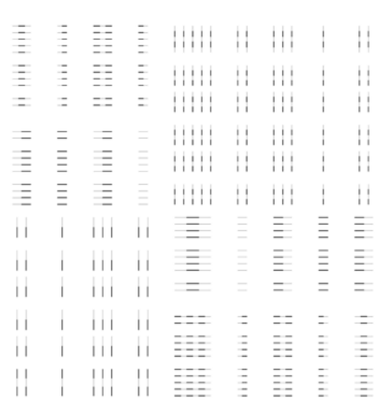


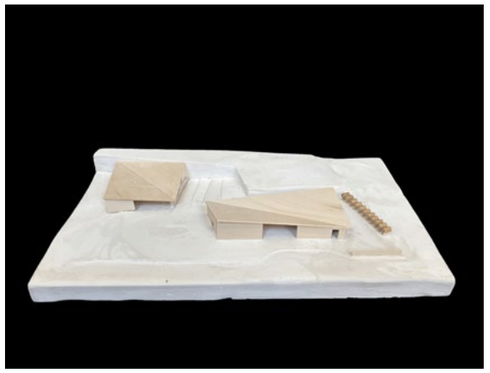


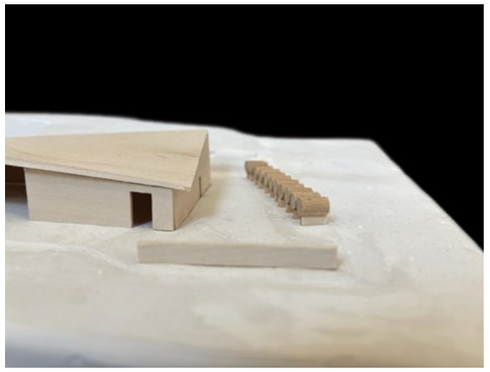
2020–2025

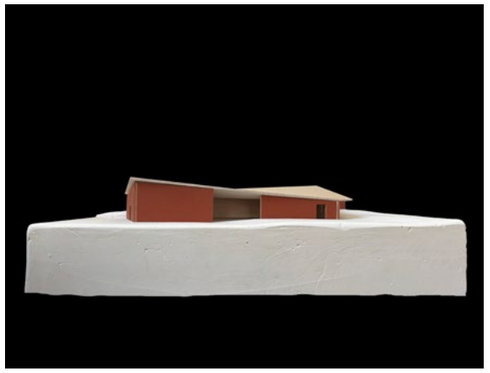


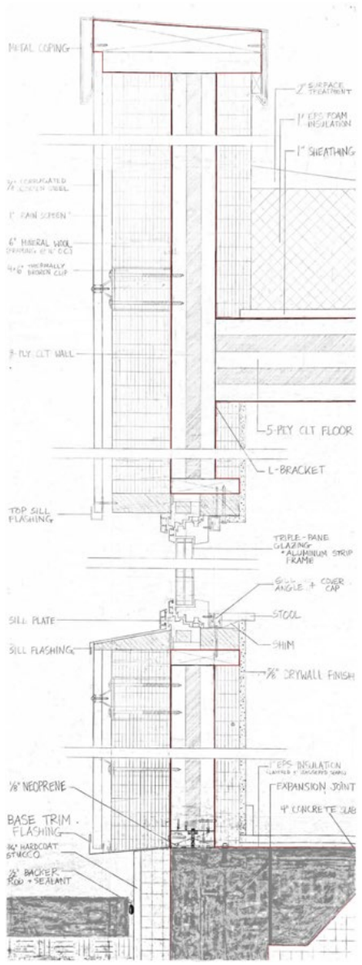


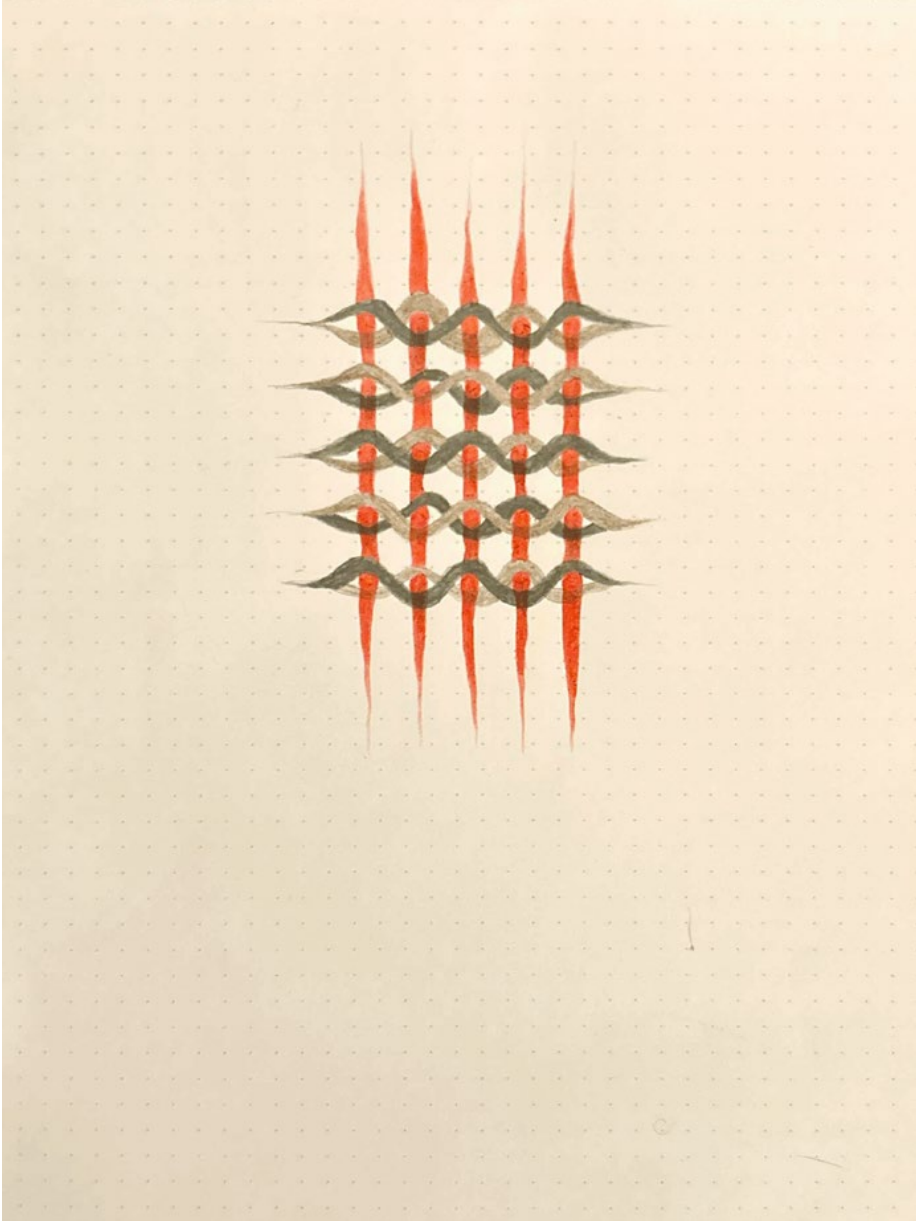








METAL COPING
SURFACE TREATMENT
1" EPS FOAM INSULATION
1" SHEATHING
3-PLY CLT WALL
5-PLY CLT FLOOR
L-BRACKET
TOP SILL FLASHING
TRIPLE-PANE GLAZING + ALUMINUM STRIP FRAME
ANGLE + COVER CAP
STOOL
SILL PLATE
SHIM
SILL FLASHING
⅝" DRYWALL FINISH
EPS INSULATION
EXPANSION JOINT
4" CONCRETE SLAB
⅛" NEOPRENE
BASE TRIM - FLASHING
⅜" BACKER ROD + SEALANT

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