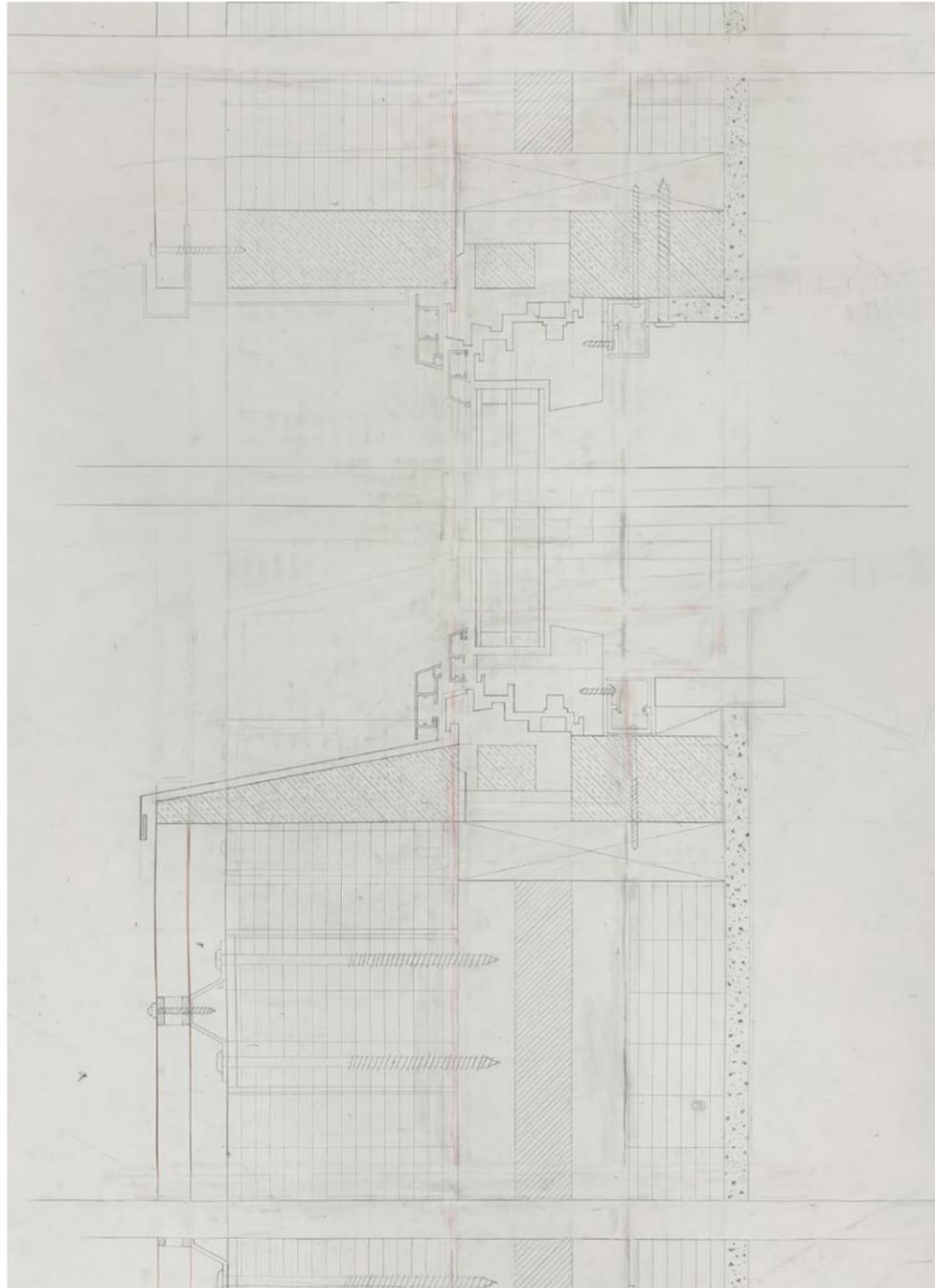




NAOMI KERN
PORTFOLIO
2025



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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.

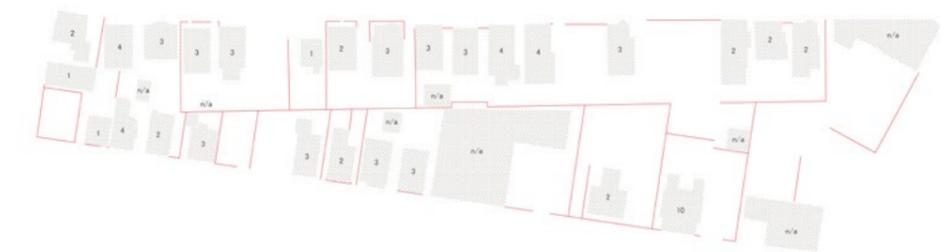


The West End is a lower-income neighborhood in southwestern Providence, Rhode Island. It has a poverty rate of 28% (1.4x the Providence figure), and less than one third of adults hold a bachelor's degree. The average household size is 2.6 people. 36% of households are headed by a married couple, while 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)



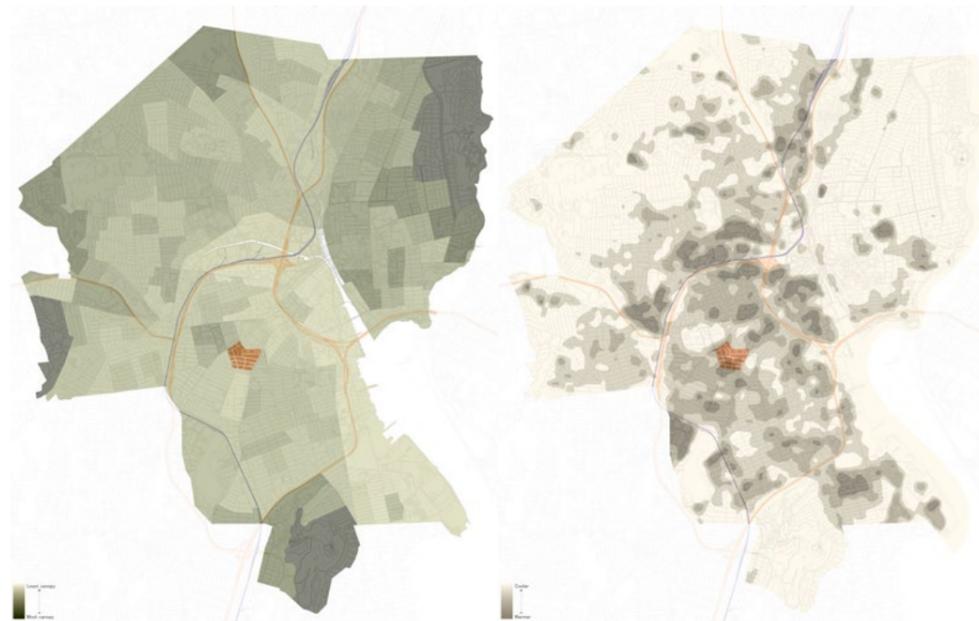
Building footprint
Impervious surface
Pervious surface



Fencing

0 ft 50 100 200

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.



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.

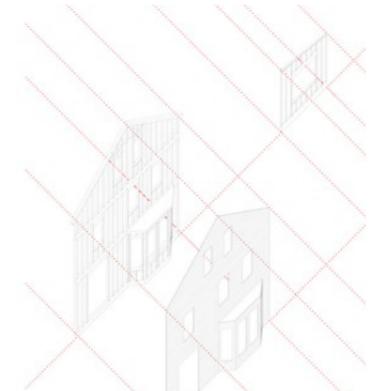
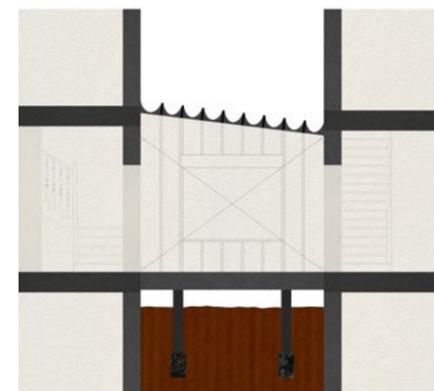
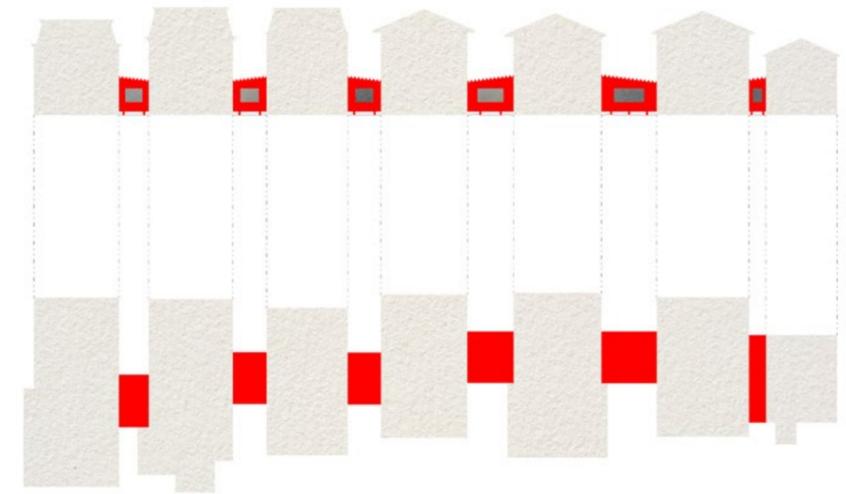
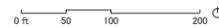
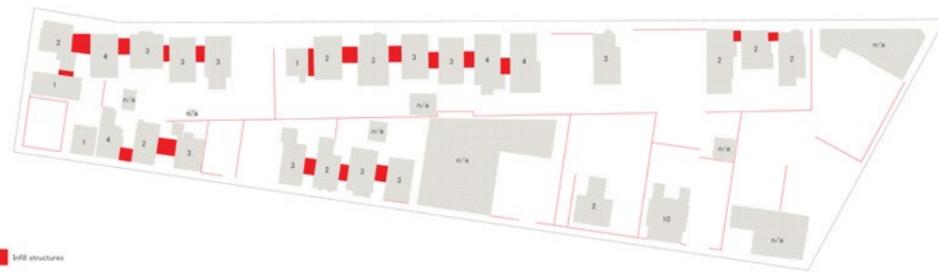
0 ft 25 50 100

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 series 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.

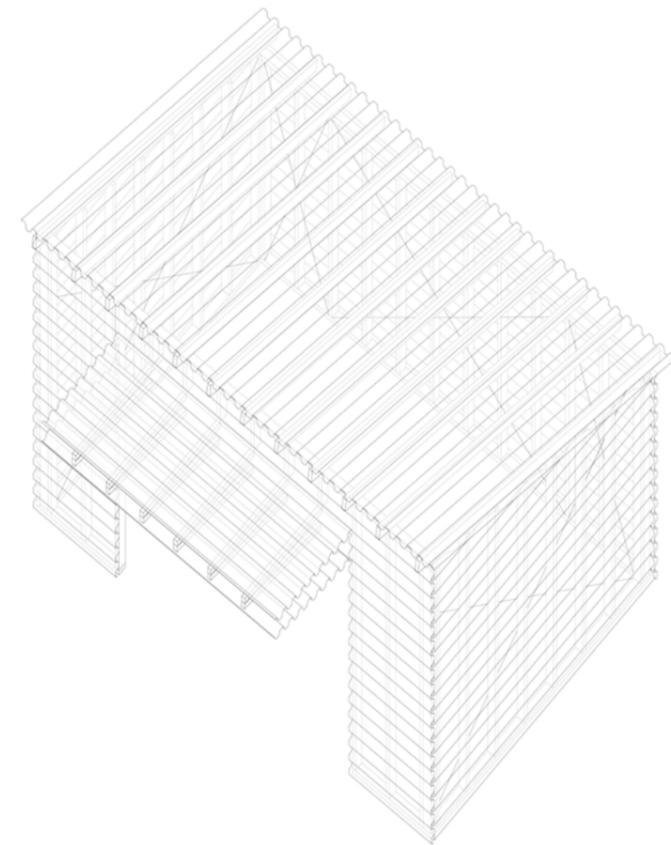
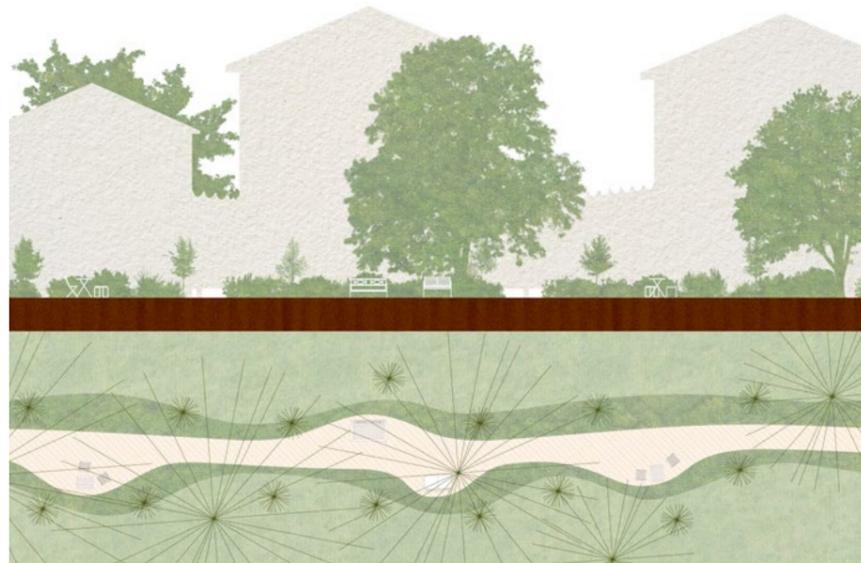
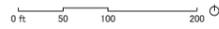
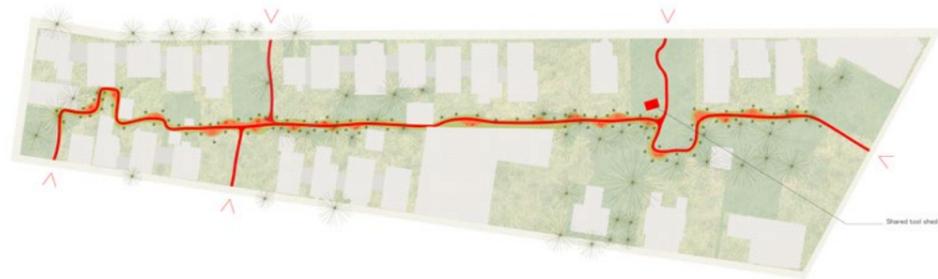


PHASE 2: A CONTRIBUTED PATH

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.



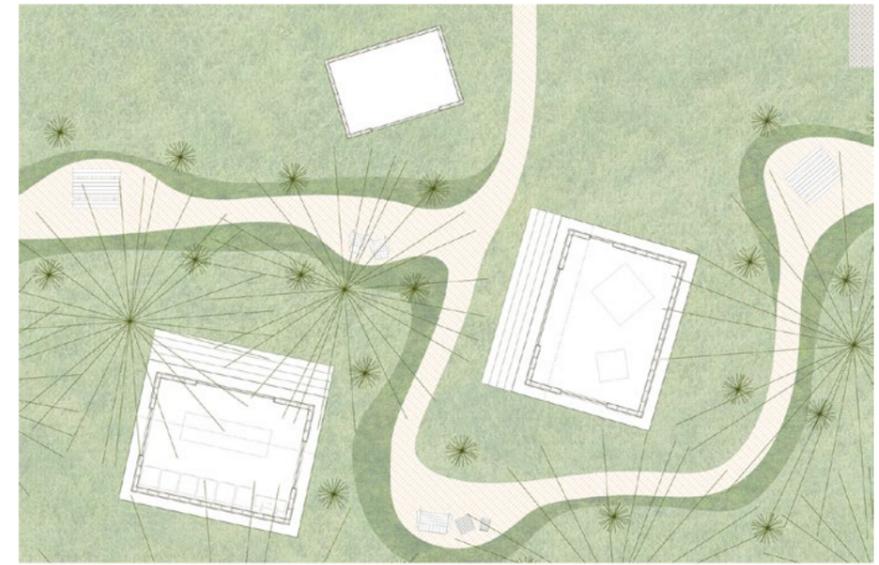
PHASE 3: WORKSHOP-MEETING ROOM-PLAYSPACE

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.

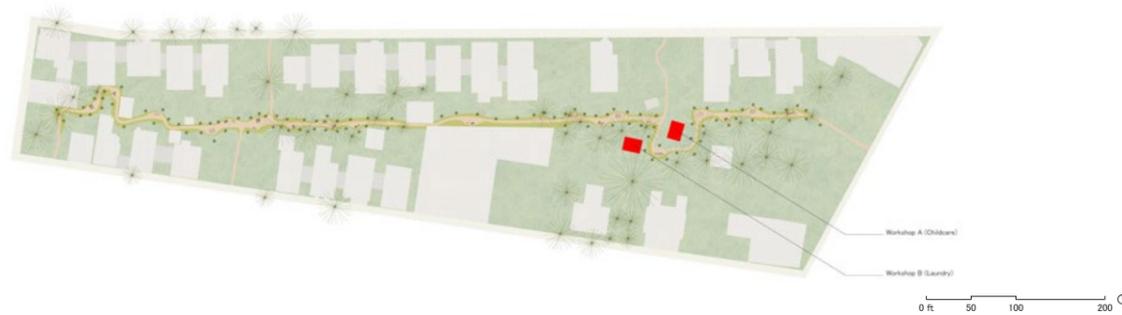
Together, the three structures provide tools and space for mutual support, shared accountability, and domestic work efficiency. Their proximity to the houses they serve saves time for busy parents, and cooperatively organized childcare gives residents vital access to the otherwise unaffordable service.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



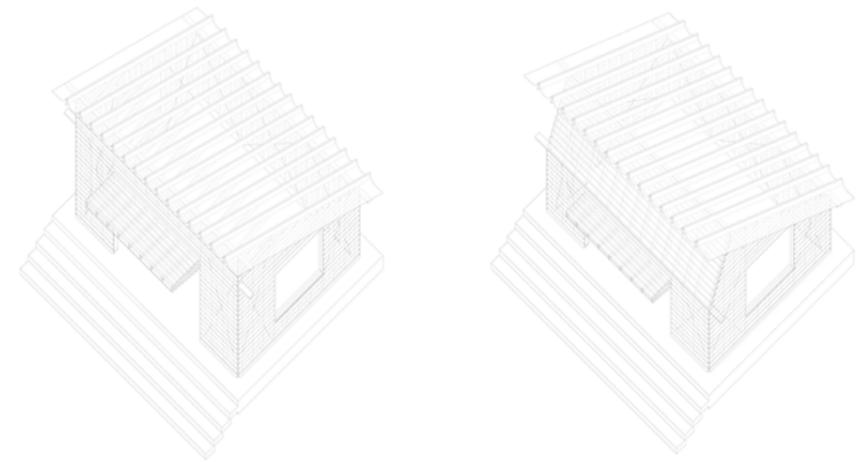
0 ft 5 10 20



0 ft 2.5 5 10

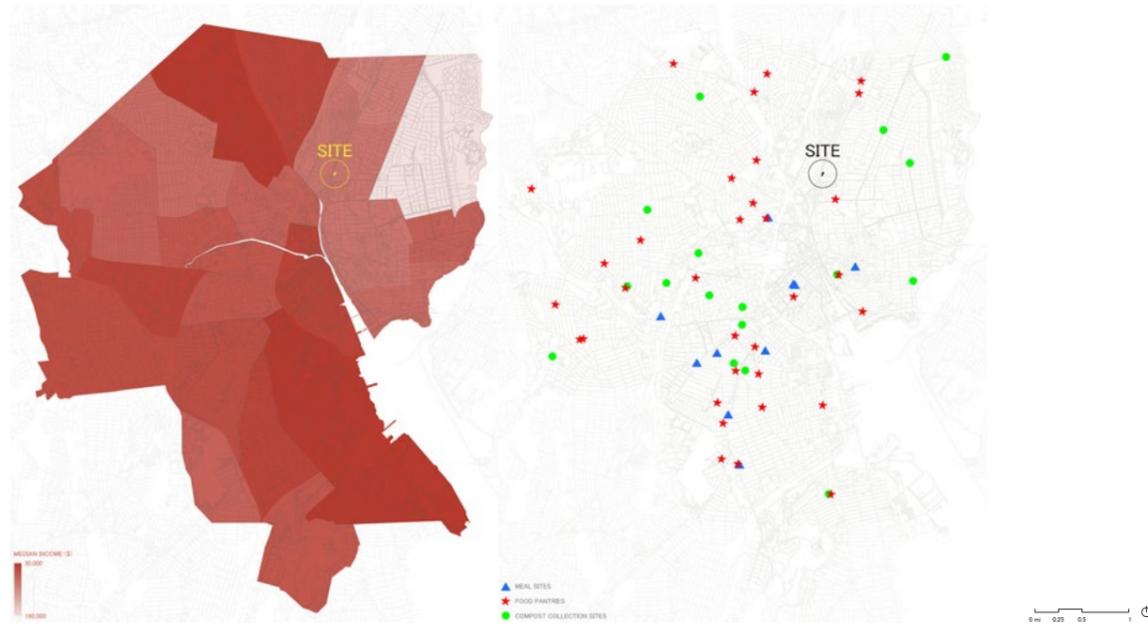


0 ft 50 100 200





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.

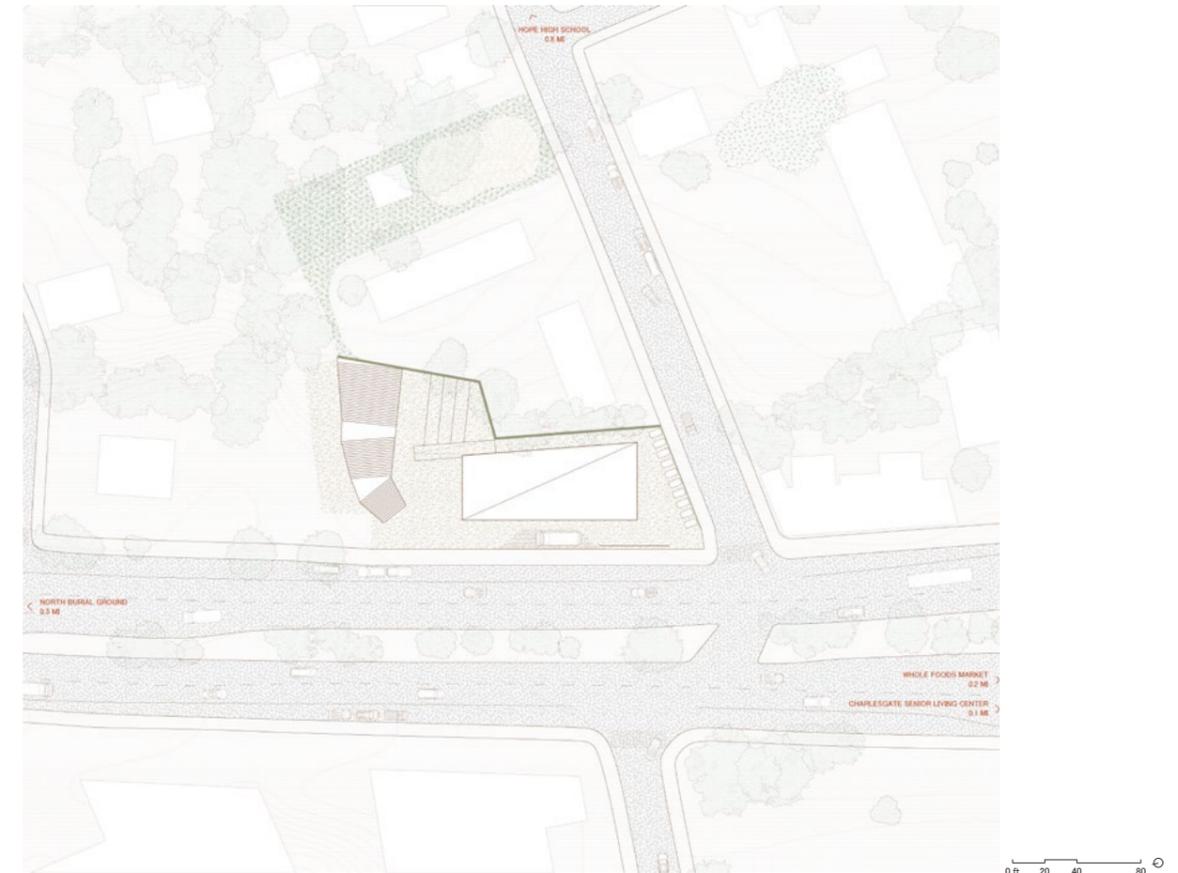


The selected site integrates into existing city-wide networks of meal sites, food pantries, and compost collection centers. Its location in Mount Hope is surrounded by neighborhoods of varying wealth levels, facilitating informal socialization between residents across socioeconomic groups.

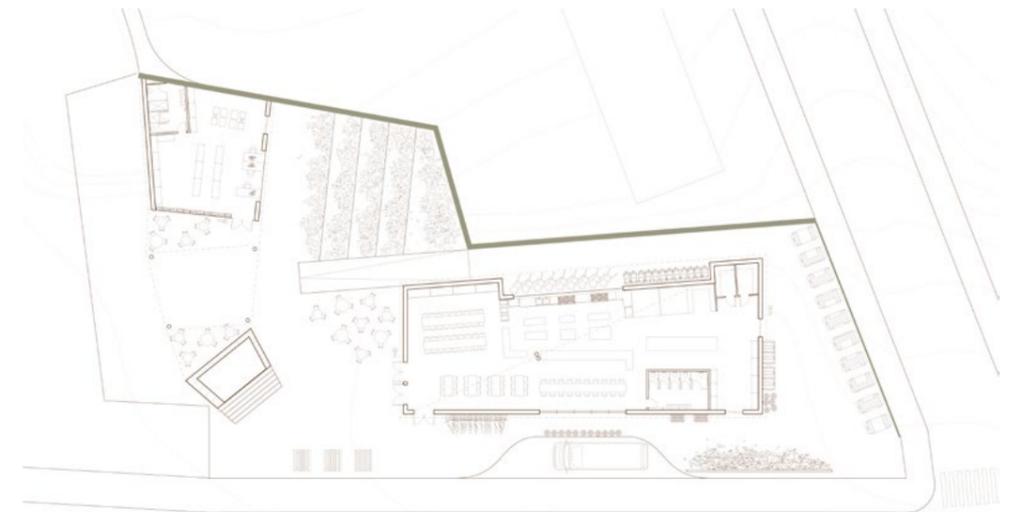
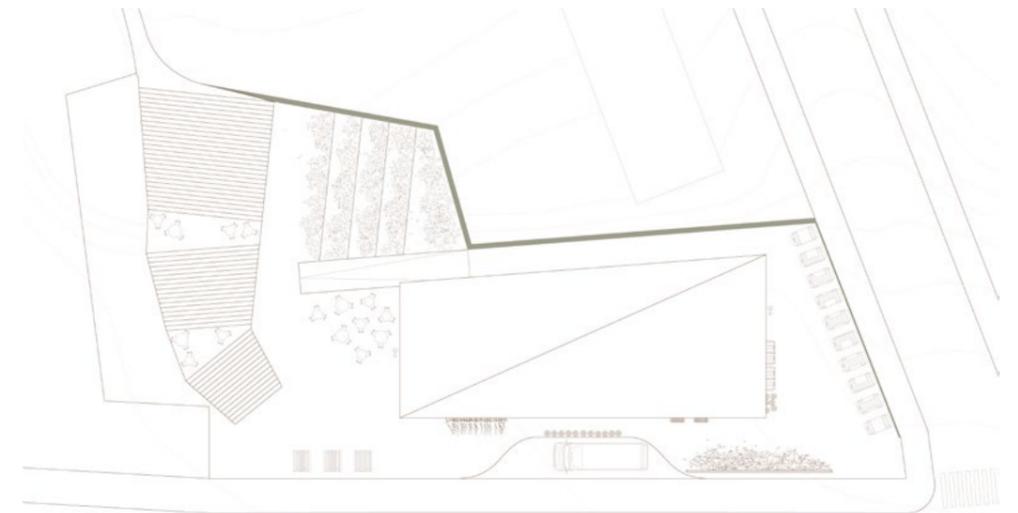
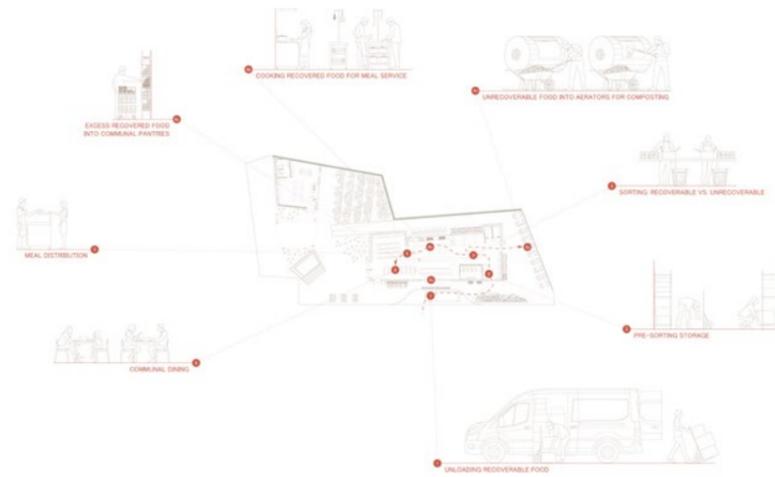
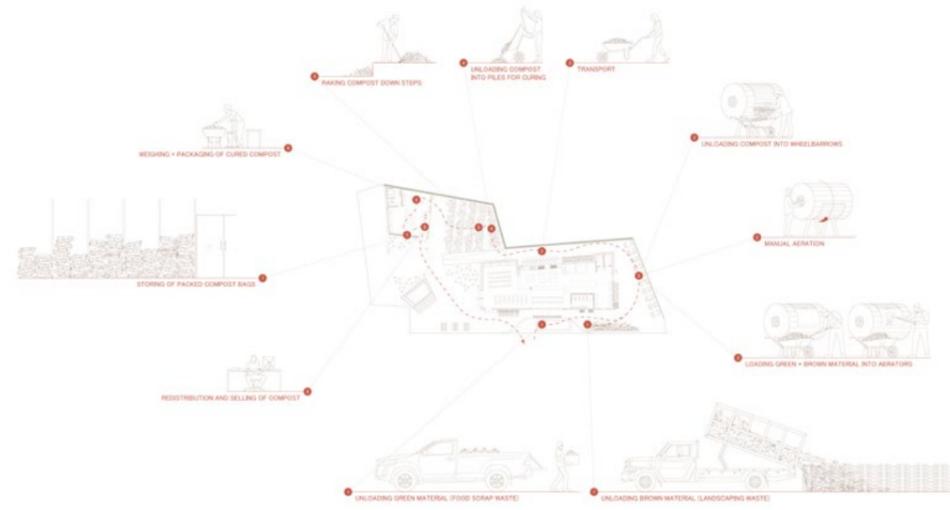


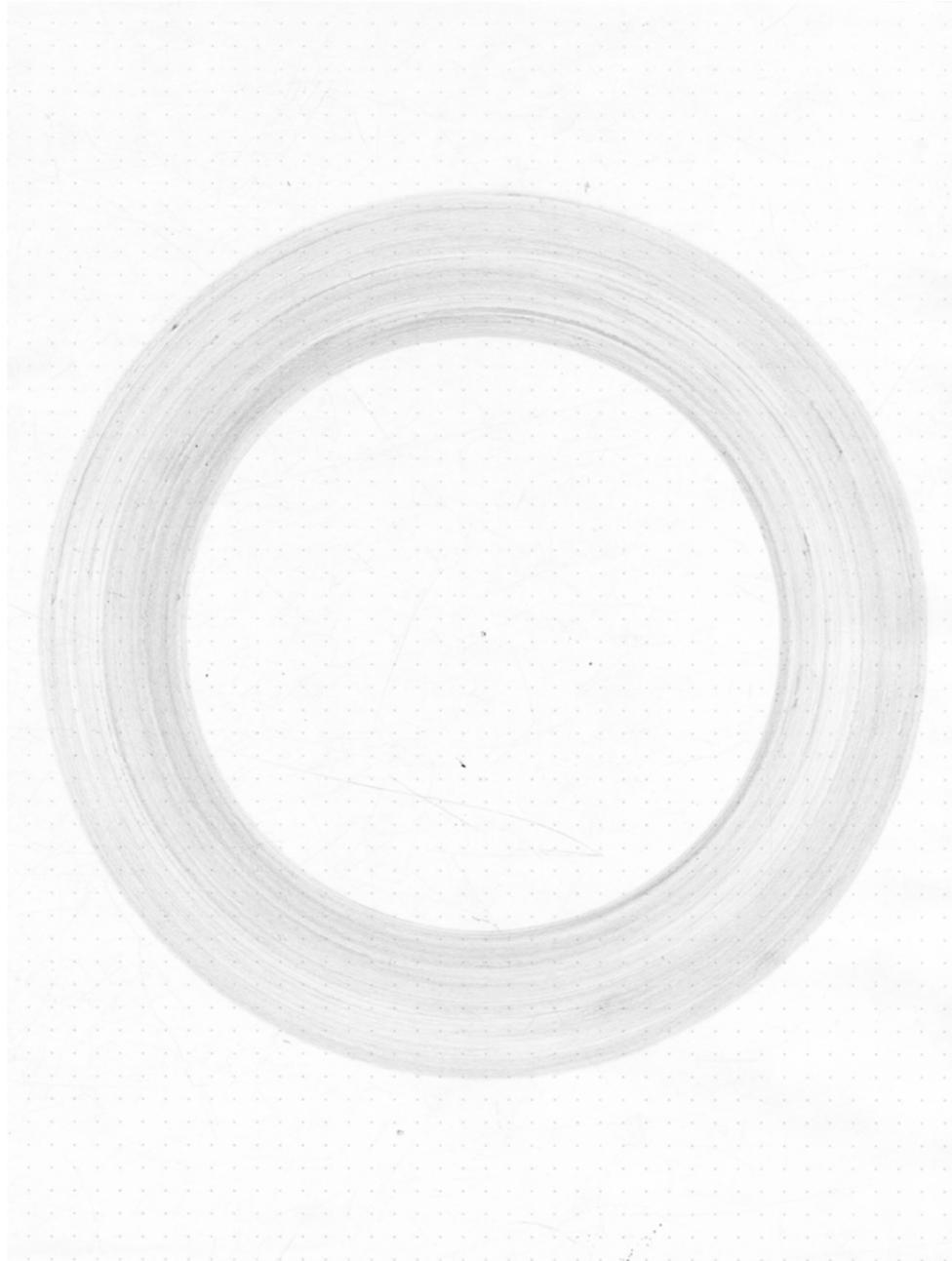
Compost production requires both “green” (nitrogen-rich, i.e. food scraps) and “brown” (carbon-rich, i.e. landscaping waste) material. Through the participation of four local partners and the local residential community, both types of compost ingredients are taken in daily.

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 arranged 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.





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?

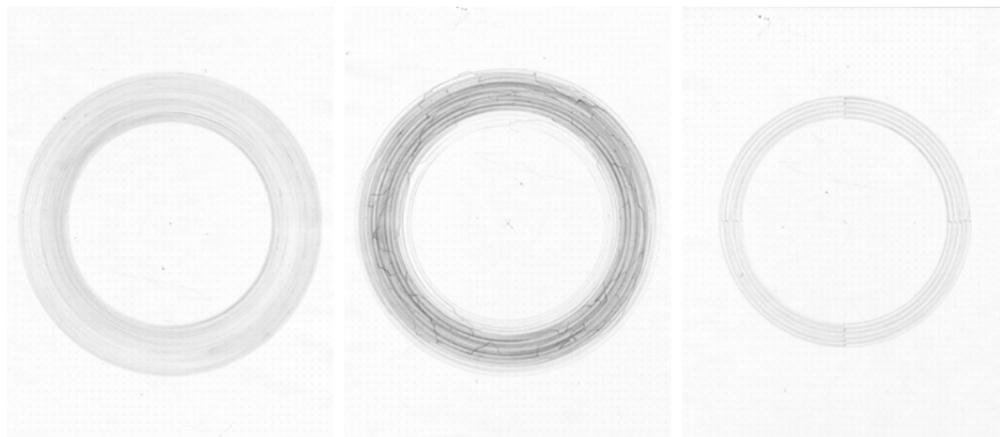
Four dishcloths woven of 16/2 undyed cotton; four households engaged in a weekly rhythm of use and restoration.



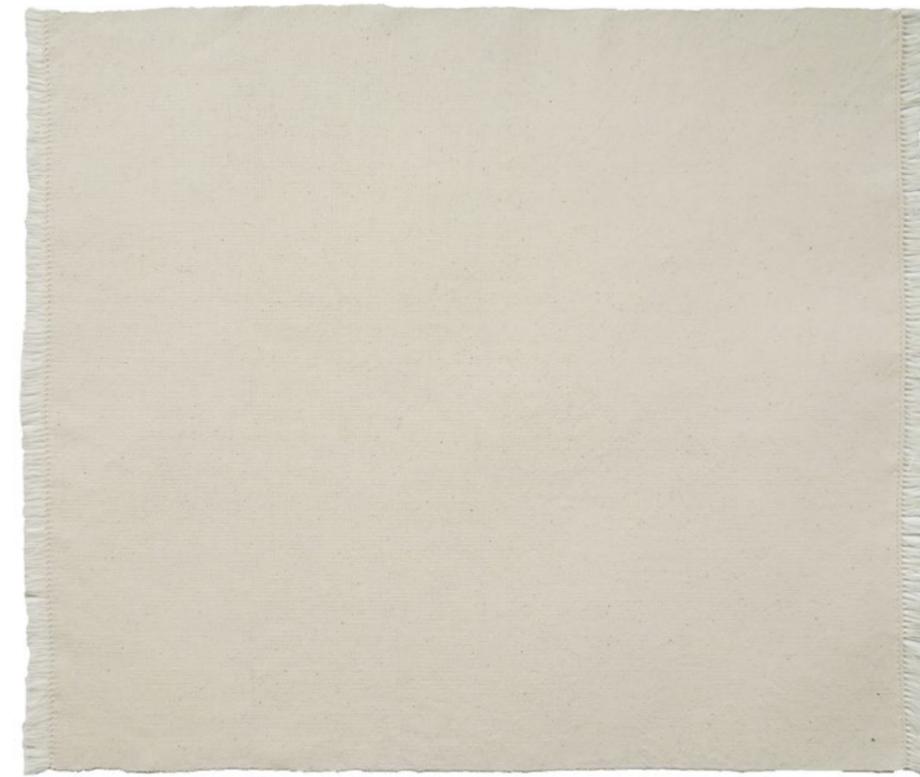
each 19.25 x 23.75 in.

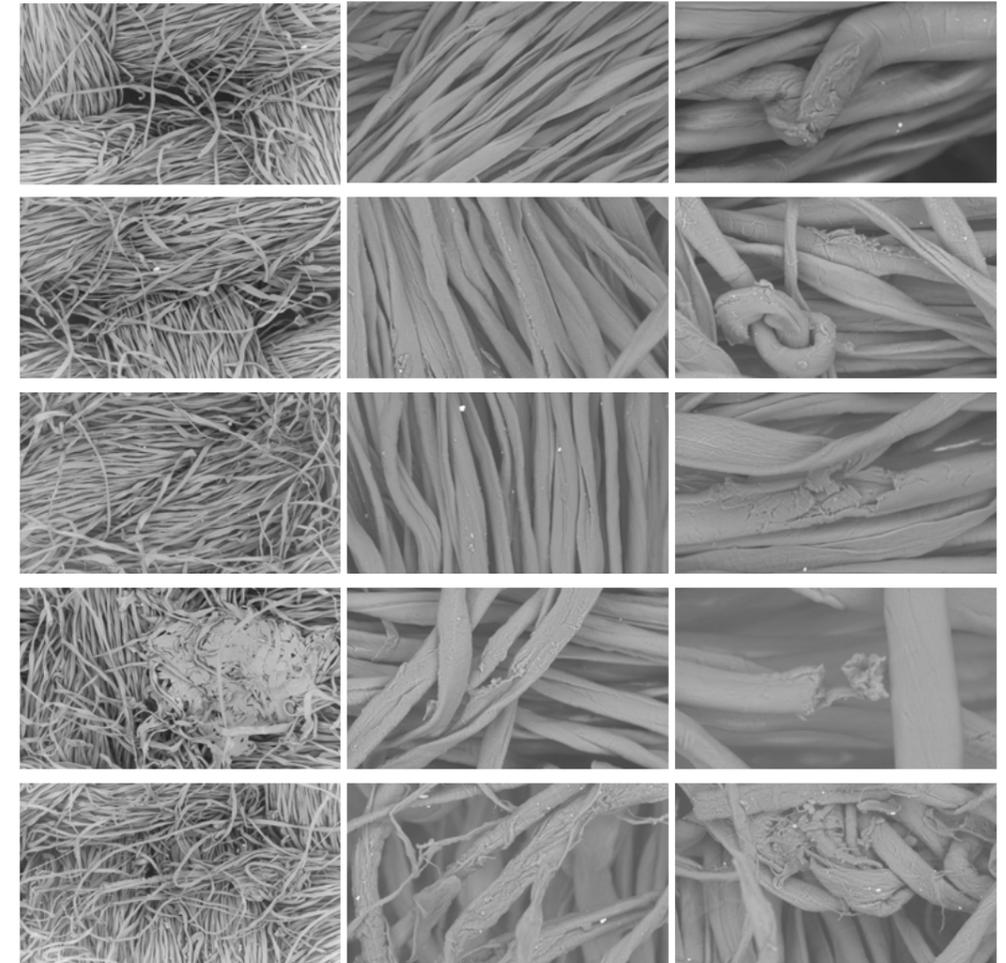


10 x 16 in.

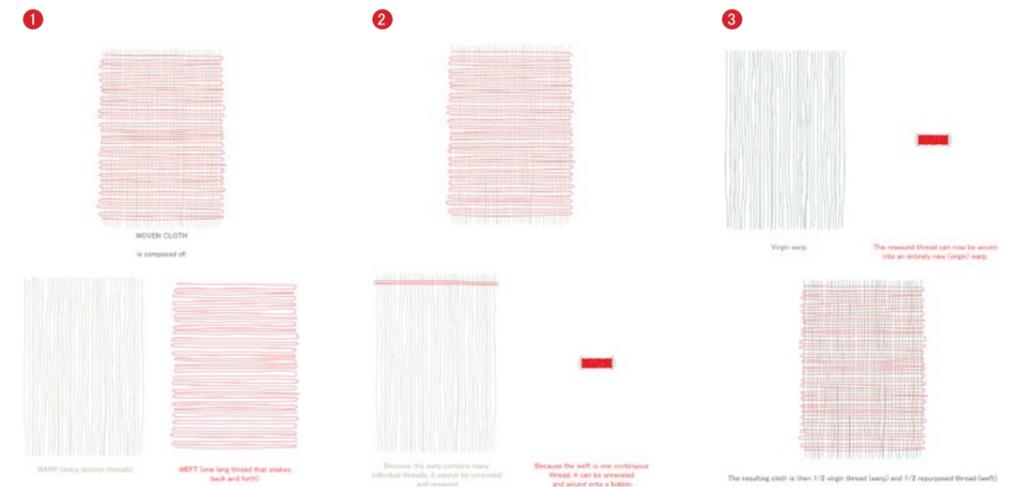
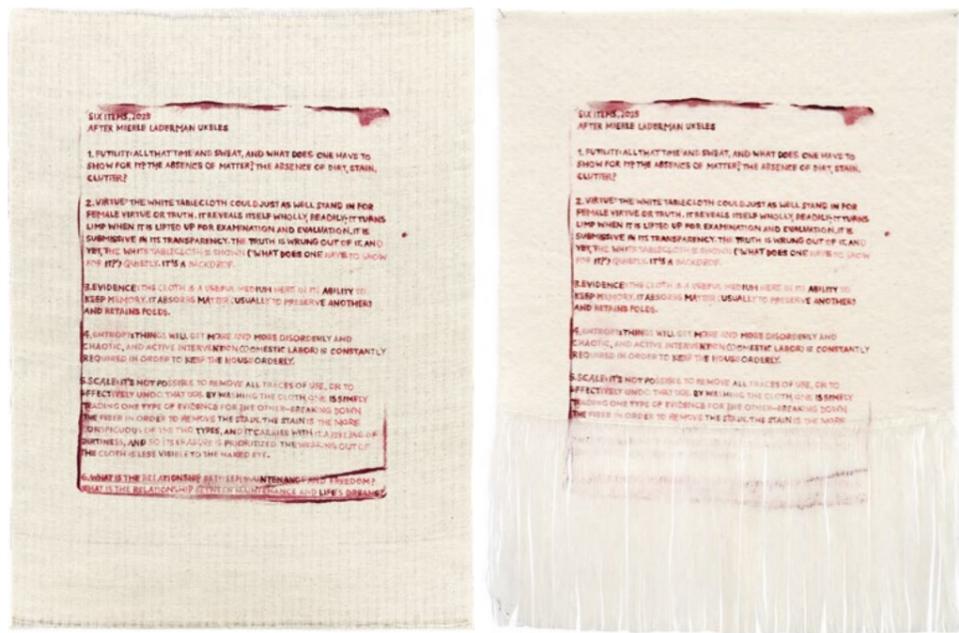


each 8.5 x 11 in.





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.



```

1 import numpy as np
2 import matplotlib.pyplot as plt
3 from PIL import Image
4 import random

5
6 class plainweave:
7     def __init__(self, ends, picks):
8         """
9         Initialize the warp and weft of the cloth with the given ends and picks (in pixels).
10        """
11        self.ends = ends
12        self.picks = picks
13        self.warp = np.zeros((ends, picks))*255
14        self.weft = np.zeros((picks*ends)*255)
15        self.woven = False
16        self.image = None
17
18    def weave_weft(self):
19        """
20        Convert 1D weft array into 2D array
21        """
22        if self.woven:
23            print("The weft is already woven.")
24            return
25        else:
26            forward = True
27            woven_weft = []
28            for i in range(self.picks):
29                slice = (i*self.ends, (i+1)*self.ends)
30                if forward:
31                    woven_weft.append(self.weft[slice[0]:slice[1]])
32                else:
33                    woven_weft.append(self.weft[slice[0]:slice[1]][::-1])
34                forward = not forward
35            self.weft = np.array(woven_weft)
36            self.woven = True
37
38    def unravel_weft(self):
39        """
40        Convert 2D weft array into 1D array
41        """
42        if not self.woven:
43            print("The weft is already unraveled.")
44            return
45        else:
46            forward = True
47            unraveled_weft = []
48            for row in self.weft:
49                if forward:
50                    for r in row:
51                        unraveled_weft.append(r)
52                else:
53                    for r in row[::-1]:
54                        unraveled_weft.append(r)
55                forward = not forward
56            self.weft = np.array(unraveled_weft)
57            self.woven = False
58
59    def imprint(self, image):
60        """
61        Imprint the cloth with the given image, converting it to grayscale and resizing it to the
62        specified dimensions.
63        """
64        # Check that warp is woven
65        if not self.woven:
66            print("The weft is not woven yet.")
67            return
68        img = Image.open(image)
69        @grayscale_img = img.convert('L')
70        resized_img = grayscale_img.resize((self.ends, self.picks), Image.Resampling.LANCZOS)
71        img_array = np.array(resized_img)
72        self.image = img_array
73
74    on_warp = True
75    for row in range(len(img_array)):
76        on_warp = not on_warp
77        for column in range(len(img_array[0])):
78            on_warp = not on_warp
79            if on_warp:
80                self.warp[column, row] = img_array[row, column]
81            else:
82                self.weft[row, column] = img_array[row, column]
83
84    def twist_weft(self):
85        """
86        Randomly make half of the weft pixels white
87        """
88        if self.woven:
89            print("The weft must be unraveled to twist.")
90            return
91        for i in range(len(self.weft)):
92            if random.choice([True, False]):
93                self.weft[i] = 255
94            else:
95                continue
96
97    def virgin_warp(self):
98        """
99        Clear the warp (use a virgin warp) by setting all pixels to white
100        """
101        self.warp = np.zeros((self.ends, self.picks))*255
102
103    def add_constant_weft_offset(self, offset):
104        """
105        Add an 2x offset number of white pixels to the weft array
106        """
107        if self.woven:
108            print("The weft must be unraveled to add offset.")
109            return
110        self.weft = np.append(np.zeros(offset*2)*255, self.weft[:self.ends*self.picks])
111
112    def add_random_weft_offset(self, likelihood):
113        """
114        Add a random amount of white pixels to the weft array with some likelihood
115        """
116        if self.woven:
117            print("The weft must be unraveled to add offset.")
118            return
119        for i in range(len(self.weft)):
120            if random.random() < likelihood:
121                self.weft = np.insert(self.weft, i, 255)
122            else:
123                continue
124        self.weft = self.weft[:self.ends*self.picks]
125
126    def show_weft(self):
127        """
128        if not self.woven:
129            print("The weft must be woven to show.")
130            return
131        plt.figure(figsize=(20, 20))
132        plt.axis('off')
133        plt.imshow(self.weft, cmap='gray', vmin=0, vmax=255)
134        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')
135
136    def show_warp(self):
137        """
138        plt.figure(figsize=(20, 20))
139        plt.axis('off')
140        plt.imshow(self.warp, cmap='gray', vmin=0, vmax=255)
141        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')
142
143    def show_cloth(self):
144        """
145        # Check that warp is woven
146        if not self.woven:
147            print("The cloth is not woven yet.")
148            return
149        woven_cloth = np.zeros((self.picks, self.ends))
150
151        on_warp = True
152        for row in range(len(woven_cloth)):
153            on_warp = not on_warp
154            for column in range(len(woven_cloth[0])):
155                if on_warp:
156                    woven_cloth[row, column] = self.warp[column, row]
157                else:
158                    woven_cloth[row, column] = self.weft[row, column]
159
160        plt.figure(figsize=(20, 20))
161        plt.axis('off')
162        plt.imshow(woven_cloth, cmap='gray', vmin=0, vmax=255)
163        plt.savefig("reweave.png", dpi=600, bbox_inches='tight')
164
165 1 cloth = plainweave(150, 400)
166 2 cloth.weave_weft()
167 3 cloth.imprint("C:/Users/nameli/Desktop/Code/Reweave/01_re_washing/Reweave01_01_original_photo.png")
168 4
169 5 cloth.unravel_weft()
170 6 cloth.virgin_warp()
171 7 cloth.add_random_weft_offset(0.01)
172 8 cloth.add_constant_weft_offset(50)
173 9 cloth.twist_weft()
174 10 cloth.twist_warp()
175 11 cloth.show_weft()
176 12 cloth.show_warp()
177 13 cloth.weave_weft()
178 14 cloth.show_cloth()

```



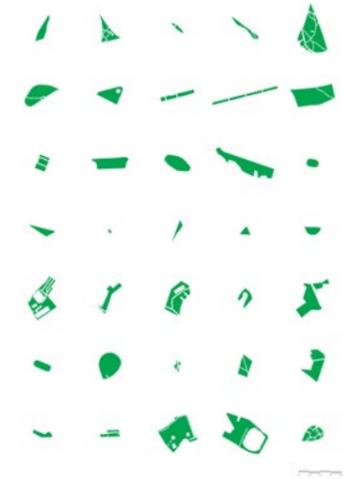
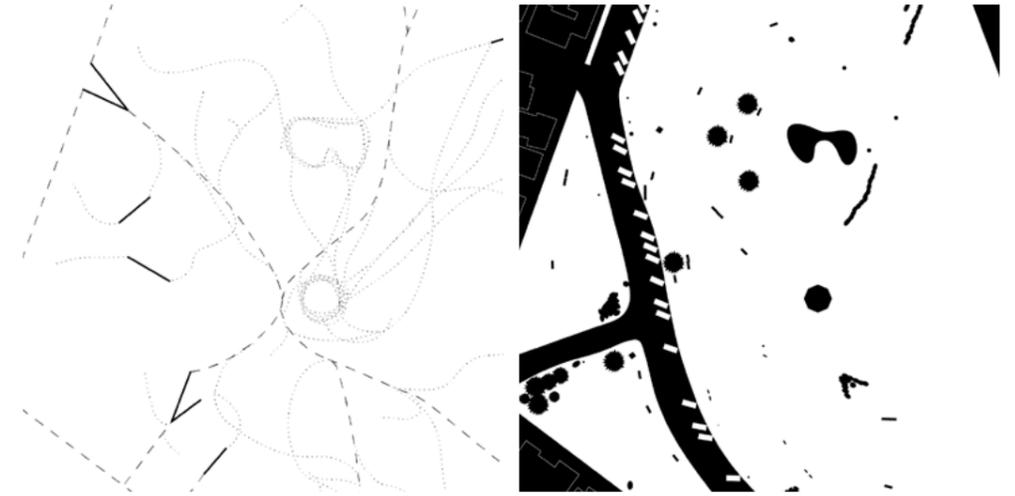
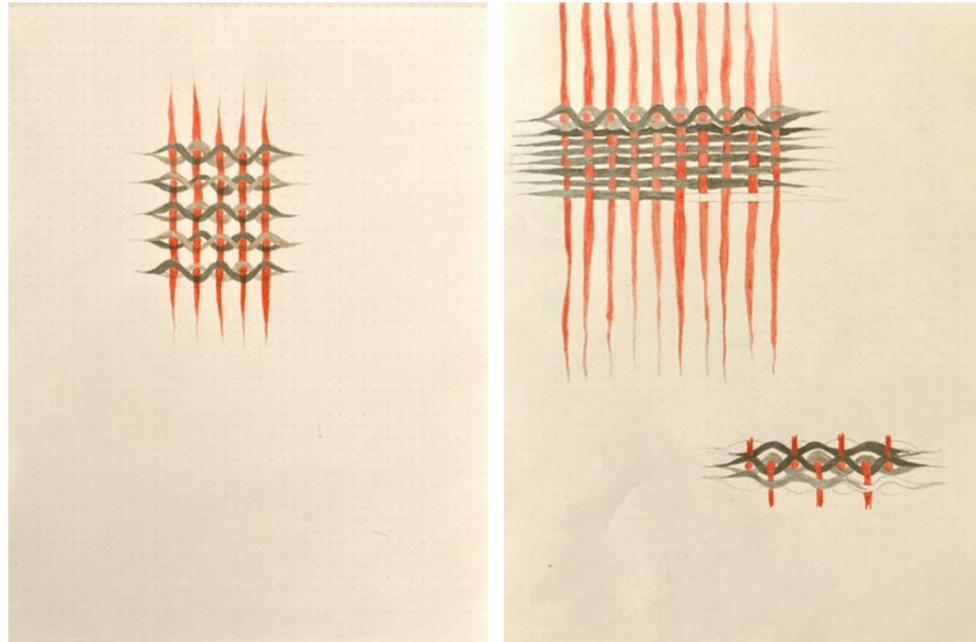
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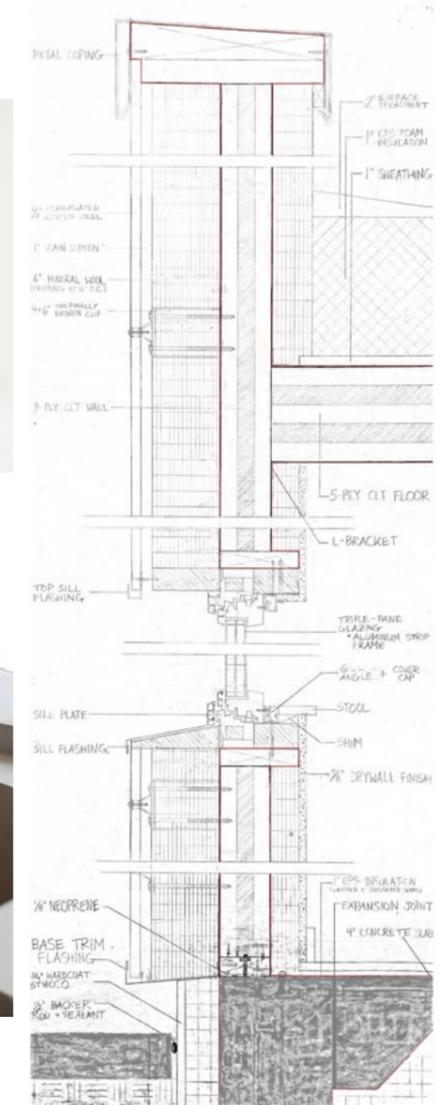
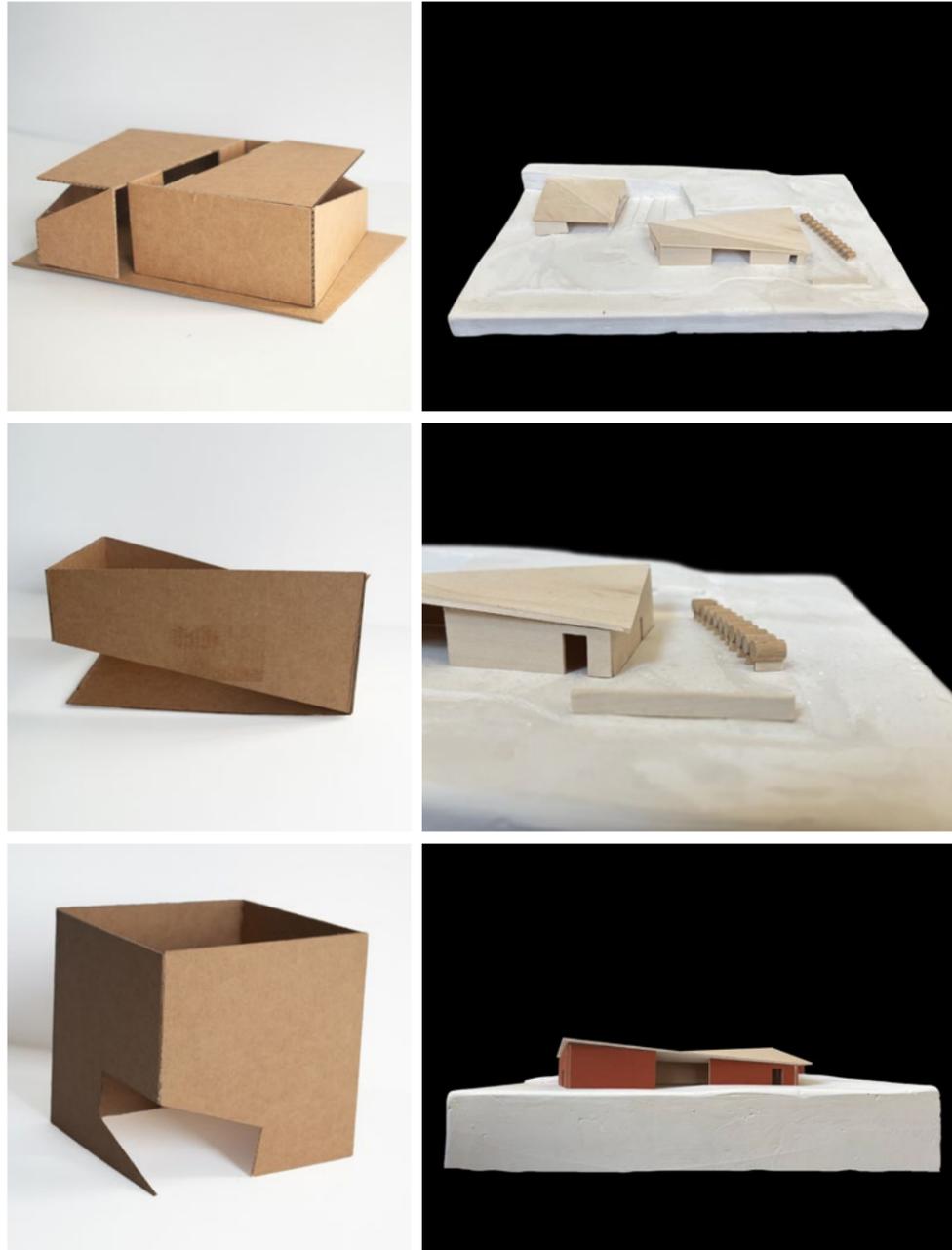
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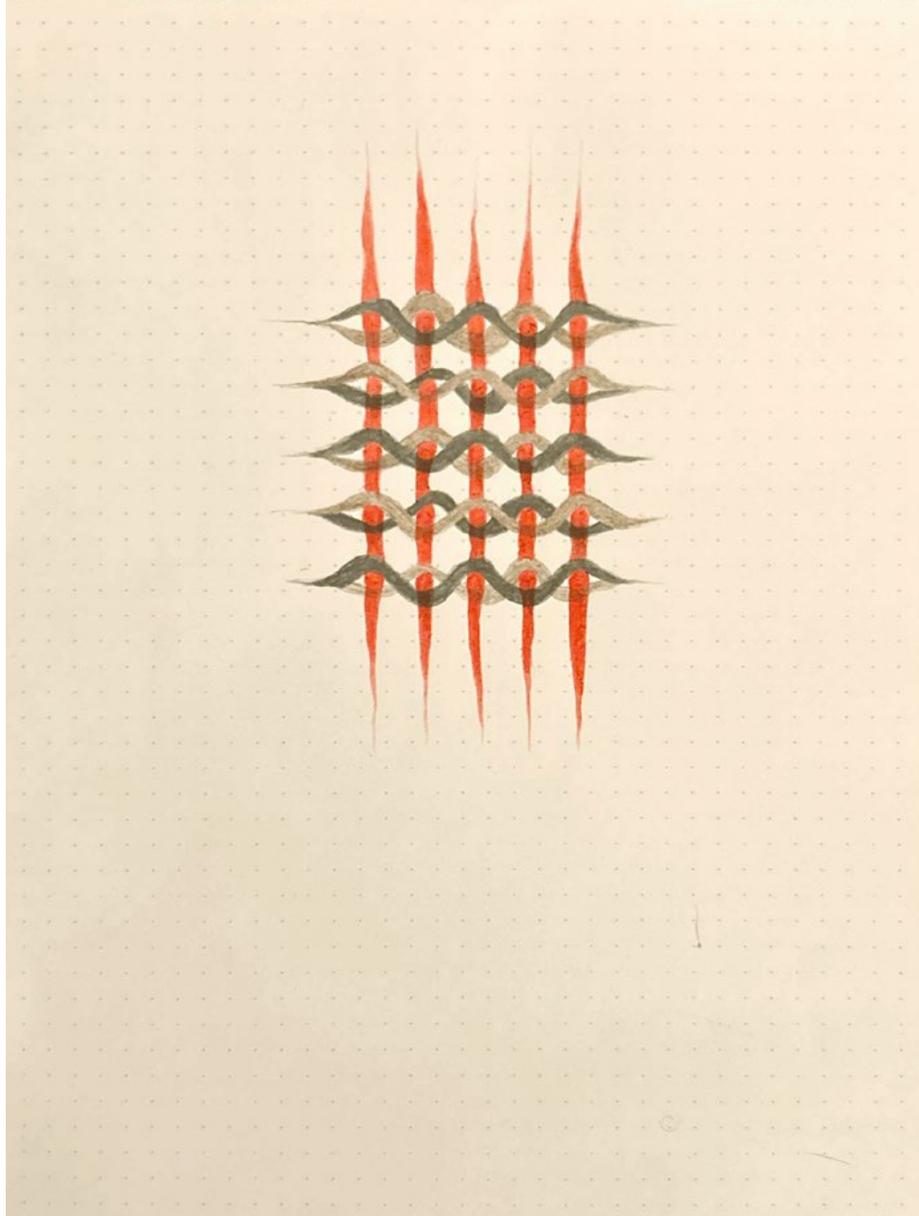
Performance piece spanning 1 hour 43 minutes. Frame constructed of 2x6 members, dowels, plywood; cloth woven of undyed cotton.











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2025

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