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## Partition Pause

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The image shows a modern architectural interior. A wall made of vertical wooden slats is the central feature, with sunlight filtering through to create a pattern of light and shadow. In the foreground, a tree branch with green leaves is visible. The floor is made of light-colored tiles. The overall atmosphere is bright and natural.

# PARTITION PAUSE

MIKE SCRIBNER

MFA in Design with a Concentration in Interior Environments

<https://www.homedsgn.com/2012/08/24/a21-house-by-a21-studio/a21-house-13/>

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Interior Design is about regard for place, history, environment, client, and quality. All of these aspects are important on their own, but they combine into an understood, and purposeful, personal space where the client experiences attention restoration, and mindfulness.





# ABSTRACT

## MOTIVATION

Mindfulness is the active pursuit of focused attention, and through practice has been shown to benefit psychological and physical well-being. While mindfulness is not a new idea, it has only tangentially been linked to Interior Design such as through performative objects (Niedderer, 2007 and 2014) which promote personal reflection before enacting a choice. If mindfulness is the active pursuit of mental presence, then Attention Restoration Theory (ART) is a passive route by which environmental cues imbue a resurgence in attention capacity (Kaplan, 2001). ART studies exemplified successful restoration through scenes of nature, and unsuccessfully in outdoor urban scenes (Berto, 2005) while interior environments went unexamined. Encouraging mindfulness and ART through interior design is worth exploring as it converges from the studies of Niedderer, Kaplan, and Berto.

## PROBLEM

How can mindfulness be supported by, or achieved through interior design, and what design principle(s) align with the practice of mindfulness? How can interior spaces and artifacts facilitate ART to passively or unconsciously support mindfulness in a residence?

## METHODS

Evaluations of mindfulness and ART case studies as related to design, and environmental interpretation will inform associative aspects to understand and employ relevant design elements.

## RESULTS

People prefer different spaces in which to experience mindfulness where the variety of colors, sound levels, lighting, privacy, smells, and textures affect them to be attuned. Based on an site interview, the designer is informed on specific interaction styles, design attributes, and solutions to pursue. Questions prompting personal reflection will lead to a personalized design which was determined to be an important psychological tool to achieving mindfulness. The use of warm and cool colors were found to be more intriguing than achromatic settings. Placing design artifacts in the space which encouraged or even required interaction from the client were found to encourage their mental presence in the moment as well. Views to outdoor, natural scenery from the space or at a minimum objects that represent nature add to the presence of mind and attention restoration. The designer educates the client on the impact of pertinent design principles such as light, color, scale, balance, texture, and harmony to obtain design by-in.

## REFLECTIONS/CONCLUSIONS

Creating a mental and physical connection for the client to the space is essential to achieving mindfulness through interior design. Mindfulness and Attention Restoration Theory augment each other from different psychological and physiological positions when the client is actively and passively engaged with their surroundings; linking the two through interior environments is key. A designed residential space that reflects the inhabitant's interactive tendencies, prompts exploration, requires choice, and arouses intrigue

will promote mindfulness, and attention restoration. Incorporating textured surfaces, natural materials, interactive objects, and purposeful views are important design goals.

1. Niedderer, K. (2007). Designing Mindful Interaction: The Category of Performative Object. *Design Issues*, 23(1), 3-17 DOI: 10.1162/desi.2007.23.1.3
2. Niedderer, K. (2014). "Mediating Mindful Social Interactions Through Design." *The Wiley Blackwell Handbook of Mindfulness*. In, A. (Ed.). Chichester, UK: John Wiley & Sons. 345-366. DOI: 10.1002/9781118294895
3. Kaplan, S. (2001). Meditation, Restoration, and the Management of Mental Fatigue. *Environment and Behavior*, 33(4), 480-506. DOI: 10.1177/00139160121973106
4. Berto, R. (2005). Exposure to restorative environments helps restore attentional capacity. *Journal of Environmental Psychology*, 25(3), 249-259.

# RESEARCH

Mindfulness is the active pursuit of focused attention, and through practice has been shown to benefit psychological and physical well-being (Kabat-Zinn, 2005). Mindfulness is based on a combination of meditative and scientific practices where reflecting in the present moment causes a state of awareness and calm. Meditation can be considered the practical, active pursuit of mindfulness as opposed to passive aspects of attentiveness such as color response studies, performative objects, and Attention Restoration Theory (ART) to heighten awareness. Color response studies use visual immersion to passively evoke memories and feelings which are then described by the observer. Performative objects employ visual involvement and physical interactions by the individual who is called upon to be more than merely observer. The person also uses the performative object to interact with other observers such that everyone becomes a participant. ART affects the observer using engaging scenes, most often of nature, to reduce mental fatigue. Even though mindfulness is not a new idea, it has only tangentially been linked to Interior Design. How could the contemplative discipline and scientific aspects of mindfulness be supplemented by, or achieved independently through sensory immersion in a designed space?

Space and place are common words; however, as defined by Yi-Fu Tuan (1977) where space equals freedom, and place equates to security, they take on new meaning. Space allows for movement; whereas, place is meant to be the pause. We can inhabit a space, but until we make it our own by giving it personal value, it is not a place and may not hold

our attention or incline mindfulness. This thinking helps align the concepts of mindfulness, performative objects, ART, and interior design, whereby artifacts, views, and design elements create scenery in the space informing it as a place, all to affect immersion, connection and mindfulness of the observer.

One design-interaction hurdle standing in the way of mindfulness is our dependence on sight; the more senses in use, the higher our level of awareness. Juhani Pallasmaa (1996) discusses how society has become dependent on sight while the other senses have taken a backseat. This has led to a loss of appreciation for architecture, and in turn, architecture has lost the ability to arouse the other senses, summarily diminishing our likelihood of sensory immersion and mindfulness in a space. Touch, smell, and sound are at work when we interact with a space but, we are often unaware of them. In addition, our lack of a total sensory relationship with the built environment does not evoke the use of memories, dreams, or imagination (Bachelard, 1994), veering us towards mindless day-to-day interactions with the world around us.

How can mindfulness be supported by, or achieved through interior design? First, one must understand how a design element can impact an observer. Several psychophysiological studies have explored this question. In one example (Figure 1), participants observed and wrote first person accounts of a virtual walk-through of two different residential interiors (Zanjani, Hilscher & Cupchic, 2016). The warm-colored space observed in this experiment



Figure 1  
(a) is the warm-colored residence and (b) is the cool-colored residence.  
Source: "The Perception of Virtual Residential Spaces." *Empirical Studies of the Arts* 34(1), 53-73.  
DOI: 10.1177/0276237415621186



resulted in comments reflecting a “perceived beauty” and “personal involvement” as the storytelling evoked memories that were projected onto the space and increased observer engagement. This residence was also seen as inviting, secure, and familiar. The cool-colored residence, which had fewer light fixtures and sparse, modern furniture compared to the warm residence, was perceived as stiff, restrictive, and less secure. This study indicated a correlation between color, and shapes in living spaces and the responses of the observer.

Another study examined the responses of visually observed warm, cool, and achromatic, digital interiors (Yildirim, Hidayetoglu & Capanaglu, 2011). This study also assessed differences between the responses of males and females. Participants rated their feelings of the various space-color configurations by selecting from ten dichotomies such as “restful or disturbing”. Men and women chose different descriptors for warm and cool color schemes, but had similar feelings about achromatic interiors. The warm color schemes aroused feelings of activeness while cool color settings were perceived as more calming. Men preferred brighter and more intense hues than women; however, both groups found achromatic coloring to be calming, but unappealing.

Yet another study conducted a visual experiment between paired colors and materials in a lighting-controlled, interior environment (Ulusoy & Olguntürk, 2017). The subjects were asked open ended questions, and answered using word association to keep responses impartial, a quality that might have been lost in direct questioning (Figure 2).

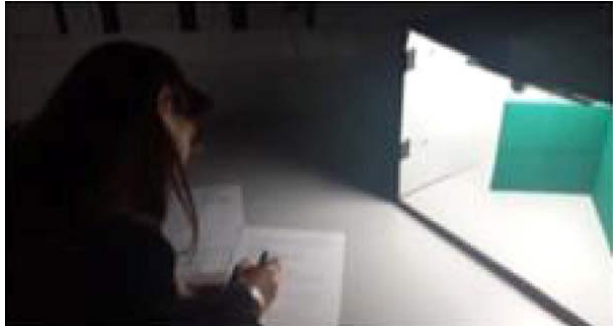


Figure 2  
“Understanding Responses to Materials and Colors in Interiors.” Color Research & Application 42(2), 261-272. DOI: 10.1002/col.22072



Figure 3  
Designing Mindful Interaction: The Category of Performative Object. Design Issues, 23(1), 3-17. DOI: 10.1162/desi.2007.23.1.3

Descriptors were categorized into sensory (vision), symbolic, and affective (emotion) groupings. Example results for the color white were words such as clean (symbolic) and light (sensory); pairing white with either green or red also stimulated the same descriptor of clean. When viewed alone, green and red resulted in words such as calming (affective) and bright (sensory) or colorful (sensory) and warm (affective), respectively. Paired together, green and red resulted in contrast (symbolic) and colorful (sensory). Material results ranged from fabric being soft (sensory) and deep (affective), to timber being colorful (sensory) and comfortable (symbolic), to plasterboard which was perceived as flat (sensory) and strong (symbolic). This study found that materiality plays a significant role in the sensory involvement and psychological interpretation (associated memories) of the end user in a space.

Second, the idea of performative objects and their influence on one’s attention needs to be discussed. Performative objects specifically turn the passive observer into an active participant through physical interaction with the item (Figure 3). Sight, touch and choice are excited from within. Niedderer conducted several experiments on how people interact with objects, and in the process, each other. Pausing to reflect on making a choice to either participate or not is the crux of Niedderer’s studies. Reflection is a large part of mindfulness; it is an illustration of our capacity to be aware of and engaged with the self. In the first exercise, Niedderer found that a single, unstable cup which could be interlocked with like cups to create a stable amalgam required the

users to engage with each other to decide on combining cups. This promoted personal reflection before enacting the participatory choice (Niedderer, 2007).

In a second article, Niedderer discusses mindful versus mindless actions, how a designed artifact (performative object) encourages mindfulness, and how design impacts behavior (Niedderer, 2014). Mindless actions happen when we fail to interact with or acknowledge our surrounding environment; this includes both objects and other people. Performative objects and social behavioral differences are realized in an experiment using standard public park benches versus uniquely designed, movable public benches. The average, fixed park bench easily allows for us to sit at the opposite end from a stranger to limit our need for mindful interaction. However, the movable bench seats where preconceptions of use are disrupted provoke mindfulness. By allowing the user to position a movable seat on the bench, they had to choose whether to stay, move closer or away from neighboring bench-sitters, stimulating reflection of these options leading to mindfulness. The design work starts from the analysis of social situations, to interactions, and resulting consequences that arise from the designed space. Choice is an important design device supporting mindfulness since the user stops to reflect and decide how and with which artifact (or person) they want to interact.

Third, one needs to explore ART as a passive means of restoring attentional capacity which is needed for effective mindfulness. If one is not attentive, one cannot be mindful.

Kaplan (2001) describes ART as an involuntary focus on an interaction between a person and their environment (direct fascination occurs), whereas meditation requires intentional, voluntary focus which may suppress environmental cues as one becomes inwardly focused (indirect fascination happens). Kaplan explored the combination of eastern meditation philosophy and ART as complimentary components needed to overcome Directed Attention Fatigue (DAF) to more effectively replenish our attention capacity. Directed attention is used during high concentration tasks and eventually will be fatigued and require rest. In addition, Kaplan homes in on how eastern and ART techniques are not only restorative but also reduce or even eliminate the use of directed attention. ART studies exemplified successful attention restoration through viewing scenes of nature, and unsuccessfully while viewing outdoor urban scenes while interior environments went unexamined. Building off Kaplan, Berto (2005) revisits ART resulting in several useful conclusions. Using the Perceived Restorativeness Scale (PRS), college students rated photos of various urban and nature scenes (all without people in the scenery) for their expected attention-restoring influence (Figure 4). The PRS and ART categories of subjective definitions used to describe the scenery were [PRS (ART)]: this is a place which is away from everyday demands where I would be able to relax and think about things that interest me (being away); this place is fascinating, it’s large enough for me to discover and be curious about it (fascination); this place and activities are organized and ordered (coherence); this place is large and has no restrictions to its movements, it is a world of its own

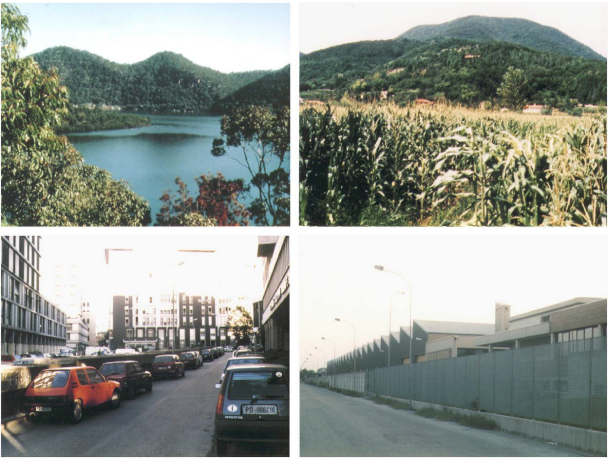


Figure 4  
Restorative scenery at top; non-restorative scenery at bottom. Exposure to restorative environments helps restore attentional capacity. Journal of Environmental Psychology, 25(3), 249-259.

(scope); this place is easy to orient and navigate through so that I can do what I like (compatibility). The conclusions were that restoration occurs best in nature settings over urban, attentional capacity can only be regenerated in restorative environments, and restoration occurs even if the exposure time is short.

In a subsequent study using a variation of ART definitions, Felsten (2009) evaluates examples of actual and artificially created scenes of the built environment and nature to

determine whether there are differences in their ability to evoke feelings of being away (able to think about things that interest you), extent (being a world of its own), fascination (drawing your attention without effort), compatibility (comforting), and perceived restorativeness (taking a break from it all) in college students who are required to use sustained directed attention which causes mental fatigue. The four scenes depicted in this study were those of windowless views inside a built structure; window views of leafless trees, (dormant) grass, and a few built structures; wall-sized murals of nature without water; and wall-sized murals of nature including a water element. The preceding scenes were listed in their order of appeal, and restorative capacity with the wall-sized murals of nature with a water element ranking highest (Figure 5). The wall-sized murals, even though they were of faraway places, were perceived as the most immersive with the water element being the most evocative of the previously listed ART definitions. Subsequently, I believe the pictured water elements may have scored higher in restorative capacity due to the observer's memories with water that included sounds (e.g. crashing surf, babbling brook, waterfall), smells (e.g. salt spray, vegetation), and touch (e.g. sand, rocks, moss) adding to their psychophysiological immersion.

One unexpected, but undeniable answer to this thesis was found in ART studies where the appreciation of nature scenery allowed for recovery from mental fatigue, replenishment of attentiveness, and mindfulness. The inference of real memories or even dreamt expectations cued from



Figure 5  
Source: Where to take a study break on the college campus: An attention restoration theory perspective. *Journal of Environmental Psychology*, 29(1), 160-167

visual-only test materials (Felsten, 2009) could only increase observer immersion and mindfulness. As I wrote this paper, and reflected on the thesis investigation process, I realized that much of my away time was spent outside in my yard. While the ART studies only involved static, but visually immersive prompts, being in nature engages all the senses from the smell of blooms, to the sounds of wildlife, the feel of dirt on your hands, and visualization of the color spectrum. It is a place where I love to reflect, detach from work, and be acutely aware of my surroundings in the moment. In addition to using the design principles to achieve immersion of the end user, the potential solutions also include a nature aspect (views and sounds), and natural materials as well as an aspect of choice (interactive elements). Design elements, performative objects and Attention Restoration Theory can augment each other from different psychological and physiological positions when a subject is actively or passively interacting with a space; linking the two through interior environments is key. A designed residential space that reflects the inhabitant's self, prompts exploration, choice, and intrigue will promote mindfulness, and attention restoration following a mentally taxing day away from the home.

Understanding items such as the client's motives for change, design knowledge, expected outcomes, and personality traits (i.e. their social and emotional tools) used to interact with different environments will inform the design. The more specifically the design relates to the client's wants and needs, the easier to achieve immersion, and mindfulness. Based on an on-site visit, the designer is informed on specific interaction

styles (choice), design attributes, views, and material solutions to pursue linking the client to the space. Subsequently, the designer educates the client on the immersive impact of pertinent design principles such as light, color, scale, balance, texture, and harmony plus the introduction of nature and natural materials.

The client is given questions to evoke personal reflection, wonderment, and dreams. These questions are answered without regard for cost; be outlandish—this is about “I love, want, and desire”. Read the answers after a day or two and reflect; update your answers as your truths appear.

1. Give an overview of how you arrived here. How long have you been in this space, and what, if any, changes have you made, and why (or why not)?

2. What is prompting you to make a change now?

3. What activities do you want to happen in this space—cooking, eating, relaxing, entertaining, reading, listening to music, art, dancing, games, hide and seek, napping, stargazing? There are only right answers to this question.

4. What do you love, like and dislike about your surroundings right this moment (consider inside and outside)? What are the special views inside or to the outside of the home?

5. What are your indoor and outdoor hobbies?

6. Do you host visitors, have get togethers, parties? If so, how often and for how many people (even if it's just one other couple)?

7. Home should be our haven. What does haven mean to you? Is this a space to recharge/lay low, or a dynamic/energetic space or a bit of both?



# PRECEDENTS



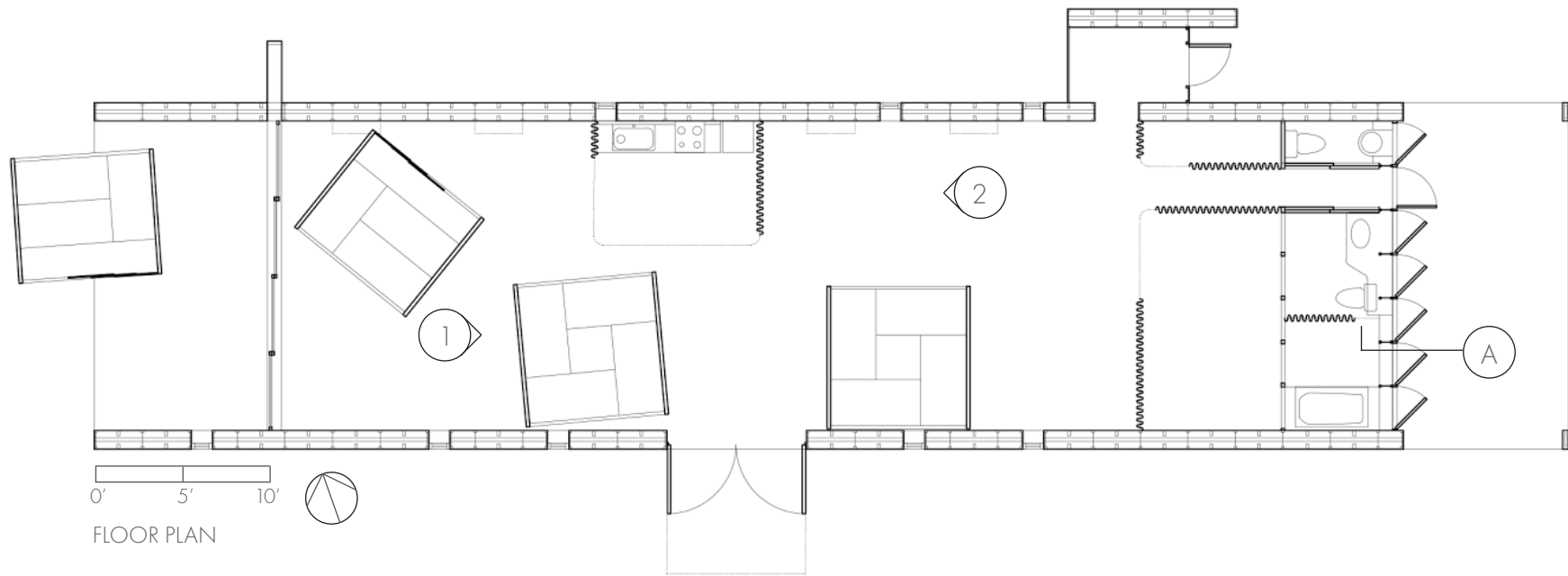
Naked House (2000)  
Kawagoe, Japan  
Designer (Architect): Shigeru Ban

Naked House is awash with the dichotomy of new versus old. New materials, old structural values. Original layouts, traditional proportions. A variety of partition types exist within this project including the translucent walls, see-through cubes and curtain walls. The plastic-styrene-cotton fabric wall layers breakaway from the historic, yet this structure mimics the delicate construction, and soft, white glow produced by traditional rice paper shoji screens. Constructed of corrugated cardboard, the cubes are the main "rooms" within the structure, evoking the feeling of an open, modern loft set

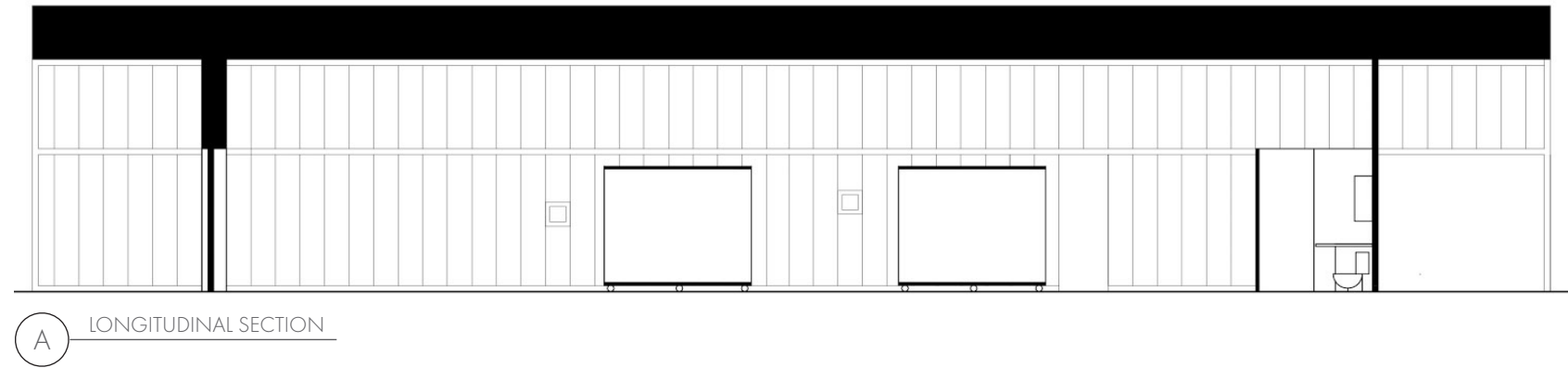


upon a small town outside Tokyo. Wheeled, and open-sided they serve as bedroom, living room, and playhouse. The footprint of the contemporary cubes was dictated by the classic, architectural form of four and a half tatamis. Japanese tradition holds that the roof is the gateway between heaven and Earth; a room's head space is important for one's thoughts to expand. The generous space of the loft style design, and access to the top of the cubes allows for this customary, spiritual reflection. The retractable glass wall is visible in the background (above right).

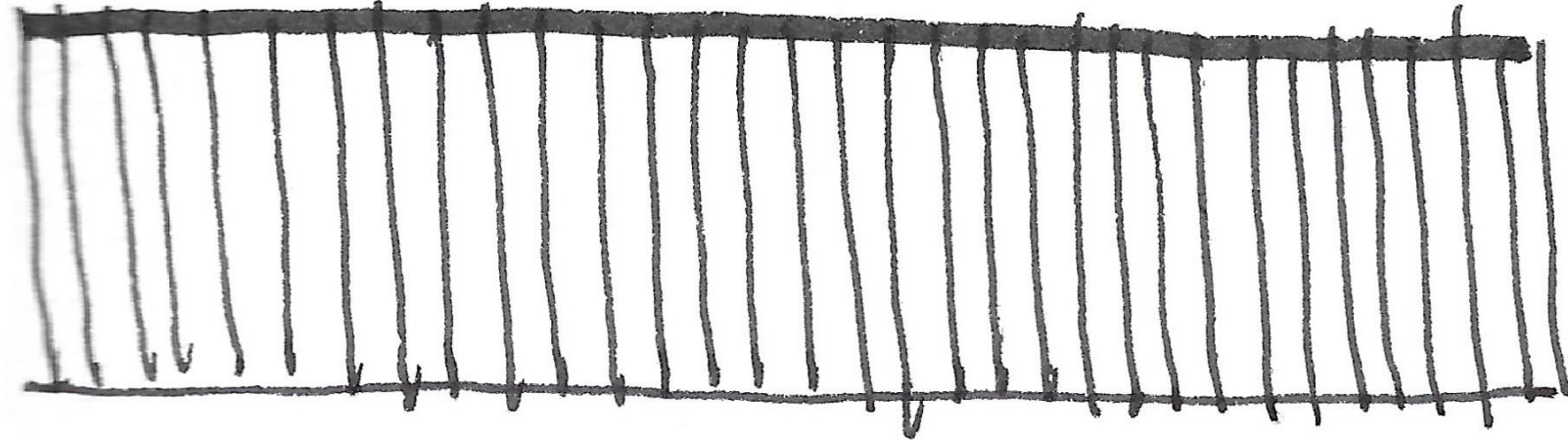




As shown in the floor plan (above), the movable cubes can be rolled outside through a retractable wall. Dynamic porosity is controlled through the cube structures, curtains, and retractable glass wall; material layers applied to the skeletal building structure create a fixed level of porosity.







----- Porous  
———— Semi-Porous  
———— Solid

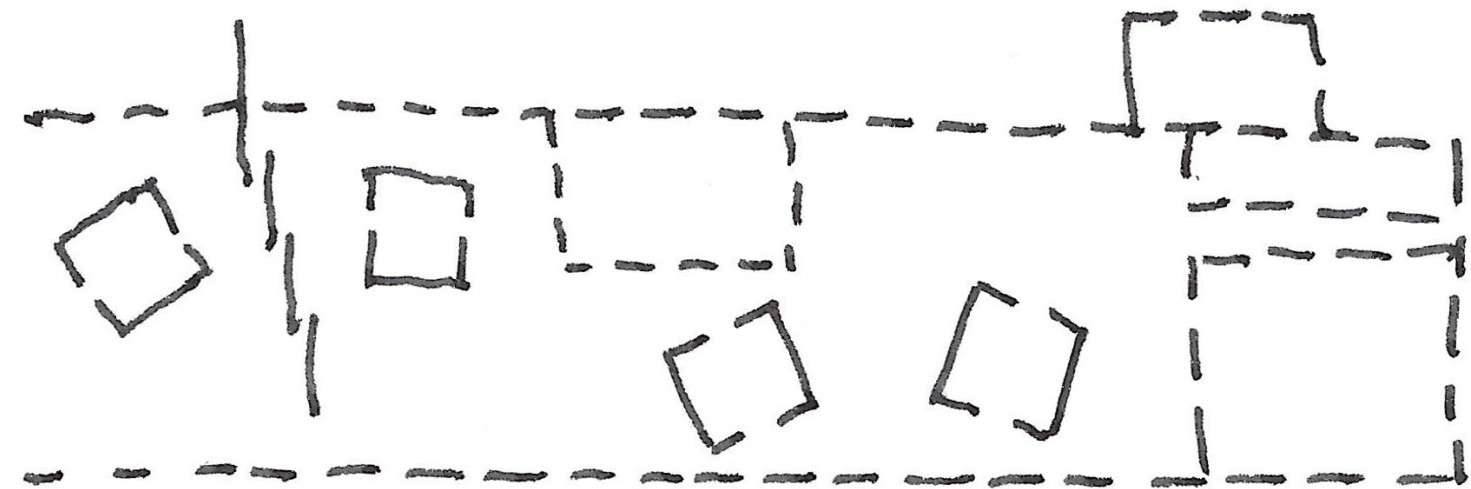
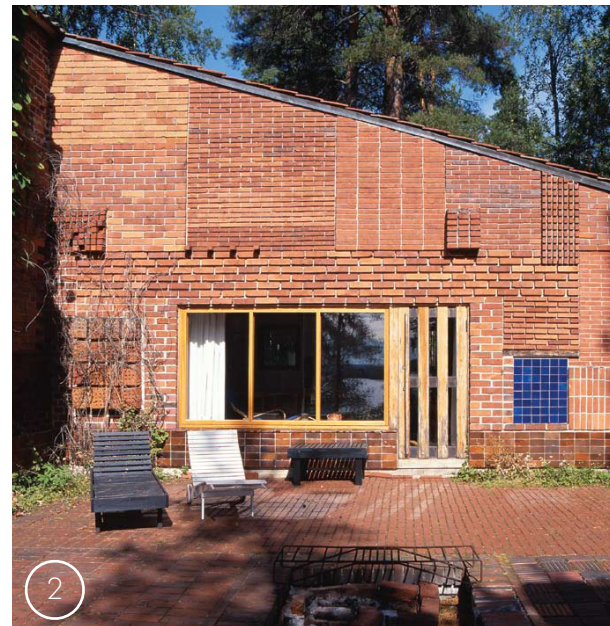




Image (1-5) source: Jettsonen, J., Jettsonen, Sirkkaliisa, Aalto, Alvar, & Pallasmaa, Juhani. (2011). Alvar Aalto houses (1st ed.). New York: Princeton Architectural Press.

Muuratsalo Experimental House (1952-53)  
Saynatsalo, Jyväskylä, Finland  
Designer (Architect): Alvar Aalto



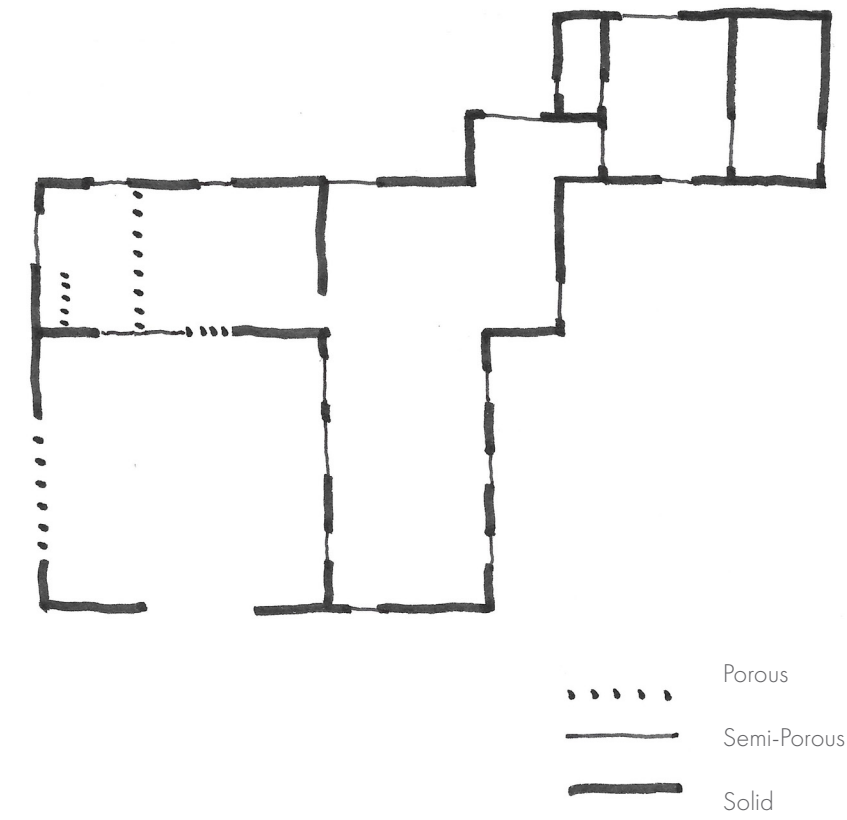
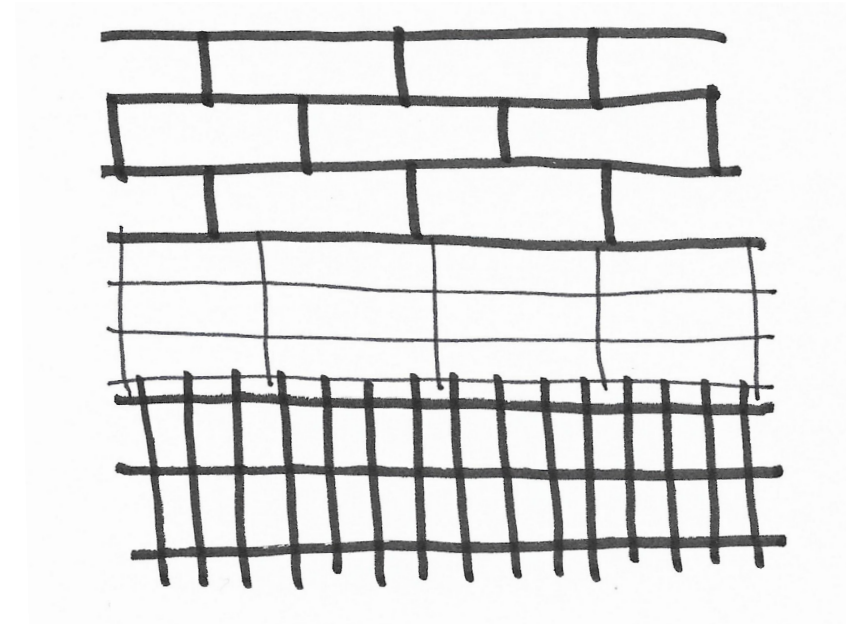
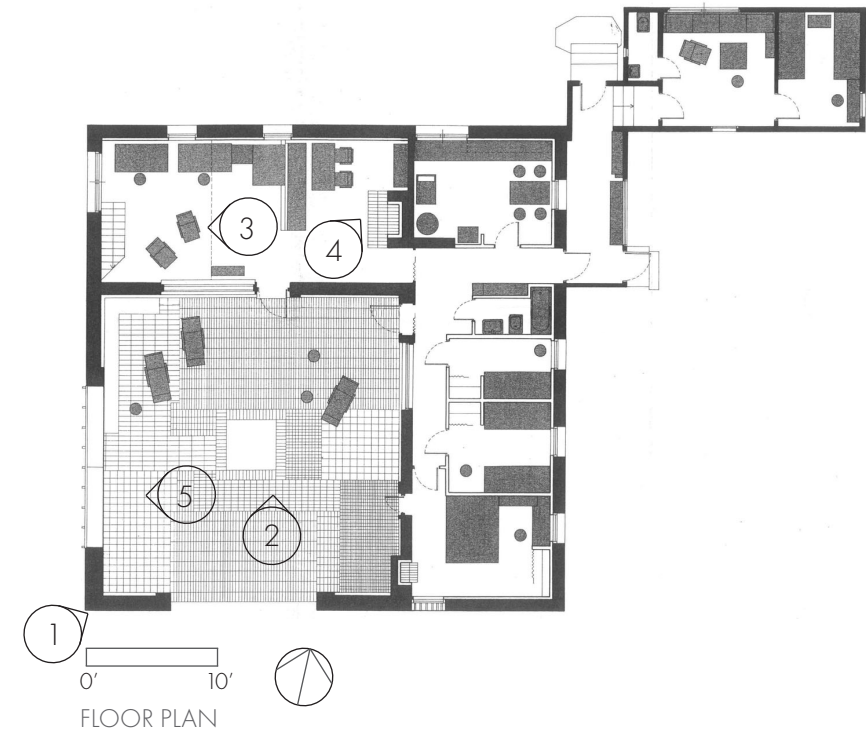
The Experimental House explores materiality through variety, pattern, and rhythm. The monolithic courtyard appears monolithic from the exterior (above left), hiding its true varietal nature (above right). Partitions in the exterior wall reveal a glimpse of what's to come, intriguing the explorer to enter. While constructed almost exclusively from one material, through the use of more than fifty different types of brick, this outdoor room is mesmerizing. If built from only one or even several forms, the space might have been remarkable only for its overwhelming sameness. The entry portal is framed with



closely spaced, wooden partitions affirming the more private space within. The studio loft (above middle) with enough posts to champion stability over the living space. A fabric partition adds visual privacy while a second partition masks the stairs. The kitchen fireplace (above right) with exposed brick details where the fire tender interacts with the hearth, and firebox while the remainder of the brick chimney recedes under its stucco.









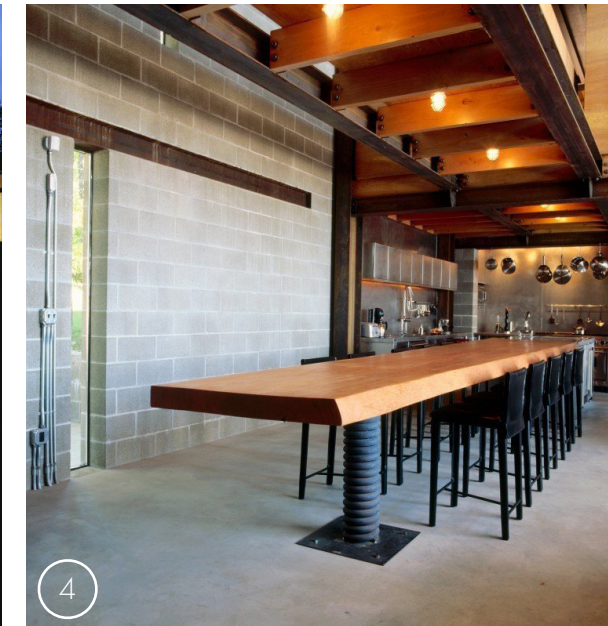
Chicken Point Cabin (2002)  
Northern Idaho, US  
Designer (Architect): Tom Kundig

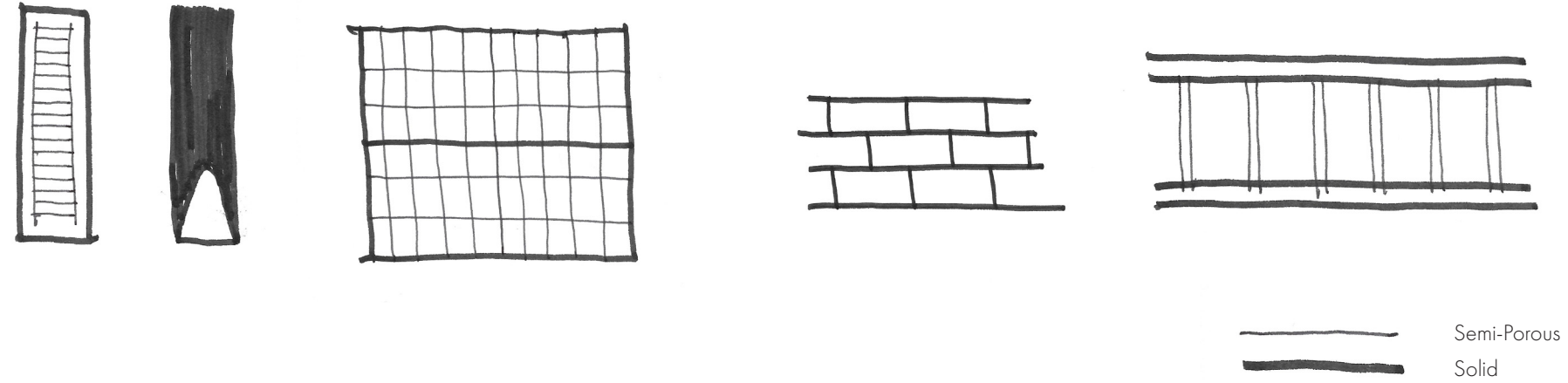
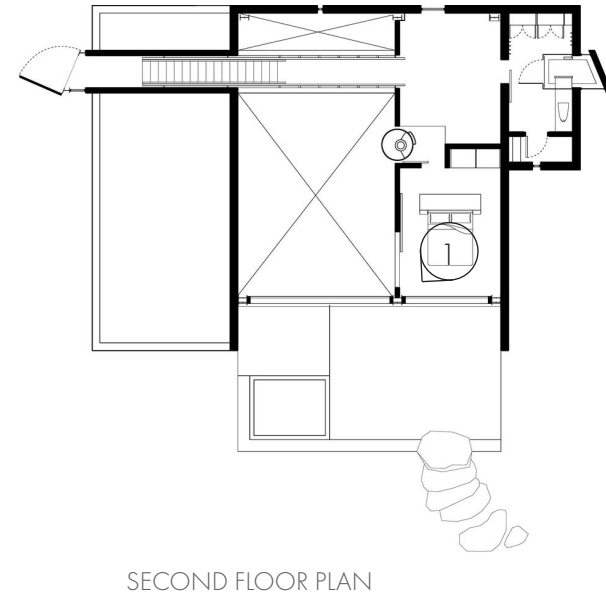
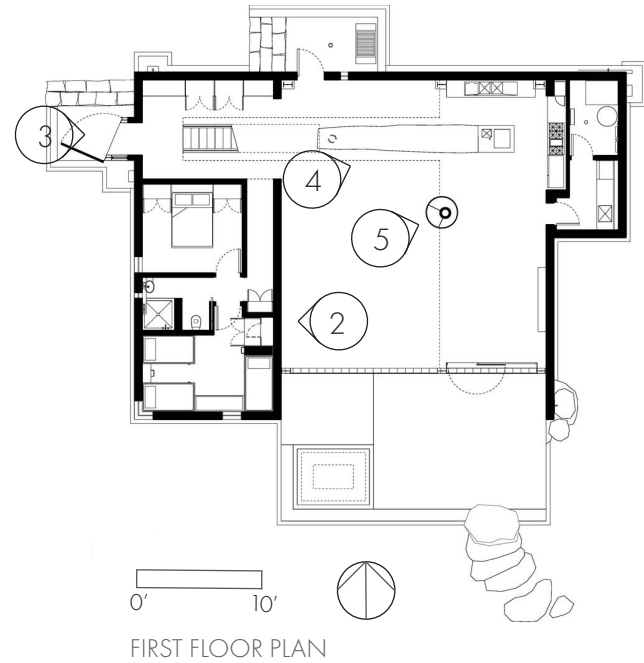


The Chicken Point Cabin executes porosity in several unique ways. The master bedroom (1) employs a barn door window to adjust privacy levels to the adjacent living space. The driveway entrance to the home (3) provides a filtered view into the public kitchen through absent stair risers; clerestory windows alert to activity within. Guests are drawn into the space to capture the entire scene. Another intriguing commonality of these spaces is a massive scale captured in the 20' x 30' pivoting window (1), sliding wall section (1), 17' tall entry door (3), and five foot diameter fireplace flue (5). A

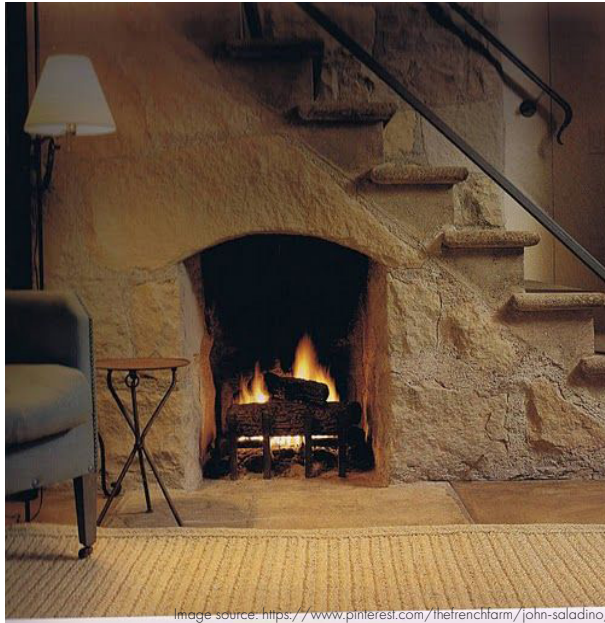


hand-cranked wheel (2) removes the window wall barrier. The second floor walkway support beams disperse sound over the eat-in table (4). These pickets add surface area to counteract the otherwise flat, and sound reflecting surfaces of this space. Adjacent to the kitchen, a wood-burning fireplace made of weathered, industrial piping provides allure in its massive scale and weathered surface.









Villa di Lemma (2009)  
Monticeto, California  
Interior Designer: John Saladino



The small, turned staircase, which proceeds up to a library balcony is one materiality focal point; the lack of a handrail instinctively forces your hand out to steady against the textured stone wall and rough-hewn newel post (right). The hand-painted tread risers evoke curiosity in the slightly irregular detail of the branches, and leaves. A fireplace near the kitchen area is built beneath a staircase (below). Due to the stone construction of the home, the materiality allows the fireplace to reside in this unexpected space.

Materiality is a key aspect used in the design of Naked House, Experimental House, Chicken Point Cabin, and Villa di Lemma. Through different interpretations, and executions of materiality each space uniquely engages the inhabitant on a multi-sensory level while also providing varying levels of porosity through partitions.

Detailing - a design element which signals the inhabitant to interact, whether physically, mentally, or emotionally, with a material or object. Naked House uses prominently visible casters under the cubes to indicate their mobility. The outdoor fire pit, and interior fireplace of Experimental House are highlighted using a recess to invite the user into close physical proximity. Chicken Point Cabin includes mechanical, user-manipulated interface elements to change porosity including the window wall, and barn-door-style window. Villa di Lemma was built without a handrail to the library balcony encouraging physical contact with the highly textured surfaces of the stairwell.

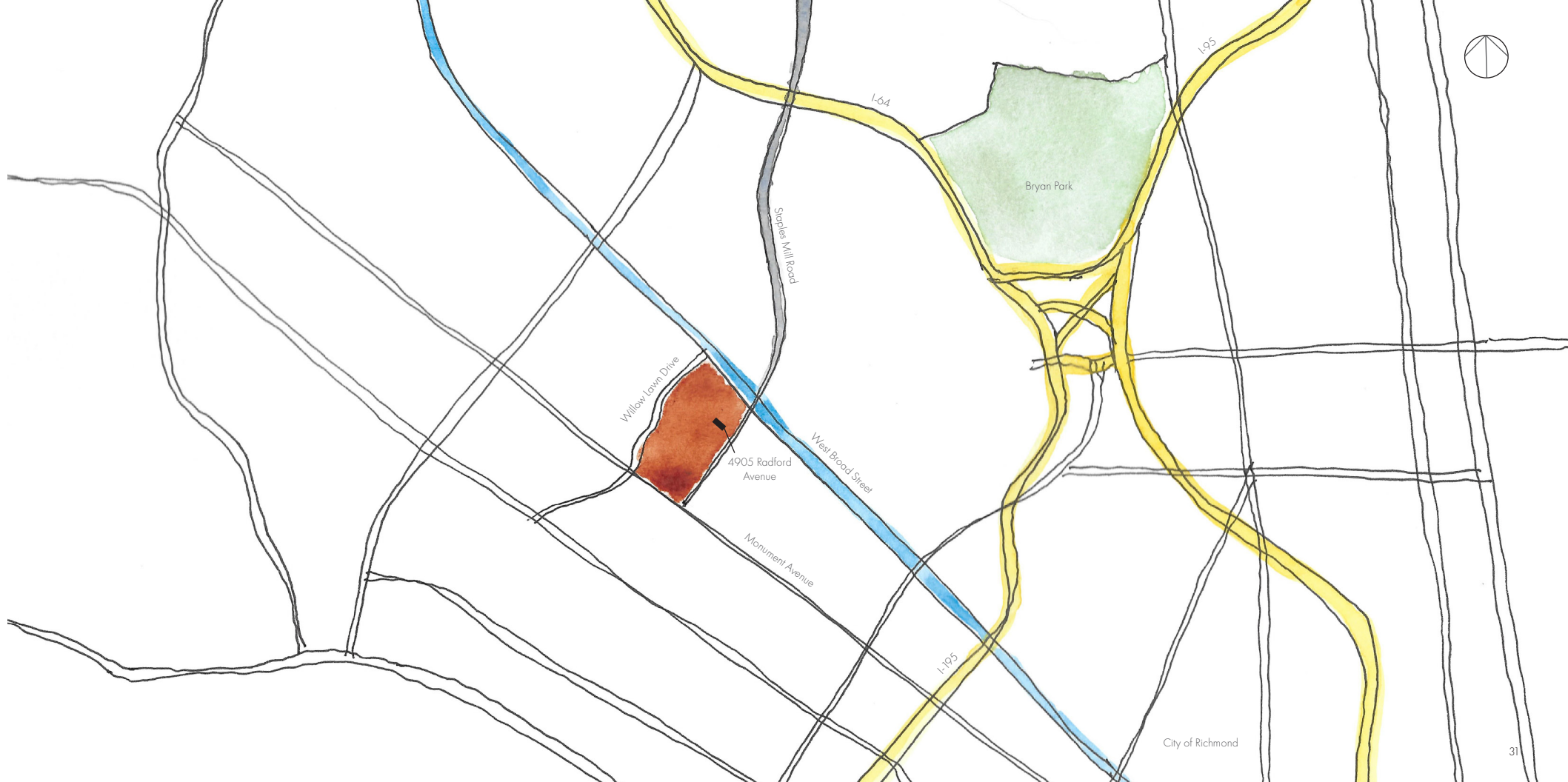
Contrast - achieved through an emphasis on disparate material, and finish adjacencies. Corrugated cardboard furniture, and cotton-plastic wall materials within Naked House are unusually paired construction materials. Experimental House uses a massive variety of styles within the same material family; the multitude of brick types provide dimensional, light/shadow, and color contrasts. Chicken Point Cabin pairs concrete, wood, glass, and steel in their natural finishes making for a contrast of natural and industrial finishes. The stone, and exposed wood surfaces in Villa di Lemma reflect dichotomies of hard/soft, cool/warm and rough/smooth.

Joints - the connection, and relationship of materials to each other. The Naked House cotton wall covering is attached to the framing members with Velcro, allowing for cleanability, but also possessing a familiar, endearing joinery. Experimental House informs the observer through layers, patterning, and varying mortar reveals within the brick walls

as well as exposed rafter bolts holding up the artist loft. Chicken Point Cabin uses unpainted CMUs, exposed wood truss to steel girder bolts and steel weld seams to convey joinery. The exposed wood construction of the library stairs in Villa di Lemma invites closer inspection by the observer.

These materiality ideas create an active moment of surprise, engagement, and grounding in the present, as well as a lingering, passive attentiveness on these focal points while the inhabitant is occupying the space. The inhabitant's level of mindfulness is elevated through these active and passive design elements. The precedents use material translucencies, patterns, rhythm, exposed structure, observer vantage point, and user-adjusted controls to impart changes in fence porosity.

# SITE



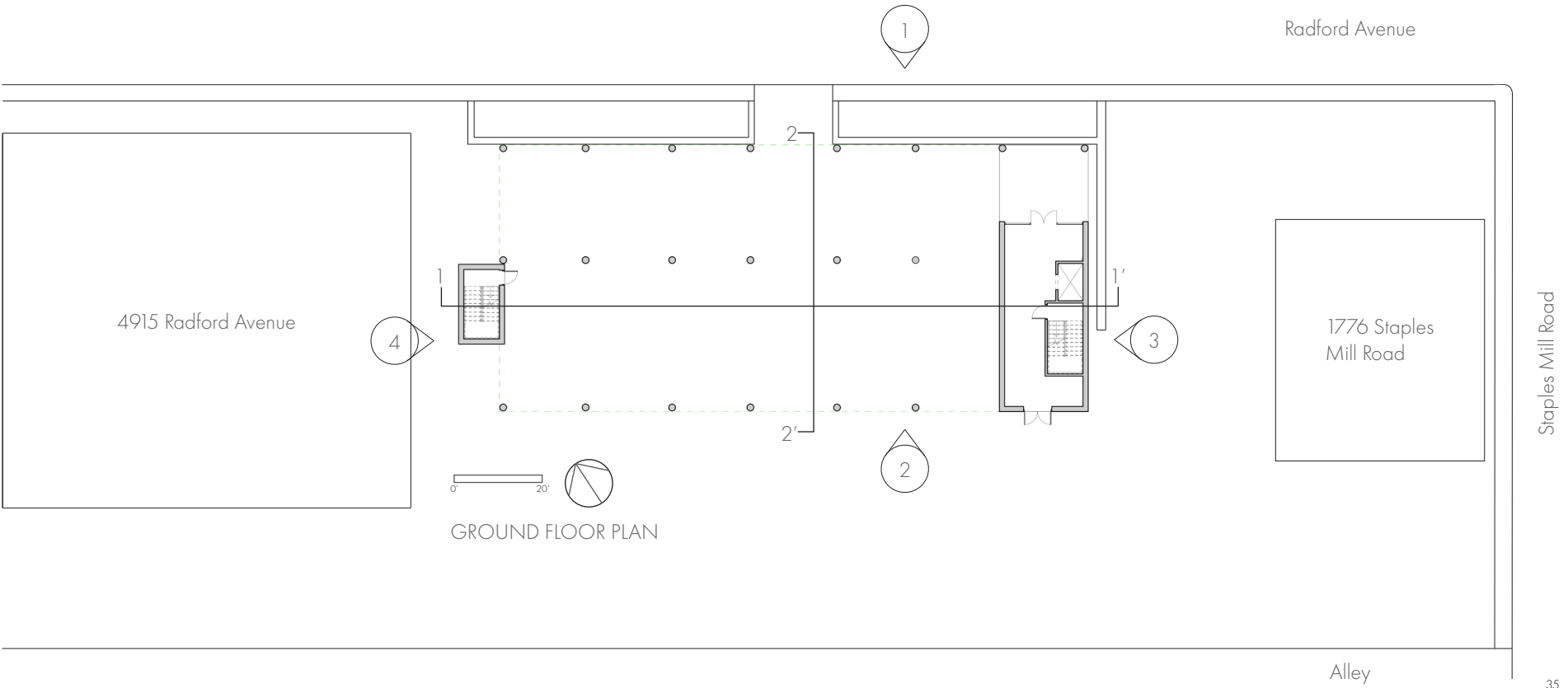


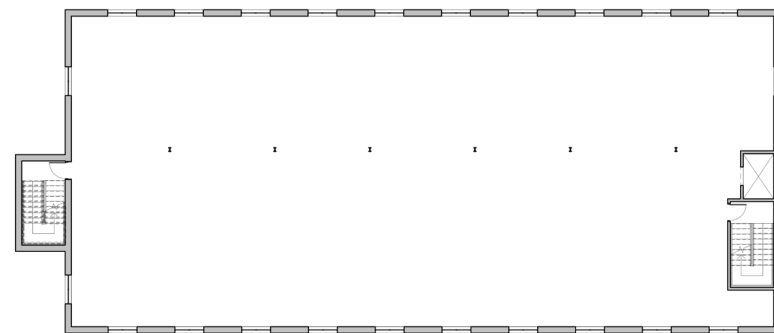
# NEIGHBORHOOD



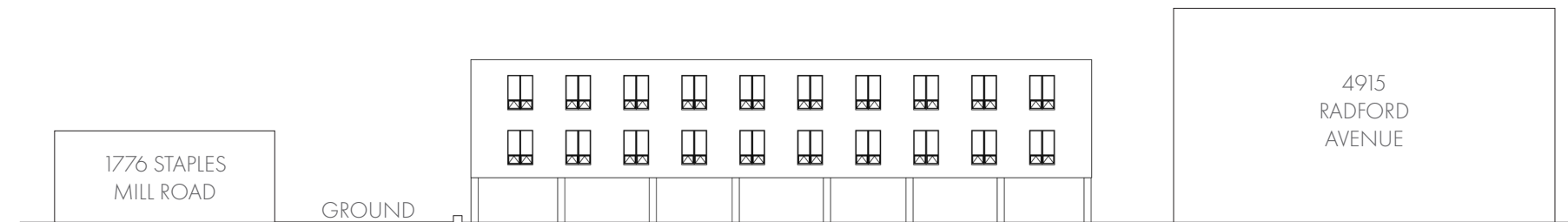


# BUILDING

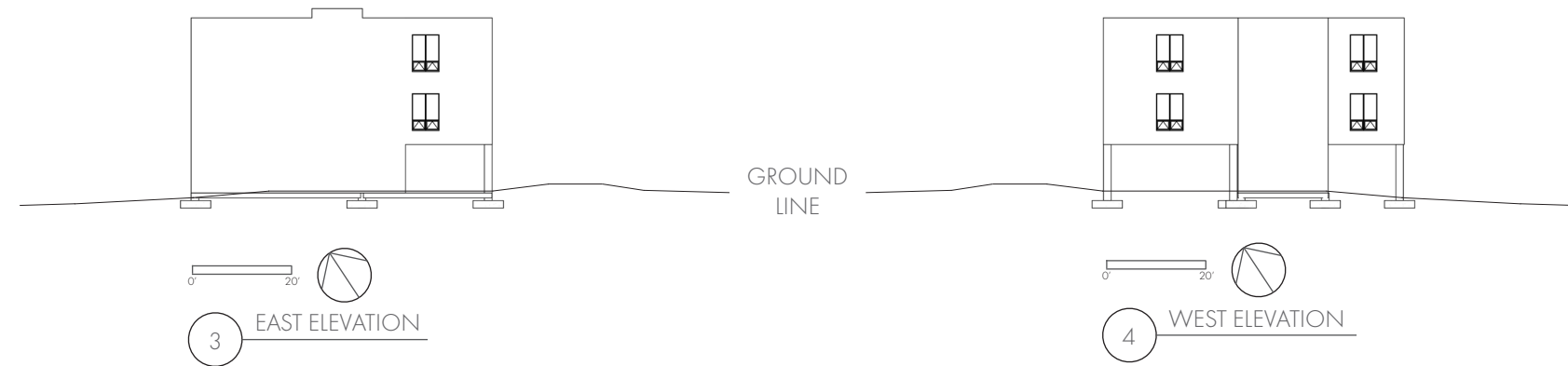
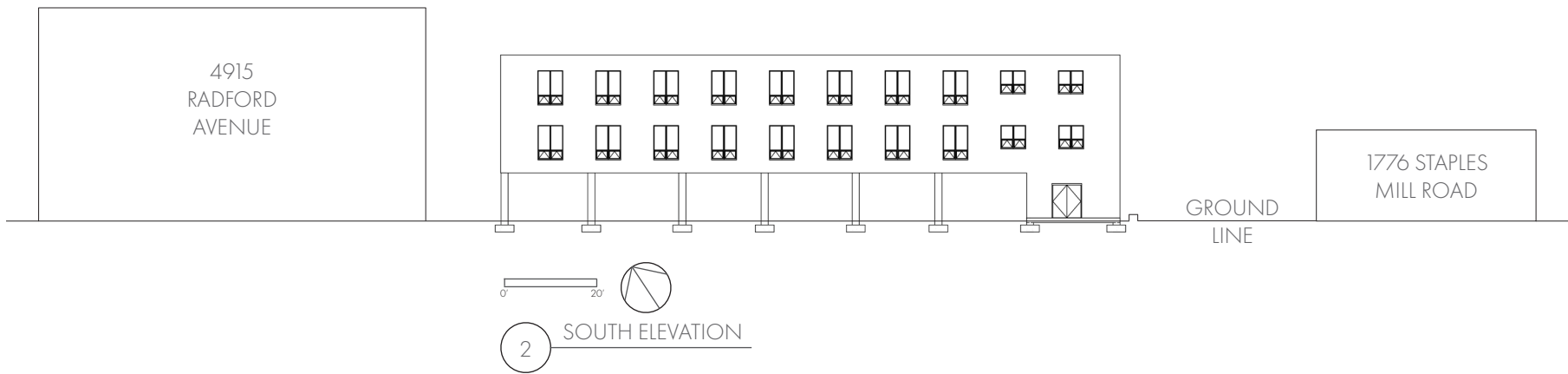




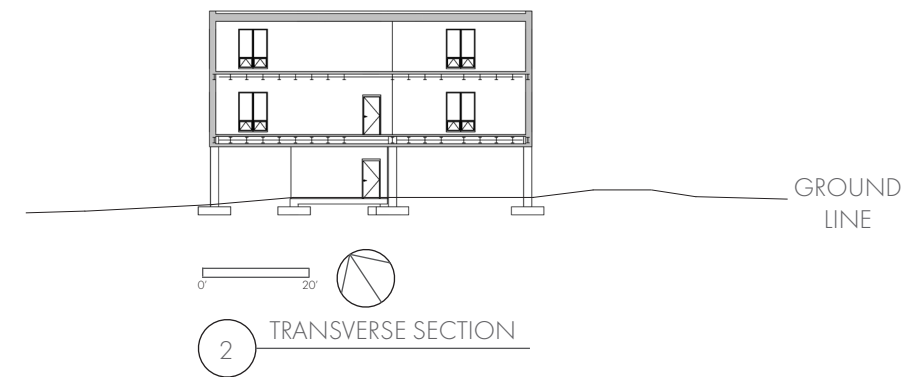
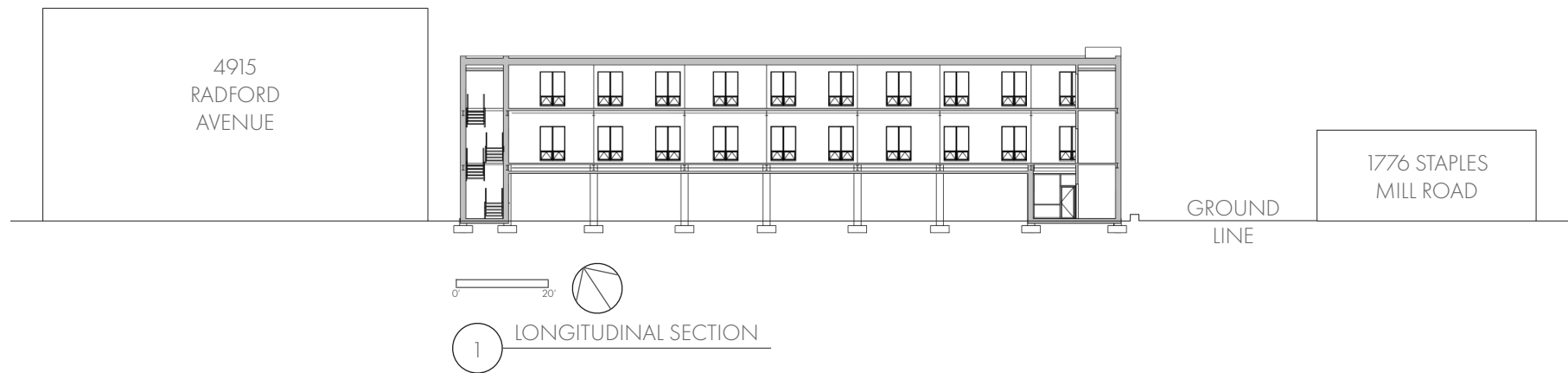
FIRST/SECOND FLOOR PLAN



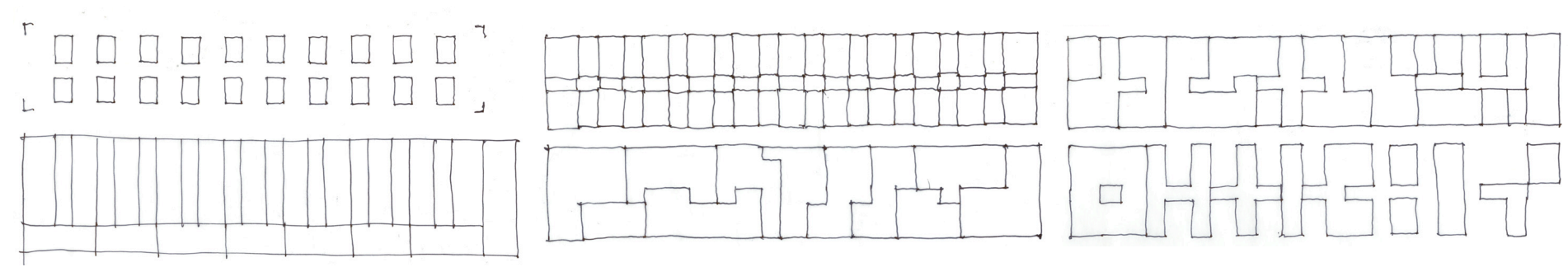
1 NORTH ELEVATION





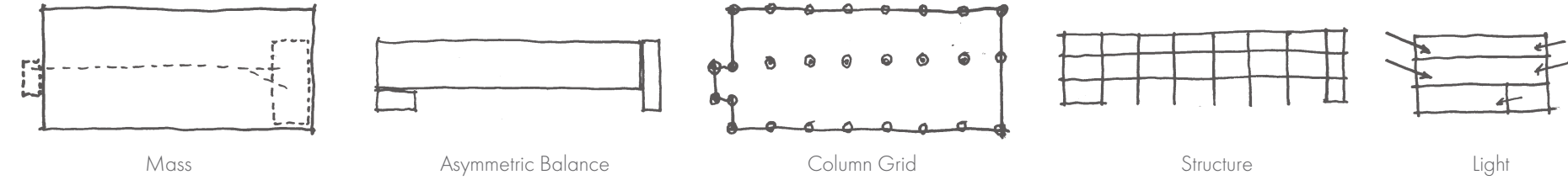


# THESIS BUILDING ANALYSIS



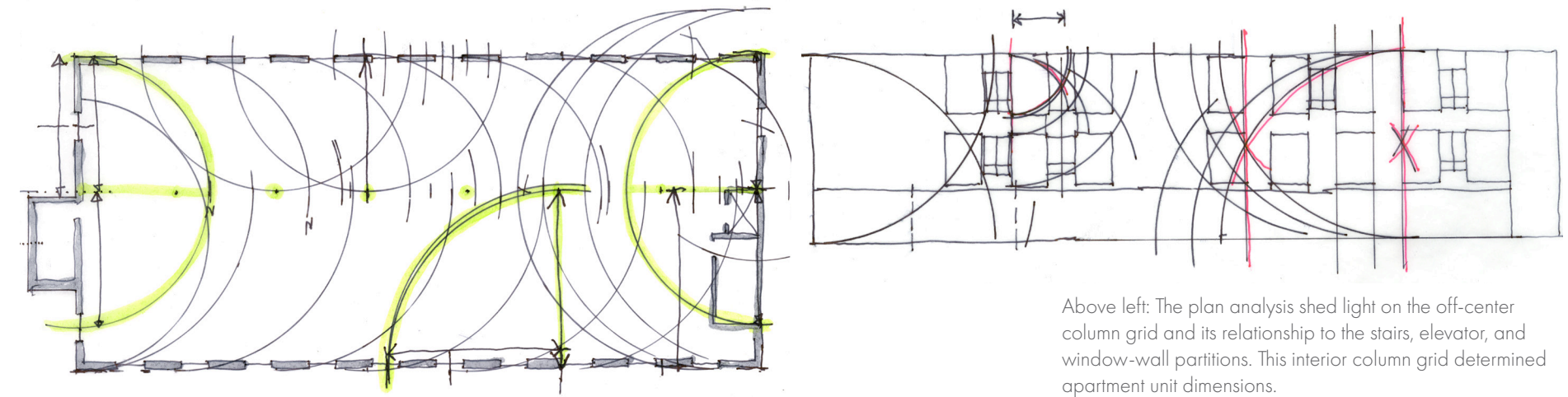
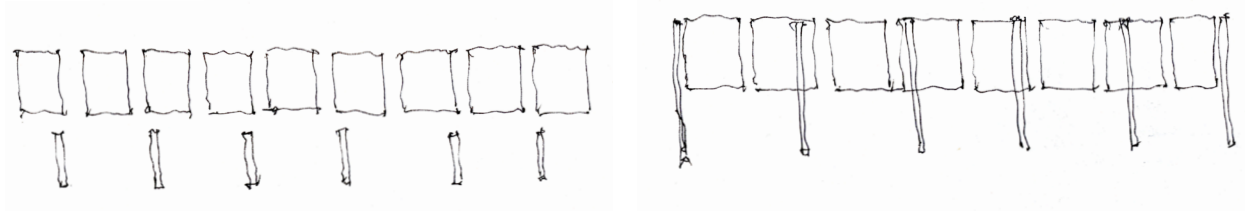
Using the facade as a grid map, the idea of interlocking apartment units starts to take shape.





Top row: Basic diagrams of the building layout informed the design of the need for interior daylight to meet the project goals.

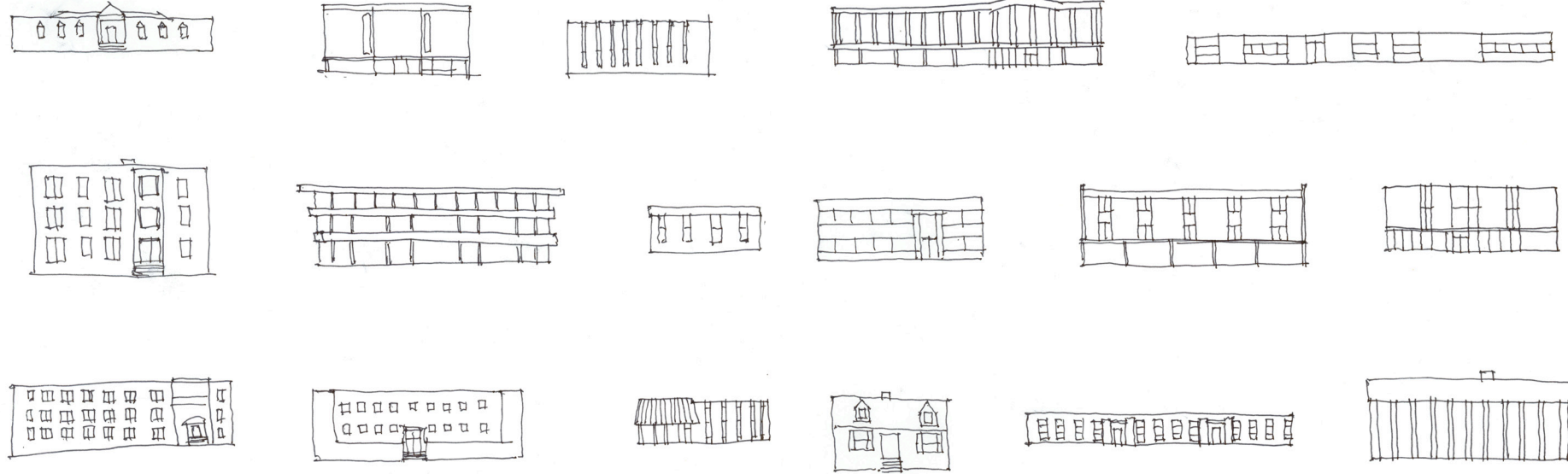
Row at right: The building facade has a succession of rhythmic panels of glass and brick. An alternating pattern is found in the relationship of columns to windows: o-o, i-i, o-o, i-i, o-o, i-i, o-o (o=outside, i=inside).



Above left: The plan analysis shed light on the off-center column grid and its relationship to the stairs, elevator, and window-wall partitions. This interior column grid determined apartment unit dimensions.

Above: Vertical to horizontal ratios were discovered during the analysis of the North Elevation, the first hint of the column grid ratio.

# NEIGHBORHOOD PARTITIONS



Numerous building facades, all within a two block radius, were heavy with vertical and horizontal partitions

# DISTRICT AND BUILDING HISTORY

The NCJ Building is located in the Brookland Magisterial District, Westwood Precinct 117 of Henrico County. The popular communities of Glen Allen, Lakeside, Dumbarton, and Laurel are also included within Brookland District.

Henrico County was established in 1611 as one of the original shires of Virginia. In 1870, the Virginia Constitution (art VII/sec 2) required every shire to be divided into townships (magisterial districts) which resulted in the founding of Brookland, Varina, Fairfield, Tuckahoe, and Three Chopt districts. The city of Richmond filed a lawsuit to annex Henrico County in late 1970, but after several years was unsuccessful.

Neighborhood characteristics include a variety of developments from mixed residential, to commercial with some historic properties in northern areas of the county. The boundaries of Brookland are Broad Street (NE), Monument Avenue (SW), and Pemberton Road (W). Major paths through this area of Richmond include Broad Street, Monument Avenue, Willow Lawn Drive, and I-64. This district is made up of homes built primarily in the 1940s and 1950's including Monumental Floral Gardens, Monument Avenue Park, Willow Lawn, and Monument Square neighborhoods. The predominant style of homes are single family, one or two story cape-cod, brick or wood-siding-clad homes. Several landmarks include Krispy Kreme Donuts, the Markel Building, and the Anthem Blue Cross Blue Shield Building. The nodes of the immediate area of 4905 Radford Avenue include the intersections of Broad Street and Staples Mill Road.

The NCJ Building located at 4905 Radford Avenue was constructed in 1964 adjacent to Willow Lawn Shopping Center. The building was designed by architect F. Louis Legnaioli for Marse Limited. The building was purchased by Neville Johnson, Sr. in the early 1970's and is now owned by Neville Johnson, Jr.

The building has historically housed offices and continues to be the home base for realtors, design firms, accountants and legal teams.

4905 Radford Avenue is an International style brick and concrete, 3-story structure. The building is sheathed in plain brick on three sides with a distinct concrete and brick panel facade surrounding vertical ribbons of glass windows on the upper two floors of the north face. The lobby on the first floor is offset to the east end occupying about one quarter of the building's width while the remaining three quarters of the building is supported on steel I-beams wrapped in concrete columns allowing for parking beneath the structure. The large vertical glass panels allow for good views of midtown and light infiltration.



# PHOTOGRAPHIC STUDIES



Image source (pp 51-55): Author











# CODE SUMMARY

Type of Construction: II-B  
Total Gross Area: 16,739sf  
Efficiency Ratio: 60%  
Total Net Area: 10,043sf  
Total Number of Occupants: 50  
Accessible: Yes  
Visible: No

# PROGRAMMING

GENERAL  
Occupancy Type:  
R-2 (IBC 2012)  
Division 9, R-48 (City of Richmond)

LOBBY (1 total)  
Purpose: Main egress to apartments  
Description: An enclosed access point  
When it is used: 24hrs/day  
Adjacencies: Storage  
FF&E: Guest chairs and end table  
Visual privacy: No  
Acoustic privacy: No  
Physical privacy: Yes  
Who uses the space: All tenants, visitors and building maintenance  
Accessible: Yes  
Net Area: 170sf  
Number of exits: 2

LOBBY STORAGE (1 total)  
Purpose: Secure storage of sporting items  
Description: An enclosed storage area for bikes, and kayaks  
When it is used: Daily  
Adjacencies: Lobby  
FF&E: Storage racks  
Visual privacy: Yes  
Acoustic privacy: No  
Physical privacy: Yes  
Who uses the space: Tenants and building maintenance

Accessible: Yes  
Net Area: 130sf  
Number of exits: 1

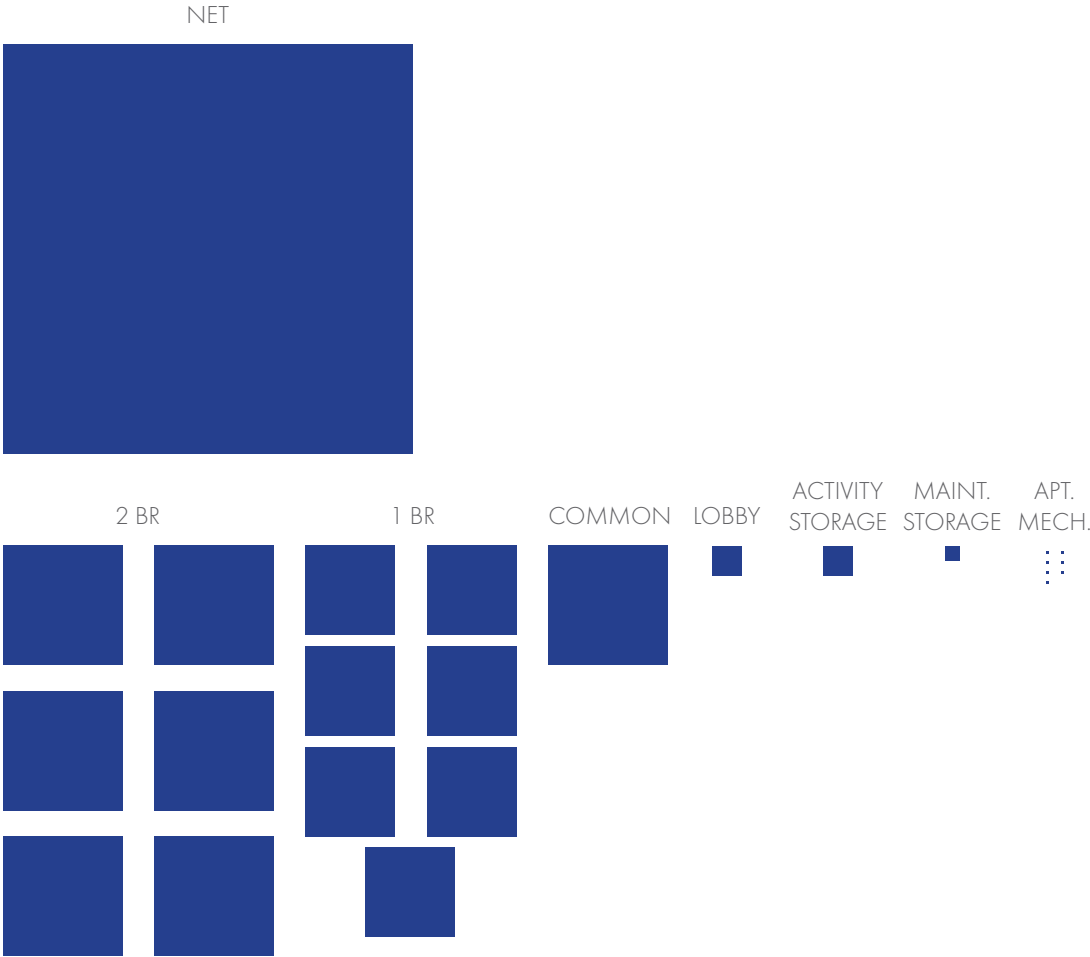
APARTMENTS (13 total)  
(6@900sf, 3@800sf, 4@700sf)  
Purpose: Residential accommodations  
Description: 1 and 2 bedroom residences with kitchen, bathroom, bedroom(s), living room, closets and laundry  
When it is used: Daily  
Adjacencies: Common Hallway  
FF&E: Kitchen appliances and cabinets, bathroom vanity and fixtures, ceiling lights  
Visual privacy: Yes  
Acoustic privacy: Yes  
Physical privacy: Yes  
Who uses the space: Tenants and visitors  
Accessible: Yes (1st floor only)  
Net Area (1 Br): 700sf/800sf  
Net Area (2Br): 900sf  
Number of exits: 1

COMMON HALLWAY (1 total)  
Purpose: Egress, socialization, community  
Description: Main access to apartments, gathering area  
When it is used: Daily  
Adjacencies: Apartments and Maintenance Storage  
FF&E: Swings, and  
Visual privacy: No  
Acoustic privacy: No

Physical privacy: No  
Who uses the space: Tenants and visitors  
Accessible: Yes  
Net Area: 900sf  
Number of exits: 1

MAINTENANCE STORAGE (1 total)  
Description: A storage area for basic building maintenance items such as bulbs, HVAC filters, plumbing and electrical repair essentials.  
When it is used: As needed  
Adjacencies: Apartments and Common Hallway  
FF&E: NA  
Visual privacy: Yes  
Acoustic privacy: Yes  
Physical privacy: Yes  
Who uses the space: Building maintenance  
Accessible: No  
Net Area: 100sf  
Number of exits: 1

MECHANICAL CLOSETS (7 total)  
One 10sf closet per two apartments which houses HVAC and hot water tanks.

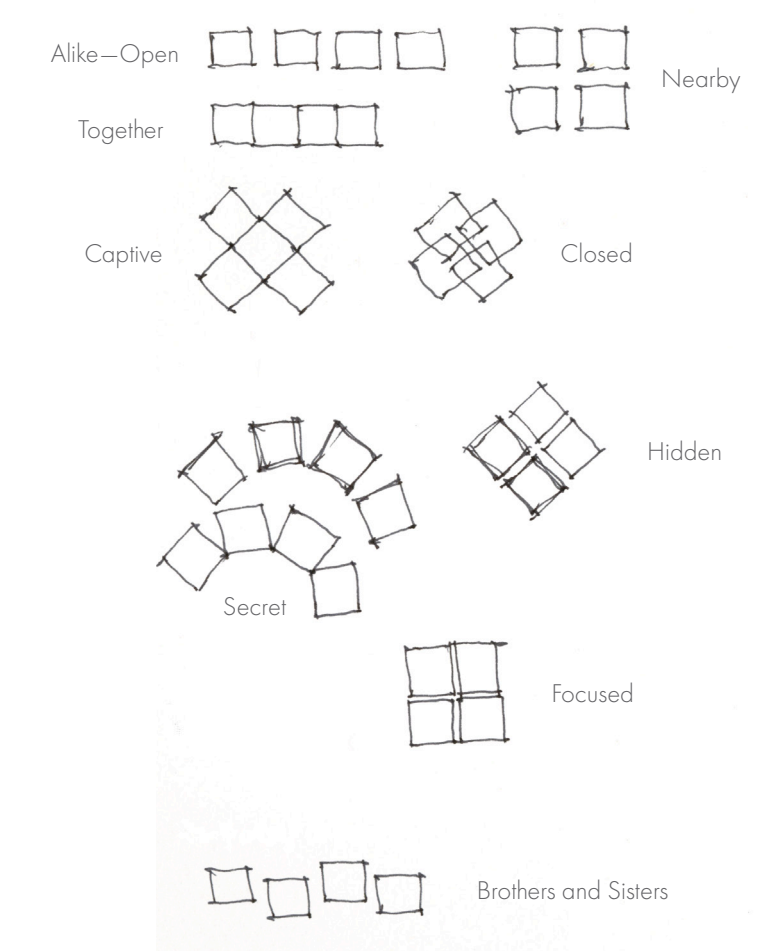
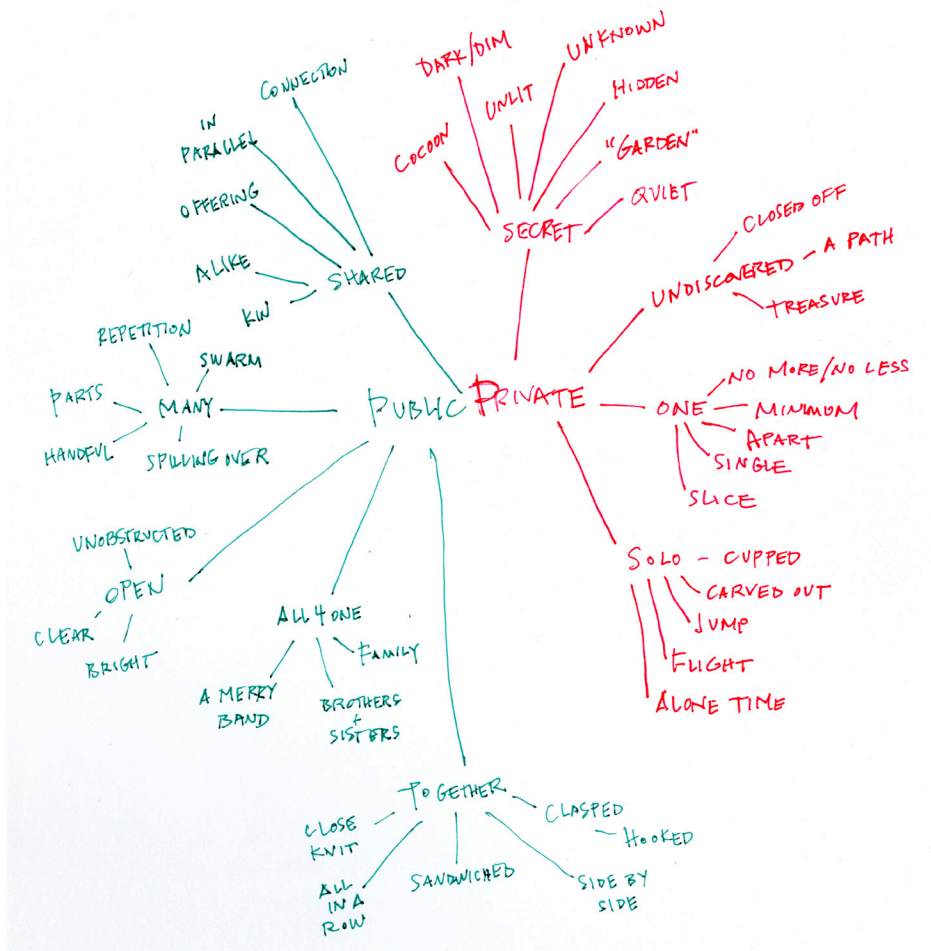


Notes	Plumbing	Privacy	Daylighting	Public Access	Adjacencies	SF	Quantity	Area
	N	N	Y	N	1	170	1	Lobby
Bike and kayak storage	Y	N	N	N	1	130	1	Activity Storage
Shared HW individual HVAC	Y	N	N	N	2	10	7	Apartment (Mechanical)
	Y	Y	Y	N	2	6@900 4/3@700/800	13	Apartments
Swings and entry benches	Y	N	Y	N	1	900	1	Common Hallway
Repair items	Y	N	N	N	2	100	1	Maintenance Storage



# CONCEPT

Porous partitions define boundaries, moderate between adjacencies, and control privacy levels. User engaged shutters modify their connectedness to spaces.

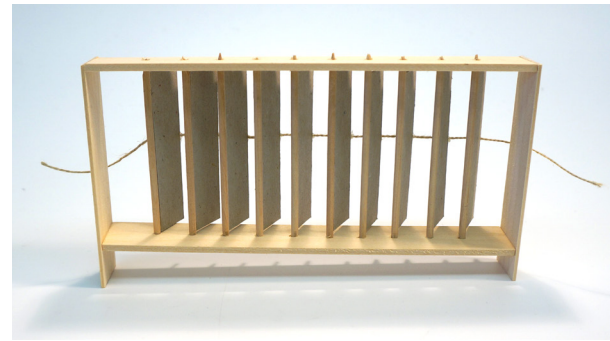
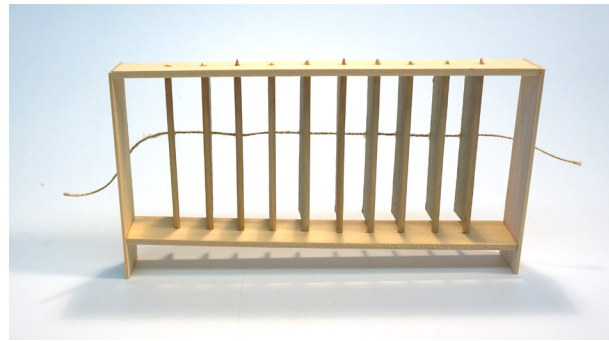
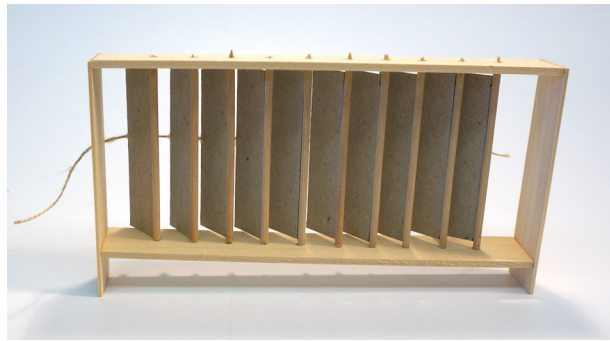


# CONCEPT DEVELOPMENT



Fixed partition porosity.





User controlled partition porosity.



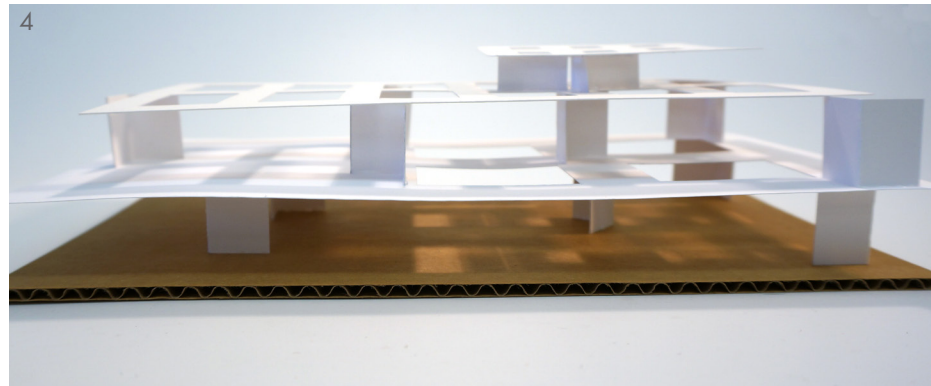
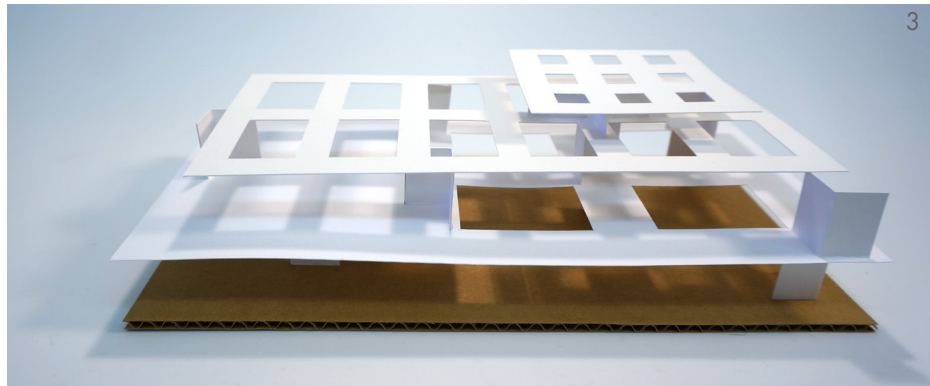
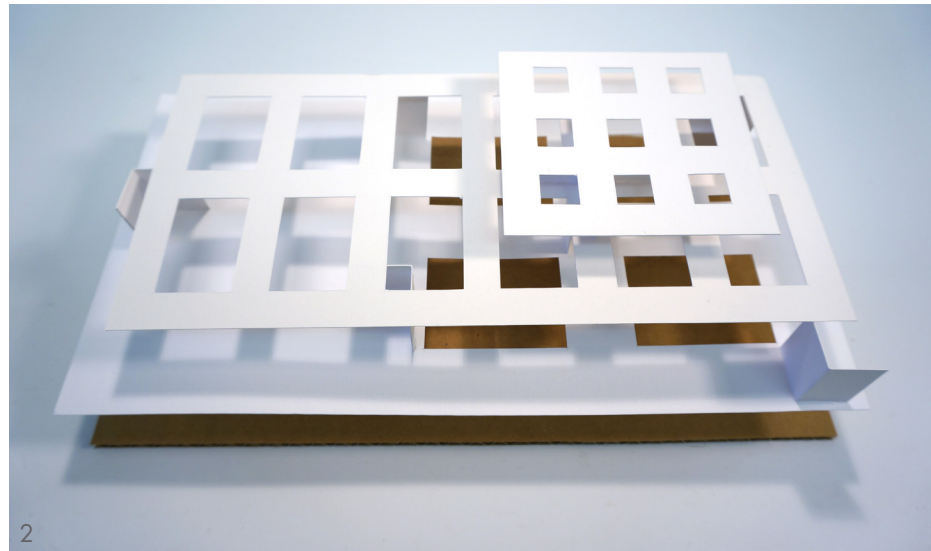
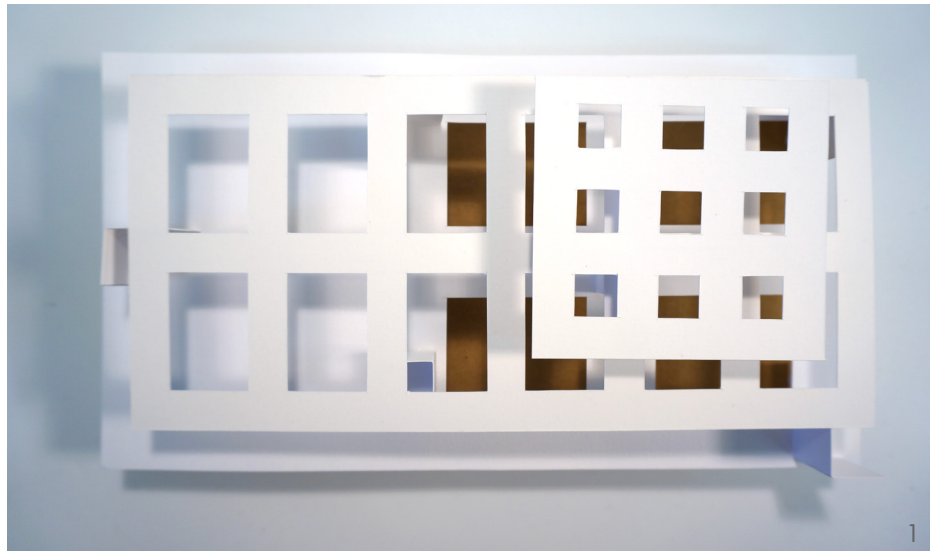
View from three feet (above), and three inches (right). User vantage point changes the perception of partition porosity, and details.



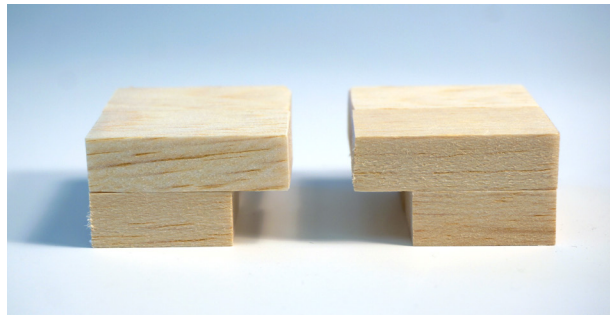
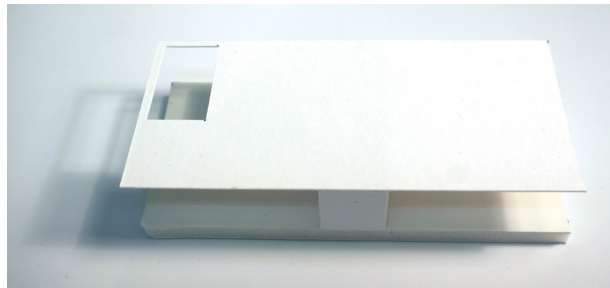




User vantage point changes the perception of partition porosity (above and opposite).

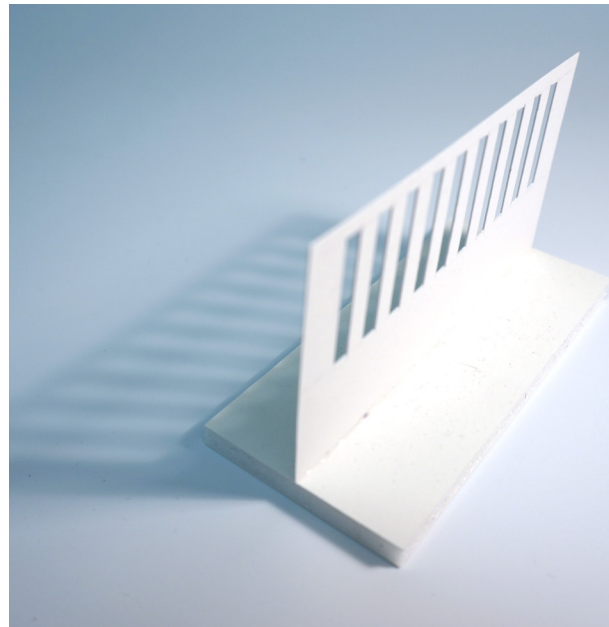




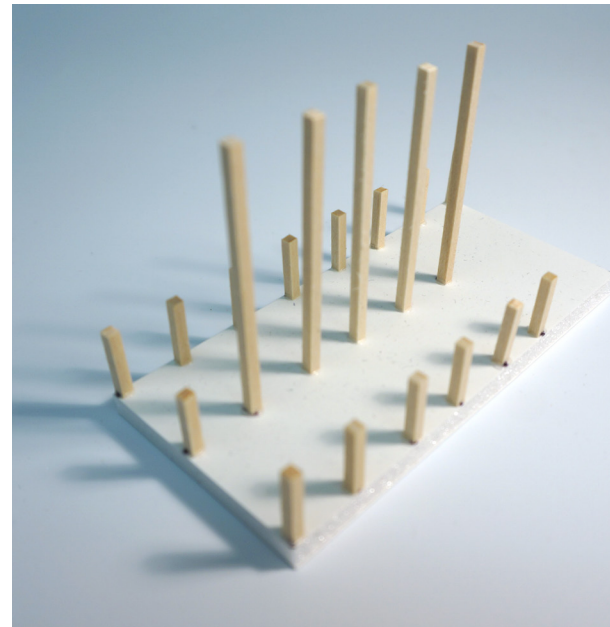


Mode models - Access (top)

Massing (bottom)

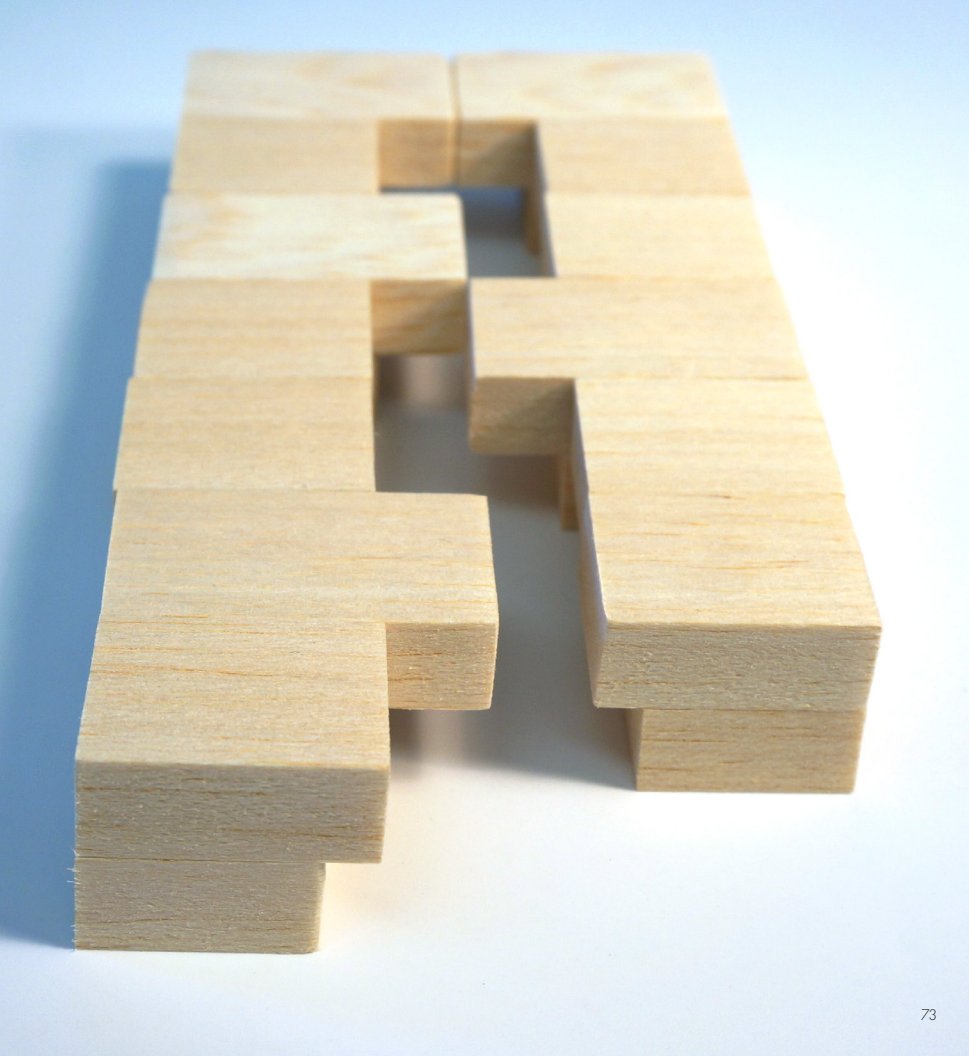


Light Pattern

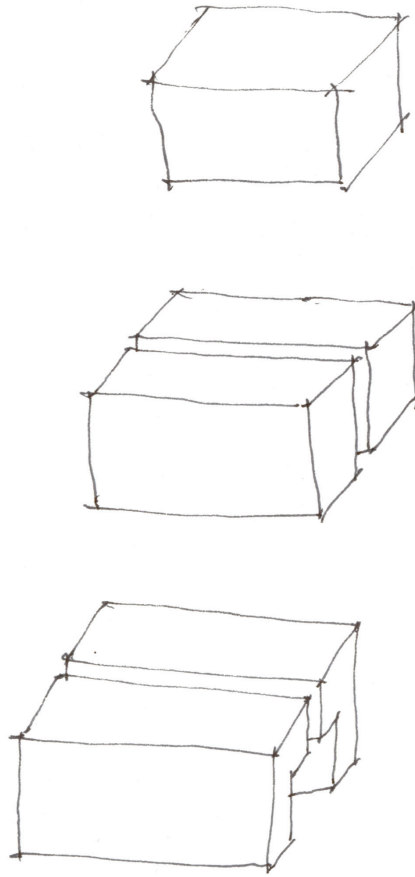
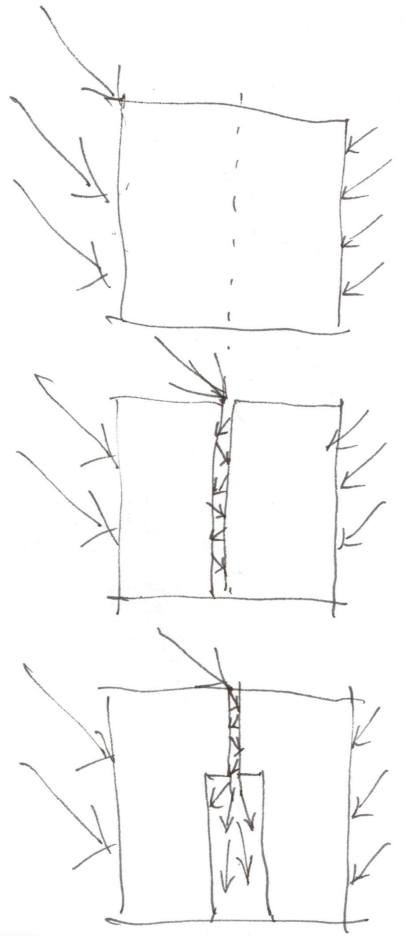


Column Grid

Access + Massing + Column Grid = Interior Daylight Concept







A light shaft is required to achieve the daylighting focal point of the design in the interior of the building.

Top: Existing daylight  
Middle: Minimum interior daylight  
Bottom: Optimal interior daylight

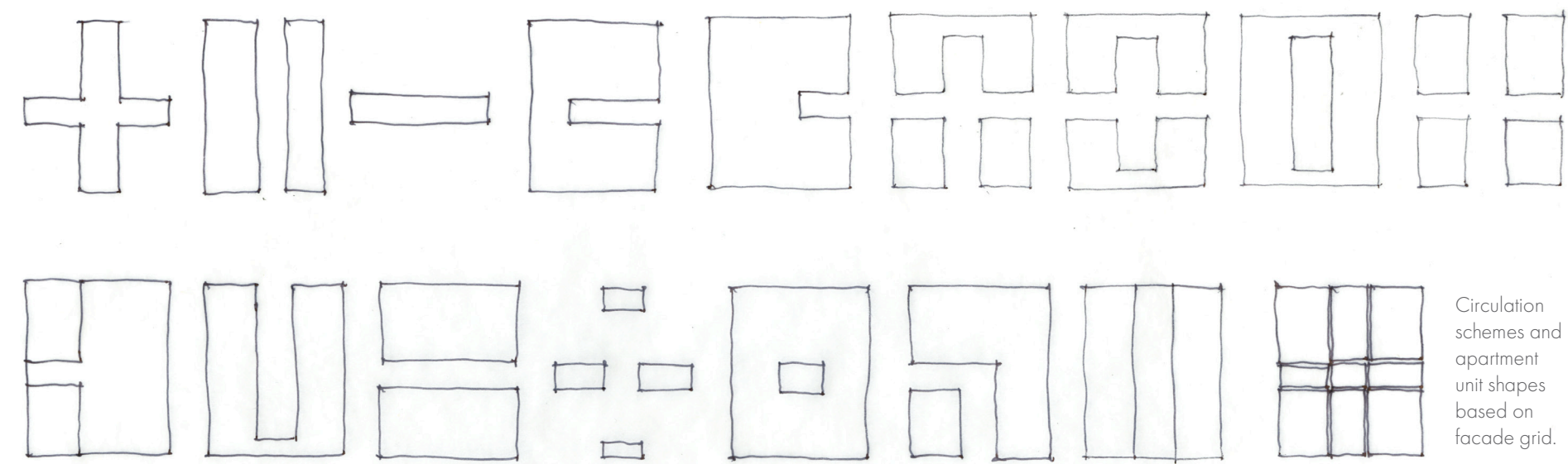
Light shaft study.



The concept light shaft combined a daylighting shaft with partitions. The final design uses solid glass daylighting panels that project light through partitions in adjacent spaces creating a similar effect.



# SCHEMATICS

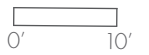


Circulation  
schemes and  
apartment  
unit shapes  
based on  
facade grid.

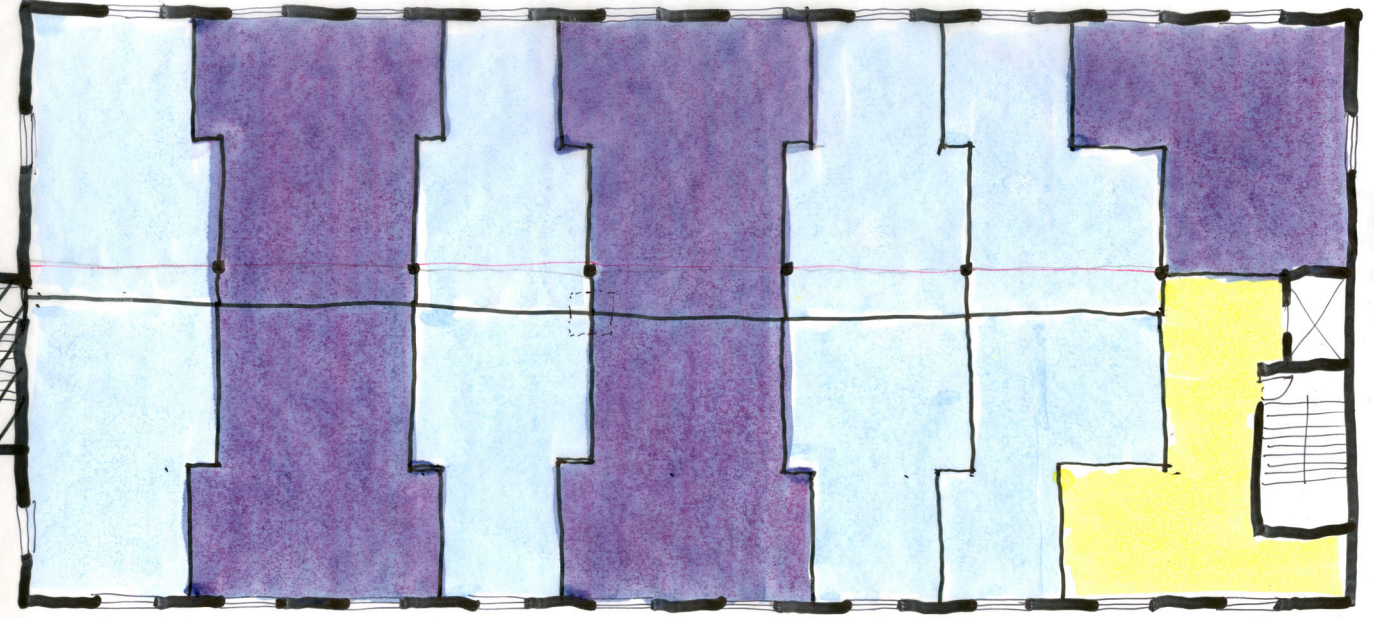
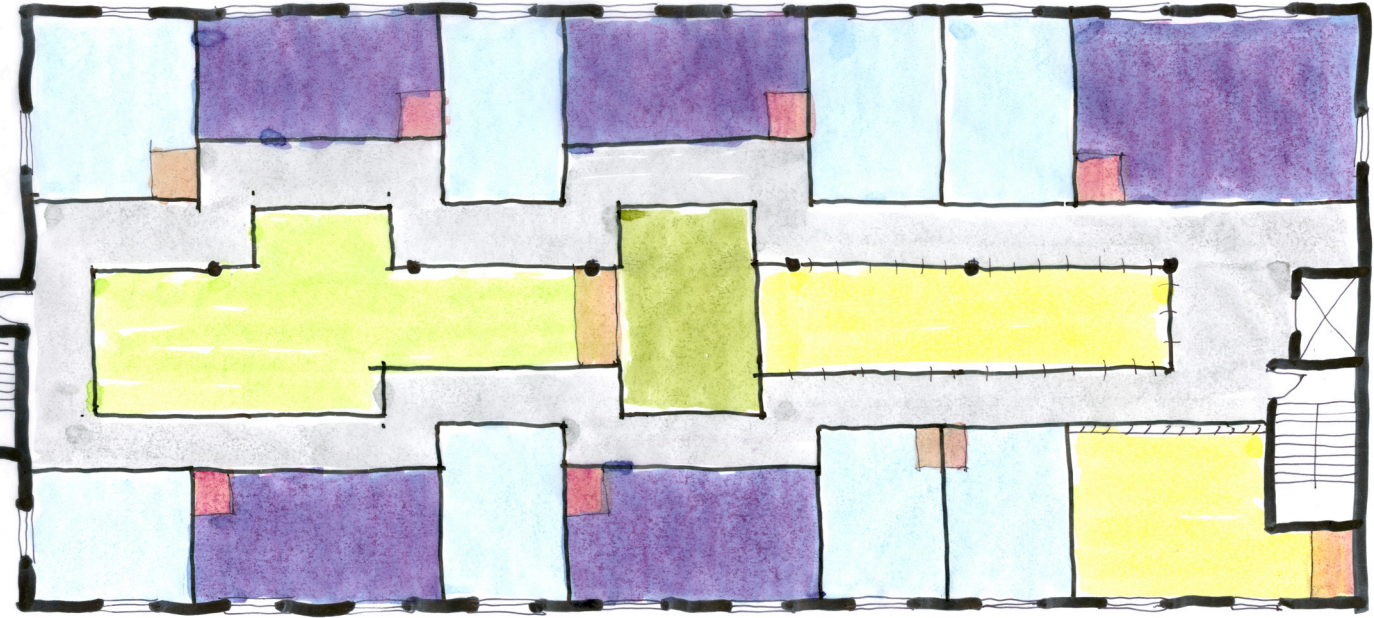


The preliminary layout of apartment units was determined from the total, programmed square footage requirement leftover after layout of the second floor; the remainder divided up into the other program requirements.

- 2 Bedroom Apartment
- 1 Bedroom Apartment
- Common Area
- Maintenance
- Utilities
- Exercise
- Common Hallway



FIRST FLOOR PLAN



The preliminary layout was achieved prior to determining the importance of the column grid. Apartment units consume equal halves of the second floor; several layouts exist for both one and two bedroom units.

- 2 Bedroom Apartment
- 1 Bedroom Apartment
- Common Area



SECOND FLOOR PLAN

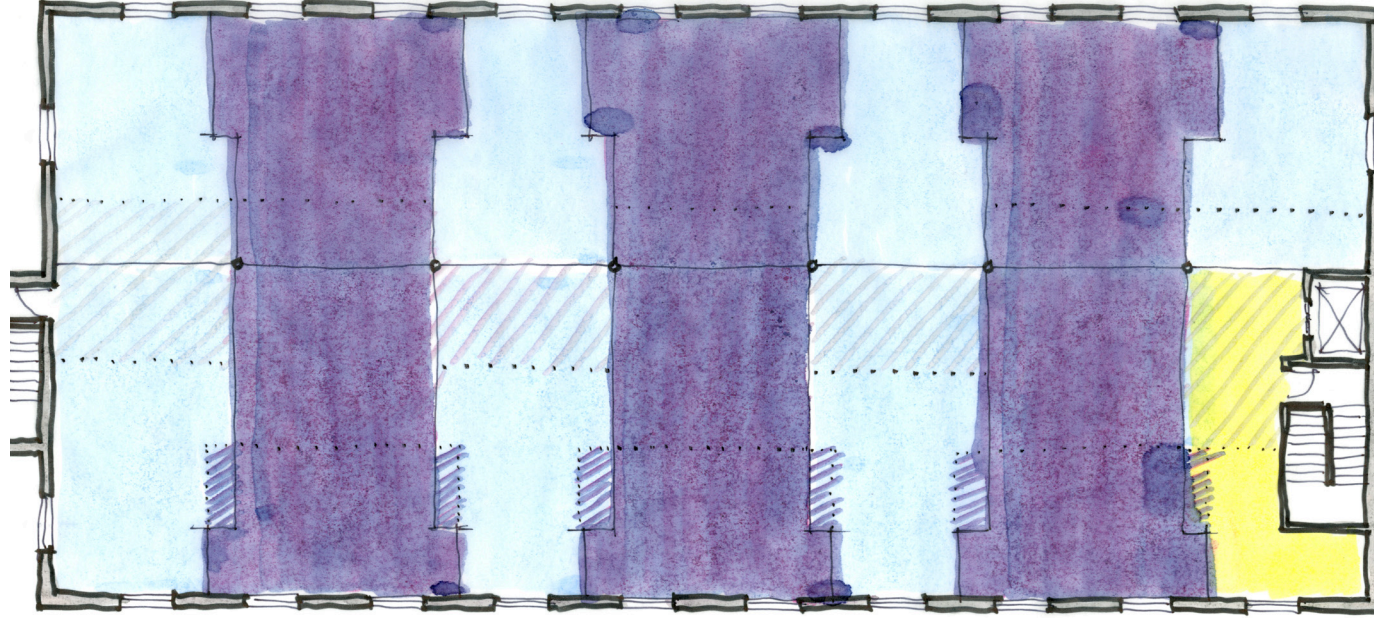
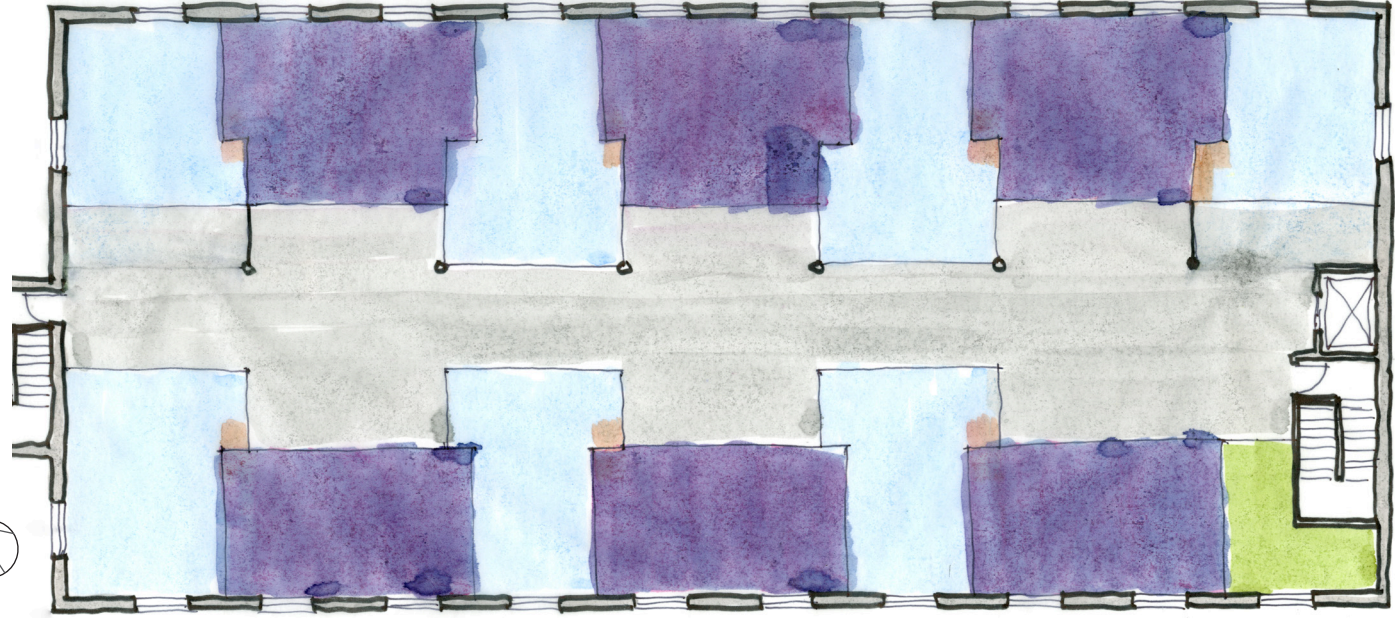


The keystone apartment shape was used to mediate between the column grid and window spacing. These two-foot "notches" became boundaries for stairways, and partition walls. The Common Hallway serves as apartment egress, and community space.

- 2 Bedroom Apartment
- 1 Bedroom Apartment
- Maintenance
- Utilities
- Common Hallway



FIRST FLOOR PLAN

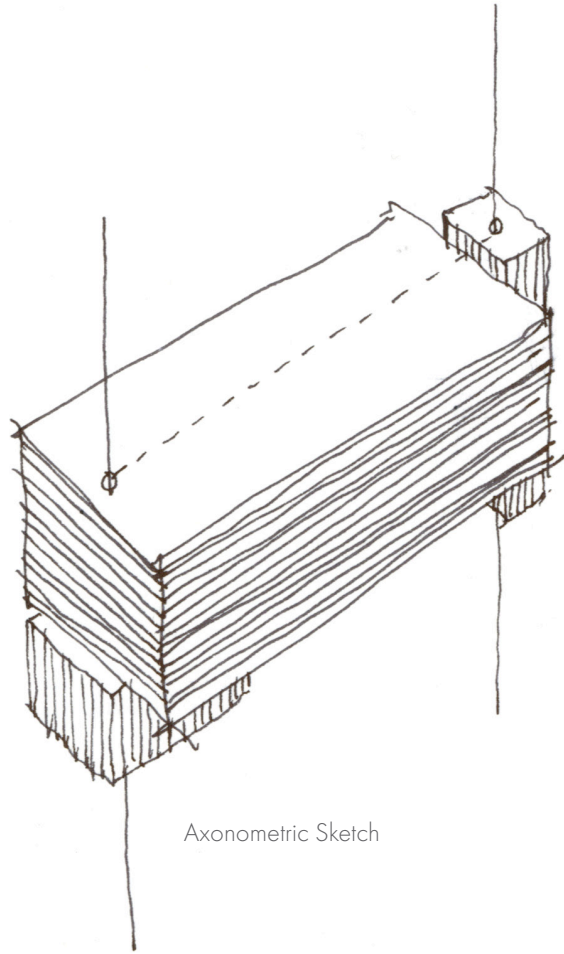


Even though the offset column grid was determined to be relevant to the building layout, and was used for this more developed schematic plan, the second floor was divided in half to equalize square footage needs. The first floor schematic continued to respect the column grid.

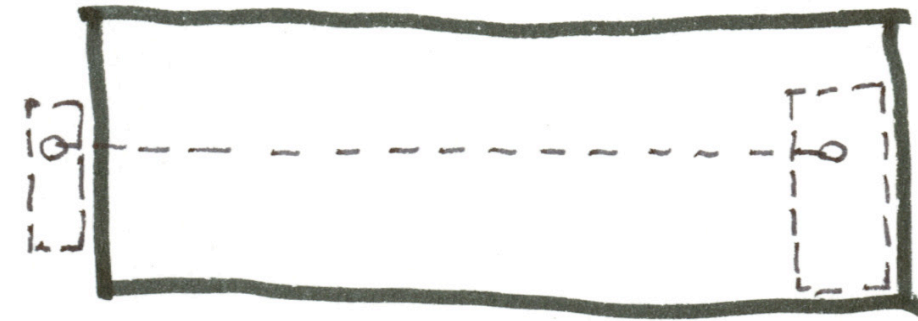
- 2 Bedroom Apartment
- 1 Bedroom Apartment
- Common Area



SECOND FLOOR PLAN



Axonometric Sketch



Parti Diagram

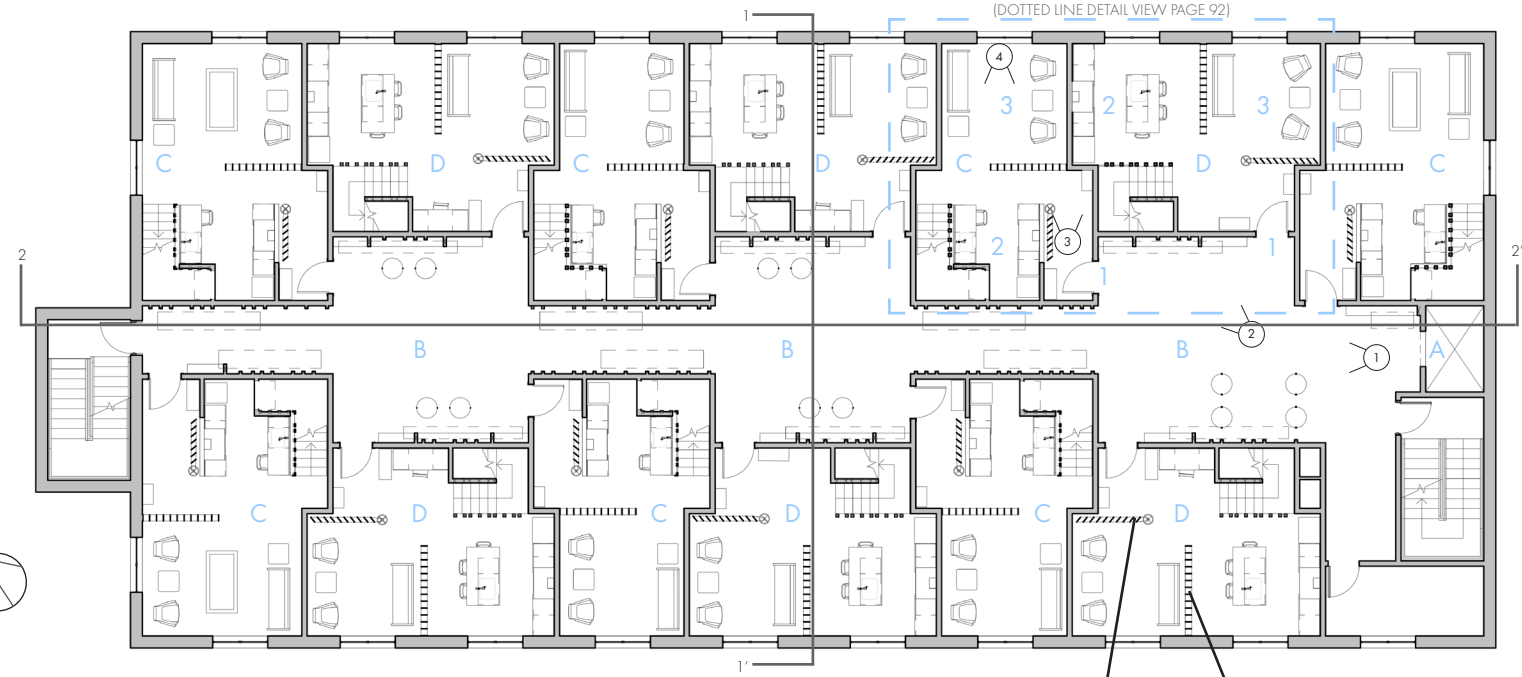


# DESIGN PLANS



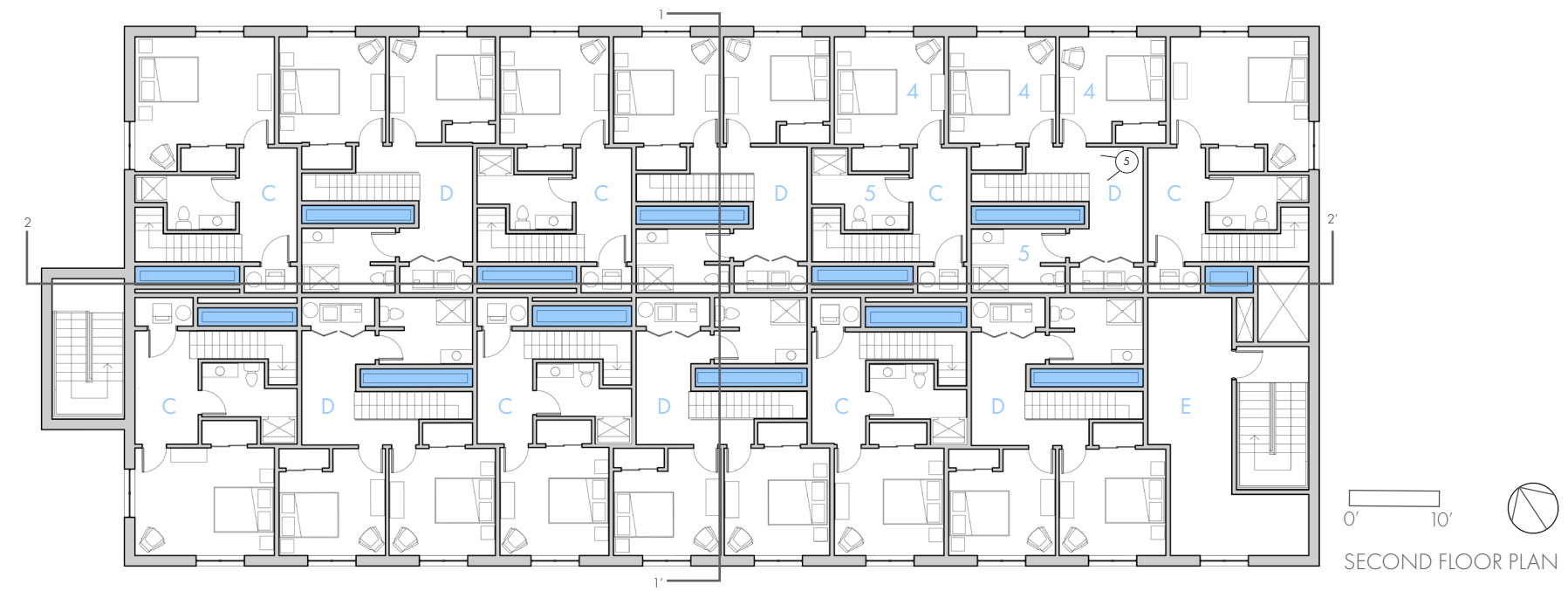
LEGEND

- A — Elevator
- B — Common Hallway
- C — One Bedroom Unit
- D — Two Bedroom Unit
- E — Gameroom
- 1 — Entry
- 2 — Kitchen
- 3 — Living
- 4 — Bedroom
- 5 — Bath



USER ADJUSTABLE PARTITIONS  
(ACTIVE INTERFACE)

FIXED PARTITIONS  
(PASSIVE INTERFACE)

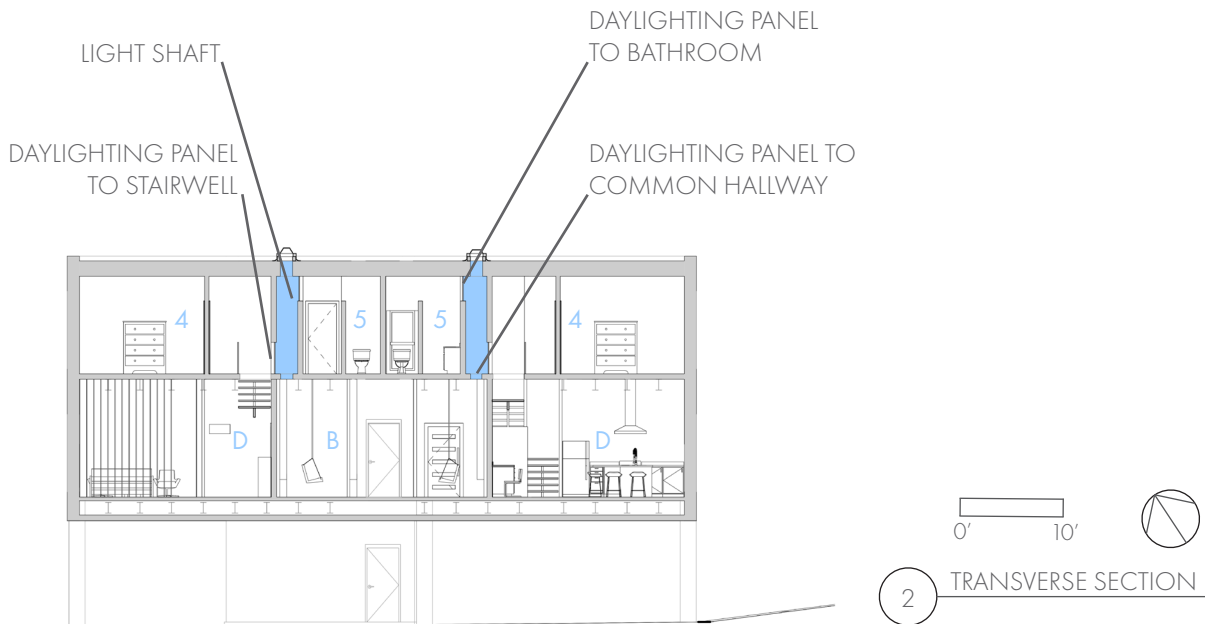
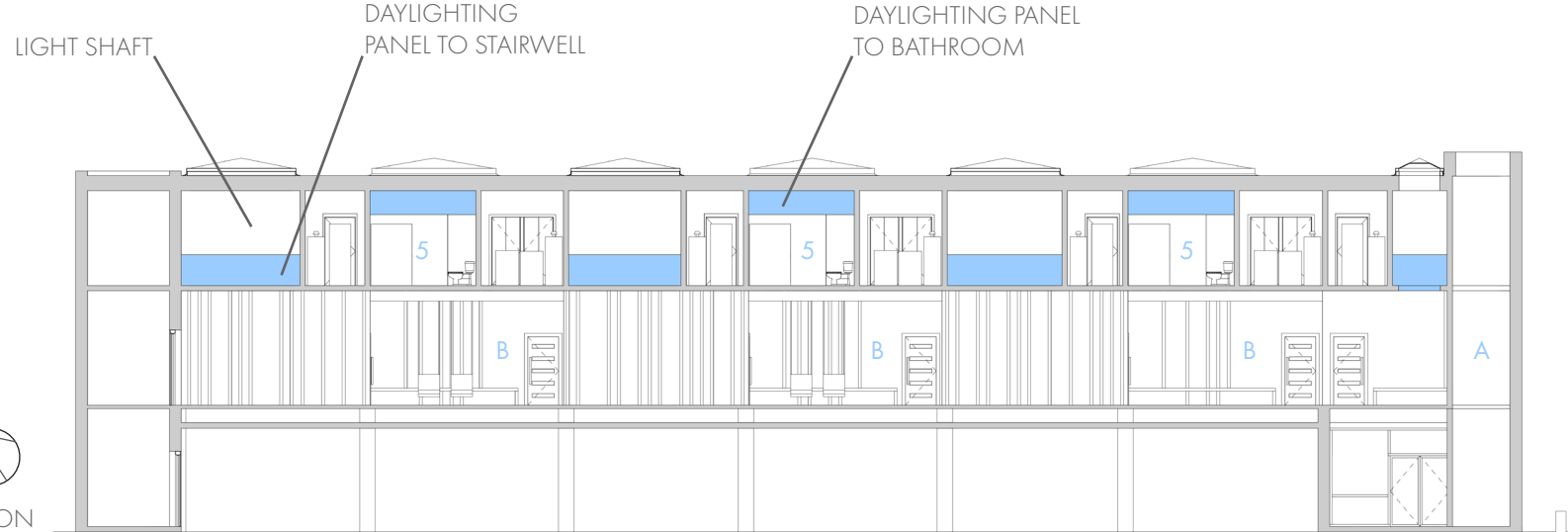




LEGEND

- A — Elevator
- B — Common Hallway
- C — One Bedroom Unit
- D — Two Bedroom Unit
- E — Gameroom
- 1 — Entry
- 2 — Kitchen
- 3 — Living
- 4 — Bedroom
- 5 — Bath

1 LONGITUDINAL SECTION



2 TRANSVERSE SECTION

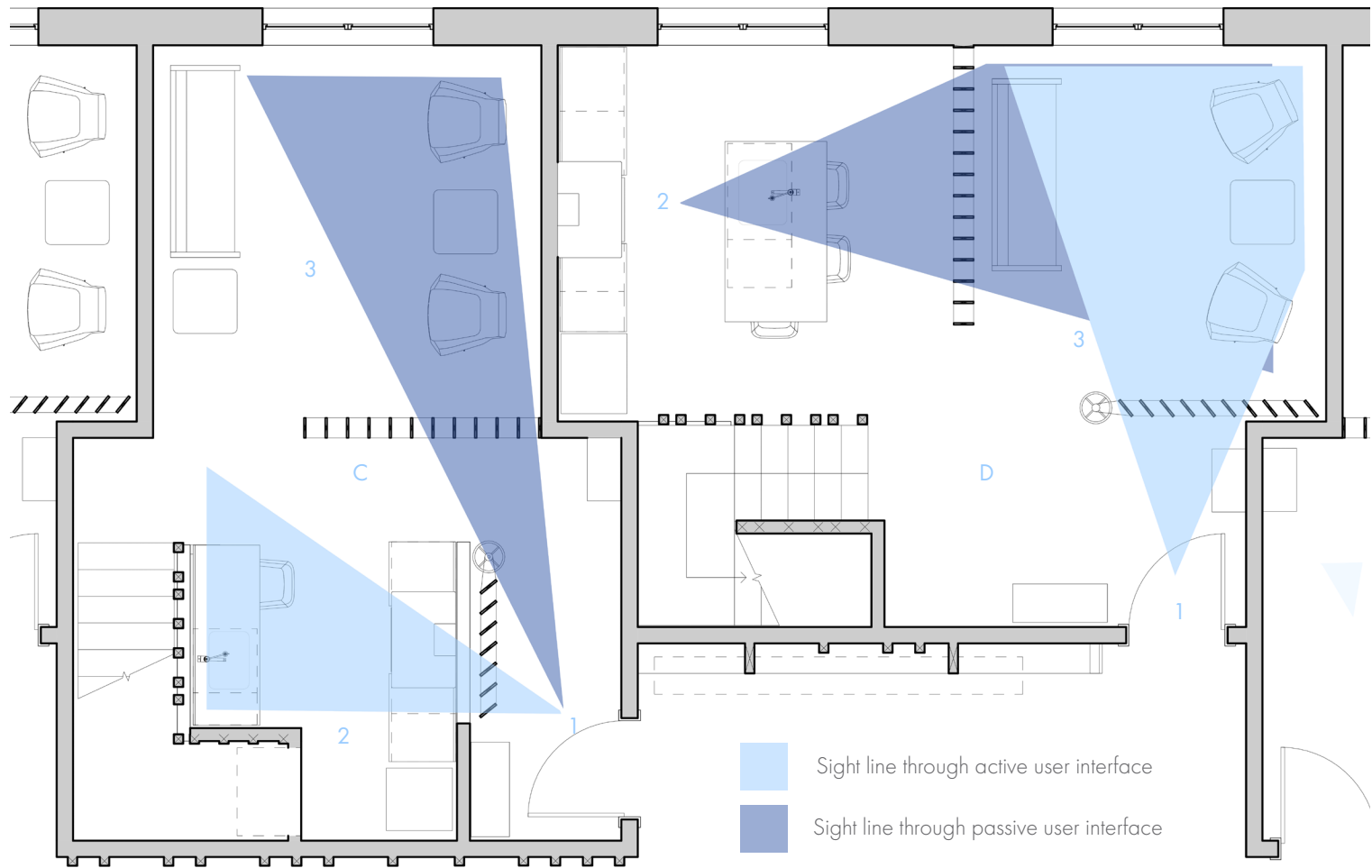
LEGEND

- A — Elevator
- B — Common Hallway
- C — One Bedroom Unit
- D — Two Bedroom Unit
- E — Gameroom
- 1 — Entry
- 2 — Kitchen
- 3 — Living
- 4 — Bedroom
- 5 — Bath

0' 3'



FIRST FLOOR PLAN



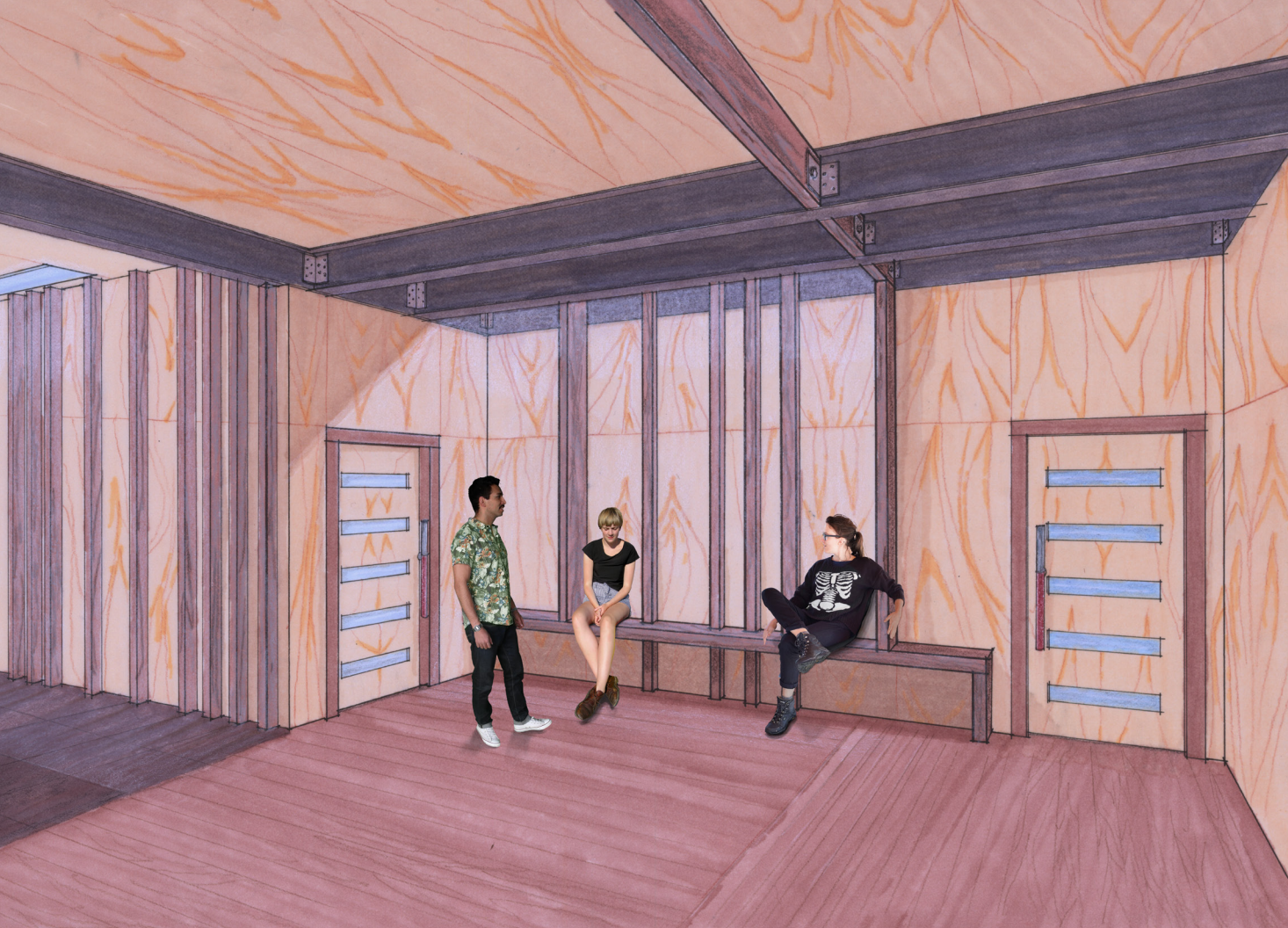
- Sight line through active user interface
- Sight line through passive user interface

# PERSPECTIVE RENDERINGS

1. The Common Hallway, viewed from the elevator, provides access to all of the apartment units while also serving as an area of community. Daylight streams in above the social swings, entry benches, and corridors.







2. Entry benches at each apartment door are more removed socialization or contemplation areas as well as a place to set grocery bags while unlocking the apartment door.



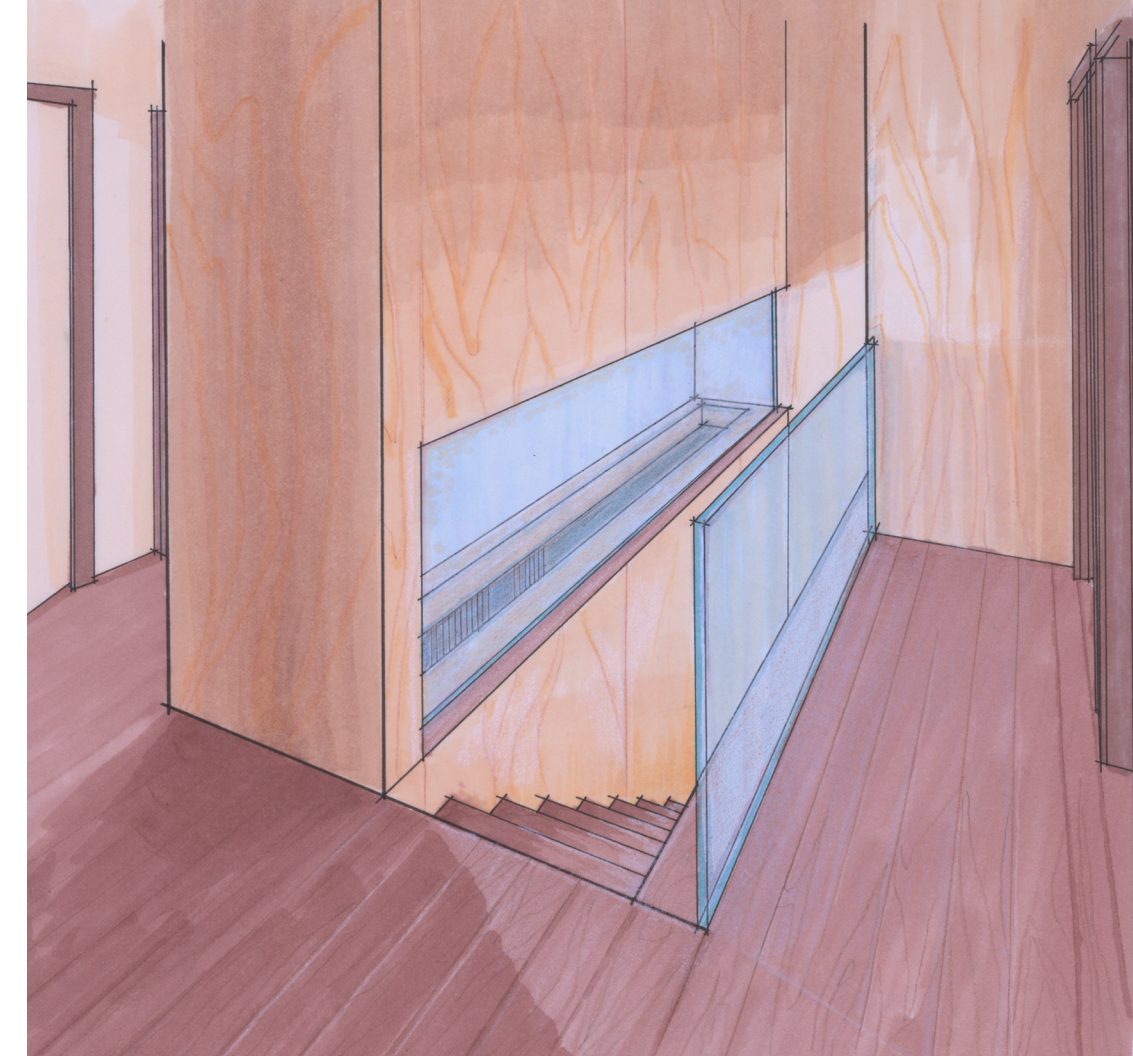
3. Inside the one bedroom apartment are user adjustable partitions, currently closing off the view into the kitchen, at left. The view into the living area, directly ahead, is through fixed partitions. Shelves can be inserted into these vertical partitions and used for displaying objects — the density of displayed objects passively controls porosity of this partition.





4. Standing in the living area, looking into the kitchen, provides a view of light streaming down from the second floor daylighting panel. The light disc on the Kuu Pendants in the kitchen can be swiveled by the user; the OK Pendant at the end of the fixed partition wall in the living area is height adjustable by the user.

5. The light shaft, as seen on the second floor, illuminates the stairwell and kitchen below, the adjacent bathroom, and the common hallway. LED strips within the shaft provide a similar lighting effect at night.





# MATERIALS



Baltic Birch Plywood



Weathered Pine



Cherry



White Oak



Buckingham Slate





Name: B. Wood  
Designer: Tom Kundig  
Manufacturer: 12th Avenue Iron



Name: Trifidae Lounge Chair  
Designer: Numen/ForUse  
Manufacturer: Prostoria



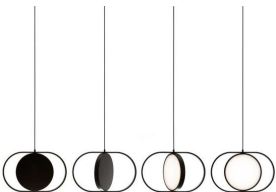
Name: Strain Barstool  
Designer: Numen/ForUse  
Manufacturer: Prostoria



Name: Segment Sofa  
Designer: Numen/ForUse  
Manufacturer: Prostoria



Name: K2 Depot 900-3  
Designer: Mikkel Bahr  
Manufacturer: JENSENplus



Name: Kuu Pendant  
Designer: Elina Ulvio  
Manufacturer: Mater



Name: Segment Low Table  
Designer: Numen/ForUse  
Manufacturer: Prostoria



Name: OK Pendant  
Designer: Konstantin Grcic  
Manufacturer: FLOS

# ACKNOWLEDGEMENTS

Rob Ventura  
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Traci Scribner  
Neville Johnson, Jr  
Gwen at NCJ Realty  
My peerless classmates



# REFERENCES

1. Tuan, Y. (1977). *Space and Place: The Perspective of Experience*. Minneapolis, MN: University of Minnesota Press.

2. Niedderer, K. (2007). Designing Mindful Interaction: The Category of Performative Object. *Design Issues*, 23(1), 3-17. DOI: 10.1162/desi.2007.23.1.3

3. Niedderer, K. (2014). "Mediating Mindful Social Interactions Through Design." *The Wiley Blackwell Handbook of Mindfulness*. le, A. (Ed.). Chichester, UK: John Wiley & Sons. 345-366. DOI: 10.1002/9781118294895

4. Kaplan, S. (2001). Meditation, Restoration, and the Management of Mental Fatigue. *Environment and Behavior*, 33(4), 480-506. DOI: 10.1177/00139160121973106

5. Berto, R. (2005). Exposure to restorative environments helps restore attentional capacity. *Journal of Environmental Psychology*, 25(3), 249-259.

6. Zanjani, A., Hilscher, M. C., & Cupchik, G.C. (2016). "The Perception of Virtual Residential Spaces." *Empirical Studies of the Arts* 34(1), 53-73. DOI: 10.1177/0276237415621186

7. Yildirim, K., Hidayetoglu, M. L. & Capanoglu, A. (2011). "Effects of Interior Colors on Mood and Preference: Comparisons of Two Living Rooms." *Perceptual and Motor Skills* 112(2), 509-524. DOI: 10.2466/24.27.PMS.112.2.509-524

8. Ulusoy, B. & Nilgün, O. (2017). "Understanding Responses to Materials and Colors in Interiors." *Color Research & Application* 42(2), 261-272. DOI: 10.1002/col.22072

9. Szenasy, S., (2014). *Szenasy, design advocate*. Hudner, A. S. & Busch, A. (Ed.). New York, NY: Metropolis Books. NK1390.S94 2013

10. Folkmann, M. (2009). "Evaluating Aesthetics in Design: A Phenomenological Approach." *Design Issues* 26(1), 40-53.

11. Hassed, D., & Hassed, C. (2015). *The Mindful Home: The Secrets to Making Your Home a Place of Harmony, Beauty, Wisdom and True Happiness*. Auckland, New Zealand: Exile Publishing Pty Ltd.

12. Cullens, Chris. (1999). Gimme Shelter: At Home with the Millennium. *Differences*, 11 (2), 204-227.

13. Bachelard, G. (1994). *The Poetics of Space*. (Jolas, M. Trans., and Stilgoe, J. R., Suppl. Text). Boston, Massachusetts: Beacon Press. (Original work published 1957) B2430.B253 P6313 1994

14. Lee, E., Allen, A. & Kim, B. (2013). "Interior Design Practitioner Motivations for Specifying Sustainable Materials: Applying the Theory of Planned Behavior to Residential Design." *Journal of Interior Design* 38 (4), 1-16. DOI: 10.1111/joid.12017

15. Feisner, E. A. (2001). *Color Studies*. New York, NY: Fairchild Publications. ND1488.F45 2001

16. Lennon, R. & Plunkett-Powell, K. (1997). *Home Design from the inside out: Feng Shui, Color Therapy, and Self-awareness*. New York, N.Y.: Penguin Arkana. BF1779.F4 L44 1997

17. Kleinman, K., Merwood-Salisbury, J. & Weinthal, L. (2012). *After Taste: Expanded Practice in Interior Design*. 1st ed. New York, NY: Princeton Architectural. NK2125.A39 2012

18. Susanka, S. (2004). *Home by Design: Transforming Your House into Home*. Newtown, CT: Taunton. NA7208.S884 2004

19. Pallasmaa, J. (1996). *The Eyes of the Skin: Architecture and the Senses*. 3rd ed. Hoboken, NY: John Wiley & Sons.

20. Locke, P., & McCann, R., (Eds.). (2015). *Merleau-Ponty: Space, Place, Architecture*. Athens, OH: Ohio University Press. NA2500.M419 2015

21. Cox, A., Gould, S., Cecchinato, M., Iacovides, I., & Renfree, I. (2016). Design Frictions for Mindful Interactions: The Case for Microboundaries. *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, 1389-1397. DOI: 10.1145/2851581.2892410

22. Annie Murphy Paul. (1998). Rooms of their own. *Psychology Today*, 31(3), 12

23. Kaplan, R. (1989). The experience of nature: A psychological perspective. Cambridge, England; New York: Cambridge University Press. BF353.5.N37 K37 1989

24. Liu, C., Wang, Y., Huang, W., & Chen, S. (2017). Destination fascination: Conceptualization and scale development. *Tourism Management*, 63, 255-267

25. Felsten, G. (2009). Where to take a study break on the college campus: An attention restoration theory perspective. *Journal of Environmental Psychology*, 29(1), 160-167

26. Williams, J., & Kabat-Zinn, J. (Eds.). (2011). *Mindfulness: Diverse perspectives on its meaning, origins, and multiple applications at the intersection of science and dharma*. *Contemporary Buddhism*, 12(1), 1-18. DOI: 10.1080/14639947.2011.564811

# THESIS REFLECTION

I chose to go first in the presentation order. This decision, about ten days prior to the event, was a good choice. Completing the renderings and board layout took a lot of effort leaving little to no energy for nerves when May 2nd rolled around.

I had read, and reread my notes. Dozens of times probably. The actual delivery was okay but not my best — exhaustion definitely became a factor in laboring through the presentation. In any event I only forgot a few things along the way that were discussed later or prompted by Rob near the end of my talk.

Comments arose about the overwhelming sameness in the surface materials — something I also noticed after showing off one rendering at a size that consumed half a board.

A statement about discussing the rituals of arriving home as part of the verbal presentation was one I had heard before and still had not managed to absorb. The intensity of finalizing ideas and producing boards had swept it away.

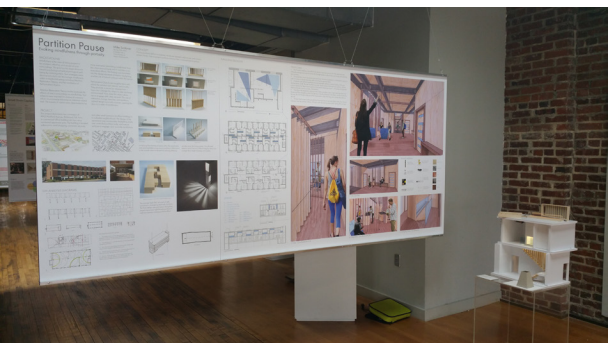
Additional comments were made about some of the details such as the birch paneling being vertically oriented instead of horizontal which would have set off the partitions as “special”, and material connections which could have been more resolved. Again, both of these were things that immediately stood out when brought up that I could not see for the blindness of crossing the finish line. Overall I was proud of the work, and no one could take that away.



Thesis defense in Rm 409 on May 2, 2018.



Signage detail for the thesis show poster...a bit last minute, but complete and ready for application to the entry poster.



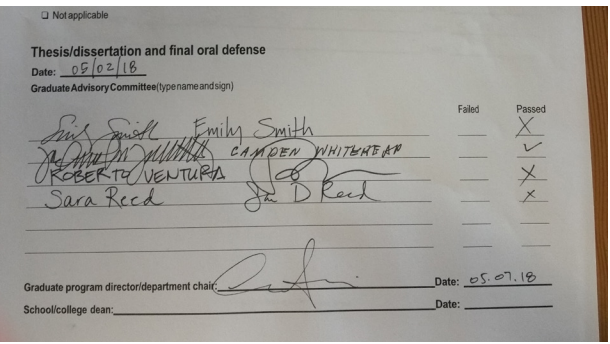
My posters and daylighting model have decent natural light during the day.



The entry poster contained a 3D effect making it unique.



99% there — just about ready to put away all the tools. The preparation and hanging process was quite labor intensive requiring about 12 hours of effort over three days.



The proof is in the pudding. Two long years — May 07, 2018.

