Engaging Buildings: Crafting Interventions for a Changing Environment

by

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Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

at

Dalhousie University
Halifax, Nova Scotia
June 2024

Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

Contents

Abstract

This thesis explores how human-scale interventions and craftsmanship can be critical components of a built environment for agency and expression through change and adaptation of space. By implementing spatial interventions on the NSCAD campus, this work aims to demonstrate how such environments can embrace change. Architecture today rarely encourages or even accounts for user engagement, which neglects creative adaptation, stifles a better understanding of the built environment and decreases the potential lifespan of a building. By reading NSCAD's historical campus, incorporating woodworking and employing a collaborative design approach, this collection of interventions aims to explore and analyze the potential of human-scale engagement on the built environment.

Acknowledgements

I want to express my heartfelt gratitude to my supervisor, Ted Cavanagh, for his unwavering patience and support, and to my advisor, Michael Putman, for helping me push my ideas further.

Additionally, I extend my thanks to the NSCAD faculty and students who have supported me throughout this journey and helped bring this work to life.

Chapter 1: Introduction

Imagination

As a child, one of the activities that captivated me was crafting things out of materials I found around the house and outside in the yard. My young and imaginative brain had a tremendous ability to see everything in the world for its untapped potential, not just its intended function. Through the lens of making, my whole world felt like a playground for exploration. However, as I grew up, this became less and less true. As we learn societal and civil rules, the built environment that surrounds us gets pushed further and further out of our hands to ultimately become a domain of professionals, behind many layers of red tape. However, looking back at a time when things were much simpler, the world looked far different, and I aim try to reclaim this perspective through the work in this thesis.

Time

In the realm of architecture, buildings often fail to anticipate and accommodate change over their lifetime. Leatherbarrow emphasizes the importance of considering time as a crucial variable in design, acknowledging that unforeseen changes are inevitable in any project (Leatherbarrow 2021). However, the ego of the architect often obscures this notion, leading to a focus on architectural achievement in how a building shapes people, rather than how people can shape a building.

Traditionally, the role of the architect concludes once the building is inhabited. Yet, this outdated perspective is

challenged by architects like John Abrams, who advocate for a lifelong commitment to the built environment. Abrams, a design builder, meticulously documents construction details to facilitate future repairs and maintenance, demonstrating a proactive approach to building stewardship (Brand 1994). Although a brilliant way of practicing the discipline, this approach still isn't very common in the field of architecture.

Reflecting on the modernist era of the 1920s, architectural worth was often linked to purity of form and elevated material choices. This emphasis on simplicity and aesthetics, captured in pristine photographs, persists in contemporary architecture, where buildings are frequently depicted devoid of human presence (Sample 2016). Maintenance practices aimed at preserving this image perpetuate the notion of a building as static and unchanging, hindering its potential for adaptation and evolution.

This idea also manifests itself in the lack of attention to materiality and craft. A large portion of the construction industry has been infiltrated by the idea of making things 'cheap, quick, and easy'. Materials such as concrete block, linoleum/vinyl flooring, or gypsum board have become standard practice in small residential projects to large institutional buildings (Simpson 1999). However, in recent years, an emphasis on longer lasting and more sustainable materials has steered much of the industry. For example, wood, although relatively inexpensive, has the innate ability to be adapted for many different uses while being one of the few truly renewable resources our planet has. A piece of wood can be reused, resawn, reshaped, refinished, or recycled, making it a highly adaptive material. It also happens to be one of the easiest materials for everyday people to manipulate. As a natural material, we understand

it on a far more fundamental level than artificial materials (Manzini 1989). However, this has also produced a growing market for fake or veneer wood products. These seek to imitate the look of real wood, but without providing the same standard of quality and sustainability through the goal of being more affordable. Ultimately, this illustrates how today's architecture forgoes good quality construction and materials for short term gain.

Adapting

Thankfully, when it comes to tackling the issue of making buildings better adapt better to changing needs, many well accepted frameworks exist today. Famously, Stewart Brand and John Habraken both focus on making architecture more adaptable and open to change. However, most of it focuses on issues in housing and integrates adaptability as a concept that operates outside of the user's direct participation. They also tend to operate at a scale removed from the human dimension. For this reason, this thesis will narrow its investigation to the adaptation of the built environment at a scale that relates more closely to the human experience. Through this lens, the question of this thesis becomes:

How can human scale interventions and craft can be critical components for a built environment that aims to facilitate agency and expression to its users?
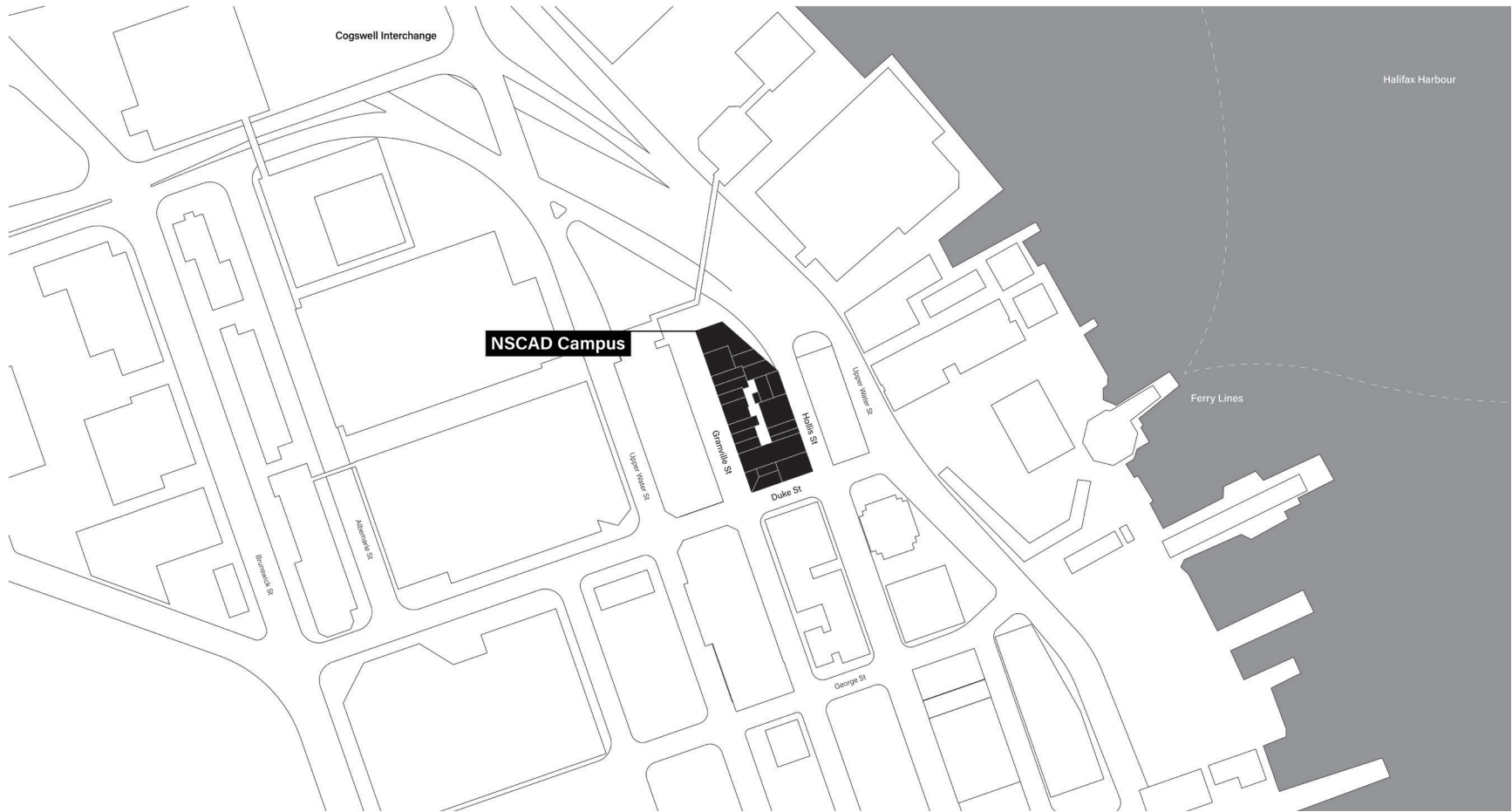
Site

NSCAD University, formerly known as the Nova Scotia College of Art and Design, is a university located in Halifax,

Nova Scotia, Canada. It is renowned for its fine arts and design programs. NSCAD has a long history, dating back to its founding in 1887. NSCAD University offers undergraduate and graduate programs in various art and design disciplines, including fine arts, craft, design, media arts, and art history. The university is known for its commitment to fostering creativity, critical thinking, and experimentation in the arts.

The institution currently has 3 separate campuses across Halifax that each serve different disciplines within the arts. The original campus, located on Granville St., forms an entire block of historical properties that hold a vast amount of history dating back to 1856 (Soucy and Pearse 1993). However, this campus is slated to be sold, as NSCAD has plans to abandon it for a rental arrangement on the Halifax Seaport (The Canadian Press 2022). This is supposedly due to a 2013 study that concluded that the buildings were "unfit for function" (Grant 2020). Truth be told, the campus is notorious for its lack of accessibility, and maze-like configuration. However, this 'awkwardness' is part of its charm and is telling of its rich history. The sale of this property to developers threatens the future of this historic campus that has grown and changed so much over nearly 150 years.

The work in this thesis is not attempting to make a case for the NSCAD campus to be adapted to today's acceessibility standards. To do so would be a miraculous achievement, but would likely prove to be a far too formidable a task. This thesis is, however, working to make a case for highlighting and demonstrating its potential. The historical campus on Granville St. will be the main site of intervention to test and apply the research done in this body of work. By working with NSCAD students and faculty the goal is to create

Cogswell Interchange

Halifax Harbour

NSCAD Campus

Upper Water St

Hollis St

Granville St

Upper Water St

Duke St

Albemarle St

Brunswick St

George St

Ferry Lines

A site plan of the NSCAD campus situated on Granville St.

interventions that demonstrates and engages this idea of a multiplying potential for adaptive built environments. Through co-design and workshops, the work would serve the greater architectural community, but also the NSCAD community better take control of their environment. This would demonstrate how a so called 'unfit' building can provide the basis that allows its community to preserve infrastructure by allowing to grow through time and inhabitation.

The scope of this investigation aims to contribute to the architectural discourse of adaptable architecture by looking further in detail at what constitutes spaces to promote spatial agency. With the use of design, the work will involve architectural interventions that aim to multiply or exploit the potential of a space to provide more opportunities to its users and highlight new uses for this old building. Not only would this contribute to the general construction knowledge of the users through teachable moments of craft, but it would also promote a positive feedback loop to encourage spatial agency.
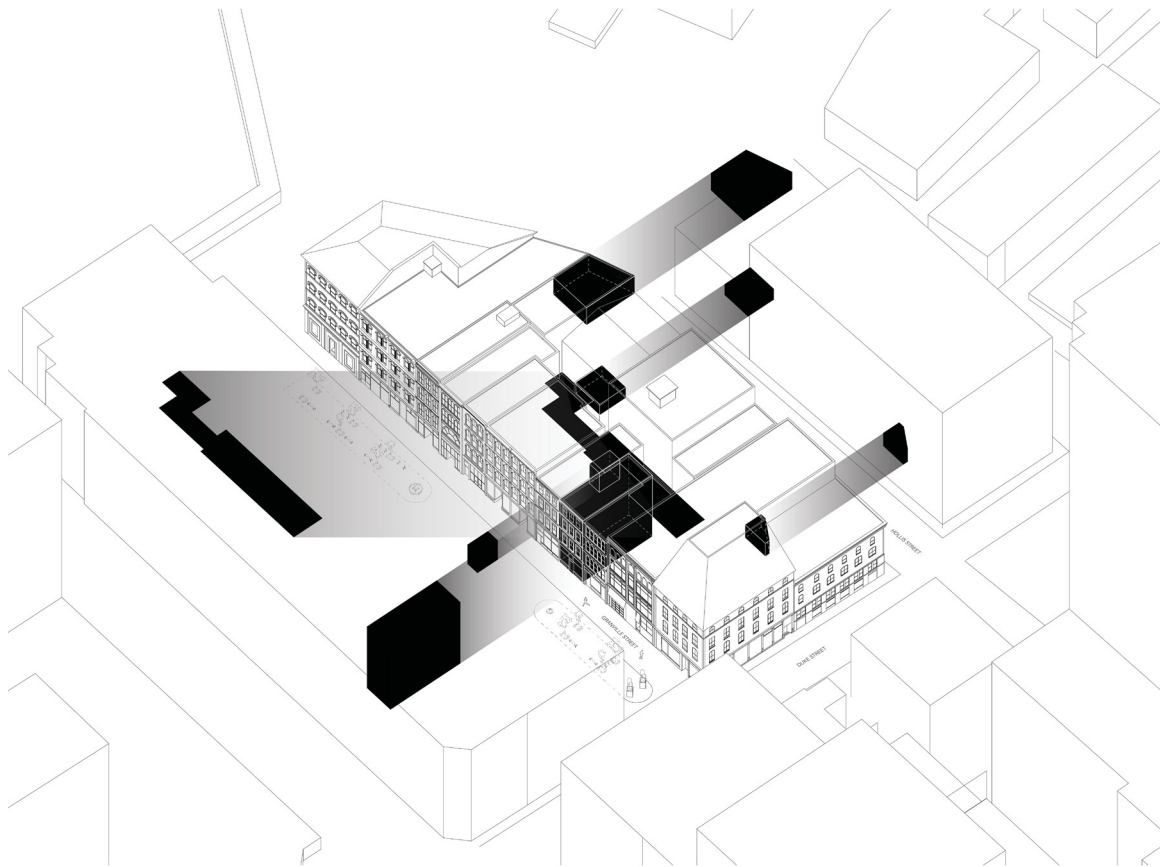
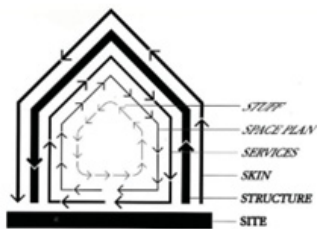The collection of intervention sites around the NSCAD campus.

Chapter 2: Defining Language

Adaptive Design

All buildings are adaptable to some extent, regardless of how difficult it is to execute. While adaptive architecture is not a very well-defined term in the relevant literature, it encapsulates buildings that are designed to adapt to their environments and the people that inhabit them. The literature on the topic spans from responsive art installations to eco buildings, and even from artificial intelligence to ubiquitous computing (Schnädelbach 2010). But the side of this field that interests this thesis the most is that of adaptive design that enables buildings to be adapted easier over time, and that enables people to better appropriate a space to their ever-changing needs.

In the 1961 book: *De Dragers en de Mensen* (The Supports and the People) John Habraken first introduces the concept of Open Building (Habraken 1961). This was developed as a series of principles that aimed to make buildings and urban fabric last longer by supporting a transition to a society that is based on co-creation, participation, involvement and inclusion. It largely does so by better enabling the users to change and adapt the building, allowing fine-grained agency or control (Kendall and Habraken 2023). An important distinction for Habraken's work is that it doesn't entirely focus on the technical nature of this idea. It attempts to redesign ownership scenarios in a way that gives permits and promotes the individual's participation and freedom, as well as provide a concrete framework for architects to utilize.

The Open Building initiative has changed throughout the decades, and now is run by a team of architects that share the desire to promote open building and continue the legacy of the late John Habraken. When it comes to the principles as they are today, they are broken down into three parts: Open Cities, Open Systems and Open Buildings. 'Open cities' is the framework of flexible infrastructure that allows for individual design interventions and short-term investments. It aims to act upon the industry through asset management, legislation, tax regime, policies and planning tools. 'Open Systems' is research into how compounds, systems and materials are used, produced, detailed and mounted. And 'Open Buildings' operates at the architectural scale: it involves production methods, financial strategies and design strategies (openbuilding.org).

As a part of this framework, the methods integrate and utilize the concept of shearing layers, developed by Stewart Brand in his 1994 publication: How Buildings Learn. Brand writes "Between the world and our idea of the world is a fascinating kink. Architecture, we imagine, is permanent. And so, our buildings thwart us. Because they discount time, they misuse time." He goes on to explain how nearly all buildings aren't built nor designed to be adapted (Brand 1994). The buildings we inhabit persist beyond our lifetime. Therefore, architecture is perceived as a permanence, but this is an illusion. A building's lifespan gives it the ability to change drastically over time to accommodate growth or loss, the new and the old. All buildings change, but nearly none are designed to do so. 'How Buildings Learn' analyzes a large array of buildings and the way that they have changed over time. Brand seeks to define and understand how and why they have changed in the way that they have, and better

Stewart Brand's shearing layers describes and classifies the different components (layers) of the built environment that typically form a building. From stuff to site, each component has a different lifespan requiring different levels of renovation or engagement.

comprehend the nuances of what makes a building "learn" as he puts it. Brand's approach is the more architectural one, as his work focuses on defining the separate built components and how they differ. In later chapters, he also goes on to explain much more explicitly what makes a building more flexible into the future; what design choices give a building more potential for the future than others.

Much of Brand and Habraken's work has inspired the framework that will guide the research in this thesis. However, this scope of my research is an attempt at looking a little closer at how adaptability and change over time can happen within an architectural setting. Much in the same vein as Habraken's work with 'Open Building', the guiding concepts that would eventually inform the interventions in this thesis fall into 3 different categories that all end up working together. The goal of this framework would be to help structure and define what the intervention should aim to achieve. Overall, the aim of this work is to multiply potential, with regards to a building, its spaces, and its users. To multiply potential can be defined as teasing out a particular and unique condition, but highlighting it in a way that showcases an array of more possibilities that this could then become, this could then repeat, over and over again.

Defining

For the purpose of this thesis, 'intervention' is defined as a design that is meant to be incorporated as part of a particular space, with the aim of altering or improving its functionality or quality to benefit the community that it serves. This would be achieved through 'interfacing' which can be defined as the act of engaging with the building through a physical

or structural connection. Referring back to the shearing of layers by Brand, the interventions may interface at any level within the stuff-site spectrum of layers equally.

Proto Interventions

Prior to landing on NSCAD as a potential site for this thesis, much of the work I was doing consisted of built experiments that aimed to engage its environment and the people around it in different ways.

These experiments, that I now call 'proto interventions' were each meant to test and demonstrate different concepts that could then be applied to the more specific NSCAD interventions in many ways.

Pegboard and Mallet

The Table in its initial condition, within the architecture studios.

The first experiment took the form of a small, yet sturdy table that attempted to demonstrate peoples' engagement and permission to engage with the built environment. It is composed of a table with a 7x7 grid pegboard, and a series of dowels scattered all over the floor. Together with a mallet provided, this furniture piece was built to attempt to measure people propensity to engage without explicit permission. Very rudimentary materials were selected for its construction as a way to indicate its insignificance as an object and make it more approachable. The table was placed within a room that usually sees relatively high traffic, and no indication of its existence nor purpose was made. The goal of this piece was to see how long it would take for all of the pegs to be inserted into the table by strangers without the knowledge or an understanding of why this table even existed.
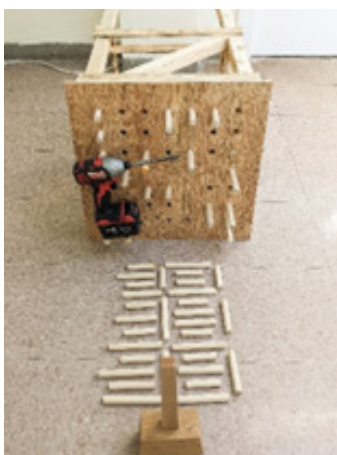
The Table in its initial condition, within the architecture studios.

Sand on the table from material explorations.

A fun configuration that the table found itself in.

The broken table in its initial condition: missing a leg.

Ultimately, not all the pegs made it into their respective holes, but, over the course of a few weeks, people did put the table to use in many new ways that were not anticipated. Since it was placed inside of the school of architecture, I observed it being utilized it for materials explorations, such as with plaster and sand. It also found itself on its side, or with all the pegs neatly arranged on the floor. Although this initial experiment was quick, it indicated to me that people would no doubt make use of things when they are left in a particular state, but to achieve a more specific goal, further instruction is maybe preferable.

The design language of this particular piece was inspired by the work of Enzo Mari. Particularly his *Autoprogettazione* which roughly translates to 'self-design'. This work can be characterized by a manual that provides a series of furniture pieces that can be realized by anyone. The technique used to build the furniture is simple, allowing the reader or user to execute the projects in various ways, modifying certain details and shapes while grasping the fundamental structural components of an object (Mari 2002). At a design level, this is what I aimed to do with the construction, but after learning more about Mari's work, I aligned myself even more with his philosophy. This concept of engaging the users through granting permission and opportunity to craft became something that I attempted to harness and build upon.

The Broken Table

Keeping in line with the previous ideas, this proto intervention was done as a design charrette with the help of a B1 (first term in BEDS program) student. I intended this design-build experiment to take a broken table that I had found in the

The completed 'fixed' table.
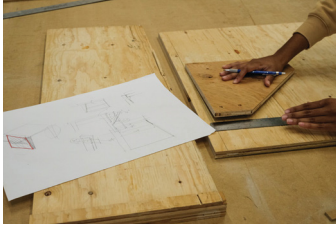
Sketches and Layout

The action of flipping open the extension.

The newly installed frames, before the night of Nocturne.

east side of the architecture studios and fix it. However, the goal was not only to fix the table, but to turn this act of repair into an act of growth: to improve the capabilities of the table in any way. Additionally, this had to be done within a time frame of about 5 hours.

By working through many different iterations this with student, we landed on creating a deployable extension to the table that provided be used when needed. Through this exercise, we were able to learn more about how a build can respond to existing conditions through careful reading, and a creative response. This demonstrated how an intervention could have the potential to effectively exploit an existing condition and turn that into an act of growth and change.

This exercise showed me the potential that this type of intervention could have, but also the joy that came from working with someone, and giving them the power and opportunity to build.

Leave a Mark

To push this idea further, I worked on an art installation built as part of Nocturne: an annual contemporary art festival in Halifax, NS. Through working with other students, this installation was composed of a series of frames that were designed to be strung through with rope to form what would essentially become a tunnel. Nocturne takes place as night, and the installation was lit up with a series of lights following the frames that would illuminate the bright white rope as it goes woven throughout the night. Leave a Mark is meant to bring people together in an act of creative building, while highlighting how we are all a part of a whole.

Throughout the night, it became obvious that the weaving happened differently than we anticipated: the intended points for weaving became overcrowded and rope began being strung up and around the entire structure itself. The result was an entirely organically woven structure that illustrated the improvised nature of participation, and how beautiful it can be.

All the weaving was done by members of the public and, with very little instruction. This showed me, and the the people that were a part of this whole experiment the joy that can come from collaboration, and how it can be designed. This concept of weaving extends further past the physical realm, as this installation was able to weave people together through joint creative efforts. This also proved to be a brilliant example of how a grid can allow for exploration and utilization of space.
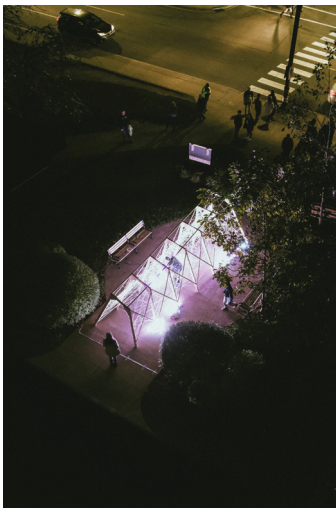
An overview / aerial photo of the installation.

This elevation photo of the installation shows the organic patterns created by the members of the public.

A perspective looking inside of the tunnel created by the woven rope.

Chapter 3: Bench and Bookshelf

Scale

The previous experiments showed me how architecture can operate and be explored through an alternative scale. : one which exists much closer to the furniture scale. Not only can these smaller experiments illustrate larger concepts, but they can demonstrate how buildings could be engaged with at a human level. Our direct interactions with a building is how we engage with buildings: this doesn't happen at the 1:1000 scale. These engagements bring into question what building can afford its users through its design. Affordances, a term coined by Gibson in 1974, refers to the possibilities for action offered by an object or environment (Gibson 1979). For example, a chair affords sitting to a person because of its size, shape, and stability. Similarly, a door handle affords grasping and turning because of its design. These affordances are perceived based on the individual's capabilities and intentions. Gibson's theory suggests that perception is not just about recognizing objects but also about understanding how those objects can be used or interacted with in the environment. This concept of affordances highlights the importance of the relationship between organisms and their environments in shaping perception and behavior, emphasizing the functional significance of objects and spaces in our everyday lives. On a certain level, multiplying these affordances through the built environment would allow more people to learn and experience the potential of the built environment.

The current approach of adaptive architecture tends operates at a program, building or urban scale. The direct human

experience tends to fall closer in line with the details of a building. This also works to facilitate craft and woodworking as methods of explorations, as well as idea of engaging the users themselves.
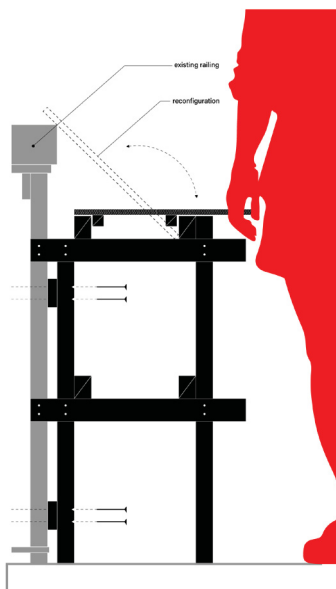
The Bench

The first area that inspired me to intervene was a sort of circulatory space, although also a larger area that often serves for exposing some student work. In the space, sets of stairs leading up and down are framed between a few large windows adjacent an interior courtyard lives central to this campus. This first intervention interfaces with the vertical members of guardrail adjacent the stairs. Initially, this was in response to the large openings of the flimsily built guardrail. The goal was to consolidate the voids created by the sparsely placed vertical members of the existing guards. However, recent weeks the guardrails have been consolidated with new vertical pieces spaced 5 inches apart to conform to building codes. In response to this, the interfacing conditions had to change, this became linked to the new guardrails which provide a regularly spaced point of connection.

Composed of pine wooden members, this piece is constructed of non-precious materials which gives it permission to be used without worry. The surfaces that are created as seating, work surfaces, exhibition surfaces, etc. are removable, and reconfigurable giving agency to its users to do as they see fit
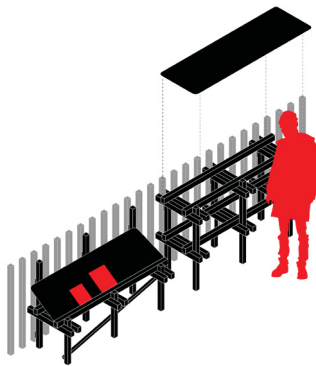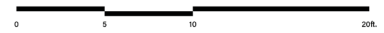

Configurations of the bench and his cousin: the table.

A detail drawing illustrating the installation of bench or table.
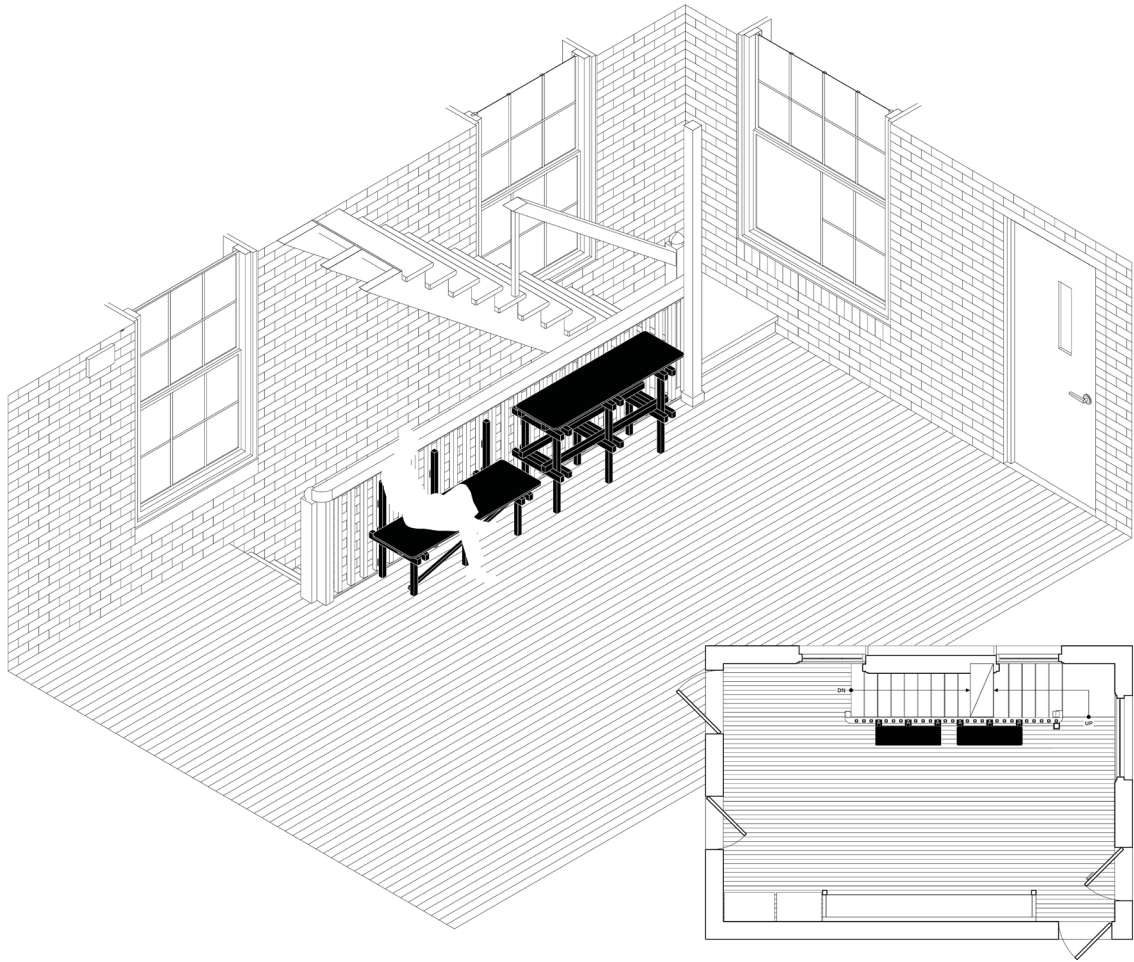
A Bench : sit + converse + showcase

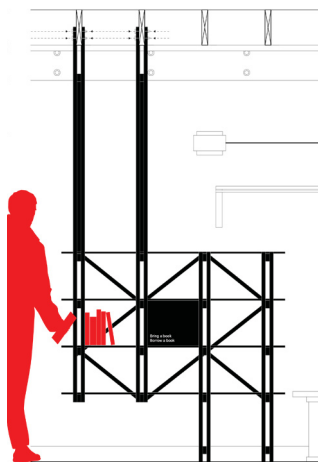0   5   10   20ft.

The bench + table in their context.

The built prototypes of the bench + table.

In a programmatic sense, the room is circulatory, however, it is quite large and boasts a glass display case at one end that serves for exhibition.

In this respect, the built-in piece provides seating height surfaces and table height surfaces that can be used in various ways. In a more concrete sense, these can be used to rest, work, play, or display. The surfaces being removable and interchangeable would also prompt the users to play with different configurations. This first iteration could become the foundation piece for a cohesive built language that would be transposed from one piece to the next.

The existing guardrail is made of wood, and this provides the properties for this intervention to interface with the built environment of NSCAD. However, in this same fashion, all the new wood members of the bench become more potential connection points for further growth. The structure can extend in any three dimensions through a clear established grid, once the basics of the structural system are understood. This unprogrammed nature imparts agency to its users to explore what uses it has to offer, but this can also be a downside since it isn't exactly clear what its purpose is.
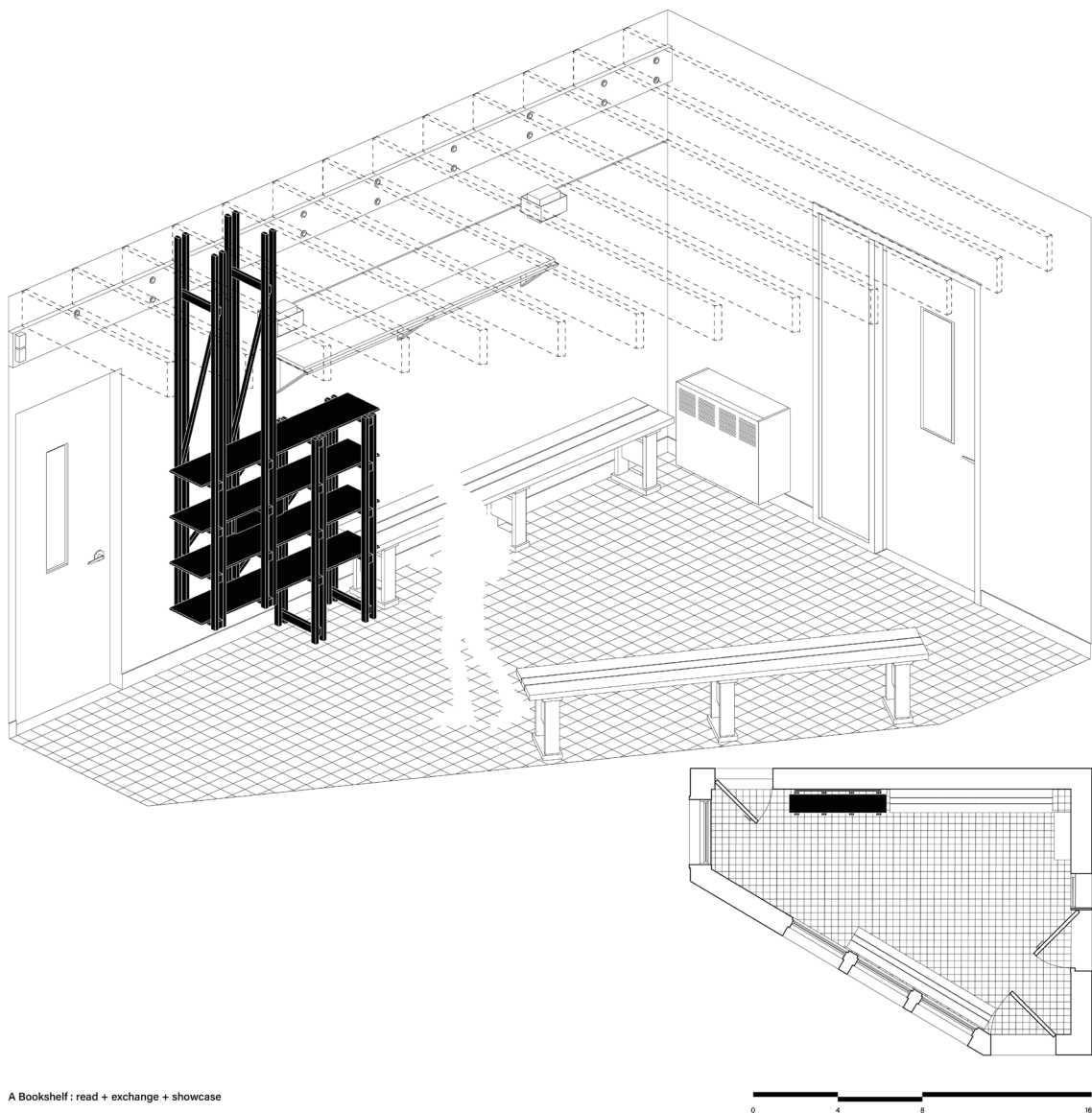
The Bookshelf

At the 4th floor adjacent Duke St., in a small triangular room exists as a transitionary space that connects two of the buildings on this campus. In response to this space, I designed a bookshelf made to interface with the exposed ceiling framing and fill the lack of clear program that this room has. Its construction takes advantage of the exposed framing by being composed of frames that are hung from

User interaction with the bookshelf.

the rafters above. The frames provide support for shelves that are intended to house books, however, the horizontal surfaces can be removed or replaced: made to adapt to different mediums. One idea discussed with NSCAD students is to allow exhibition for zines that showcase their work. The interchangeable format of this intervention makes the books, zines, and any other form of media able to all have a place at once.

A Bookshelf : read + exchange + showcase

0   4   8   16ft.

The bookshelf in its context.

This intervention creates meaning for a small awkward space that wouldn't otherwise be utilized by allowing exchange of book: bring a book, borrow a book. By introducing a new, albeit simple, addition to the space, it brings a new programmatic feature to the room. In the existing conditions, two 8ft. benches exist to provide seating, allowing city. The addition of the shelves allows books to be exchanged, but also invites people to exploit all the natural light; to sit and read. This intervention's scale is similar to the bench, but it exists not only to multiply affordances around a space, but to also bring a new and clear program to an otherwise useless room.

The frames provide support for shelves that are intended to house books, but the horizontal surfaces can be removed or replaced: made to adapt to different mediums. One idea discussed with NSCAD students is to allow exhibition for zines that showcase their work. These shelves also establish a clear grid that then shows how it can easily be expanded upon. By hanging the frames from the ceiling, the exposed framing's potential gets demonstrated. The shows to the users of the space how this can be done and highlights the rest of the exposed framing more untapped potential.
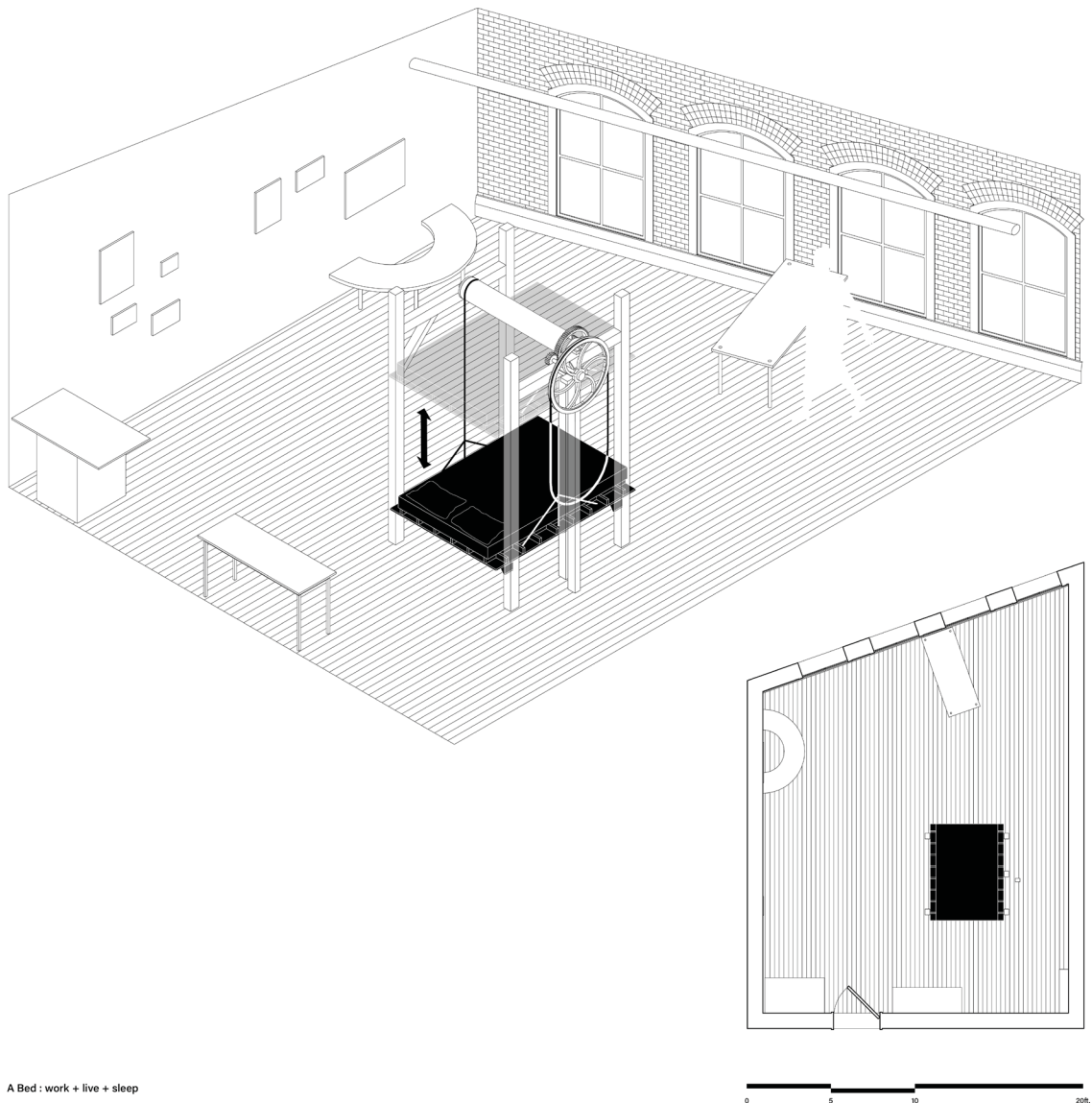
Chapter 4: The Bed

The Bed

This next intervention takes us to one of the master's drawing studios at the top floor of the north block. In this space, exists the remnants of an old pulley system that was likely used to move freight up and down around the building. This intervention merge with this currently unutilized system and provides a bed that can be lowered and lifted to be stowed away. The frame then lands on four blocks that are slightly elevated from the ground. The rope used to lift this contraption can be tied off to secure the bed in the air when it is not needed.

This intervention responds to the need of a student spending long nights working on projects and having no reasonable place to sleep on campus. The workspace gets extended to a living/working space through this addition. In comparison to the bench and the bookshelf, it utilizes specific mechanism that exists in the building and involves the active participation of the user to make it work. This simple addition transforms what a person might want or expect out the space. The intervention also challenges ideas what is considered as appropriate furniture for an academic space. It is no mystery that students will spend long hours into the night working on assignments and projects, but nowhere is it appropriate to sleep, until now.

This ascending and descending platform also invites a series of other things that can exist upon it. It can, for example, be used as a clever way to stow away large prints or works that require a large surface area to live. This intervention can

also prompt someone to question why manual mechanisms such as this one have become a thing of the past. In this case, the pulley system still works many decades later without ever being serviced or maintained. This may give users an appreciation for the history of the building, while also be utilized in a modern way. This intervention was one of the more unique ones, but I felt that it leaned further away from the community I was aiming to serve, and the open-ended intent of this work.

A Bed : work + live + sleep

The bed in its context.

Chapter 5: Scaffolding

Built for Change

The 12th chapter of Brand's *How Buildings Learn* 'Built for Change' compounds and goes into detail about the features, materials and design choices that has found help a building's journey to adaptation. Much of what comes out of this chapter revolves around simplicity, quality craftsmanship, quality materials. For example, he talks about the value of a solid timber frame: it can last centuries and allows for reuse and recycling of its components. The need for grid: it provides the frame for which space can be organised around. However, when considering people's direct participation in the act of adaptation, these ideas can be pulled down into at a finer scale. At the human and detail scale, grids and timber don't lose their utility when it comes to organizing space and the ability to be reused.

Scaffolding

In contrast to the bed, bookshelf, and bench, this intervention interfaces with a much larger piece of the building. At the center of the NSCAD campus exists a relatively large enclosed courtyard up on the second floor. The outdoor space is open from all sides and provides the students and faculty with fresh air and the opportunity to gather. This intervention interfaces with this courtyard via its wood decking that allows the erection of a multitude of posts, creating a grid within the space. This grid, composed of timber frames, covers a large section of the courtyard without impeding the
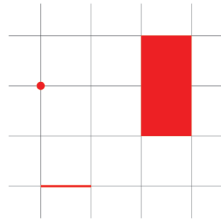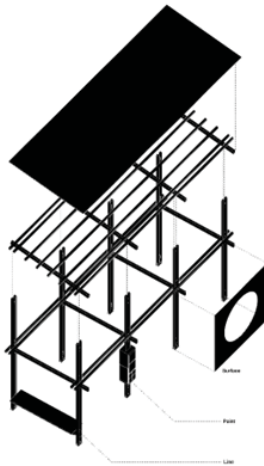
Diagram of the conditions of the grid.

Exploded axonometric of the conditions of the scaffolding.

flow of the space. The spacing of the gridlines is human scaled at around 6ft. between each post. The purpose of this intervention is to provide more activation of this outdoor space which is very unique to this campus.

The grid alone captures a portion of the courtyard and defines its dimension in relation to the user. However, what the grid affords the occupants is much more opportunistic. A grid can be defined as a network of intersecting lines, typically forming squares. In our case this creates 3 different types of moments on the grid that can be engaged with in a variety of ways that would enrich the space and one's experience. the point, the line, and the surface. The point holds 0 dimensions, but is created by the intersection of the lines which exist in 1 dimension. The lines lead to 2 dimensional surfaces that can exist vertically or horizontally. This extends us to the third dimension, where space can be engaged combining these element, and potentially breaking the grid itself.

The goal of this intervention is to enable the users to build, and engage in creative efforts that would afford the courtyard more life and more possibility and activity. In other words, this aims to give them agency.

In the social sciences, agency is generally defined as having the ability to act freely and independently within a set structure of influence. This usually refers to a certain type of structure such as: social class, context, as a practice, it is mostly influenced and defined by societal, political and economic structures. Therefore, the architect can be described as facilitating these structures, by aiding their deployment and catering mainly the actors most in power within said power structures. In most cases, that role can be stereotypically

04
ffolding : connect + build + learn
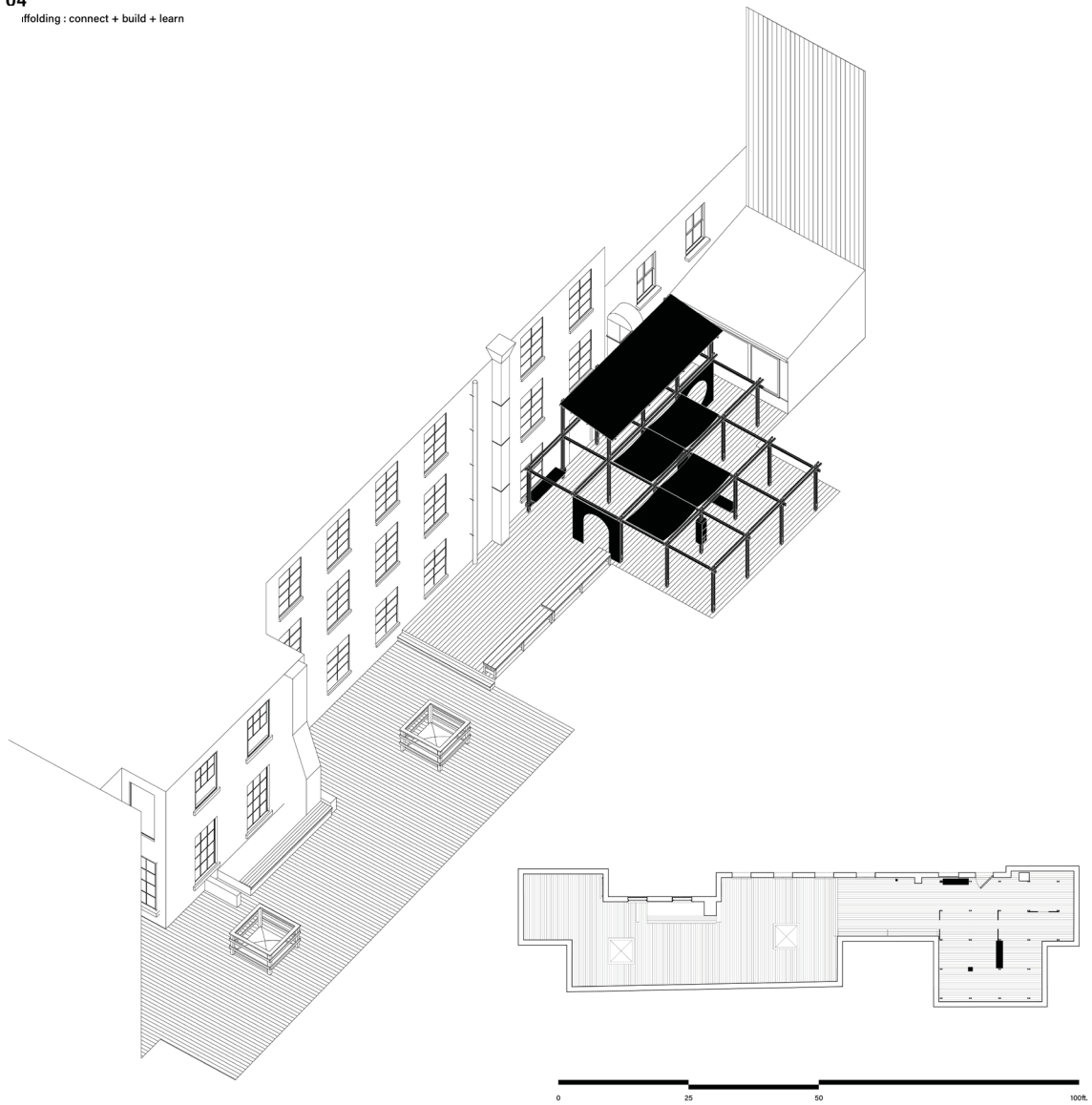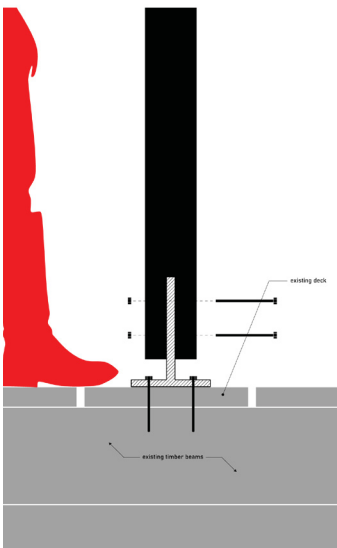

The scaffolding in its context.

The act of building the scaffolding.

The scaffloding in place.

The act of engaging the scaffolding.

A detail drawing of the column connections.

boxed into 2 opposing camps: a genius that singlehandedly challenges the structure, or a servant to the structures (Awan, Schneider, and Till 2011). This falls under the idea that agent and structure are two opposed forces. However, in the work of Anthony Giddens, he argues that the agent can neither be entirely constrained by the structure, nor completely independent from it (Giddens 1987). Following this idea, we can surmise that both the professional and the agent, would need to occupy a dialogue that doesn't entirely contradict nor entirely follow the structure. In doing so, the playing field between the two parties can become leveled, dissipating hierarchies, in a way that doesn't discount the personal or professional knowledge that either party possesses. Giddens coins the term "mutual knowledge" as a way of describing the foundational shared knowledge that different actors need to practice in a manner that is conducive to positive change (Giddens 1987). This mutual knowledge becomes very important when considering the relationship that the professional and the agent have when making decisions and engaging in creative problem solving. Expanding on this idea, the sharing of knowledge between both parties could also be conducive of knowledge exchange empowering both through acquiring new knowledge and different perspectives. Under this framework, letting go of hierarchical structures becomes key in fostering mutual knowledge and enabling agency to move forward with action.

The idea that blurring the lines of hierarchical structures could help empower is possible in many ways, but the general premise is that permission first needs to be granted in some shape or form. A common misconception is that agency happens in spite of permission not being granted,

however this falls into trap of implying a contradictory dualism between structure and agent. In this case, a more nuanced idea of permission could be favorable. When it comes to permission, it can take a wide variety of forms, but its purpose remains to be the spark that triggers action within the agent (in this case the users of a space). For building and manipulating the built environment, explicit permission is mostly only given to the professional. In this case, the idea that implicit permission could be just as empowering should be given merit. When it comes to permission, it can take a wide variety of forms, but its purpose remains to be the catalyst for action within the agent.

In a more architectural sense, using unprogrammed spaces becomes another critical way of enabling agency. It is a clear way of anticipating and accounting for growth and change, in a structured and intended way. However, with the lessons from the previous designs, proposing ways that it can be utilized would help prompt users to see what possibilities might exist to begin with.
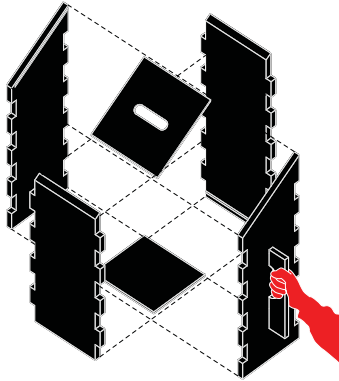
Great Mosque of Djenné

The intent of the grid is to provide its dimensions to prompt engagement, however the grid itself could also be more than a guide. For example, originally built in the 13th century, then later rebuilt in the early 20th century, the Great Mosque of Djenné features an expression of its participation on its facade. Considered one of the most known UNESCO world heritage sites in Africa and recognized also as the world's largest mudbrick building in the world, this mosque is primarily made of mud bricks and is covered in a clay plaster to protect it from the elements. The design of its facade incor-

porates regularly spaced bundles of palm sticks named 'to-ron' which serve a decorative purpose, but more important-ly, act as a type of scaffolding which can be climbed. These are used to help reapply the clay plaster to the outside of the mosque during the annual Grand Mosque Festival, where the community comes together to repair and maintain the building. Although this feature isn't unique to this mosque, it is commonly found across West African mosques, it demon-strates a design choice at the very core of the cultural and sustainable practice of maintenance (UNESCO 2009).

These 'toron' create a grid that acts as a form of scaffold-ing for maintenance and repair. However, this idea of scaf-folding could potentially help permit a form of growth or change. Additionally, this mosque illustrates how the grid can be more than just the space and substance that is cre-ated around it; a grid alone can prove to be sufficient for interaction.

Chapter 6: The Box

The Box

The box brings us back to a human scale, with an object that can be easily carried in one hand. In the Granville Block, exists a small trapezoidal hole in the wall. Created by a stairwell that exists behind that wall. This prompted me to make a box that not fits perfectly in this cavity, but would serve to collect ideas and suggestions on how or what the community of NSCAD could do to improve the campus.

Exploded axonometric of the idea box.

This 'idea box' combines the concept of engaging the built environment with engaging the social realm that would come through collaboration and hopefully giving the students a bit more of a voice. In this case, the Interfacing with the building does not happen through a solid connection, but through form itself, as the box is designed to slide in and out of the cavity. I estimate that the hole found in the wall is either the result of an improvised renovation, or an oversight during construction. Nonetheless, this imperfection has provided an opportunity to engage the built environment in a singularly unique way.

Half a House

Born from scarcity of building materials, this project by Elemental is a housing solution in Chile that allow a house to grow, when the need for such an expansion arises. In Chile, many families cannot afford home that is large enough to accommodate a growing family. As a solution, Alejandro Aravena and his studio Elemental have created a design for
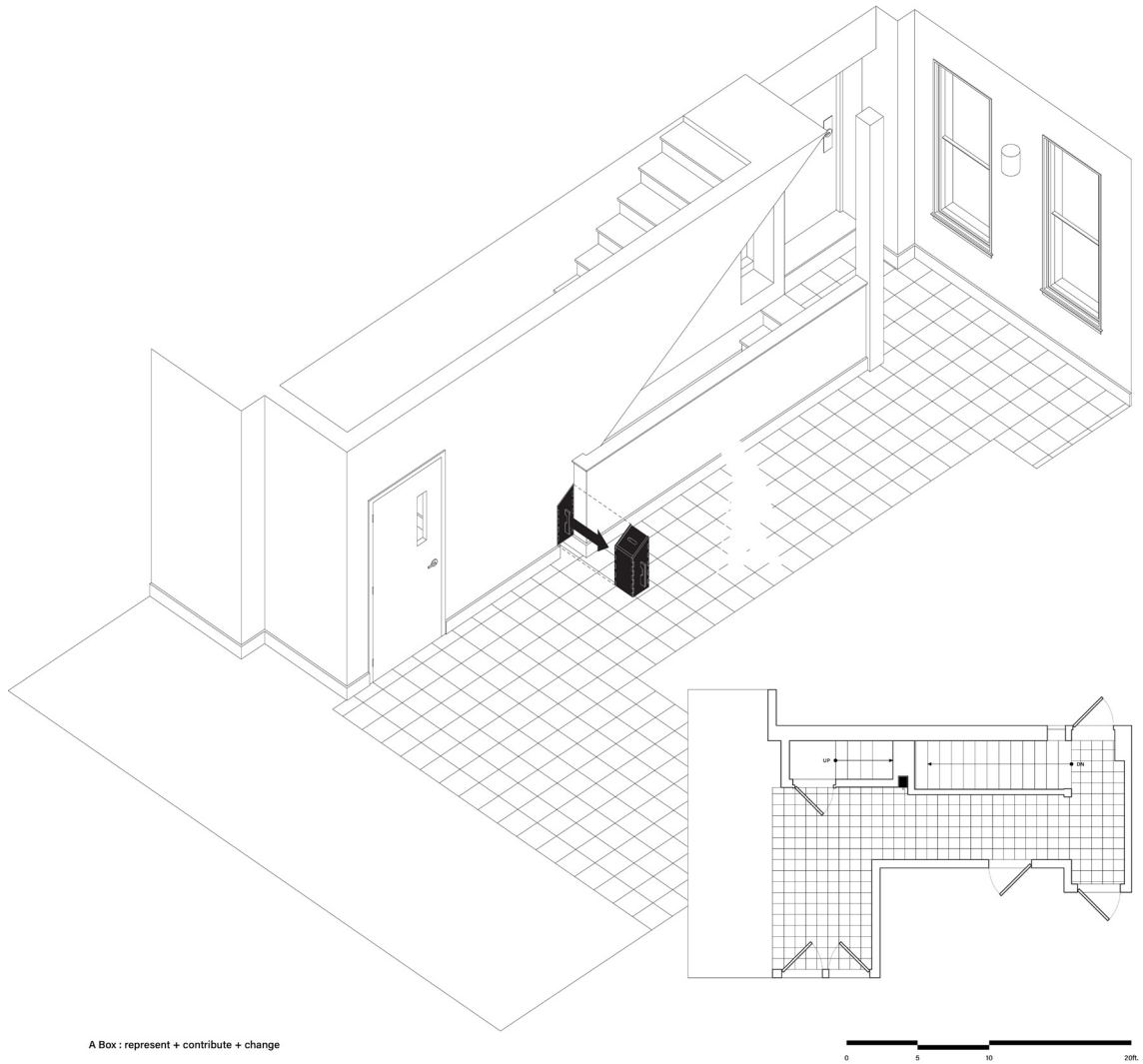
A Box : represent + contribute + change

The box in its context.

a home that shows the outline of its potential future growth. These houses do so through an unbuilt section that only has basic framing which allows the inhabitants to expand into that space when they need it and can afford it. This also gives the inhabitants the choice of what this expansion will look like, and how it will be programmed.

The fact that this project is the same shape as my box is entirely a coincidence; however, they share a very important concept. The structured void allows infill to occur in a very specific manner while granting total freedom for what happens within the confines of this space. With the box, this void is unintended, but with Elemental's project, it is entirely designed. This presents the idea that unprogrammed space can happen at many scales and can be designed to great effect.
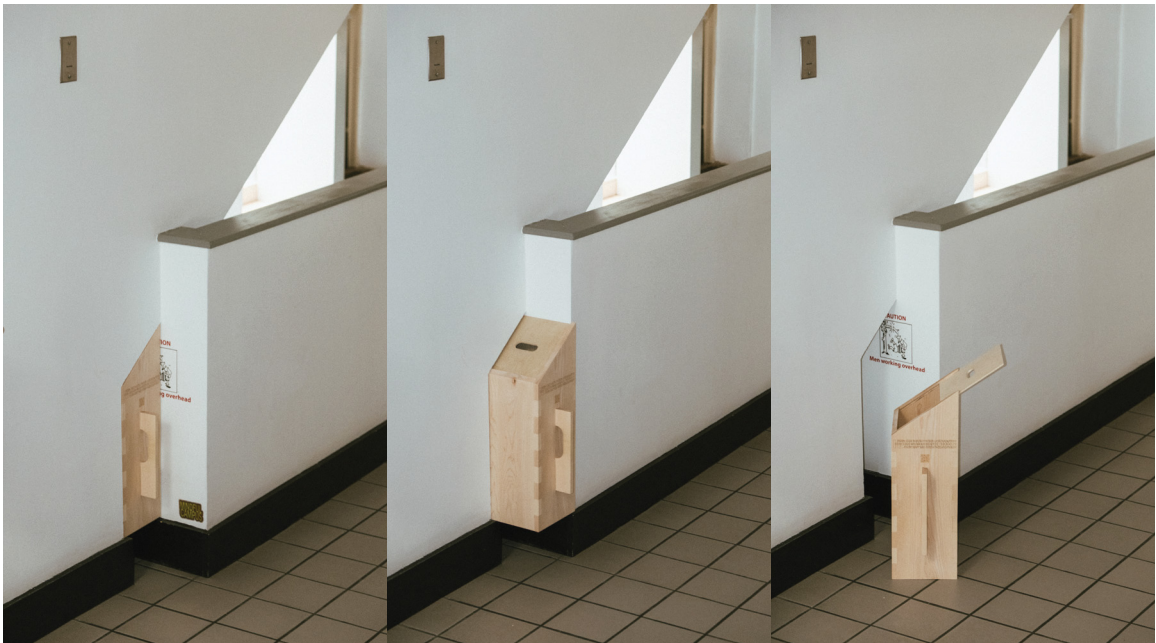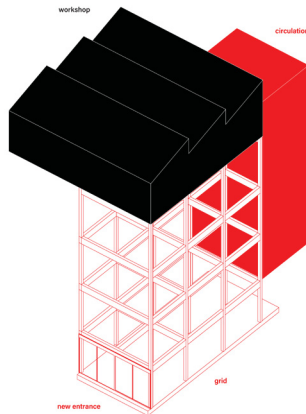

The built idea box being engaged in its context.

The built idea box in place in its context.

Chapter 7: The Workshop

The Workshop

A diagram of the different aspects of this adaptive reuse.

This last design expands the scale to the urban block. This change in scale demonstrates how intervention can look more like adaptive reuse. By examining the entire collection of buildings that form the NSCAD campus, this strategy aims to reconnect much of the campus through a new main entrance. This would reconnect the pedestrian Granville St. to the rest of the campus and into the inner courtyard. This reimagines the structure of the building as a timber grid, expanding upwards and culminating in a new workshop that would reintroduce many of the disciplines that have since been pushed out to alternative campuses around Halifax. This space would include a communal workshop, tool rental services, and an outdoor workshop area for experimentation.

The intent of the workshop would be to promote the practice of craft across all disciplines and to enable the perpetuation of intervention. The workshop and outdoor space would have a series of tools and surfaces that allow for experimentation and execution within the space. Some of the tools could be rented out, giving agency to the community to further intervene on the campus itself. This new workshop could also be seen as the first intervention that allows subsequent ones to exist. In an ideal world, the simple act of providing the tools and the space to build and alter would result in these types of interventions becoming commonplace across the campus.

Furthermore, this intervention learns from the previous ones by capturing the idea of a grid and the unique conditions that
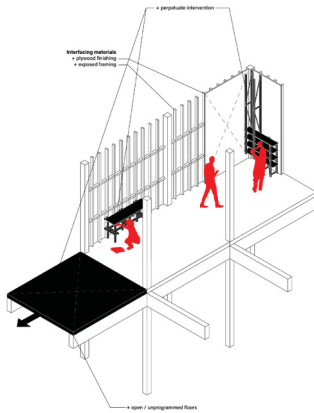
A diagram of the design languge of the new spaces.

make intervention possible. By incorporating these ideas at different scales, the design language of these new spaces would allow room for growth and change in their use over time. This can be conceived through sections of exposed framing and plywood interior cladding, which would provide plenty of surfaces for interfacing. However, none of these would follow any set rules: the spacing and regularity of these features would vary, giving more variety. On a larger scale, sections of floors would be open, unprogrammed, and yet to be exploited.

Stewart Brand's concept of unprogrammed space is fundamental to adaptive architecture. He asserts that these spaces are crucial for the longevity and flexibility of buildings, enabling them to evolve and remain relevant as the needs of their users change. Unlike highly specialized buildings, unprogrammed spaces offer a level of flexibility that allows them to be adapted for various functions as needed. This adaptability is particularly valuable in dynamic environments where space requirements frequently shift, such as educational institutions, offices, or community centers.

Building on Brand's idea, I propose extending this concept across different scales: unprogrammed walls, openings, grids, etc. While Brand's larger-scale flexibility is designed to empower organized groups, varying the scale can also empower individuals. By integrating both larger and smaller scales, we create a more coherent and adaptable environment.

This adaptive approach not only addresses immediate functional needs but also anticipates future changes, ensuring the longevity and relevance of the space. As users interact

with these unprogrammed elements, they contribute to a dynamic, evolving environment that continuously responds to their needs. This methodology bridges the gap between the architect's initial vision and the lived reality of the space, fostering a resilient and user-centered architecture.
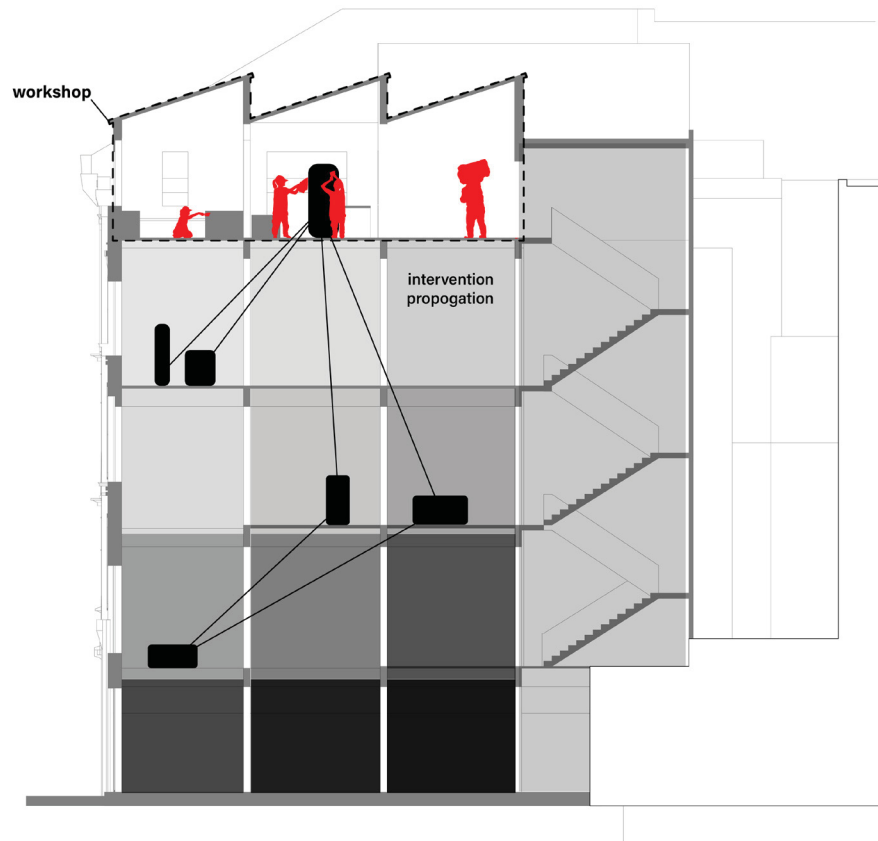
The new workshop that allows creation and propogation of interventions.
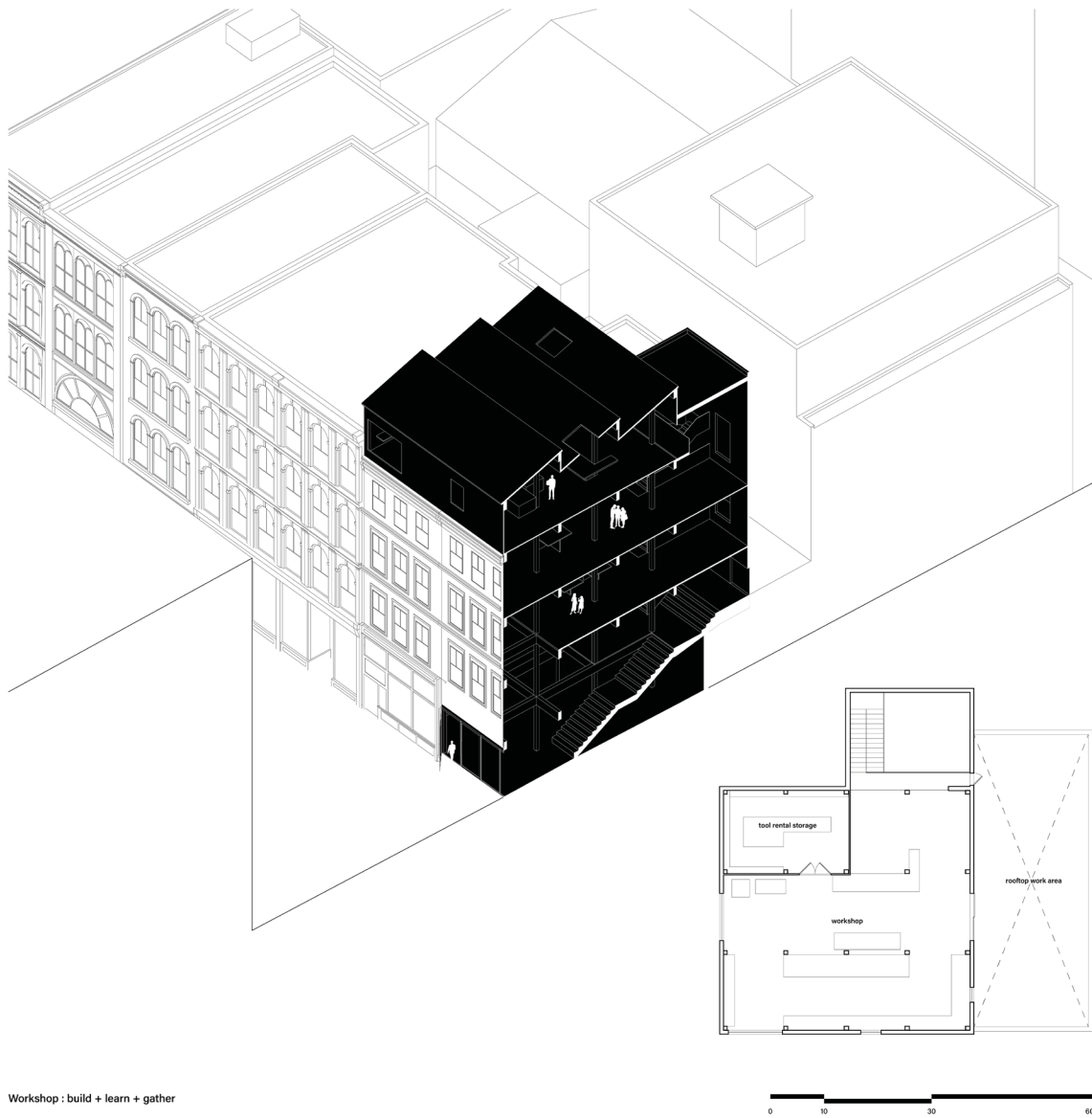
Workshop : build + learn + gather

tool rental storage

rooftop work area

workshop

0   10   30   60ft.

The workshop in its context.

Chapter 8: Conclusion

This thesis has aimed to explore the potential of architecture to operate at various scales, engaging users through thoughtful design interventions. By examining the impact of these interventions at different scales, from a small box to adaptive reuse, this work demonstrates how architecture can foster meaningful interactions and empower users to further adapt their environments to their ever changing needs.

Reflecting on this experience, I have gained valuable insights into the art of designing interventions and objects. While my skills in creating architectural interventions may have gotten better, the profound lesson lies in grasping the significance of reading a building and capitalizing on opportunities through creative engagement.

Each intervention undertaken during this exploration has underscored the criticality of understanding a building's inherent qualities and potential. By closely observing and interpreting architectural spaces, I learned to identify underutilized areas and envision how they could be altered to better serve a community, and propose how the users of a built environment can directly engage in this endeavor. Much of the work in this thesis raises questions about the nature of architectural intervention itself. This prompts us to consider what constitutes intervention at an architectural level, even in the absence of a physical or structural connection. The blurring of the lines between what Stewart Brand defines as stuff, space, structure, etc. could prove to be a valuable approach. These distinctions are logical

in time, but aren't as compatible with reading a space as a whole, and at face value.

Moreover, the scale at which interventions are executed, whether at a micro or macro level, each necessitates a nuanced approach. While smaller scale interventions, such as reconfiguring furniture or inserting functional objects, address immediate spatial needs, larger-scale interventions, like redefining entrances or integrating communal workshops, influence broader social dynamics and user interactions. Despite the differing scales, all interventions explored in this work shared many common principles. This would seem to indicate that the efficacy of an intervention lies not solely in its scale or physical manifestation but in its ability to provoke positive change and enhance the built environment's functionality and user experience. Whether introducing subtle enhancements or reimagining entire spatial configurations, each intervention serves as a catalyst for redefining how individuals interact with and perceive their surroundings, and hopefully perpetuate this approach through continued adaptations.

In essence, this journey has reaffirmed that effective architectural interventions hinge on a deep understanding of context, a keen eye for opportunity, and a commitment to fostering meaningful engagement. These have been shown to me as worthwhile principles to follow at all scales, but also in many different walks of life. This prompts the question: what would the built environment be like, if all the users could operate as their own architect?

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