Curating Place: Using Interpretive Design to Metabolize Change in the Rural, Post-Industrial Landscape of Woronoco Massachusetts

Clark G. Piers-Gamble
UMass Amherst

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CURATING PLACE: USING INTERPRETIVE DESIGN TO METABOLIZE
CHANGE IN THE RURAL POST-INDUSTIRAL LANDSCAPE
OF WORONOCO MASSACHUSETTS.

A Thesis Presented

by

CLARK GARRISON PIERS-GAMBLE

Submitted to the Graduate School
of the University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

Master of Architecture
&
Master of Landscape Architecture

May 2018

Department of Architecture
Department of Landscape Architecture
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Approved as to style and content by:

____________________________
Sigrid Miller Pollin, Chair

____________________________
Max Page, Member

____________________________
Carolina Aragón, Member

____________________________
Steve Schreiber, Department Chair
Department of Architecture

____________________________
Robert Ryan, Department Chair
Department of Landscape Architecture
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ABSTRACT

CURATING PLACE: USING INTERPRETIVE DESIGN TO METABOLIZE
CHANGE IN THE RURAL POST-INDUSTRIAL LANDSCAPE
OF WORONOCO MASSACHUSETTS.

MAY 2018

CLARK GARRISON PIERS-GAMBLE

B.S.ARCH, Wentworth Institute of Technology
M.ARCH, University of Massachusetts Amherst
Directed by: Caryn Brause
MLA, University of Massachusetts Amherst
Directed by: Robert Ryan

In this research, I aim to investigate the interrelationships between people, architecture and the landscape, by asking the question "what is the architect’s role in curating place’. The goal of this body of work is to challenge the role of the ‘architect’ when working within the context of place. This research, and the design intervention developed a process that challenges the profession by asking: “Should an architect be solely the creator of place, or is the architect a curator of place? The research analyzes existing theories related to the definition and concept of place approached from a wide spectrum of professional expertise overtime to attempt to grasp human being’s passion related to the dynamic topic of place. The intent is to create a framework for design that can be adopted, implemented and layered upon any place, to unearth, distill, and better understand its essence.
The rural post-industrial landscape of Western Massachusetts specifically focused around the former paper mill village of Woronoco is the stage for this inquiry. Place is anchored equally in the qualitative and quantitative forces that shape it and thus requires an attentive observer, a trained observer, but most importantly a local, inspired observer who is fundamentally attached to that place.

As both a landscape architect and architect, I offer a heightened awareness of the patterns and processes or ecology of place especially concerning the occupation and physical impact of humans on the landscape through the built environment.

The proposed design interventions will attempt to treat place as a living organism, one that is continuously changing and whose dynamics are interconnected and responsive to a broad range of forces that shape it. A place curation design approach has led me to offer a series of design interventions, and not a proposal for a single building. These interventions will not fulfill a single program or fulfill one specific functional purpose; it will not focus on creating a design typology or use a consistent design language or material palette. Instead, the design will introduce multiple architectonic interventions that are derived almost organically in the landscape, in a manner that will stimulate the continued use and engagement with this place. Human interaction, engagement and interpretation is the essential component to ensuring the long-term sustainability of place, allowing it to continuously evolve and be relevant to future generations.
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CHAPTER I
INTRODUCTION

This thesis is, a proposal for how designers might curate place. Place is a construct that is built on three primary elements – the landscape, people, and architecture. These elements are arranged in this order because settlement begins with a landscape which then is occupied by people who then build architecture to reflect their needs and cultural identity. While each of these elements was looked at independently from one another at various points in this research, it is their inter-woven connectedness upon which this thesis is anchored.

The initial research conducted for this thesis was built on an investigation of Alzheimer’s Disease which looked at the human condition when faced with this neurodegenerative disease. While the topic of Alzheimer’s disease wasn’t the focus of the final question for the thesis, it continued to play a role as an analogy about how the landscape, people, and architecture of place were related. Some of these commonalities between these elements included their ability to adapt to change and the fact that each has their respective timelines which are reflective of an active process of aging. Each element can be expressive of memory either through physical weathering or cognitively which in turn informs their unique identity and more importantly an attitude toward a shifting identity over-time. This attitude promotes a sensibility that place is an ever-changing ecosystem. The commonalities shared by these elements suggest how they are more alike than different and if the question is then how might design be integrated to ‘curate place’ it should be focused on how to convey these common traits and expose how they are related. This thesis takes
a stand that the role of design is to promote the connections between the landscape, people and architecture to foster a holistic idea of place.

Figure 1. Landscape

Figure 2. People
This thesis also originated from a response to my attachment to the concept of place especially the landscape, people and architecture for which define the place where I grew up, the town of Russell Massachusetts. Russell is a small rural hilltown community that is located near the southern boundary of Western Massachusetts. The town of Russell consists of an approximately 18 square mile area that hosts a population of just over 1,700 people. The town of Russell is situated along the Westfield River nestled in a valley situated between what are known locally as the foothills of the Berkshire Mountain Range and the Westfield Plateau. The study of place was not only focused on Russell due to my attachment to this place, but also due to my interest in studying the rural post-industrial landscape.

The rural post-industrial landscape was of particular interest in this thesis as it has much more powerful influence on a community in comparison to an active industrial landscape, an urban-industrial landscape or even an urban post-industrial landscape. The main reasons why the rural post-industrial landscape is of specific interest is due its prominent existence throughout the
rural communities of New England. These landscapes which are often a direct result to early paper industry, but because for these small communities the mill is often the most culturally charged element of the community, it is expressive of a golden age in the economic stability of most of these communities, and it is most often the most developed portion of the community hosting infrastructure that far surpasses the scale of development in comparison to its surroundings. As these mills have continued to be decommissioned due to lack of resources, competitive global industries, and inability to maintain technological relevance they have become of particular concern for these municipalities who often do not have the resources to sustain them often resulting in their failure leading to significant issues related to public health and their negative impact on critical ecological systems of the local environment. This thesis takes a critical look at the field of architecture and landscape architecture especially concerning how the design profession engages this concept of place in the rural post-industrial landscape.

In order to fully understand the resonating theme of place in architecture and landscape architecture it is essential not only to express my sentiments and methods for processing place as the active reader, but also to interpret and try to convey the work and theories of well-known experts and practitioners who have also tackled this monumental task of interpreting the concept of place from a wide spectrum of professional expertise. The body of this thesis provides a comprehensive overview of place through analytical theory, case study, documentation of a specific place, analysis of design precedents and the proposal of specific design interventions that grapple with the dynamics of place.

Today, we live today in what is known as the Anthropocene period, "The era of geological time during which human activity is considered to be the
dominant influence on the environment, climate, and ecology of the earth.”\(^1\) While Stoermer essentially states that humans are more than ever impacting the earth most commonly in a negative manner the French Philosopher Bruno Latour simultaneously calls for the expanded role of design to extend beyond “the details of daily objects to cities, landscapes, nations, cultures, bodies, genes and to nature itself.”\(^2\) It is this sentiment where Latour effectively states that it is the unique responsibility of designers to provide positive and impactful solutions at all scales and through all mediums that address these changes. While each of these sentiments can result in mixed interpretations, they are nonetheless insightful to the current condition of the field of architecture and landscape architecture and initiate an important question, which is to consider the role architects shall play in shaping the environment. In this research, I aim to investigate the interrelationships between people, architecture and the landscape, by asking the question “what is the architect's role in curating place’.

The goal of this body of work is to challenge the role of the ‘architect’\(^3\) when working within the context of place. The continued question that this research, as well as the design intervention, will attempt to address is, how does the ‘architect’ assume the role as not the creator of place, but rather the curator of place? Due to the fact that his thesis is to be defended in both the fields of architecture and landscape architecture the title ‘architect’ is used interchangeably.


\(^3\) As this thesis has been developed in a manner to fulfill the requirements of both a Master's degree in Architecture and Landscape Architecture at the University of Massachusetts it should be understood that the words 'architect' and 'architecture' are used interchangeably throughout this body of work to represent both fields of Architecture and Landscape Architecture.
The research will look at and analyze existing theories related to the definition and concept of place approached from a wide spectrum of professional expertise overtime to attempt to grasp human being's passion related to the dynamic topic of place. The intent is to create a loose framework or interpretive model for design that can be adopted, implemented and layered upon any place, to unearth, distill or better understand its essence.

The rural post-industrial landscape of Western Massachusetts specifically focused around the former paper mill village of Woronoco is the stage for this inquiry. Place is anchored equally in the qualitative and quantitative forces that shape it and thus requires an attentive observer, a trained observer, but most importantly a local, inspired observer who is fundamentally attached to that place.

Having grown up in this place, I have the perspective as a local, who has a great love for this place. As a local has a unique aptitude for observing the subtle changes of this place. Beyond my perspective as a local, it is my professional lens as both a landscape architect and architect that provide me with a heightened awareness of the patterns and processes or ecology of place especially concerning the occupation and physical impact of humans on the landscape through the built environment. It is this diversity of skills and my genuine interest in how design is responsive to the cultural heritage and history of place which this thesis provides me with the opportunity to grapple with these dynamics and formulate my response to this topic.

The proposed design intervention will attempt to treat place as a living organism, one that is continuously changing and whose dynamics are interconnected and responsive to a broad range of forces that shape it. Through this lens, the proposal will not limit the intervention to one specific design as an object in the landscape, anchored in a single concept such as adaptive reuse.
The intervention will also not provide a singularly defined program or a specific functional purpose; it will not focus on creating a design typology or use a consistent design language or material palette. Instead, the design will aim to introduce multiple architectonic interventions that are derived almost organically in the landscape, in a manner that stimulates the continued use and engagement with this place. Human interaction, engagement and interpretation is the quintessential component to ensuring the long-term sustainability of place, allowing it to continuously evolve and be relevant to future generations. The interventions will attempt to strategically use architectonic elements, located in specific moments in the landscape that will ultimately heighten the human condition in this unique landscape, emphasizing and educating the local community about the narrative of this specific place.

Given its foothold at the critical intersections between culture, nature, and technology, architecture has a fantastic opportunity to take a stand and make a dramatic positive impact on society by being the steward of place. Architecture must stimulate community identity in a manner that is responsible, expressive, experimental and innovative. Architecture must be attentive to the contextual forces, local ecology and cultural heritage of a place to propose responsible and regionally specific design interventions anchored in new vernacular processes. Such a design methodology would encourage the architect to assume the role not of the creator of place, but rather the curator or place.

This concept resembles a similar spirit to that of the work of Architect Samuel Mockbee and the Rural Studio Program at Auburn University. Over the years Mockbee's community-based collaborative initiative has been successful in developing an architectural methodology that is anchored in designing for the people, often the people of modest means who are geographically isolated. The key to its success is through educating young practitioners about an
architectural process anchored in hands-on building, site-specific expression and most importantly human interaction. The architecture created in this manner is less concerned with the form or function, but rather on the narrative it stimulates. The narrative is essential to its success because it provides a vibrant and active dialogue between the place, the designer, the community, and the builders; a conversation, which persists long beyond the life of the project for all involved. The Rural Studio program which works exclusively in rural settings highlights how the architect must be multidisciplinary assuming roles as the "artisan, the activist and the artist." The Local architect holds three things paramount in his or her design "place, craft and community." The work of Mockbee and the local movement offer a methodology that is grounded in a more holistic approach toward architecture. This process inherently offers a platform for design experimentation; "The problem is not simply to repeat the past, but rather to take root in it in order to ceaselessly invent." The resulting design process does not categorize people, nature and the built environment as separate variables in a linear equation, but as an interconnected process working in constant dialogue. J.B. Jackson articulates the nuance of this calculus when he describes the ideal landscape:

The ideal landscape defined not as a static utopia dedicated to ecological or social or religious principles, but as an environment where permanence and change have struck a balance. Few landscapes have achieved this, and fewer still have managed to maintain it for any length

---


of time. But all of them, it seems to me, have sought it; all of them in one manner or another, that is to say, have acknowledged the existence of landscape as an idea.\footnote{Jackson, J. B. (2009). Discovering the vernacular landscape. New Haven: Yale University Press.}

Fundamentally, architecture and architects need to dig deeper into how they consider people and place during the design process. Daily new scientific research is published in evolutionary biology, neuroscience, psychology, and genetics documenting the relationship human beings have with their built and natural environment. The findings of such research have enormous potential as tools for understanding how human beings actively use and experience place; however, developing innovative methods of analysis that can be applied to place that is approachable to the greater population and which can be implemented to the local condition is paramount. This is why the investigation of using language as a tool for investigating place may be critical for the modern architect.

It is the responsibility of today's architect to be able to understand why people fall in love with places, understand the complexities of place, and ultimately understand how place does not exist in reality. The architect must approach the concept of place in the similar manner in which he or she approaches other complex ideas that are often articulated in architecture, such as culture, integrity, and authenticity. These ideas are complex because there is never a single objective reality to explain their existence. To limit the idea of place to that which is bound by a social construct is a mistake. The goal of the designer is not to define a place but to have a genuine dialogue with that place. The concept of place investigates the biological, spiritual, ideological, narrative, commodities or independent variables, which link people to aspects of an area
or region. In his book: Topophilia: a study of environmental perception, attitudes, and values Yi-Fu Tuan coins the term "topophilia" which he describes as coming from the Greek roots topo- (place) and –philia (love of/for) and means literally love of place. Tuan’s research, expresses the complexities of the concept of place and in the book, he describes the word "topophilia," as: "...a neologism, useful in that it can be defined broadly to include all of the human being’s affective ties with the material environment, these differ greatly in intensity, subtlety, and mode of expression." What is essential about Tuan’s research is that he does not define place singularly. Instead, he provides the reader with a framework to grapple with the complexities surrounding the concept and articulates the gravitational attraction place has on human beings.

When discussing the complexities of place, Tuan states: “The scientist and theorist, on his part, tends to overlook human diversity and subjectivity” In response to this idea in the light of this written methodology I found that the most intriguing element of this process would be in the interpretation of the written word related to place among different cultures. For example, the English word for forest is often referred to as "it" in a sentence. There is a story of an English-speaking man having a conversation with a Native American. During this conversation, the man says to the Native American, "I like to spend time in the forest, because it is a place where I feel alone and at peace," when the man asks if the Native American man also feels solitude in the forest the Native American looks confused and at first, he does not respond. The English man immediately assumes the Native American either didn’t understand the question


or lacks the sophistication to articulate this idea about contemplation or introspection. The Native American instead is confused, not because of the question, but because his word for forest corresponds to a place where he is not alone; the forest is a place where his spirit instead surrounds him. Even though their reasons are different the two men share this feeling of peace in this place. For the Native American the forest was a living being whereas the English word "forest" is expressed as inanimate place un tarnished by civilization and the inclusion of the word "it" further convolutes the meaning as "it" could refer to anything, any inanimate object that could have nothing to do with the forest. The shared sanctity of the forest symbolizes the landscape as a unifying medium for which the two men are connected while the cultural interpretation provides a heightened level of awareness of the dynamics of place. Similarly, in my research, I aim to investigate the idea of place in a manner that is focused on providing designers with a possible method to approach the concept of place as a means for informing deeper exploration and integration of the concept in their work.

Early in this investigation, I began to think of other ways in which place had been analyzed or depicted and I realized that place was examined extensively in two very distinct fields, biology, and literature. Biology examines the inner workings of place from a scientific perspective through the understanding of life cycles and the metabolism of flora and fauna. However, Biology remains a specialized field of study and requires a trained scientist to comprehend its findings. In comparison, literature specifically poetry is a human interpretive process, expressed through language as a written or spoken word. While language is relatively universally received its translations or interpretations are culturally derived. American linguist Dan Everett characterizes the complexities of the cultural entity of language when he states:
There’s no language gene. There’s no innate language organ or module in the human brain dedicated to the production of grammatical language. There are no meaningful human universals when it comes to how people construct sentences to communicate with each other. Across the languages of the world (estimated to number 6,000-8,000), nouns, verbs, and objects are arranged in sentences in different ways as people express their thoughts. The powerful force behind this variability is culture.¹⁰

Everett’s response sheds light on the profound role culture plays concerning language, but he also conveys the fact that even with these almost infinite configurations of the written word, human beings have developed a system that has enabled them to communicate and express themselves across cultures, a system that has successively evolved over time.

Similarly, to how Tuan used Greek roots to define a new concept for his research of place, I also looked to language as a possible tool that might inform my investigation of place and specifically how architects must become the active readers of the metaphorical language to interpret and curate ‘place actively.’ In line with this concept, I initially looked at works of non-fiction and poetry, where language was depicted through a story or colorful language crafted in a manner that emphasizes the reader’s engagement with the place the author envisioned. Stories specifically are developed through an author’s rigorous investigation and careful selection of diction to express that particular place. The collective framework in which the story is presented to the reader is what makes it convincing and more or less results in an authentic representation of that particular place, "A town or neighborhood comes alive through the artistry of

of a scholar who is able to combine detailed narrative discerning vignettes of
description."11 While the author's language is essential to conveying an idea
about the authenticity of place it is even more critical to indicate that this is still
an interpretive process. The interpretation of the author has great potential to be
well received by the general public when it reverberates a trueness, especially
to those most familiar with the place and it is delivered through a relatively
accessible medium. The narrative is most well received when the reader places
trust in the author’s capabilities based on the rigorous investigation and
dialogue with the people and characteristics of that specific place.

Like language, architecture is a component of the human condition, which
has steadily progressed overtime and it too is tasked with conveying a message
about its relationship to its place and its culture. While language and
architecture can date as far back as the earliest human settlements,
arhitecture, in its evolution especially in recent years has failed to support the
human condition. The complexities of modern society as an expressive and
representative element of place especially concerning how it stimulates
community, inspire diversity and implements innovation. Producing the concept
for successful architecture requires the architect to "Make use of the language
of the local culture; otherwise, his message falls on deaf ears, or is distorted to
fit this local language."12 The architect must consider not only the physical
aspects of the place, but also the perception of the community in which it exists,
how it’s publicly understood as well as what type of actions it evokes. Too
frequently architects and architecture rely on stylized diction or formal moves,
which are foreign to the general public and have continued to neglect the local

11 Tuan, Y. (2014). Space and place: The perspective of experience. Minneapolis: University of
Minnesota Press.

condition. In an excerpt from his poem "A Poem on Hope," Wendell Berry eloquently speaks to this issue when he writes:

Because we have not made our lives to fit
Our places, the forests are ruined, the fields eroded,
The streams polluted, the mountains overturned. Hope
Then to belong to your place by your own knowledge
Of what it is that no other place is, and by
Your caring for it as you care for no other place, this
Place that you belong to though it is not yours,
For it was from the beginning and will be to the end…¹³

Berry powerfully describes our attachment to place as human beings especially to nature and he also illustrates how we have failed to nurture our 'places' and because of the perpetuation of this mentality our 'places' have become ruined, we have tarnished something that was once pure, because we mistakenly thought that we possessed ownership of the place yet in reality our existence is temporary and the changes we make during our lives will continue to affect these 'places' long after we are gone. I chose to include this poem as a means to express how language in various forms can move the reader whether it's in a narrative form or in this case a poem. With the appropriate words a reader can visualize and feel the destruction of nature which man has inflicted on the world by simply reading words on a page.

When analyzing a written work, it is the responsibility of the reader to consider the plot, setting, characters, point of view, imagery, symbolism, tone, irony, and theme in a manner that continuously questions and actively interprets

the author’s diction. While the author has a responsibility to provide the reader with these critical ingredients, which allow this dialogue to occur he or she in return also expects a certain level of commitment by reader to interpret the text, the same must be said about the relationship between architecture and people. The goal of this written methodology is to reveal not an unbiased reality about place by the architect as the author, but rather to encourage the architect to engage in a detailed and in-depth analysis of that place utilizing his or her specific skill set to penetrate and express the essence of that place and then provide a medium for which the public can contribute to the conversation. This process supports the ideas of Roland Barthes in that,

> It is language which speaks, not the author: to write is to reach, through a preexisting impersonality — never to be confused with the castrating objectivity of the realistic novelist — that point where language alone acts, "performs," and not "oneself": Mallarme’s entire poetics consists in suppressing the author for the sake of the writing (which is, as we shall see, to restore the status of the reader.\(^{14}\)

Writing about place in this practice relies on the architect to act as a responsible unbiased professional, a curator of place who is invested in appropriately articulating his or her findings regarding place as an obligation to the reader or community and in doing so includes the reader in the conversation. As Barthes indicates how through the inclusion of the reader in the process he elevates the role of the reader as the active interpreter. In reaction to the failure of architecture to address the needs of the ‘places’ in which they exist J.B. Jackson states:

Compared to traditional, pre-technological dwellings ours are spiritually and culturally impoverished. Our almost uncontrollable love of making "environments" – never stronger than now – compels us to create in our houses as well as in our cities environments that are good for nothing but health and recreation, environments almost entirely without content.\textsuperscript{15} Jackson later goes on to express elements of vernacular architecture in a mood of almost nostalgia when he states:

The vernacular dwelling is designed by a craftsman, not an architect that it is built with local techniques, local materials, and with the local environment in mind its climate, its traditions, its economy-predominantly agricultural, such dwelling does not pretend to stylistic sophistication. It is loyal to local forms and rarely accepts innovations from outside the region. It is not subject to fashion and is little influenced by history in the wider sense. That is why the word timeless is much used in descriptions of vernacular building.\textsuperscript{16} In response to Jackson's description of vernacular architecture the argument should be made that contemporary architects should not simply reinstitute the practice of vernacular architecture in today's practice, but it is the responsibility of architects to understand regional and vernacular architecture in order to develop place-based architecture. The only elements in which contemporary architecture should not follow the vernacular methodology described by Jackson is in regard to the inclusion of a professional architect in the design process and to be receptive to the implementation of selective modern


innovations for it is critical that "Architecture is something that challenges people, challenges what they want, challenges their idea of what comfort is, challenges their perspective on how they could live". Jackson relates back to this idea of language and actually compares it to the conflict between place, people, architecture, and landscape when he says, "A landscape, like language, is the field of perpetual conflict and compromise between what is established by authority and what the vernacular insists upon preferring".

Jackson’s observations strike a chord with regard to how he suggests that language can be the active metaphor for characterizing the cultural and social dynamics of place. The question I begin with is how might a design process, be informed by and sensitive to both the physical and phenomenological elements connected to human being’s attachment to place in a manner that ultimately celebrates that place?

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17 Eisenman, Peter. Rural Studio Interview, SNAKEBIT WEB TRAILER, Archinect.com

CHAPTER II

THESIS QUESTION

What is the architect's role in curating place? This question is the bedrock for the research. The idea of curating place spawns from an idea of how designers, specifically the architect has the unique ability and opportunity to enrich the way human beings interpret or engage with a specific medium in a particular environment. Experience elevates our senses as we attempt to make logical understanding of the anything. This interaction shared between the work and an individual, and the environment for which it is presented is representative of what Bachelard would identify as the human being's 'primitive' response. The 'primitive' is a general instance where people inquisitively investigate something with little to no framework or organization for which to processes new stimuli. The 'primitive' response as it relates to the interpretative processing of art serves as an analogy to how the architect may respond to place. As the visitor to a museum might interpret a work of art in a gallery through a 'primitive' response, a similar thread could be drawn to how a visitor of place may interpret the landscape or architecture of that place as they are the stimuli of that environment. While the museum and art scenario attempts to capture an elevated condition of how human beings interpret intentionally manipulated mediums in constructed environments to enrich or call attention to a particular element or idea that the artist wishes to convey, it is the role of the curator that is most appealing in this research.

An artist is a professional creator. While the artist is tasked with creating something, that may be expressive, provoking and even shocking through the use and manipulation of a particular media, his or her work is subjective. The
artist creates through personal expression and while it may be sensitive to its perception of the general public or geared for a specific audience it ultimately is highly interpretive. In contrast, the curator who is as invested and integral in the process of art and its exhibition has a much different role.

To the untrained individual, the role of the curator may be a foreign one. Curators are tasked with the collection and organization of works of art for exhibition and storage. Curators are professionals, experts in various mediums, styles, and types of art which make them uniquely equip them to care for and ensure the safety and ultimately the long-term preservation of original works. While curators traditionally have worked in museums, art galleries, educational and cultural institutions their scope in recent years has expanded to include the curation of landscapes, primarily historical landscapes which have begun to blend their expertise with that of preservationist and the landscape conservationist. While the artist is focused on art as more-or-less as an object, curators are tasked with crafting exhibitions of various works of art, which involves the display and archival of each piece designed by an artist. This compositional attitude towards a body of work of art is anchored in the participation and experience of the general public with the art. While the artist may attend an opening of his or her exhibition, he or she is typically removed from the interaction between the art and the people who actively interpret it. Instead, it is often the curator’s role to conduct public and private tours of the work on exhibit and to also instruct educational workshops about the work, which ultimately makes the work accessible and digestible to a greater audience. The curator carefully maintains every piece of art in an exhibition, he or she actively monitors changes in the work through a comprehensive inventory. This constant interaction with the work may involve conducting research and analysis that enable the curator to date specific pieces or to
determine the source or originality which through this method of discovery enable them to make decisions with regard to how the work is both displayed and preserved. Art curators work collaboratively with experts throughout the globe to share ideas and collections; it is the openness to collaboration that is also uniquely appealing in regards to how it may translate or apply to architecture. Art curators are often tasked with writing and reviewing grant proposals and publicity materials that bring in funding for the art establishment facilitating the continued exhibition of art. The curator is equally focused on the day-to-day operations and presentation of art as he or she is focused on the future and long-term display of art. It is this constant intimacy with the current art with a vision for the future that is also appealing to architecture. Curators are also highly active in facilitating events and meetings to bring awareness to the public about the establishment and its current exhibitions. It is this thread of social consciousness were the curator acts as the activist for its art that is becoming ever-more apparent and an integral component of the practice of architecture today.

Most commonly we think of an art curator's thoughtful arrangement or organization of pieces of a single artist or group of artists to evoke a desired emotional response or cognitive connection to the work. This response is being interpreted based on either a heightened awareness of the artist's conceptual and expressive agenda or an ability to frame a piece or pieces of art in a spatial framework typically the architecture of the museum or gallery. These spatial considerations may call attention to specific details of the art that interact with the desired lighting effect or provide the work with spatial qualities including spatial openness or enclosure, a rhythm for which the work is on display and is experienced which considers movement and as well as auditory effects of the adjoining space.
While the processing of art is a highly interpretive process, one that is unique to every individual who experiences the work there are commonalities that individuals share when viewing or engaging a piece of art that a skilled curator must understand. It is the role of the curator to comprehend these similarities that the general public will share and if successful be able to thoughtfully craft an experience specific to the desired effect of the work itself.

To test the ideas behind curating and the interpretation process, we can use a basic description of a gallery space where a series of work such as original Picasso’s, two-dimensional paintings, are hung on a series of white partitions in a daylit space. This description begins the curating process where you as the reader is starting to envision your ideas of the art in the exhibition as well as the gallery space itself. Through this cognitive processing, you are curating your interpretation of what this hypothetical gallery might look or feel like and may even begin to fill the gallery with known works of the artist. This processing of the description is likely derived from your life experiences, visiting other galleries which have informed both your memory and potential emotions responsive to those moments. It is this idea of pre-conceived ways in which people engage art, particularly that artists, curators, and even architects consider how to re-present original works.

In this research, the investigation of curating place leads to a comprehensive attitude for which the act of curating requires including: context, knowing the spatial geometry, understanding of precedents or collective experiences, sensory stimuli and interactions, understanding of how people create memories through a highly interpretive human process.

If we the reader can understand the dynamics at work with regard to how one may curate art, can we go a step further and try to understand how an architect possibly might be able to curate place. The interest in curating place,
which will be explored in much greater detail to follow, is that for an architect the highest potential in his or her work is to understand the soul or identity of a specific location. If the architect can effectively curate place, he or she has been able to work within the tangles of divine fate or cosmic evolution depending on one’s vantage point.

Curating place requires the attention of detail of a local, someone whose experience has deeply been informed by their physical connection to a specific place. This thesis question considers place in much of the same light as an original work of art, something that has been shaped by a creator or forces of place that must be cherished, understood and exhibited to others. It is this stance that reaffirms the attitude that the architect is then not the creator of place, but the curator of place. The architect is tasked with using his or her unique set of skills to develop a deep and holistic understanding of the genetics of place which have come to define it. The architect as the curator of place is tasked with implementing humble, responsible design interventions that have the lightest touch on the place which are anchored in not on redefining place but how he or she might enrich a visitor’s experience. As the curator, the architect must digest his or her own thorough and holistic comprehension of place. A thorough understanding of the genetics of place may enable them to formulate new ways in which information is re-presented to the visitor, ways in which he or she may educate the visitor about the unique heritage of this place. As a curator, the architect must engage with the user and take more of an active role in understanding places' occupation over time which may promote attitudes or strategies for monitoring change and be relevant to the moment. All the while the architect must grapple with the fact that curating place is a highly interpretive and participatory process.
CHAPTER III

METHODOLOGY

A. Methodology

1. Conduct a literature review targeted on identifying the theory of place from a broad spectrum of professional expertise including but not limited to: physics, philosophy, phenomenology, landscape architecture, architecture, regional planning, geography, ecology, literature, history, sociology, art, and public health

2. Use literature review to develop a loose framework anchored in categorically identifying the forces of place which will be used to test and analyze this framework on an abstract construct of place (falling tree)

3. Identify a specific place: the rural post-industrial village of Woronoco, MA

4. Use historical documents (records / sketches/ drawings/photography/ writings/interviews/videography) to develop a cultural perspective with an underlying historical context of the sequence of events and customs that have occurred locally, regionally, nationally and globally that have shaped this place (Narrative & Timeline)

5. Use existing databases including but not limited to MASSGIS, USGS and Census Data to generate digital representations (maps and information graphics) of the regional context to understand how this place is in dialogue with its greater surroundings
6. Search through web-based platforms for digital media including, but not limited to: YouTube, Facebook, GOOGLE to find content (photos, videos, sketches, literature, historical documents) to determine where and what people have documented about this place, used to target shared or collective moments of social interest and attachment.

7. Conduct an onsite photo/video survey of the existing conditions. This process will inventory the whole place in its current condition but also is used to identify specific micro-environments that provide a wide range of the unique physical conditions of the site. While the photo survey will target points of interest identified from the earlier research, it should also focus on specific nuances experienced when the individual physically engages with this place.

8. Written narratives will be generated based on the identified micro-environments of the place determined by the previous analysis.

9. The written narratives of the targeted micro-environments will be used as the medium to conduct a diction-based analysis which will aim at providing an interpretive form of documentation of the individual’s unique experience with the place of inquiry.

10. Conduct a case study of current methods of design practitioner’s for working with a similar rural post-industrial landscape found in the region.

11. Distill and formulate a response to the previous analysis to determine an attitude or specific method for approaching the place of inquiry.
12. Based on this rationale analyze similar methods of design intervention that share attitudes of design in the form design precedents

13. Propose specific design interventions that respond to the unique conditions of the micro-environments of the place of inquiry and previous analysis
CHAPTER IV

PLACE THEORY

A. Overview

The study of place a highly interpretive process. To emphasize this the work of Pat Perry, is introduced to help graphically articulate how ‘place theory’ grapples with the dynamics of place through the interwoven connectedness of the landscape, people and architecture as a composition.

Perry’s illustrations are anchored in observation. He is an artist and adventurer who captures the physical reality of the ‘places’ he visits with a lens that is intently keen on expressing the human condition. His work was inspirational when considering the concept of place not only due to it its representational inventiveness but also because much of his work depicts the rural landscape, often expressing a sense of rawness through the depiction of struggle. It is his ability to convey emotion, depict action, and the clarity of which his subject is presented that promotes a focused narrative of place. It is his two black and white illustrations entitled "outlived" that we see the profile and bust of a boy and girl facing one another.
In the illustrations, the heads have begun to deform at the head taking on an organic shape where a rural landscape is depicted over what would have been the faces of the two individuals. The landscape is abandoned with tattered structures, debris, and artifacts in which new vegetation is beginning to consume the place. This effect used by the artist shows how the struggle depicted in the landscape seems to represent the identity of the two individuals. The graphics while representative of hardship also express an idea about memory tied to this place as well as the regenerative capacity of the landscape to reestablish itself in a post-occupied condition. While the place which inspired the illustrations is unknown, it shares many commonalities with that of the post-industrial landscape of Woronoco. It is Perry’s ability to represent place through his interpretive depiction that is fundamentally rooted in many of the same concepts tied to ‘place theory.’
Figure 5. Word Cloud

The word-cloud paired with Perry's illustrations attempts to emphasize the dynamics surrounding the topic of place. Each word has been selected for its inherent connections associated with place, but like the image, the words aim to stimulate interpretation rather than definition. The word cloud serves to represent a diagram for the content which ‘place theorists’ have set out to interpret, define, and convey when considering the concept of place.

place has been a subject of interest for thousands of years and while this analysis is by no means all-inclusive it is meant to convey how select few individuals have begun to digest the topic. This Chapter is dedicated to the investigation of place through a loose framework which considers how a few prominent theorists and practitioners from a broad spectrum of professional expertise including: physics, philosophy, poetry, history, architecture, landscape architecture, regional planning, geography, ecology and public health have tackled the concept of place over time. This analysis is aimed at providing context for each individual’s work and attempts to distill important
elements related to the concept of place that were used to organize how this thesis would approach the concept of place.

B. Aristotle [space logic]

Some of the earliest questions regarding the concept of place started over 2,400 years ago with a logic-based investigation by Aristotle. Aristotle's view of place is derived from the natural sciences, logic, and metaphysics including abstract concepts such as being, knowing, substance, cause, identity, time, and space.

In his definition of the natural place, Aristotle describes matter as being separated into four different categories: Air, Earth, Water and Fire each of which have four identifiable characteristics: wet, hot, cold or dry. Aristotle uses the phrase 'natural place' to refer to the natural order of the elements which are associated with these four primary conditions.

While it is clear that the philosopher considered the 'natural place' in his interpretation of the concept, his primary consideration of place was defined by physical reality. Aristotle's most well-known example of 'physical place' was his reference to a wine sack. He described the wine sack as the place, which has volume and the capacity to contain liquid. The sack was a 'physical place' because it had a physical boundary. For Aristotle place was the physical boundary that contains a constant volume, a volume that is identifiable as a physical reality and exists as a consistent and enclosed whole. Through Aristotle's reasoning, an object within a particular place needs only to be contained within the defining physical boundary. While this physical view of place is logical, it doesn't completely satiate the dynamic investigation of place, which is why he also expressed ideas about how place and the idea of 'motion'
are related and relative to one another. The introduction of motion in this equation is an important component as motion is suggestive of change.

In his investigation of place and motion, Aristotle provides the example of a boat on a river. He considers, what is place when it is not still and what is its boundary if the place is also not static? Aristotle introduces the concept of a person on a boat to articulate this scenario. Aristotle describes the scenario stating "The physical boundary which defines them such as a boat, is in constant motion and therefore cannot be used as a point of reference when discussing location." In this light, the definition of place is expanded to fit the closest boundary that frames the boat in motion.

It is critical to note that in this research, Aristotle’s view of place which was heavily influenced by his finding that place has the potential of being dynamic is again a notion that place has the ability to change. It is after this discovery and inclusion of change that he reconsiders the familiar wine sack scenario and articulates how while place could be filled with wine, the wine could also be removed. Through the act of consuming the wine he articulated how that same place now changed. Where once there was wine there would soon be air.

While most of Aristotle’s views of place do not speak to architecture specifically, he does express place with ideas and concepts that can be directly translated to architecture. It is Aristotle’s logic-based philosophical approach toward the definition of place that is expressive of the physical condition of place that offers a strong early theoretical foundation for the conversation of place. According to Aristotle, it does not matter what is in a place as long as the defining physical boundaries are there.

C. Martin Heidegger [being]

Through the philosophical evaluation of place especially as it relates to the landscape, people and architecture it is essential to look at the work of Martin Heidegger, specifically in his lecture, "Building, Thinking, Dwelling," introduced in 1951. The basis for Heidegger’s relationship to place is through what he denotes as the human beings most profound relationship with the environment which is to 'dwell' in place. Heidegger promotes a platform for 'dwelling' as a fundamental human aspiration or the intention of all human life. All humans strive to 'dwell' and 'dwelling' requires a unique relationship between the individual and a specific place. We categorize dwelling as the human being’s sense of being, connected to a place that he or she lives.

People need to think about dwelling before they begin to dwell. Therefore, it starts as a cognitive relationship with place as a vision or cognitive construct. We think about where we would like to dwell, where is suitable for dwelling, how we might dwell in a specific location, well before we dwell in that place. The action of dwelling for Heidegger is as much a cognitive process as it is physical. Beyond the cognitive process that enable people to ‘dwell’ Heidegger stress that building is the second interaction between a human being and place as one strives to ‘dwell.’

Building is the fundamental component of the settlement. Building is the application and use of material through physical action in place for a specific reason. Traditionally, human beings construct out of necessity to ensure survival. People build shelter for security, a wall to mark boundaries or contain livestock or to simply to signify our existence in place. Building signifies the physical action of the individual in place. It is through this process one learns intimately about that place. Building is laborious it pushes a heightened sensory reaction to place as it stresses human comfortability when working in it resulting
in deep sensory memory related to that particular place through its tactility. The action of building instills attachment and promotes the unique opportunity for one to 'dwell.'

Unlike Aristotle, Heidegger bridges between the spatial and participatory elements that provide a framework for human occupation and the actions or ways in which human beings both occupy and change space. While Heidegger states that "spaces receive their being from locations and not from their space," he provides a perspective for place that expresses how contextual forces not merely physical boundaries may inform it. He also advocates that place is a direct result of human action, actions that can be identified as building, thinking, dwelling; actions, that are expressive of the human state and his or her ability to physically change space and cognitively consider it.

The work of Heidegger in this research is essential because his findings would serve as the primary foundation for many other architectural theorists and practitioners, phenomenologist and fellow philosophers to follow.

D. Gaston Bachelard [phenomenology]

Heidegger's investigation of the concept of 'dwelling' provides the context for the work of Gaston Bachelard. Gaston Bachelard was a French phenomenologist most recognized for his work entitled "The Poetics of Space." In this text, he introduced the topic of "topo-analysis" defined as "the systematic psychological study of the site of our intimate lives," this concept again focuses on the topic of how people 'dwell' in place. His work not only furthers our understanding concerning how we use or exist in the 'places' that we 'dwell,' but

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also stresses how "...inhabited space transcends geometrical space"\textsuperscript{22} which leads to his concept of "existential space."

The work of Bachelard is not only incorporated in this research for the logical reasons which pertain to his literal study of architectural elements that begin to define place, but more importantly for the reason that his work symbolizes that of any great philosopher, which is that it provokes more questions about the relationship between the human condition and the universe than it provides answers to. While it could be argued that our fundamental act in life as human beings is to make logical sense of our existence, Bachelard's work focuses on capturing the boundless imagination and creativity of the individual, focusing his attention rather on the human being's naturally inquisitive nature. A vital example of this idea was explored in his work entitled "The Psychoanalysis of Fire," where he expresses:

\begin{quote}
The axes of poetry and of science are opposed to one another from the outset. All that philosophy can hope to accomplish is to make poetry and science complementary, to unite them as two well-defined opposites.\textsuperscript{23}
\end{quote}

This excerpt was included because it shares the depth of inquisition Bachelard undertook throughout his life, but also stands as an important diagram for positioning architecture within the context of a human art form with philosophical roots derived through human expression and period-specific technologies. It is also the manner in which Bachelard weaves a thread between art, architecture, philosophy, science, and literature which makes his work especially relevant to this thesis. In "The Psychoanalysis of Fire," he states:

\begin{quote}

\end{quote}
The arts, on the other hand, begin with constructing power, generally called imagination, and embody it in forms with clarity of communication that makes them objects of perception to others. The units of this constructing power are analogy and identity, which appear in literature as the figures of simile and metaphor.²⁴

It is not only the intersection of these disciplines that is appealing but the element of imagination and manner in which it is communicated efficiently through these different mediums.

In his exploration of "The Poetics of Space," Bachelard focuses on conveying moments that all humans share by looking at the concept of 'primitiveness.' Bachelard's concept of the 'primitive' is anchored in his belief that all people respond in 'primitive' ways of thinking and acting. Bachelard expresses how an individual's first encounter with phenomena are 'primitive.' He believed that all knowledge began in a primitive manner or through a basic set of values that were predetermined by the basic human condition. For Bachelard, the 'primitive' is used to express the building blocks of knowledge based on emotional or cognitive responses to phenomena, and he argued that deeper knowledge of phenomena could only be reached if the 'primitive' responses of the human condition were first understood.

It is also Bachelard's interest in surrealism that is enlightening in this research. While surrealism was a direct response to the significant shifts in culture, defined by the time after the second World War which flourished along with other philosophical and psychoanalytical works of this period which aimed at expanding the understanding of the human state in a rapidly changing and highly destructive moment in history. Bachelard's focus on surrealism promotes

an exploratory process used to express these dynamics of the human condition related to space. One example of this process is captured in his work entitled "animalizing imagery." In this text, Bachelard looked at how one might take a primary human emotion, such as aggression and apply it to place. In this work, he explores the concept of the wild, formulating an interpretive response to the dialogue between these variables through a medium and manner that could be further interpreted by others to stimulate comprehension and question. This investigation articulates his desire to construct an experimental concept and process anchored in human being’s relationship with place based on emotional criteria. While he never produced art to test the concept, it is seen in the work of others, especially surrealist artists of the time who demonstrated how a process such as this could lead to original works. These works furthered the dialogue of interpretation which is paramount when looking at the artistic nature of architecture and its interwoven relationships to the human condition and place. Although not returning to the fundamental ancient philosophy of Aristotle and others to better understand ‘space’ or place through the means of the primary elements of earth, air, water and fire he instead looked at these elements regarding their "material imagination." Unlike the research of Aristotle, ‘space,’ for Bachelard, was not focused on the physical boundaries of three-dimensional objects. Instead through his lens as a phenomenologist, he articulated how the investigation of 'dwelling' has little to do with the analysis of "architecture" or design; he states: "it is not a question of describing houses, or enumerating their picturesque features and analyzing for which reasons they are comfortable." 25 This stance taken by Bachelard indicates how he believed place was a reflection of human consciousness or at least the half-dreaming consciousness which he called ‘reverie.’ From this perspective, any "application"

of Bachelard’s ideas related to place and architecture requires an interpretive approach due to its highly interpretive nature. It is this concept of interpretation and the creativity associated with the human imagination that promotes the idea that what we know about architecture restricts further exploration and experimentation in contemporary design which ultimately limits the opportunity for a more enlightened dwelling.

While Bachelard does not explicitly state that dwelling has ceased to exist, he like Heidegger shares a sense of nostalgia regarding the poetics of dwelling as he often reflects on memories of his own experiences that happen to be framed in vernacular architecture and rural settings, products of simpler and more modest moments in time. This attitude again is also reflective or a direct response to living in this highly destructive period of history.

Through the direct and specific linkage between the built environment and our perceptual evaluation Bachelard’s work specifically, “The Poetics of Space” focuses on how human beings are the active readers and interpreters of place or as Bachelard refers to it as ‘existential space.’

While the majority of the text focuses on the expression and the individual’s relationship with architectural conditions or “psychological diagrams” it should be noted, that they are organized around the descriptive constructs provided by the author. He articulates how very few examples of place which illustrate the intimacy people share with these ‘places’ are examples of grand architectural moves. Instead, he articulates the opposite, as he is focused rather on tiny moments that we can pinpoint and associate with based on our relationship to our ‘primitive’ human reaction to potentially single instances found in the built environment. This belief introduces how memory plays an important role in connecting people to place.

Bachelard notes how humans are imperfect and his infatuation with ‘primitive’ instances found in architecture often highlight imperfections in architecture which people are drawn to. These moments of imperfection are moments that encourage interpretation. While the ‘reader’ provides their interpretation of these moments, Bachelard simultaneously promotes the ‘reader’ to be an active reader, one that must consider the author’s intent. "In every dwelling, even the richest, the first task of the phenomenologist is to find the original shell."²⁷ In response, especially regarding how his work is interpreted in this research, the architect’s responsibility is first to evoke the soul of place and understand the ‘primitive’ manner in which the individual can interpret it.

One can see how his work has inspired and continued the conversation and analysis of place especially concerning the work of Michel Foucault. Foucault’s work, specifically his essay entitled "Of Other Spaces: Utopias and Heterotopias," he proposes a shift in ‘topoanalysis’ from the ‘intimate space’ that was the focus of Bachelard to that of what he coins as "other spaces," which he characterizes as "spaces of crisis, deviance, exclusion, and illusion."²⁸ The focus of ‘other spaces” promotes a new analytical process which he titles ‘hetero topoanalysis.’ From Foucault’s perspective, it is the introduction of ‘hetero topoanalysis,’ or the ‘places’ at risk and are in direct need of our attention that begin to suggest the place has the capacity to both change and potentially be forgotten. Foucault’s attention toward ‘hetero topoanalysis’ is expressive of how place is both reflective of the moment and how it actively changes over time.


E. Frederick Law Olmsted [landscape architecture]\(^{29}\)

Frederick Law Olmsted was a visionary who looked beyond the practices of the day to design in a manner that captured the essence of place. While the majority of practitioners in the field of landscape design during the period of Olmsted relied heavily on gardening and horticulture consistent with the motifs found in Europe at the time, Olmsted's work was able to transcend the garden primarily based upon his affinity with the extraordinary natural and unadulterated landscape's that he saw in the American landscape. He often wrote about the American landscape, reflecting specifically on the pristine wilderness, comprised of dense forests, rolling hills and winding valleys, which framed the rivers and lakes that knit them together. Not only was he moved by the scenery, but it is important to note his deep understanding of the natural systems or ecology of place which was expressive of the interconnectedness of these elements in the landscape. While Olmsted sought to make each of his designs unique, he always worked with and emphasized the unique qualities of place specifically the regional character.

Many of his works also spawned from a social responsibility to provide all people, especially those living in the volatile and often deplorable urban conditions consistent with the day with accessible spaces for outdoor recreation, reflection and crucial moments where people could escape the city and connect with the natural landscape. Olmstead's landscape offered the public the opportunity to dwell. The social component of Central Park is most profound as it became a concrete example of a democratic landscape. People of all nationalities, backgrounds, and classes would gather here to connect with

nature. Olmsted believed that it was a basic human right to have access to fresh air and water and views of plants and wildlife even if experienced in relatively controlled microenvironments that existed in highly urban surroundings. The juxtaposition of wilderness insulated by the dense urban fabric as seen in his work at Central Park epitomizes this attitude. Through his understanding that the landscape went beyond the confines of the garden, he was successful in integrating structures in the landscape including bridges, dams, paths and other infrastructure. These elements were seamlessly embedded in the landscape composition which helped facilitate better experiences for users by framing views, providing accessibility and ultimately the ability to control the landscape. The inclusion of these design features in his landscapes allowed his designs to operate at a new scale that was at the time revolutionary. Olmsted's work came to define what we know today as 'landscape architecture.'

Landscape architecture would allow designers to create place.

Olmstead's use of native plant communities that were often already thriving in a particular site provided his designs with a sense of authenticity regarding the character of the place. The un-manicured or unkempt aesthetic of the ground plane of the Bosque with fallen branches, leaves, and needles, moss, and fungi growing on decaying plant matter exposed the vibrancy of nature at an intimate scale which juxtaposed large vistas, water features or monumental trees. These moments found throughout the entire landscape composition touch on the what he coined the 'genius of place.'

While these landscapes heavily integrated native plant species in the design, his understanding of other non-native species allowed him to emphasize specific moments in the scene which provided depth and a level of hierarchy throughout his compositions. The insertion of these elements is comparable to
what Bachelard might call imperfections that had the potential to encourage interpretation from an attentive observer.

Olmsted's thoughtful inclusion of human-made architectural structures which he referred to as 'subordinate details' provided opportunities for better accessibility to moments for people to view or interact with nature from a unique vantage point. These moments allowed users to experience a sense of wilderness while in a very urban context which ultimately provided people with an elevated awareness and overall love and appreciation of nature which they may have otherwise never been exposed. Through this method of design, he was able to enrich one's experience in specific moments in a place.

The ultimate goal of the 'subordinate details' in the overall composition of the landscape design was to exist as he referred to in his reflections as 'unconscious.' Architectural elements were thoughtfully integrated into the landscape seamlessly as to not deter from the natural scenery. He strove to provide even the most conscious observer with an uninterrupted experience which almost always emphasized a heightened condition of the natural landscape through the use of natural materials, often stone which often bled into the natural topography provided the composition with a level of integrity.

Many of the concepts and design strategies that were employed by Olmsted provide each landscape design with its own identity as a unique place. His holistic understanding of the dynamics found in the natural American landscape ultimately presented him with the ability to create timeless landscape designs that have never lost their ability to captivate the human condition in its dynamic relationship with nature.
F. Frank Lloyd Wright [architecture]

Frank Lloyd Wright is most notably known as the father of American Architecture specifically for his concept of "organic architecture" which is the idea that all parts of architecture relate to each other naturally. In Wright's work, there are no forced connections or illogical leaps within the design. There is an ever-present sense of intention in his work which is both expressive and logical and often evokes a sense of integrity and authenticity in the individual materials used in his architecture. Spatially, Wright's work is anchored in providing a natural flow from the outside in, and the inside outwards. Within many of his Prairies Style designs, which he is arguably most well-known for, Wright strove to accomplish this through the use of low-sloped roofs, extended eves, and often single stories which related directly back to the natural landscape of the site. Wright's Prairie-Style architecture specifically, responds directly to the relatively flat landscape comprised of the vast fields of the Midwest which were emphasized by the extended horizontal elements in the architecture's form which articulated the architect's understanding of how the architecture and landscape coexisted. Other architectural details in Wright's work reiterated this sense of cohesion between the built and natural environment. Elements such as the use of natural motifs especially in his early works were drawn directly from the landscape. These attributes found their way into the house either through the use of geometric stained glass that abstracted a tree canopy, or the imaginative use of natural daylight capture this association. Even the arrangement, rhythm or order of the materials was derived from Wright's interpretation of the connections between the earth, ground, and the sky through his material palette and use of color in his interiors.
While it is essential to look at Frank Lloyd Wright in his own right, it is also necessary to consider his work in comparison to one of his contemporaries, Charles-Édouard Jeanneret or as he was better known, Le Corbusier.

Wright’s socially conscious organic architecture that responded to the unique features of the individual site stands in high contrast to the work of Le Corbusier and many other modernist architects who were proponents of the international style. The International Style was a product of the technological advancement in material science and innovative technologies that were a direct response to the Second World War. Corbusier’s architecture focused on the use of industrial materials organized by three critical principles ‘mass’, ‘surface’ and ‘plan.’ Projects like the Domino House aimed at providing a much-needed housing prototype for the victims of the Second World War.

According to Corbusier, ‘mass’ was the basic form space takes and he strongly advocated that his concept regarding space be purely geometrical as pure geometries are both beautiful and functional. Corbusier’s ideas regarding surface were considered separate from ‘mass’ which was used to emphasize the ability of a surface to define form through the selective use of material often steel, glass, and reinforced concrete. The third element of Le Corbusier’s work was the ‘plan.’ The plan in Corbusier’s eyes was the defining feature that informed the rest of the design of the architecture. He strongly advocated that all forms start in plan and are genuinely realized through a proper composition of the plan.

The relationship between architecture and place in Corbusier’s work is similar to that of many practitioners of the modernist international style; they chose to intentionally ignore or destroy the bond between the architecture and place. Ideally, Le Corbusier wished to design a perfect plan to not only improve the quality of life of people in a modern sense but to also obliterate any
previously standing sense that space and location must respond to one another. Le Corbusier argued that architecture was stifled by custom. He strongly advocated that it should rather be the product of modern technology and the modern individual. This mentality was solidified in his description of the home as a "machine for living."  

The most prominent critique of Le Corbusier’s architecture is related to his treatment of place which he knowingly ignored. The idea that his architecture could be picked up and sited anywhere, like a spaceship has persisted and still to this day many contemporary architects, use Architecture as a medium for personal expression justifying the dominance of form-making to provoke or shock the occupant.

Conversely, the work of Wright while faced with the same social challenges of the day, prompted by early industrialization which included the need for affordable housing, technological advancement in material science, the inclusion of structural engineering and designing for a modern era, he never lost sight of essential elements that permeate each of his designs. Such essential elements which included: human scale, proportion, the authenticity of materials, cohesion with the landscape, and masterful detailing.

There is always a sense of human scale, an emphasis on local materials that are not tarnished by paint or stains. The authenticity of material provides visual and physical connections to the natural landscape which is reverberated in the siting and form of the structure. Awareness of appropriate orientation ultimately capitalizes on natural daylight and airflow reaffirming one’s connection to the outdoors. Wright was also successful in captivating the human occupant through in-depth understanding of the built medium that architecture provides,

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responding again to nature he was able to showcase the intricacy of details which might engage the occupant. It was through Wright’s “organic architecture” that he was able to knit together the details of the architecture through specific design language that provide the place and the occupants with a sense that every aspect of the design is working together in harmony.

His work was expressive, beauty obtained through the attention to detail. These elements share a direct connection to the natural world. Especially in his motifs depicted in his stain glass work and joinery which were influenced by his time spent in Japan and Japanese architecture.

It was Wright’s awareness and manipulation of the human condition in space that evokes an individual’s sensory interaction with the program. He obtained this through the subtle changes in materials and the structure of the space itself that informed how one might move through the architecture. An example of this is in his home and studio where he leads the occupant through a long, dark, narrow, arched low ceiling hallway that slows one’s progression before spilling into large, extensively daylit living space with a vaulting ceiling embodies his attention to the human scale and human experience. In this space, he was able to play of the individuals senses by abutting two highly contrasting spaces with one another to emphasize the individual's experience within each.

Looking at Wright's body of work we see how his sensitivity to place evolved over the course of his career. We see the physical adaptability and a level of experimentation where arguably he achieved to ‘dwell’ himself at the studio and home in Chicago. His understanding of how architecture can become one with the landscape to evoke a sense of place is most notable in Falling Water. His understanding that the role and responsibility of the architect extended beyond the confines of a single structure or function and the
obligation to be socially conscious to the needs of the greater population was the core in the conception of his Usonian House, a design that paired affordability and performance without sacrifice to the attention to detail. Like Olmsted, Wright understood that greater social change needed to adapt to different scales. This deep understanding can be seen in his exploration in the theoretical conception of Broadacre City even if it lacked a consideration of the place and instead focused on the amenities of the modern man. All of these projects and relationships with place contributed to Wright's final masterpiece of the Guggenheim in New York City, which interestingly enough connects with the place Olmsted created at Central Park, a masterpiece that redefined place within an urban context.

G. John Brinckerhoff Jackson [environmental activism]

John Brinckerhoff Jackson is a prominent writer, professor, and activist who is a critical observer of the American Landscape. In his book entitled "A Sense of Place, A Sense of Time," Jackson responds to the fact that today in America an overwhelming majority of the population live in urban-industrialized environments that are rapidly changing due to increased density and active development. He argues that the speed that we live our lives has expedited efficiencies and increased qualities in our day-to-day lives but has also brought about a period where the everyday American has lost a sense of connection especially to place. It is this lack of connection to place that Jackson argues can be attributed to the loss of community in the 'places' we live. Jackson expresses that this phenomenon is not exclusive to the urban environment but can be seen in the rural American landscape as well. In his writing, he observes what he calls
a "new vernacular landscape" a landscape filled with highways, trailers, parking lots, loading docks and suburban garages all of which reflect the emphasis of our societies attachment to mobility, change, and impermanence. While many outsiders view this new American landscape as repulsive or monotonous, he comments how these landscapes have been derived organically and are representative of a landscape that matches the attitudes of the present moment. It is this notion that challenges moral character as while people thirst to re-connect themselves to place they are unwilling to go without certain amenities that the modern era may provide.

In his book entitled "Landscape in Sight," he reflects not on the subsequent history that led to the development of place as a historian might, he instead focuses on how place is created through the organization of community. He articulates how the physical act of moving stones from the earth to establish boundaries, to delineate land ownership and provide the opportunity to cultivate the landscape are all actions that are anchored in a custom-based attachment to place. It is this tactility with place that we have seemed to have lost in recent years and it is logical that by encouraging a physical interaction with place people might be able to re-connect themselves.

Jackson also looks critically at our customs today and the roads and highways and considers how the streets themselves have now been re-defined as contemporary 'places' that are supported by the traditions of people of the day. He challenges the concept that the road today is not merely the means of getting from one place to another, but a place itself. The idea that place changes and is reflective supports this reasoning. Through Jackson’s view ‘places’ are a result of human habit or customs which define the environment.

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where patterns and practices will continue to occur and shift. Through this lens, Jackson emphasizes the idea of a "slow emergence of new ideas of community." He provides an example of this new idea of community when he speaks about New Mexico where there has been a transition from people living in the vernacular pueblo homes to trailers. He comments "the latest innovation in the dwelling the trailer was a response to the need of the motorist for a mobile home." While not undermining the ability of people to dwell in a trailer Jackson suggests rather that in many ways the trailer is a pure representation of dwelling today as he supports the concept that "the house is the microcosm of the landscape, and the landscape explains the house." Jackson’s view of place is controversial in many circles as many people still reflect on more pastoral ideas surrounding place. Jackson believes that "a sense of place is something that we create in the course of time. It is the result of habit or custom" but also expresses how many others believe:

…that a sense of place comes from our response to features which are already there – either beautiful natural setting or well-designed architecture. …an unusual composition of spaces and forms – natural or man-made."  

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It is this sentiment that Jackson articulates how it may not be how we consciously use space, but how our culture and our daily activities inform the ‘places’ we find most meaningful. Jackson emphasizes how the landscape has become unimaginative, lacking articulation and is reflective of human being’s intent to dominate the landscape.

Jackson does not categorize people, nature and the built environment as separate variables in a linear equation, but as an interconnected process working in constant dialogue. J.B. Jackson articulates the nuance of this calculus when he describes the ideal landscape:

The ideal landscape defined not as a static utopia dedicated to ecological or social or religious principles, but as an environment where permanence and change have struck a balance. Few landscapes have achieved this, and fewer still have managed to maintain it for any length of time. But all of them, it seems to me, have sought it; all of them in one manner or another, that is to say, have acknowledged the existence of landscape as idea.37

H. Ian McHarg [ecological planning]

Ian McHarg is a landscape architect and regional planner whose work was focused on the study of natural systems. As a designer and planner, he was able to present a way in which development could be idealized through a deeply rooted understanding of the natural systems of place. In his prominent book entitled "Design with Nature" Ian McHarg promotes an innovative manner in which he was able both assess and represent the dynamics of natural

systems found in the landscape through the use of provocative infographics. These drawings provided a way in which he was be able to articulate the ecological complexities of place while suggesting how development could be sensitive to these systems. McHarg promoted an ecological view of the landscape that was focused on the fact that human occupation is something to design for and that design had the capacity to provide needed support of regional ecological systems. Rather than protecting ecological systems from human impact by freezing or preserving the landscape he advocated a way in which human development and natural ecological systems could work together in a more holistic marriage. McHarg advocated for the analysis of soil, climate, hydrology, and topography of a place before designing to ensure their sustainability. By understanding these elements in a particular place, he was able to promote change while maintain the unique character of the original natural place.

McHarg’s work addressed many issues of the day including the spread of Modernism which presented a methodology based in technological advancement and human being’s control of the landscape through prescriptive design strategies that was more universally focused rather than being responsive to the unique conditions and characteristics of place.

The roots of his design methodology also took a critical stance against the traditional French Baroque style of garden design, which McHarg also saw as a conquest of nature. While the focus of landscape design of the day was still focused on the picturesque English style of garden design, McHarg called attention to promoting ecological sensibility.

McHarg’s work was anchored in his background as a regional planner which relied heavily on the fact that human occupation would and should be expected. His designs were geared toward an occupied nature where there is a
cohesive relationship between the people and the landscape. His work firmly advocated for the interwoven worlds of the human and the natural, which sought to intelligently design human environments in concert with the conditions, climate and unique context of a particular place.

McHarg's work serves as one of the first examples of using ecology as a design tool. A method that would radically change the landscape architect’s scope of vision when working with any place. McHarg stood in radical opposition to the continuation of urban development which relied heavily on the design of massive constructed infrastructure to meet the demands of the masses in highly concentrated areas. Through his scientific lens and representational analysis, he was able to convey the hidden information of place to a much broader audience.

I. Christian Norberg-Schulz [genius loci]

Christian Norberg-Schulz was a phenomenologist who stressed that “the environment influences human beings, and this implies that the purpose of architecture transcends the definition given by early functionalism.”

Phenomenology is focused on the process of experience. As it relates to architecture phenomenology is a high awareness of the context for which a structure exists. Norberg-Schulz’s is well known for his book “Genius Loci Towards a Phenomenological Architecture.” In this book, he illustrates the geographical context for which architecture exists, as well as many of the intangible elements of architecture that inform human experience. Norberg-Schulz refers to the tangible and intangible elements of architecture in what he

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calls "space" and "character." Much of the book is dedicated to photographs of 'places' throughout the world. Through the use of the image he is able to convey the texture and character of the 'places' he visits which often require no supportive text. Norberg-Schulz comments:

Architecture belongs to poetry, and its purpose is to help man to dwell.
But architecture is a difficult art. To make practical towns and buildings is not enough. Architecture comes into being when a "total environment" is made visible…

In general, he promotes the belief that genius loci, is embodied through the design of buildings which convey the properties of place and bring them closer to the human condition. He believed that the essential act of architecture was to understand the "vocation" of the place. In this vein of reasoning he argued that through human occupation and participation with place comes awareness of how the individual is part of place as a total phenomenon. He reflected that “To belong to a place means to have an existential foothold, in a concrete everyday sense.” It is this idea of human attachment and connectedness to place which Jackson challenges as being on the verge of being lost in today’s society.

**J. Yi-Fu Tuan [topophilia & environmental perception]**

The concept of place investigates the biological, spiritual, ideological, narrative, commodities or independent variables, which link people to aspects of an area or region. In his book: Topophilia: a study of environmental perception, attitudes, and values Yi-Fu Tuan coins the term "topophilia" which he

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describes as coming from the Greek roots topo- (place) and –philia (love of/for) and means literally "love of place." Tuan’s research expresses the complexities of the concept of place. In his book, he describes the word "topophilia," as:

…a neologism, useful in that it can be defined broadly to include all of the human being’s affective ties with the material environment, these differ greatly in intensity, subtlety, and mode of expression.41

What is essential about Tuan's research is that he does not define place singularly. Instead, he provides the reader with a framework to grapple with the complexities surrounding the concept and articulates the gravitational attraction place has on human beings.

For Tuan, topophilia is "the affective bond between people and place or setting." 42 He reflects:

topophilia is not the strongest of human emotions. And it varies significantly in emotional range and intensity, including fleeting visual pleasure, the sensual delight of physical contact, the fondness for familiar places such as home, and joy because of health and vitality. But for all that, it strikes a chord. It is a familiar sentiment, a word that encapsulates various relationships we have with particular parts of the world both as individuals and as participants in cultures with long histories, environmental attitudes and perceptions.43

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While the primary subject of his research is focused on place it formally does not often appear throughout the text, instead the attention is focused rather on how human beings, connect, perceive and experience place.

Tuan argues that as soon as people become aware of topophilia, its importance becomes obvious. He reflects how topophilia is apparent in our experience and affinity toward nature, the attractiveness of ‘places,’ through aesthetically pleasant design and settings that are reflective of how people work and live. This idea shares many commonalities with the ideas presented by Christian Norberg-Schulz who believed that it was the character of place and the vocation of place which connect people to it. Tuan goes further by demonstrating how the attention homeowners give their yards reinforces their connection to place which is also supportive of the need for physical interaction. Tuan believes that topophilia spawns from anything that gives people pleasure either constructed or natural. He also stresses that topophilia is an emotional response. A response that can be experienced in a range of emotions as it can be comfortable and subdued, or ecstatic. Topophilia is in the eye of the beholder.

K. Edward Relph [categorical geography]

Edward Relph is a Canadian geographer who is most well-known for his work “Place and Placelessness” which was a published monograph based on his Ph.D. dissertation.

Much of Relph’s research is focused on the specific categorization of ‘space’ as a method for capturing a broad perspective of ‘space’ used to for analysis. Relph's work focuses primarily on seven distinct categories of ‘space’ which include primitive, perceptual, existential, sacred, geographic, cognitive and abstract space which bridge between the tangible and intangible elements
that inform the characterization of ‘space.’ In his research, he also introduces the concept of the antitheses of place which is fittingly named ‘placelessness.’

Relph’s first categorization of ‘space’ is ‘primitive space’ which represents the basic physical reality of ‘space.’ Primitive space is identified as space, inhabited or used by animals. ‘Primitive space’ unlike Aristotle’s definition of space has no real spatial relationships or boundaries in the most literal sense of having volume or dimension but rather defines the basic interaction between a living organism’s body and senses with the surrounding environment. ‘Primitive Space,’ is also not to be confused with Bachelard’s concepts of the ‘primitive’ which are not derived from a basic human reaction to the environment but are rather a reaction to a human being’s physical presence or proportion to their environment.

‘Perceptual Space’ is an idea that adds participation or the concept of action in ‘space.’ Perceptual space focuses on the concept that living organisms primarily human beings have basic and specific needs. These needs are then translated into specific actions that define the material characterization associated with a particular ‘space’ which he expresses as, “the identification of the surroundings based on the use and current usefulness of each object.” 44

Relph provides an example of this interaction with the depiction of a child or infant who might experience space before his or her cognitive functions have fully developed which result in an almost organic reactionary relationship with that particular ‘space.’ This example of ‘perceptual space’ is very similar to Bachelard’s ‘primitive’ concept.

“Existential Space” is derived from one of the main principles that is also found in Heidegger’s work related to the concept of ‘dwelling.’ Relph defines

existential space as, ‘This is space as it is defined by a cultural group, although it is still experienced individually.’ 45 ‘Existential space’ is constantly changing because it is defined by human interactions. It is critical to note that it is not always possible for ‘existential space’ to be perceived outside of a cultural group or an individual who lives in a ‘space.’ This idea is similar to Yi-Fu Tuan’s concepts related to topophilia which is an individual’s emotional response. Relph’s identification of ‘existential space’ provides two unique distinctions that are added to the idea of place which are the level of intimacy one has as the interpreter of ‘space’ as well as this notion that ‘existential space’ is continually changing.

‘Sacred Space’ is defined as well in Relph’s work which he categorizes as a religious experience. ‘Sacred space’ is organized around the meanings and symbols associated with a specific location or cultural group where there is a meaning that resonates through every aspect of that particular ‘space.’ While it is important that Relph includes unique attitudes toward the relationship between ‘space’ and religion by categorizing ‘sacred space’ as having a religious component he narrows the perspective of what can be considered as ‘sacred space.’

In his definition of ‘geographic space’ Relph identifies with the lived-experience and the qualitative features of ‘space’ by introducing defining features such as color, depth, density, and solidity. The inclusion of the subjective interpretation of ‘space’ provides a platform of varying experiences individuals have with ‘space’ and brings together this important idea of human interpretation of ‘space’ which results in contrasting relationships and

experiences unique to the individual based on unique stimuli and sensory responses.

‘Cognitive space’ is an intangible characterization of 'space' which identifies as a 'space' as the object for reflection, here he introduces the cerebral processing of 'space' which is a very human defined characteristic which encapsulates the fundamental idea of thought. He describes thought as being almost always associated or in reference to other thought. From this perspective, a thought is never without context and relies on former memory.

‘Abstract space’ is very similar to cognitive space. The main difference that Relph mentions between the two is that abstract does not require the space to be a “faithful reflection of a physical space such as cognitive space does.”46 Abstract space is completely human-constructed and subconscious.

Relph categorizes ‘architectural space’ as space which is concerned with the "imaginative experience of space."47 Relph defines ‘architectural space’ as "space that is designed in a deliberate attempt to create a specific space and spatial experience, while the other types of space are naturally occurring and tend to shift and change in a very organic fashion. Often the best architectural spaces contain what Relph refers to as, "highly developed abstract ideas of space."48

One of the major concepts that are unique to Relph’s investigation of place is his concept of 'placelessness.' In his research, Relph expresses this idea of 'placelessness' as a practice of human manipulation of place that, "focuses on the spread of same-ness while local culture is dimmed more and more."49 While most of the examples Relph uses to support this concept are relatively

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contemporary and are related to effects of globalization, he also provides examples of how this idea is not a new phenomenon. He makes the connection between globalization as being comparable to other similar moments in human history such as the spread of Greek and later Roman culture throughout Europe and Asia, as well as the industrialization experienced throughout the world after World War II. In the concept of ‘placelessness,’ the reader is exposed to an even more dynamic and qualitative idea regarding place which is the authenticity of place. Relph uses his concept of ‘placelessness’ to support how globalization has created ‘inauthentic place.’ Relph argues that ‘inauthentic place’ is derived from convenience or attitudes toward a certain level of entitlement regarding a materialistic quality of life that has created a relatively global consensus with regard to what we as humans of the 21st Century expect to possess. This idea is very similar to that of J.B. Jackson and his observations of the monotony of suburban development in America. For Relph this idea stems from the time we expect to obtain certain things, and the overall availability of things. One of the most evident examples of this concept is tourism, which relies on the catering to the needs or expectations of the visitor to maintain its existence. Tourism relies on a supply and demand which ultimately creates normal reactions toward our relationships with place, the shock factor or nuance of place no longer exists because it is replaced by what is instead socially expected. It crushes an authentic experience of place. This concept brings up an important concept which is ‘place diversity’ not only regarding characteristics but interpretation.

L. Oladele Ogunseitan [topophilia and public health]

While the focus of theory surrounding place has been heavily focused on the landscape and architecture with brief introductions to how human beings
interpret and create place, the work of Oladele Ogunseitan is included in this research to understand that there exist other social considerations. Today, the study of place also has an important niche in public health. As this thesis has introduced the extended role of the architect in today’s society it is important to note how the architect must also consider public health. Public Health plays a critical role in the work that is being conducted today even beyond hospitals, healing landscapes, and therapeutic gardens. Today, through the study of biophilia and other research such as Dr. Oladele Ogunseitan’s “Topophilia and Quality of Life: Ultimate Restorative Environments” there is now available data that supports the fact that quality of life is correlated with a human being’s love of place. Dr. Ogunseitan’s theories and research are even more unique to this research as up until this point all of the theories presented have analyzed place from a qualitative point of view. Dr. Ogunseitan’s new methodology for approaching the topic of place described in his definition of topophilia as an "abstract psychological construct whose meaning can only be observed indirectly through its effect on measurable responses" ⁵⁰ provides a very different vantage point. Dr. Ogunseitan takes a firm stance that place can only be analyzed through a quantitative and scientific methodology which stands in high contrast to the other theories previously presented, providing greater depth to the entire investigation of place as a whole.

M. James Corner [place imagination]⁵¹

To interpret the work of James Corner, one of the most well-known contemporary landscape architects practicing today, we must look at the

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definition of ‘landscape’ as he does with its roots in the artistic representation of the natural world. It is through this lens that we begin to see the underlying awareness related to artistic freedom, authorship and interpretation, a framework which is representative of the concept of place. Within certain circles especially in the world of cultural heritage landscape management the two words ‘landscape’ and place are used synonymously with one another. Paul Shepheard captures this inter-use of the word place and ‘landscape’ in his book entitled “the Cultivated Wilderness.” In the book, Shepard investigates the definitions of ‘wilderness’ and ‘landscape’ in doing so he unveils the inter-woven definitions of the two words, and he asks the important question "is wilderness landscape without humans or is it that there is no landscape without humans?" Shepard goes on to answer his question stating “You don’t get landscape until you get humans.” The second part of this quote is the critical piece and one that needs to be understood by the reader especially in relationship to the work of James Corner. Corner takes this idea a step further by articulating that it is not only that ‘landscape’ has no state of being with the absence of people, but that the ‘landscape’ or place is the result of a human creative process. He states,

There is nothing natural about landscape: even though landscape invokes nature and engages natural processes over time, it is first a cultural constant, a product of the imagination.

Within this conceptual vein of the ‘landscape’ Corner focuses the reader's attention to what he denotes as the ‘third dimension’ of landscape which is the ‘narrative of landscape.’ He states: the ‘narrative of landscape’ can be mythical,

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one that is only legible through the "precise cultural coding of signs and hidden symbols,"\(^{55}\) As a practitioner in this description he articulates the need to be an active reader of place in order to promote appropriate design intervention or as he refers to it, 'landscape imagination.' Corner's ideas related to 'landscape imagination' is the irrational creativity of place, he argues that "landscape imagination is more about feeling and subliminal meaning than it is about facts."\(^{56}\) Through his processing of the ideas related 'landscape', narrative, and landscape imagination he promotes three unique vantage points which are:

The evolution of a particular form of landscape whose depiction is framed within a given cultural context, the literary dimension of 'landscape imagination' through time that juxtaposes it to the production of landscapes against a background of mythical references, and the invention of future nature that break away from their traditional roots and try to reinvent themselves.\(^{57}\)

This breakdown intends to emphasize the critical relationship humans need to pay attention to when engaging with their landscapes through a loose framework that is highly interpretive. This interpretive framework allows the reader to transcend these distinctions and ultimately expand the concept of the 'landscape.' Corner's essay emphasizes the idea that 'landscape' is an imaginative cultural process.

In relationship to this research regarding place Corner's work highlights the notion that some codes or symbols are specific to a place and these elements can be exposed by a thoughtful reader. He expresses how place is


not static and therefore emphasizes that place requires active interpretation and creativity to promote its sustainability.

N. Peter Zumthor [phenomenology]

Phenomenological architecture focuses on the idea that, "designing experience is the unique responsibility of the architect." The theory of phenomenology promotes this responsibility by concentrating primarily on sensory-based design to establish experiential architecture. Most commonly phenomenological architecture is the result of a manipulation of space, its materials, and light that is rooted in a deep understanding of the human senses and how these senses both inform experience and how those experiences inform memory.

The dynamic dialogue among the built form, the human body, and the mind is a conversation that grapples with both tangible and intangible as well as the objective and subjective. Phenomenological architecture exists in the qualitative experience of the human condition which is unique to the individual. Phenomenological architecture encourages people to become hypersensitive to his or her surroundings. The individual’s perceptual senses and cognitive processing are the means that connect the individual to place. While the phenomenological architect’s design palette emphasizes the phenomena of space, light, and form it also relies heavily on the consideration of human activity, the integration and communication with the landscape, the organization of unique programmatic space and interstitial space as well as aims to articulates a masterful exploration of material expression.

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Phenomenological architecture stands in high contrast to that of rational architecture by promoting quality based on its sensitivity of human perception. Rational architecture is categorical or system that representative of layers of scientific reduction. In comparison phenomenology relies on the layers of sensory expression which can infuse human emotion in architecture. The qualitative focus of this type of design focuses not on functionality but instead on interpretation and introduces the concept of existential functionality.

As architecture is designed to serve the needs of human activity, phenomenological architecture pushes the boundaries of conventional expectations regarding how spaces are defined to strengthen the bond between the occupant and the design. Architecture, if handled masterfully through the expression of material, organization of space and manipulation of light can evoke a dialogue with the occupant. This conversation can be in reaction to something as seemingly simple as the specific orientation of a grain of a species of wood and its warmth as light washes it. Phenomenological architecture pays particular care for the treatment of qualitative elements such as color, texture, hardness, solidity, and craft.

In the world of architecture, Peter Zumthor is synonymous with phenomenological-architecture. As one of the world’s most well-known contemporary architects who both practices and has been extensively published based on his work and theory related phenomenological-architecture, he is an individual who must be considered when investigating the topic of place. His writings often focus on conveying his design process and interwoven personal relationship with place typically emphasized by personal observational description. For example, in Thinking Architecture, Zumthor does not discuss his actual architectural designs. Instead, in the opening chapter of this book which
is titled "A Way of Looking at Things" he begins with a description of a kitchen he remembers from his childhood that has become imprinted in his mind.

Everything about this kitchen was typical of a traditional kitchen. There was nothing special about it. But, perhaps it was the fact that it was so very much; so naturally, a kitchen that had imprinted its memory indelibly on my mind. […] memories like these contain the deepest architectural experience that I know. They are the reservoirs of the architectural atmosphere and images I explore in my work as an architect.\(^59\)

This idea of memory having a significant role in the design process is an important idea that is used as a common motif in Zumthor's writing. Even though his sensitivity toward the human perception of place is epitomized in his ability to locate his work in a place and the physical features of the site, his work emphasizes the qualitative functionality anchored in phenomenon. Zumthor stresses the importance of sensory experience between an architectural object and those who encounter it as one that should be critical and complimentary.

In his work, there is strategic balance between human perception and architectural rigor. In his book, "Thinking Architecture," Peter Zumthor believes that:

In [my job as an architect], I contribute to the existing physical framework, to the atmosphere of places and spaces that kindle our emotions...[Arranging] the sequences of rooms to guide us, take us places, but also let us go and seduce us.\(^60\)

There is a realization that the qualitative characteristics of phenomenology propose a necessary understanding of the sensory perception of space. The

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intentional use of space, material, and light as the primary ingredients in the phenomenologist palette is an attitude derived from providing people with authentic examples of focused phenomena found in the built environment. These phenomena may include the play of light that refracts off of the still water which washes over the grey stone in Zumthor’s thermal baths which highlights the natural grain of the stone, subtle movement of the water and play of light as it washes over these surfaces. Moments like these are created to provide the occupant with an opportunity to interpret or develop their attachment to the 'space,' ultimately encouraging memory and furthering the meaning of that place.

O. Andrew Michler [hyperlocalization]

As articulated throughout this chapter dedicated to place theory the concept of place is not a new topic of inquiry in academia especially as it is related to architecture; however, recent initiatives including the idea of hyper-localization in the field has reactivated this topic as it applies to this particular architectural theory.

Hyper-localization is defined as a “Design process that absorbs the cultural and natural elements around it and formulates them into low impact and gracious habitats.” Hyper-localization, is focused on being able to understand and express the essence of 'place;'

When you build a thing, you cannot merely build that thing in isolation, but it must repair the world around it, and within it, so that the larger world at that one place becomes more whole.


This quote by Christopher Alexander is the mantra of the hyper-localization concept and it stresses the importance of the architect’s responsibility for shaping, nurturing and mending our world, echoing the words of Bruno Latour. Alexander’s words are meant to inspire an idealized methodology for informing the built environment; however, his approach as articulated in his book "A Pattern Language," instead promotes a prescriptive method of design, rather than one that is organic and ultimately fails to consider the complexities associated with place. Currently, the concept of hyper-localization has been implemented in predominately new construction projects in urban conditions where money and resources are plentiful. While hyper-localization in these instances may be responsive to the regional design strategies, site forces, and social fabrics it ultimately falls short concerning critically considering the dynamics surrounding place.

The current poster-child of the hyper-localization movement is the Bullitt Center, located in Seattle Washington. The Bullitt Center has recently received certification under the Living Building Challenge, "the World’s most rigorous proven performance standard for buildings." While the Bullitt Center embodies a shift in traditional Architectural practice, one that targets net-positive operations and fosters innovations using locally sourced healthy building materials and even rekindles a regional attitude with the implementation of heavy-timber construction it still considers architecture as an object, not as a process. The forward-thinking initiative taken by the designers of the of the Bullitt Center aimed to celebrate technology and a forward-thinking manner of how designers can reduce the impact they have on the built environment. The project showcases the additional roles and responsibilities of today's architect.

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However, this building despite its minimal operational loads and appropriate vetting of healthy building materials it still has a substantial carbon footprint and does little to engage or celebrate the place. The design of the Bullitt Center maintains a traditional attitude where the architect uses his or her design language to redefine place as the author, introducing new construction without responding to

The Bullitt Center locally sourced materials as a way to express to regional characteristics of place while being sensitive to the contributions of carbon associated with material extraction, processing, and shipping. It is a much more ecological conscious design platform, but simply using a material that is local doesn't necessarily providing that substance or depth that may connect the individual to that place.

P. Richard Forman [landscape ecology]64

Richard Forman is a landscape ecologist whose primary focus is the scientific analysis of how changes in the landscape occur and how these changes affect a local ecology. While most of Forman’s work does not explicitly call out place as the focal interest, his work sheds light on the dynamics of place. In his work, he actively interprets how landscapes change, most often spatially as a direct response to natural and anthropogenic disruption, which ultimately has an impactful effect on the local ecology. What is even more appealing about Forman’s work related to the concept of place is that as an ecologist he provides a comprehensive and systematic approach for monitoring and studying place from not a theoretical vantage point, but a highly insightful

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and scientific methodology. In his written work entitled "Land Mosaics" Forman introduces how the changes in the landscape can be investigated from an analysis of five specific spatial processes: perforation, dissection, fragmentation, shrinkage, and attrition. He like many other ecologists operate in a manner that investigates the landscape composition as series of interrelated patterns and processes that are determined by the dynamic relationships of the biotic, abiotic and cultural influences of the specific place of inquiry.
CHAPTER V
DEFINITION OF PLACE

The English Oxford Dictionary offers several definitions for the word place which include:

A (public or residential) square. Senses relating to space or location. A particular part or region of space; a physical locality, a locale; a spot, a location. Also: a region or part of the earth’s surface. A building, establishment, or area devoted to a particular purpose. Senses relating to position or situation with reference to its occupation or occupant. A position or station occupied by custom, entitlement, or right; an allotted position; a space or position allocated to or reserved for a person.  

These variations in the literal definition of the word begin to suggest the inherent complexities associated with the interpretation of the idea and meaning of place. Hugh Raffles an English anthropologist defines place more architecturally when he describes 'places' as: "spatial moments [that] come into being and continue being made at the meeting points of history, representation, and material practice"  

place is more than the location or the description of abstract space it is a qualitative, holistic phenomenon. In Architecture, the discussion of place is most often used synonymously with the word 'space.' While there undoubtedly is a strong connection between the two words in the field, it is essential that the architect takes a critical stance on defining each of these two words individually.

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as it pertains to his or her interpretation. It is paramount that the ideas pertaining to place are concepts that encompass the totality of the human condition in a particular environment which is responsive to the forces of that specific environment.

place is derived by a multivariable calculus that is the result of the communication and responses among people, architecture and the landscape or as it is studied in ecology the interwoven relationships of culture, the abiotic and the biotic. The subject of a place is highly interpretive and requires sensitivity by the active interpreter to engage in such a dialogue. The idea of place is molded by the human state that encapsulates the defining forces of its identity which can be derived scientifically, spiritually, metaphorically, spatially, architecturally or environmentally.

The architect’s task is to sculpt space with life and the human condition in mind through material practice in the manipulation of the landscape and architectonic elements. To sculpt space, the architect must understand how human beings occupy, interact and actively interpret space often to evoke a desired attitude or movement for which individuals exist in that ‘space.’ It is only when ‘space’ is sculpted by the architect and occupied by a human being that ‘space’ transforms and takes on a new identity as place. At this moment, the defining elements of ‘space’ are determined by the spatial and cognitive interpretation of the inhabitant who then creates their unique connections to that place. While the architect is uniquely equipped with the skills and tools that allow him or her to communicate with the concept of place, the architect’s ability to successfully sculpt ‘space’ to create place relies heavily on the purity of his or her conceptual inspiration.

The topic of place is reflective of concepts of time and memory. Human memory is both subjective and objective. place is often informed by one’s
cultural influences as well as based on the individual's specific cognitive responses to specific stimuli which can be highly interpretive. Architecture and land use, provide us with a more or less collective understanding of place. The Architecture of a place embodies how human beings shape their environment by providing functional structures in natural landscapes, yet while architecture may provide us with the physical examples of the passage of time, structures that extend well beyond the extent of a single human life architecture is also highly interpretive. Consideration of the landscape provides us with an even more comprehensive perspective of place as its natural resilience provides us with a lens of the gradual sculpting of the physical environment over time.

What is most critical when looking at the interpretation of landscape is to be aware of the definition of the landscape itself. The ‘natural landscape’ is one that is unadulterated by the physical impact of human life. Based on this concept the only natural landscapes that exist are those that are beyond our atmosphere as our entire planet has in some way shape or form been created and informed by centuries of human occupation. As our world, which is fixed at a constant scale continues to fill ever-more rapidly it becomes more deeply impacted by this occupation; it is ever-more pressing that the architect assumes the responsibility of curating place.

For this reason, it is the role and responsibility of the architect to wholeheartedly embrace this state of existence and consider place (the people, architecture, and landscape) as a living organism. An organism that cannot be preserved or frozen in time, but instead requires active interpretation, embracing the fact that place is something that is continuously changing.

The architects first task in ‘curating place’ is to define the forces and processes and patterns that represent place as they apply to the people, architecture, and landscape of that place to develop a strong contextual
framework for which to work. While the definition of place is ambiguous the
definition that I will use in this investigation is defined as: “spatial moments [that] come into being and continue being made at the meeting points of history, representation, and material practice.”67
The definition of place defined in this manner emphasizes the importance of thinking about place as a process. A process that is a function of time, people’s occupation and manipulation of that place and a physical environment where this dialogue occurs.

CHAPTER VI
PLACE FORCES

Place Forces is an analysis of place through a system of interconnected tangible and intangible forces that are in constant communication. In this research, I have identified eight forces that will be used to investigate place these forces include: Space, Mass, Material, Time, Atmosphere, Occupation, Experience, and Spirit. The majority of these forces are formulated scientifically, as they attempt to organize, categorize and comprehend place holistically logically. The underlying emphasis of the research is anchored in promoting a method that may offer an original objective interpretation of place. A process that aims to capture the qualitative and subjective conditions of place.

<table>
<thead>
<tr>
<th>Space</th>
<th>Mass</th>
<th>Material</th>
<th>Time</th>
<th>Atmosphere</th>
<th>Occupation</th>
<th>Experience</th>
<th>Spirit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ground, horizon, sky</td>
<td>porosity, scale, proportion</td>
<td>texture, density, character</td>
<td>memory, identity, history, demographics, weathering</td>
<td>climate, weather, geology, soil, hydrology, vegetation, wildlife</td>
<td>dwell, landuse</td>
<td>stimuli, senses, interpretation</td>
<td>beauty, essence</td>
</tr>
</tbody>
</table>

Figure 6. Place Forces

A. Space

The definition of ‘space’ in this research is most similar to that of Aristotle’s theory of physical place, where ‘space’ is articulated as a volume that is defined by a single boundary that categorizes all of its contents with a shared or common trait. ‘Space’ is the most fundamental component of place, it is the platform for which place occurs.
B. Mass

Mass is the physical construct of place. While a boundary can be theoretical or without physical definition, 'mass' provides place with many new concepts that emphasize its physical reality. The definition of 'mass' brings with it many concepts which are fundamental in the field of architecture. These fundamental concepts include those related to and consider the treatment of edge conditions, ground, foreground, horizon, sky, the perception of 'mass' and 'void' and its rhythm as well as other variations of spatial definition such as form, depth, scale, proportion, hierarchy, and language. This definition is most accessible relative to architecture, but it should be apparent that all of these concepts can also be interpreted in the natural landscape.

C. Material

The categorization of material is intentionally introduced next as it is most directly connected or affiliated with 'mass.' 'Materiality' is what gives 'mass' life. It is representative of the substance or identity of the mass because it is the medium for which mass is constructed. It embodies the raw materials or processes that were implemented for its creation and what the inherent properties associated with such materials are. The definition of materiality brings about concepts like surface, color, texture, hardness, reflectivity, emissivity, and absorptive properties and character. Human perception heavily influences 'materiality.' The differences between natural or manufactured 'materials' can evoke specific human emotion. These emotions can be engaged given the juxtaposition of materials, how two or more layers relate to one another as it applies to their detailing and pertinence to the composition as a whole.
D. Time

Most commonly time is identified in three categories past, present and future which are all relative to one another. The most straightforward understanding of time is that any one moment it can be categorized as past, present or future given the individual's relationship with that particular moment. In this attitude time is relative.

With this basic understanding of ‘time,’ it is important also to note that this force is the first intangible element defining place. Time is a human construct. Time allows human beings to organize and sequence the events that impact place chronologically.

Time is relative and it can most if we look at ‘time’ and the effects it has on the three separate entities that define place, the landscape, people and architecture we understand that time is relative and each of these at very different scales.

In architecture, time is an active participant, because the architect must understand the past to design in the present but he or she must also anticipate the needs or aspirations of the future.

In the field of historic preservation or cultural heritage landscape management, the focus of time is essential, because traditionally it has been essential to select what is known as a period of significance where the practitioner intends to preserve the identity of that place of that specific moment in time. Many critics say that this methodology of preserving culture and heritage is that this freezes the place. A new interpretive understanding of place identifies place as a living entity, one that understands that there is no period of significance rather the landscape, people, and architecture are subject to the constant chaos that is life. In this more dynamic vein of reasoning, the concept of aging is introduced, because what these three defining entities of place have
in common are that they are all aging. Understandably, each is aging at different rates and with completely different understandings of the aging process; however, they can be interpreted as aging entities. This concept promotes a vantage point of place that is focused on the continuation of shifting interpretations of place as it endures the aging process.

While this idea is compelling, it is not all-inclusive especially concerning how time relates specifically to human beings which are defined or understood primarily from an understanding of span of human life, including birth living and death. It is crucial, in the definition of ‘time’ to also consider the topic of history, which encapsulates the influence of cultural constructs and collective ideology and their influence on place. Ideas about history also are heavily informed by the evolution of technology, as the progression of time is demarcated by specific technologies that emerge or implemented at identifiable moments, which physically defined 'time,' primarily through architecture. It is for this reason that ‘time’ follows ‘material’ in the sequence of place forces. As mentioned previously, materiality is dependent on the process in which it is extracted as raw a substance in its pure state, but it also is highly reflective of the way in which it has manufactured into its final state of being as a material. The processing of material is directly in sync with period-specific technologies. The timeframe of any given material, mode of extraction, and means by which that raw material is re-worked all signify the life and life expectancy of that material, signifying the manner in which that material ages over time.

Time can be expressive in the degradation of a material, the erosion of a hillside or the wrinkling of the human skin. Time is as a human construct that is directly linked to the human condition. However, in this research time is also considered as a way to analyze the landscape. In the research, time is directly related to life and promotes the idea that any ‘mass’ both living or inanimate
found in the landscape can be actively interpreted as having life, and thus also ages and has a life expectancy or period for which it is identifiable as that which it is named.

E. Atmosphere

Similar to ‘time,’ ‘atmosphere’ categorizes many of the other intangible characteristics of place including light and shadow, airflow, sound, smell, humidity, and temperature all of which can be analyzed or identified much like the force of ‘material’ as natural or artificial. Elements of ‘atmosphere’ are those that exist independently of human beings as well as those of relatively modern times created by human beings artificially. A place has its unique atmospheric characteristics which do not require the presence human beings to occur. These naturally occurring ‘atmospheric’ forces are the features that define specific geographical regions of our whole environment which include wind patterns, sunlight or solar energy, precipitation, and climate that are direct functions of previously mentioned forces of ‘space’ including ‘mass,’ ‘materiality’ and ‘time.’ These naturally occurring ‘atmospheric’ forces are what provide other human sentiments related to the force of ‘time’ through the events of day and night and the changes of the seasons. These relationships between the forces of ‘time’ and ‘atmosphere’ help orient the individual in place and can and have resulted in significant physical and spiritual connections people have with place as human evolution has relied heavily on these relationships for survival.

While naturally occurring, ‘atmospheric’ conditions, are regionally specific it is critical to note how human beings have continued to attempt to control ‘atmospheric’ forces. The creating of micro-environments within the construct of architecture through the implementation of electric lighting, active heating and cooling, ventilation and moisture control provide people with more or less
constant 'atmospheric' conditions. In architecture, the atmosphere seeks optimization of the occupant's idealized zone of comfort derived from relatively unanimous consensus of people across all demographics. In this investigation of place, the human being's control over 'atmosphere' will not be targeted, instead, 'atmosphere' will be considered in its naturally occurring state and thus consider it outside of the human being's control.

F. Occupation

The force of 'occupation' pertains directly to the presence or involvement of human beings in a place. How a place functions or is used by its inhabitants is reflective of its 'occupation.' 'Occupation' can most easily be related to how one moves through place through supporting characteristics such as circulation, function, vocation specifics regarding how human beings physically exist and use space. The occupation of place is critical because it considers the level of intimacy, frequency, or framework one has associated with that particular place. While architecture is built in 'space,' encompasses 'space,' and defines 'space,' it is when architecture enables human 'occupation,' that it has the potential to become place. It is also evident that social and cultural forces influence occupation. While 'occupation,' especially in architecture, is heavily perceived as a human interaction it should also be expressed that in this definition, 'occupation' can also refer more broadly to the 'occupation' of living organisms in a given place. As we see especially in extreme natural landscapes specifically the ocean, desert and rainforest where human 'occupation' is minimal the naturally occurring 'occupant' can be considered as the regional flora and fauna. The consideration of flora and fauna of place as the 'occupants' of place is essential to this research as it provides a platform for these elements equal to that of human beings. This interpretation of 'occupation' validates the
impact these elements have on place while emphasizing an ecological sensibility, which considers place as a living organism (ecosystem).

G. Experience

Experience is interpretive. Experience is the most intimate level of understanding place, and by definition, it is unique to the individual. Experience is characterized by an individual's cognitive engagement with place which is related to how the individual's brain processes stimuli through the senses and then interprets based on one's past experiences (memories). It is critical to note that without 'experience,' there would be no differential between 'space' and place as it relies on the human condition. 'Experience' is subjective, it is influenced by culture, the frequency in which one engages a place, one's sensitivity to the other forces that define the place and is even informed by our subconscious.

In this definition, it essential to identify three types of 'experience' when analyzing place that of the first-time visitor, the occasional occupant, and the daily inhabitant. The daily inhabitant is subject to the day to day changes made to the place. This level of intimacy with a place can sometimes result in the unawareness of minor changes made to the place due to constant interaction which may desensitize one to the changes occurring as the daily inhabitant experiences the full incremental changes made to the place. The occasional visitor however who is familiar with the place does not experience the micro-variations but is often sensitive to the major shifts made to the place over time. While the daily inhabitant has a much deeper and well-rounded body of 'experience' with any particular place simply due to the sheer volume of moments shared with the place an occasional visitor’s experience relies heavily on memory. It is also crucial to understand the 'experience' of the first-time
visitor. These individuals are uniquely suited to critically ‘experience’ place unbiasedly as their ‘experience’ is reactive and without familiarity. The first-time visitor relies on his or her own past experiences to inform an interpretation of a new place and therefore is forced to absorb and respond to a plethora of the forces at that moment.

From this vantage point, it is also essential to again understand how outside influences and culture can begin to define one’s ‘experience’ with a ‘space.’ It is likely that priest will have a much different ‘experience’ when inhabiting the altar of a church, then the architect who designed it, the inhabitant attending a daily mass and the child who is baptized there.

A first-time visitor who has seen images of a place, or is aware its history ultimately has been influenced previously by other’s interpretations of that place which has been culturally derived. If a first-time visitor has experienced similar place or has a specific skill-set or training related to the dynamics of place analytics he or she will ultimately have a much different experience than the child who inhabits the place for the first time. These scenarios are not only used suggest the variation between one’s sensitivity to place but are also used to attempt to articulate a spectrum of relationships people can have with a place which can then inform human ‘experience.’ The inclusion of the child’s perspective touches on one of the most dynamic relationships which are that of the human being's natural development. A child, who is not fully developed and has fewer life experiences, has the potential to have an unadulterated interpretation of place. It is the child’s scale and particular vantage point when observing place that is also much different than a full-grown individual. A child also may possess a certain hypersensitivity to sensory stimuli to that which may be foreign to them which may inform an acute awareness of the place.
While each of these categories is related to the frequency of 'experience' and uniquely define the first and subsequent 'experiences' with a given 'space' it should be understood that one does not outweigh the other. An individual's qualitative 'experience' or emotional response to a place has the potential to form an attachment to that place which can result in love of that place or 'topophilia.' All 'experiences' of 'space' are critical to consider to provide an authentic and holistic examination of place.

H. Spirit

The final force that is introduced in the definition of place is the 'spirit' of place or phenomenology. The inclusion of 'spirit' in the definition of place is included because it is the most intangible force that has been introduced in this research. This force ensures an interpretive layer to the analysis of place as it tries to include a level of uncertainty or irrationality that may be associated with human being's relationship with place. While arguably it could be defined as the category that superimposes all of the previous forces simultaneously into a composition of place the goal is rather to encourage a critical look at what existential qualities a place has. 'Spirit' is often considered as a visceral inexplicable human reaction to a particular place. While 'spirit' can be interpreted through our subconscious, it has roots in the existential realm of the human condition. Phenomenologist Christian Norberg Schultz in his book entitled Genius Loci reflects on the 'spirit' of place when he states,

The existential dimension ("truth") becomes manifest in history, but its meanings transcend the historical situation. History, on the other hand,
only becomes meaningful if it represents new concretizations of the existential dimension.\textsuperscript{68}

This sentiment regarding the 'spirit' of place sheds light on the fact that 'spirit' can transcend time and occupation, culture and history, it is an ephemeral element of place. The force of 'spirit' often speaks to those 'places' that are considered to be sacred. There is a common belief that people do not choose sacred 'places,' instead, they are merely discovered by an individual. It is this sense that place can occur naturally and has a soul of its own which begins to articulate the 'spirit' or essence of place which Schultz refers to as Genius Loci.

I. Reflection

As outlined above place encompasses both the tangible and intangible. place accounts for the totality of the forces presented in this body of work. The goal of categorizing these forces independently from one another is to allow them to have an individual platform interpretation. This process enables the reader to have the ability to analyze these forces independently but also provides the opportunity to make connections to how these forces are interwoven that otherwise may not have been apparent when analyzing the composition as a whole. While each force of place that has gone into this definition may identify with other theories related to the subject, it is necessary to define one's interpretation independently to best capture the specific perspective of the individual reader and their positioning toward the subject.

Architecture is an art form, an art form that requires the participation of human beings. It is paramount that the reader continues to ask oneself, as the

active interpreters of place, "what is the responsibility of the architect to curate place?" The word curate is used specifically because of its common association with art. While architecture is a spatially derived art form similar to sculpture, unlike sculpture it is not limited to the process of creating space as most human beings can create an enclosure or define 'space' through the use of 'structure.' Sculpture often is expressive of a sense of purity regarding its ability to define 'space' often with the human condition in mind. A sculpture is free from constraint, regulation, and functional requirements allowing it to be a fluid imaginative and creative process that inspires good architecture.

Instead Architecture, due to the number of working parts that are in concert with one another it is unlike sculpture cannot become place. As mentioned earlier in the introduction of this research and again touched on in the body of the definition of place specifically in the definition of 'structure,' 'atmosphere' and 'spirit,' place can occur both naturally and it can be human-made. The main goal of curating place is identifying the forces of place that are meaningful to that place to understand better how they inform specific human condition of that space. The architect’s highest responsibility is to use his or her specific skills to curate place based on his or her awareness of these forces in a manner that allows and encourages people to dwell, effectively ensuring the continued interpretation of place.
CHAPTER VII

INTRODUCTION TO WORONOCO

A. Woronoco History

The investigation of the history of Woronoco as it pertains to this thesis would not have been possible without the research of Michael Donovan and his book entitled “A Place of Many Windings.”

Woronoco is a rural New England community that is located along the Westfield River at a place known as Salmon Falls. At one time Salmon Falls was one of the most identifiable ‘places’ found along the river due to its 18-foot natural cascading waterfall that carved through the rolling hills of Western Massachusetts. Historically Salmon Falls was a point in the river where the Woronoak Native Americans would actively fish. It was at this point in the river that it would be teaming with shad, trout, and salmon that were attempting to go upstream an over the falls.

The name of Woronoco is significant in the investigation of the concept of place as its most common interpretation is a "Place of Many Windings" or the "Country of Windings." The meaning of Woronoco, as given by R.A. Douglas-Lithgaw, M.D., in his "Dictionary of American Indian Places and Proper Names" is "The country with windings." Woronoco is an English translation of a Woronoak name so it is somewhat interpretative. The official translation of the beginning of the word "Wara" means circle and "ock" is country so it may also just as easily be interpreted as "the circle land" or "the winding country." Another interpretation which pronounces the name as Wau Wu Nockoo translates the name as "place of the fat hunting."

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There is no way to determine the actual translation of the original name for the area as the interpretation as well as the spelling of the name has varied with over a dozen spellings of the name including Woronoco, Worrinoco, Woronoak, and Warrinoco. While the interpretations of the translations slightly differ the winding, natural features including the hills, valleys, rivers, and streams which support an abundance of wildlife suggest the name "place of many windings" it is this name that seems to represent this place best.

Woronoco is representative of just one of the hundreds of valleys that can be found in Western Massachusetts. The landscape is an assemblage of ground-down mountains scarred by an ancient glaciation. As these ice plates that were once a mile thick sheared off the summits, they created valleys and carved out a rugged landscape of rolling mountains studded with ledges and cliffs of quartz-veined granite and gneiss, sandstone, flint, shale and many other geological features that would be both helpful and a hindrance for later settlers. According to local geologists and glacier scientists about 20,000 years ago, the ice sheets began to melt producing massive runoff forming streams and river systems throughout the Connecticut River valley which would follow what is now the Connecticut River into the Long Island Sound.

As the glacier melted, it moved over the terrain and picked up great boulders and smaller stones as it ground its way south. After thousands of years the stone and sediment began to build up at the mouth of the Long Island Sound, it created a natural dam in Connecticut known as Rocky Hill. As the glacier melted, these stones fell to the bottom of the lake. Today, these artifacts can be seen in the landscape as features such as glacial terraces, meadows with an occasional boulder or dense forests with boulder fields. The ice melt which is known today as Lake Hitchcock filled the valley and dominated the
valley and the surrounding landscape for nearly 4,000 years which profoundly influenced the settlement of the region.

Eventually, the massive volume of water that was lake Hitchcock would break through the natural dam at Rocky Hill, and Lake Hitchcock dissipated into the Sound. The clay base of Lake Hitchcock and the native vegetation that grew and populated the shorelines of the Lake would begin to populate the newly formed river corridors. The Lake’s bottom which consisted of centuries of organic materials washing through the Connecticut Valley and undergoing the natural decaying process would become the soil of the Valley which was washed downstream. This soil would become one of the most fertile regions in the continent. It was the fertile soil that would allow Native American tribes to thrive here for centuries and it would also attract the early English settlers to the area for farming. In the hills toward the west of the state in and surrounding the area known today as Woronoco, the constant supply of water and the rugged terrain supported thick forests and promoted an abundance of wild game along the Westfield River.

For centuries, Native Americans thrived in the area actively fishing, hunting and farming. When the earliest English settlers arrived in this area of Western Massachusetts, the Woronoak Native Americans lived along the banks of what was then known as the Agawam River later named the Westfield River. A branch of the Woronoak tribe known as the Pochassics is today thought to have been settled nine miles upstream near Mount Tekoa. In this area, the Pochassics had a burial ground along a natural terrace above the river where they chipped the stone for their tools and weapons from the outcropping of solid flint known as Hinckley’s ledge, located southeast of Mount Tekoa. Mount Tekoa rises at the edge of Pochassic plain, where in later centuries farmers would often find arrowheads and stone tools as they plowed their fields. The Pochassic also had
a "harvest rock" here at the base of Mount Tekoa, a massive stone slab measuring roughly 60 feet in diameter, which has been pockmarked with holes and depressions where they would have ground their corn into meal.

The south and west face of Mount Tekoa reveals granite cliffs that rise above the Westfield River which receive the sun throughout most of the day. The Natives used the sun on the granite cliffs to dry the fish they caught in the river below. The deep seams, narrow shafts and fissures in the granite cliff-side created excellent shelter for rattlesnakes and supported their hibernation. While the term "Rattlesnake Mountain" is used synonymously today with Mount Tekoa some translations of the word Tekoa also suggest an original meaning as the "place of the snakes."

The Woronoaks and the Pochassics were not formal tribes; however, they were communities connected to other tribes, named for the places they lived. From both a geographic standpoint it is likely the Woronoak people belonged to the larger Nation of the Mahican Nation which occupied the western portion of the state, but it is likely they were often in communication with the Mohegan Nation which occupied the central portion of Massachusetts. Given its context and historical records which suggest that the Woronoak tribe remained passive in the conflicts that would rise between the region’s Nations and eventually confront European Settlement it is likely that these people had good relationships with both sides which is why they remained neutral. Early records suggest the area that was known as Woronoco included all of Springfield, Westfield, the Hilltowns to the edge of the Berkshires and a small part of what is today Connecticut.

The literal translation of the word "Pochasic" is "the place where the winding ends," which defines the landscape at the point in Woronoco where
Mount Tekoa meets the Pochasic plain on the Westfield River at which point the Westfield basin merges with the Connecticut River Valley.

It is likely that the Native Americans lived in the area as early as 2,000 to 3,000 B.C. and physical evidence suggests that Natives lived in region of present-day Westfield, Blandford, Woronoco, and Russell continuously from the 14th Century until English settlement in the 17th Century.

What is known about the Woronoak people is derived from the traditions and practices of the larger tribal Nations like that of the Mahican and Mohegan in the surrounding region of New England. It is likely the Woronoak community selectively burned off areas where they intended to farm every year before they planted their crop to clear brush and trees. They also would have girdled trees which was a practice that would ultimately kill selective trees resulting in the loss of foliage, but through this process, the trees would remain until they physically rotted away which would provide shelter from the harsh elements during the growing season. The crops that would have been ground would have included maize, squash, peas, and beans which wouldn’t have been planted in rows and instead would have likely been mixed both out of convenience and through an understanding of plant communities in examples such as the use of corn stocks to support bean plants.

Many Native American tribes were considered to be nomadic as seen in the Native American tribes of the Great Plains who would follow the herd of Buffalo or other game. The Eastern Native American tribes also moved regularly; however, they moved systematically give the time of the year paying close attention to the changes in the seasons. During the summer months, the Natives would have lived in the bottomlands along the rivers where they would fish, tend to their crops, dry fish, build canoes, and other equipment needed throughout the year. After the harvest, they would move into the forest to their hunting
camps where they would prepare for winter making deerskin clothing and blankets. In the winter, they would move to the valleys to continue hunting, trade with other tribes and gather wood to heat their wigwams. The wigwams that they would construct were between 12 and 16 feet in diameter made from woven reeds. An entire extended family would share a single wigwam organized around a central chimney. In early spring, they would have migrated toward the streams which would be roaring due to the snowmelt and spring rain. During this time of year, the streams would be teeming with salmon and shad which were slowed by waterfalls, boulders, and rapids. Natives would use spears, bone hooks, weirs handmade dams and pools where the fish would become trapped. The 18-foot-high vertical drop known as Salmon Falls in Woronoco was, like Mount Tekoa one of the defining landscape features that brought people and the landscape together.

Relationships between the English settlers and the Native Americans in Western Massachusetts were relatively peaceful. Historic documents provide evidence and accounts of peaceful purchase and land agreements. The early settlers and the Natives were reliant on one another for economic dependence trading tools, clothing and other goods for pelts and land. In a historic record there is a reflection of Woronoco which states: "Its unusual facilities for the prosecution of trade in valuable peltry gave it prominence in the earliest records of the Connecticut River Settlements." Peace between the settlers and Natives in this region continued for all of the 17th Century. Disputes between land happened; however, it seems that while many of the Native Americans of the area understood what it meant to sell the land they had different beliefs about

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the ownership of property. As Natives of this place were semi-nomadic and comfortable with surviving off the land, they most often simply moved westward when faced with an encroaching settlement. Due to their superior skills related to farming, trapping, hunting and fishing even after the land was sold, many settlers allowed the Natives to continue to hunt, fish or trap on the property if given a piece of the profits. The concept of land ownership was not considered one-to-one with the settlers and the Native Americans of the region.

The English settlement of Springfield in 1630, the establishment of a trading post by the Woronoak tribe in 1940 and the land agreements that were documented as early as 1641 marked a major shift of the occupation of this place. In 1660 as result of more settlers moving west and the densification of Springfield there was an interest in using the land known as Woronoco as a plantation to support its growth. Decided at a town meeting Woronoco was denoted as a Springfield plantation and small group of adventurous individuals from the community set out to establish farms in this area. Implementing European methods for timber harvesting and agriculture the area would be subject to slash and burn techniques for clearing the dense forests along the major river corridors to allow space for large continuous areas that would be dedicated to farming. This attitude for controlling the landscape for food production would transform the appearance of the landscape of this region. Due to its rugged terrain, the area of Woronoco inherently resisted this major shift and would not be settled until 1771. The landscape would force these settlers to grow their crops in the glacial terraces along the Westfield River and practice subsistence farming rather than plantation for food production and sale. The settlement of Woronoco would later encourage the integration of better roads, small gristmills, and even a ferry was used to cross the Westfield River. In 1786 the area that is known as Woronoco today would be incorporated in the town of
Russell. During this time, a few families continue to thrive in the area, but it wasn't until the 1841 during what would be known as the second industrial revolution, the Boston and Albany Railroad would cut through the region following much of the Westfield River that the landscape would again be transformed. The introduction of the railroad brought with it the potential to ship goods and raw materials, it provided the rural settled areas of the state with regional connections that offered an opportunity for people living in these rural areas to profit from the land. In 1871 the Jessup and Laflin paper mill would be established in present day Woronoco which introduced the first dam in the Westfield River in this area with the intent of using the river to power simple mechanisms used in the production of paper. Due to the amount of infrastructure required and financial struggles the Jessup and Laflin paper company would only last for 16 years at which point Roswell Fairfield purchased the mill and renamed the community Fairfield in 1887. Fairfield would also face many struggles as emerging technologies around paper-making were constantly changing and being improved which continually forced Fairfield to buy new equipment which ultimately restricted the mills profitability. The Fairfield mill would only survive for five years.

In 1892 Woronoco would be transformed once again through the vision of business man named Horace Moses. In 1892 Moses, a businessman like many others during this period was enthralled with the idea of making paper and the paper industry. To understand the business and the relatively new technology Moses traveled to Strathmore Scotland to learn everything he could about the process. During his time in Scotland Mosses was stunned by both the technology, but also the natural beauty of the landscape of Strathmore as well as the thistle which thrives there. The thistle is the national flower of Scotland. On return home from his trip from Scotland, Mosses purchased the former
Fairfield paper mill located in Woronoco. In reflection of the natural beauty of the landscape of Woronoco which he expressed as being very similar to that which he had seen in Scotland, he decided to name his new company Strathmore and determined that the seal of his company would be the thistle.

Figure 7. Origins of Strathmore [Strathmore Scotland]

Figure 8. Origins of Strathmore [Paper Making]
The Strathmore Paper Company would go on to be one of the most successful paper companies in both the United States and the World, known for its superior quality. While the success of the company is undeniable, it was Mosses’ vision to create a company town around the mill that led to its sustainability. Unlike many other company towns that were developed during this era of early industrialization which could be seen in major areas like Lowell, Worcester, and Springfield, Mosses’ vision was to create a utopian community in Woronoco. Rather than focus on the profitability of the town, Mosses focused on how to create a place that would offer skilled jobs in a rich industry. He would provide good wages, affordable housing, education, exposure to culture, eateries, facilities for civic activity and would encourage outdoor recreation in this unique landscape. Many of these concepts were a direct byproduct of industrialization and the invention of the paid work day as now people had income and time to not only focus on survival but establish a higher a quality of life. He would ultimately create a place that people could happily raise their family. Given Strathmore’s niche market in the paper industry as well as his success in creating a tight-knit community in Woronoco, the Strathmore Paper Company would go on to thrive for a hundred years enduring several Wars the
Great Depression, fierce competition from much-larger manufacturers and even major shifts attributed to the inflation of wage rates in the New England as paper-manufacturing migrated to the Southern States where cheaper labor and land was available. Former workers and members of the community would go on to reflect on how proud they were to be both from Woronoco and of the product they helped create. Ironically, it was Mosses vision which focused on providing specifically the children of Woronoco with a solid education, skill training in agriculture the sciences and industry as well exposure to the outside world that would eventually lead to the decline of the mill in Woronoco. The more these young people were exposed to the larger world the harder it became to keep them in this place as they would be inspired to travel, serve in the military and to go to college. Many of these young people would leave the tight-knit rural community to often settle in larger cities and more diverse communities but would often reflect on the great memories they had grown up in this place. While Strathmore would close its doors in 1999 its legacy still remains as the name Strathmore is still synonymous with high quality paper throughout the world.

Today, Woronoco is village found in the town of Russell one of the several Hilltowns of Western Massachusetts. The Hilltown region include areas of Berkshire, Franklin, Hampshire, and Hampden Counties west of and above the escarpment bordering the ancient rift valley through which the Connecticut River flows. The investigation of the History of Woronoco stands as a framework for which is used to further digest this place. History is an assemblage of the collected memory of place. History serves as a record of the significant events that have had a meaningful impact on the people and place at a given point in time. As a human construct, history is an interpretive process. It is a process that has many vantage points and requires diligence in unearthing authenticity as history plays a critical role in shaping future events. Human history often is
often focused on the recorded moments of that 'place;' the wars, famines and natural disasters, while its focus on the traditions and specific heritage of place are too frequently lost. The day to day routines, relationships, interactions personalities and memories of people are fleeting moments that while they genuinely define human life they often go unrecorded. The history of Woronoco has experienced a similar fate. While the village flourished for nearly three centuries, very little has been preserved related to the details of the events and individuals of Woronoco. What remains today, is the tattered and failing infrastructure that was once the heartbeat of a thriving community. The history of Woronoco is further explored graphically in the timelines below which articulate the geological timeline which has come to define the physical features of this place as well as the important moments in history that have come to shape it. The current state of Woronoco then explored through the photo-documentation of historical documents and the existing conditions in the sections to follow.

Figure 10. Geological Timeline
Figure 11. Historical Timeline
B. Photo Survey of Existing Conditions

1. **Historical Views of Woronoco**

   Propagation of postcards and illustrations of Woronoco and the Strathmore paper Mill were common tactics used to express how beautiful and cutting-edge this place was. The selected images depict the Boston and Albany Railroad hugging the bank of the Westfield River below Tekoa Mountain, the mill and its power station located at Salmon Falls with the Berkshire Mountain Range in the background and a trolley that would be constructed to connect the downtowns of Huntington, Russell, Woronoco and Westfield in the years prior to the automobile.
Figure 12. Historic View [Boston + Albany Railroad]

Figure 13. Historic View [Strathmore Paper Mill]

Figure 14. Historic View [Trolley]
2. **Natural Disruption**

Natural disruption also sheds light on the micro-changes of this place which have been observed in a single lifetime which includes tornadoes, flooding, and even periodic forest fires. These natural disruptive forces have continued to shape the landscape naturally through the decimation of vast forested areas but have also encouraged further implementation of local disruption specifically through the insertion of dams which resist the effects of flooding of the developed communities.
Figure 15. Natural Disruption [microburst]

Figure 16. Natural Disruption [flood]

Figure 17. Natural Disruption [forest fire]
3. **Anthropogenic Disruption**

Anthropogenic disruption is inclusive of all infrastructure found in the landscape that was the result of more conventional attitudes toward development. The attention to local disruption is focused more on the implementation of significant infrastructure including the construction of dams and highways that have had a dramatic effect on place, but have also had an impact at the macro-scale which inflicts change.

The integration of Dams like Knightville and Littleville Dam in Huntington locating in the Westfield River to protect settlement down-river from seasonal flooding has ultimately changed the ecology of this body of water which connects the region which has introduced moments of poor water quality and loss of habitat for specific wildlife. Infrastructure such as the Massachusetts Turnpike in Woronooco has provided an opportunity for higher volumes of vehicular traffic to travel from one end of the state to another. This bridge has disconnected already geographically rural communities from larger towns and cities which has drastically impacted the local economy. The construction of the bridge has resulted also resulted in vehicular travel along scenic byways such as Route 20 which known as Jacobs Ladder to be navigated primarily by locals which reduces the opportunity to connect a broader community to this place.
Figure 18. Anthropogenic Disruption [Littleville Dam]

Figure 19. Anthropogenic Disruption [Knightville Dam]

Figure 20. Anthropogenic Disruption [MA Turnpike]
4. **Natural Weathering**

As reflected in the geological timeline presented in the previous chapter, the landscape of Woronoco is representative of the continuous processes of uplift, weathering and glaciation. It should be understood that these processes operate at a much slower rate of change yet have come to define the unique natural features of this landscape including the unique rock formations seen in the Westfield River and the juxtaposition of Tekoa Mountain and the Westfield Plateau.
Figure 21. Natural Weathering [glacial shear]

Figure 22. Natural Weathering [pot holes]

Figure 23. Natural Weathering [stratification]
5. **Regeneration**

Despite the negative effects of natural and anthropogenic disruption in the landscape of Woronoco, the landscape has capacity for regeneration. The photos below depict the resurgence of local vegetation after forest fire. The natural regeneration of place emphasizes its ability to adapt to change while simultaneously expressive of the destructive force which has continued to transform this landscape overtime which is articulated in the charred timber and soil. With death comes new life. This supports the notion that place is a living ecosystem.
Figure 24. Natural Regeneration [coarse organic matter + nutrients]

Figure 25. Natural Regeneration [re-seeding]

Figure 26. Natural Regeneration [soil layering]
6. **Post-Industrial Landscape**

The photos taken of the post-industrial landscape depict the current state of Woronoco. Here it can be seen remnants of the infrastructure that was a byproduct of the mill. Today, these artifacts are representative of material weathering, structural failure, and the state of the local vegetation consuming it. These also convey an attitude that this place has been abandoned. These artifacts are what remain of thriving local industry and its rapidly deteriorating visible heritage.
Figure 27. Post-Industrial Landscape [artifacts]

Figure 28. Post-Industrial Landscape [hydro power pipe]

Figure 29. Post-Industrial Landscape [multi-modal bridge]
7. **Post-Industrial Architecture**

Here are photos that were taken of the current conditions of Mill 01. The images are expressive of the structural failure of the masonry facades, broken windows, substantial water intrusion as well as an abundance of debris and artifacts that have been left by former occupants. The Mill has an eerie sense of abandonment.

![Figure 30. Post-Industrial Architecture [water damage]](image1)

![Figure 31. Post-Industrial Architecture [failing façade]](image2)

![Figure 32. Post-Industrial Architecture [debris]](image3)
8. Vegetation Resiliency

With the absence of human occupation in this place, the images reveal how resilient the natural vegetation is by anchoring itself to faces of rock at the dam with almost no soil to support its growth, vegetation growing through tar and pavement and even growing within the layers of masonry in the building façade. These images poetically depict not only the resiliency of the local vegetation but also this current state in which nature is beginning to consume or reclaim this place.
Figure 33. Vegetation Resiliency [dam]

Figure 34. Vegetation Resiliency [pavement]

Figure 35. Vegetation Resiliency [façade]
9. **Local Expression**

Given the disconnectedness of Woronoco today in relation to other local communities, there is a sense of freedom and lawlessness when engaging this place. This mentality is embodied in some of the local expression that was encountered when visiting this place where individuals have used the infrastructure as canvases where they have depicted a series of cowboys. These images begin to convey the character of this place through representation.

Figure 36. Local Expression [cowboy 01]

Figure 37. Local Expression [cowboy 02]
The following representational analysis is a series of analytical maps that begin to understand this place both contextually, but also through the articulation of the hidden layers of information which are superimposed predominately in the landscape which define it. The majority of this information can’t be perceived when inhabiting this place, so this serves as a method of analysis that is anchored more in discovery. Through the use of local geo-databases each graphic aim to represent a single topic. By understanding these elements singularly, this process can provide a better holistic understanding of this place as a composition. While some of the depictions are suggestive of the uniqueness of this place in comparison to others in proximity, it is how this place is interconnected through ecological principles specifically the patterns of singularly defined forces of place that these graphics convey.
1. **Context**

![Figure 39. Russell Contextual Map [Russell]](image-url)
2. **Historical Places + Settlement**

**Settlement Legend**
- Context
- Building Footprints
- Roads
- Historic Places
- Historic Areas

Figure 40. Settlement Patterns [context]
Figure 41. Settlement Patterns [Russell]
3. **Soil + Topography**

**Soil by Slope Legend**

- Context
- 0%, Water or Urban Land
- 0-3%
- 3-8%
- 8-15%
- 15-25%
- 25-35%

Figure 42. Soil Patterns [context]
Figure 43. Topography [Russell]
4. **Geological Provinces + Surficial Geology**

**Geology Provinces Legend**

- Context
- Eugeosyncline Sequence
- Grenville Belt
- Mesozoic Basin
- Waits River - Gile Mtn. S

Figure 44. Geological Provinces [context]
Figure 45. Surficial Geology [Russell]
5. Impervious Surface + Flow Analysis

Impervious Surface Legend

- Context
- Pervious Surface
- Impervious Surface

Figure 46. Impervious Surface Patterns [context]
Figure 47. Flow Analysis [Russell]
6. **Hydrological Patterns + Local Hydrology**

![Hydrological Patterns + Local Hydrology](image)

**Figure 48. Hydrological Patterns [context]**
Figure 49. Hydrology [Russell]
7. **Bedrock Lithography + Slope Analysis**

![Bedrock Lithology Map](image)

*Figure 50. Bedrock Lithography [context]*
Figure 51. Slope Analysis 01 [Russell]
8. **Sand + Gravel Depth + Slope Analysis**

**Sand & Gravel Depth in ft.**

- Context
- 0-50
- 50-100
- 100-200
- > 200

- Large Sand Deposit
- Glacial Till
- Fine-Grained Deposit
- Floodplain Alluvium

Figure 52. Sand + Gravel Depth [context]
Figure 53. Slope Analysis 02 [Russell]
9. Forestry

Forestry Legend

- Context
- Forestry Stewardship Areas
- Prime Forest Cat. 1
- Prime Forest Cat. 2
- Prime Forest Cat. 3
- Prime Forest with Statewide Importance
- Prime Forest with Local Importance
- Prime Wetland Cat. 1
- Wetland of Statewide Importance
- Wetland of Local Importance
- Non-Forested Land

Figure 54. Forestry Patterns [context]
Figure 55. Forestry [Russell]
10. Vegetation Ecology + Local Vegetation

Ecology Zones Legend
- Context
- Transitional "Fuzzy" Areas
- Lower Berkshire Hills
- Berkshire Transition
- Conn. River Valley

Figure 56. Ecological Zones [context]
Figure 57. Local Vegetation [Woronoco]
11. Wildlife Habitat + Orthographic Image

Figure 58. Wildlife Habitat [context]
Figure 59. Local Orthographic Image
CHAPTER XVIII

CHANGING DEMOGRAPHICS

D. Changing Social Demographics

1. Overview

As mentioned previously, place is a concept that is an interwoven composition of three critical elements: the landscape, people, and architecture. Much like the changes in the landscape and architecture which can be attributed to natural and anthropogenic disruption, the changes experienced by this place are also due to shifting social demographics. The information provided related to social demographics was investigated to understand this shift better. This information is organized on singular subjects such as population, community age, household income, education, housing tenure, and housing typologies which are looked at over a five-year period between 2011 and 2015 for the town of Russell, which is then compared to 2015 data for four other communities in proximity. Analysis of this information was used to generate not only a current profile of the community in comparison to its neighbors, but also a way to look at trends that might be considered when engaging this place.
2. Population

Russell has experienced a 20% decrease in population between 2011-2015. There are roughly 11.5 square acres per person in Russell in comparison the city of Westfield has approximately .001 square miles per person.
3. **Age**

The median age of individuals in Russell is reflective of the significant elderly population at 47.5 years old. This population is roughly ten years older than state and US averages. The aging population in this community is a real issue as the town lacks the support this population. The absence of a younger demographic here can be attributed to a lack of job opportunity.
Overall household income since 2011 has increased by roughly a 17%. The average household income is higher than all comparative areas at $73,611. While data is suggestive of a favorable view of the household income for members of this community due to the small population, absence of economic opportunity and the fact that nearly 100% of the population is forced to travel for work it may be reflective of the small population of higher-earning individuals moving to the community.
5. **Education**

![Population 18-24 years old](image1)

![Percent of Population w/ High School Education or Higher](image2)

Figure 63. Comparative Demographics [education]

There has been a 200% increase in population, ages 18-24 that have attained a bachelor's degree or higher since 2011 yet it has also seen an increase in the number of individuals not finishing high school.
6. **Housing Tenure**

There has been a 16% decline of occupied housing in Russell since 2011. The high percentage of home ownership is indicative of the limited rental opportunities. The decline in occupied housing can be attributed to failing infrastructure, migration due to lack of economic opportunity and an aging population.
7. **Housing Typologies**

50% of all the housing stock in Russell is a modest three-bedroom building typology. This housing stock is primarily from the 1940’s or earlier. There has been 0% of new housing construction since 2005. This information is reflective of the stagnation of new development as well as suggestive of the potential need for home improvement of rapidly aging housing stock.
CHAPTER VIII

CASE STUDY

A. Overview

This case study was included in this research due to its similarities related to the handling of place through a curatorial process specifically in this rural region of Western Massachusetts. The history and dynamics that begin to define MASS MoCA share many commonalities with that of Woronoco. MASS MoCA, has been thoroughly documented due to its unique approach toward preservation and adaptive reuse. This approach strongly emphasizes how design has the potential to make visible the character and unique heritage of ‘place.’ The intention of studying MASS MoCA was to better understand current practices in the design profession for handling this place typology in an effort not to replicate but a means inform the response to Woronoco. In all consideration, a museum like MASS MoCA can’t nor should it be recreated.

MASS MoCA is a museum that considers its mill architecture and the post-industrial landscape as artifacts that are on exhibit in concert with the installations and works it hosts. It is through this lens of curation of place that this thesis is rooted. While this case study is reflective of the sensitivity and innovative methods for approaching place, it stands in high contrast with regard to the investigation of Woronoco. While MASS MoCA has met great success, becoming one of the nations most beloved museums it takes a strong stance on creating a vision for the large-scale adaptive reuse of this existing infrastructure of this ‘place.’ In comparison, the investigation of Woronoco focuses more on the moment and the injection of micro interventions that attempt to re-connect the local community to this place through humble experimental design intervention that enrich one’s experience.
B. MASS MoCA

Awareness of place is attributed to an individual's or a community's unique experience associated with that particular 'place.' In many rural New England towns, it is widely known that place has been the byproduct of the rapid development of industrial mills and factories that were constructed here between the nineteenth and twentieth-century. These mill towns, often textile and paper mills were developed in a manner that capitalized on the affordability of rural forested land or farmland that resulted in the transformation and planning of completely new towns. Company towns, as they later became known as, lived and died by the success or failure of the company. Over the past two hundred years, as manufacturing has dissipated and has almost entirely lost in these areas of New England the surrounding towns have faced difficult economic hardships and subsequently have been tasked with maintaining large structures and often entire campuses that have too often been left behind. Many of these old factories, which are primarily privately owned, are often overtime absorbed by local municipalities, not as a resource but as a burden, a burden however that may serve as an important symbol of the town's heritage. While some of these sites survive as tourist attractions or museums, most require innovative strategies for their adaptive reuse. The most challenging task of the conservationist is to fully understand the cultural heritage of the architecture and its landscape to preserve the qualities of that place.

Conservation is a process; it is an open dialogue with the past, present, and future a conversation that involves three critical elements; people, architecture and the landscape. Many people see the Massachusetts Museum of Contemporary Art or MASS MoCA, today as a treasure of Western Massachusetts. The museum is an opus, an expressive synthesis orchestrated by the complex interrelationships between its community, existing infrastructure
and the dynamic landscape for which it was originally sited. Today, MASS MoCA is identified as the largest contemporary art exhibition space in the entire United States. The museum is comprised of not only a single building but rather a whole campus, which includes 28 structures that extend across 16 acres of its post-industrial landscape. The campus is situated on the confluence of two branches of the Hoosic River in proximity to the downtown area of the city of North Adams. During the years before the American Revolution, the landscape that later became the site of MASS MoCA was settled by tradesmen and farmers concentrated in what would then be known as Adams. Located in Berkshire County of Massachusetts the city of North Adams was settled in 1745. During the colonial period, North Adams had several thriving local businesses and small industries that included shoe and hat manufacturers, a brickyard, a sawmill, a lumber yard and it also supported several other trades including cabinetry and wagon building as well as marble working. The success of these small industries relied heavily on the siting of the businesses in proximity to the Hoosic River. The river allowed the small industries to harness the power to run the workshops as well as provided opportunities for easy trade down river.

In response to the industrial revolution during the early 1800’s, North Adams became a hot spot for innovation. North Adams was a place where several successful factories took root. "By 1847, Adams had 19 cotton mills, four satin factories, and two calico printing shops as well as non-textile factories strung out along the river and its tributaries." The industrial growth of Adams was also attributed to the construction of the Boston and Albany railroad, which began in 1842. The railroad significantly increased the flow of the transportation

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of goods, materials, and people and it became a catalyst for the area's industrial growth. In 1867 the Renfrew Manufacturing Company built a textile factory in the city, which would later become one of the most respected companies in the textile industry. The Renfrew Manufacturing Company was known to have provided the material used for the Union Army uniforms during the Civil War. The original Renfrew Textile factory was "an architecturally distinguished example of the late nineteenth-century Italianate style mill design."2

The original factory consisted of "Mill No. 2 a smaller Mill No. 1 as well as several ancillary buildings, a holding pond, and eight long buildings containing eight to 26 units of workers' housing, as well as a house for the superintendent" 2. In the late 1890's the factory had over 900 employees, and 25 of the 26 buildings that still exist today as part of the MASS MoCA complex were constructed. Over just a few decades the company grew exponentially, and by 1905 the Renfrew Manufacturing Company employed 3,200 people and became one of the leading producers of printed textiles in the world.

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During the early 1900's the factory modernized, which included the addition of several structures and the integration of electricity and the construction of a circular brick chimney. "In 1992 Mill No.2 was equipped with 1,992 looms and 36,000 spindles, with a dye house and finishing works"\(^3\)

![Figure 67. Renfrew Manufacturing Company Expansion](image)

The success of the Renfrew factory resulted in a significant shift in Adams as a company town, a period where the company began to reinvest in its community. By 1924 the Renfrew factory had constructed company housing, athletic fields, a company store, a community house, a school and a railroad station all in proximity to the mill. Between 1927 and 1929 more modifications were made to the campus including the elimination of the water-power capabilities which were used by the factory to generate energy. Until this point, the factory had operated almost exclusively through the use of harnessed hydro and steam energy. By 1927 with the shift of cheap labor in the Southern States the Renfrew Factory was unable to maintain its business. When the property was sold the factory was described in a local periodical which stated; "The Mills consist of two groups of brick manufacturing buildings of heavy mill construction, with all modern factory conveniences – steam, electric and water

power, sprinkler systems, electric light, toilets, washrooms, etc. Good natural light, ample supply of excellent water for processing.\textsuperscript{4}

In 1927 the Arnold Print Works Company purchased the mill and used the factory to print patterns on fabric. Soon after, Arnold Print Works became the largest employer in North Adams, yet the Great Depression significantly impacted the factory from 1929-1939, which ultimately forced the company to close its doors in 1942.

In 1942, the United States was on the brink of entering World War II, and at this time the Sprague Electric Company purchased the factory. In the first few years of owning the old factory, Sprague made extensive modifications to the interiors to convert the former textile mill into an electronics manufacturing plant.

![Sprague Electric Company](image)

Figure 68. Sprague Electric Company

Sprague's ownership brought a resurgence of innovation to the area. The new company introduced new technical trades that were open to both male and female workers, and it also promoted jobs for educated professionals including the hiring of physicists, chemists, electrical engineers, and skilled technicians.

The Sprague Electric Company would design and manufacture crucial components of some of the most advanced high-tech weapons systems that would be used during the war. These include components that would be eventually be used in the Atomic Bomb. Sprague became a significant research and development center in the city of North Adams and for the North East.

After the war, Sprague's products were used in the launch systems for the Gemini moon missions, and by 1966 Sprague employed 4,137 workers in a community of only 18,000. The Sprague factory was as a city within a city, and there was great respect among the community for the significance of the factory, and as a result in 1982 the factory was placed on the National Registrar of Historic Places due to its architectural and historical significance. During the mid-1980s Sprague continued to produce electrical components for the booming consumer electronics market, but in 1985, the factory closed due to the globalization of trade, shift in the electronics market to computers as well as the extensive work that was required to maintain and upgrade the campus.

After the closing of the Sprague Factory, the campus was abandoned for nearly fourteen years. During this time, it was left to endure the unforgiving New England environment, which resulted in crumbling mortar, dislodged masonry,
rusting steel, peeling paint, extensive water damage, an efflorescence seen in the masonry, and failing structural members including exterior walls, trusses, floors, and roofs.

![Image](image.png)

**Figure 70. Sprague Electrical Factory Abandoned**

During these years the complex also experienced frequent vandalism including broken windows and graffiti. As time passed, the effects of the environment were expressive in the building's aesthetic showing signs of aging in this 'place.'

While the Sprague Electric Company factory was left to mostly rot in place, at the same time the board at Williams College Museum of Art began prospecting for a space that would be able to exhibit large works or contemporary art in Berkshire County. During their investigation for such a site, the mayor of North Adams suggested to Thomas Krens, who was then the director of the Williams College Museum of Art to look at the Sprague Factory.
Soon after visiting the campus Krens and the Board were captivated by the appeal of the former factory for their new exhibition space. The scale and aesthetic qualities of the factory's campus, which emitted a sense of authenticity began to serve as an interpretive catalyst for the board in which they would later use as the conceptual framework for the adaptive reuse of the existing infrastructure. Early on in the project, it was determined by the team that MASS MoCA would question the conventional ideas about what a museum should be.

During the early stages of the project Massachusetts legislature voted to support the project; however, subsequent economic challenges in Massachusetts resulted in lost funding by 1993 the former textile factory was scheduled for demolition. Even as the State pushed not to support the project the support from the local community and private donors contributed more than 8 million dollars to pursue Phase I of the project. The early master plan for MASS MoCA was led by high profile architect's including; Bruner/Cott & Associates, Frank Gehry, Robert Venturi, and David Childs of Skidmore, Owings & Merrill.
In 1992, Bruner/Cott was selected as the lead project architect, and in 1995, the Cambridge, Massachusetts-based firm completed the final designs for the first phase of construction. As private support, public funding, and detailed drawings for the complex came together so did the articulation of MASS MoCA’s unique mission.

The original concept of the museum’s program was re-configured in a manner that called for a big box scheme. The museum would consist of ample open space with a historic shell that would be used to exhibit a fixed collection of minimalist work. However, as the curator of the museum and artisans began to invest themselves in the spaces of the former factory there became a growing interest in using the various areas for not only art and sculpture but for performances, films and other innovative exhibitions. In reaction to the new vision of the museum’s program the project team adopted an organic design strategy that focused on creating a methodology of preservation that would exhibit works of art, sculpture, dance, music, films, theater and even culinary events in a manner that would challenge preconceived notions of what a museum is or should be. The resulting program included exhibition space, artisan residencies, workshops, studios, and administration offices. The new
concept for the museum would result in MASS MoCA in becoming a host for continually changing exhibitions and the performing arts, which nurture the creation of new exploratory works and offer a canvas for new forms of creative expression while being sensitive to the memory of the place. In 1999 after the completion of Phase I of the adaptive-reuse project MASS MoCA opened its doors and ushered in the third century of the site being at the forefront of innovation, experimentation, and production.

Today the MASS MoCA campus is one of the largest visual and performing arts centers in the country occupying nearly 16 acres. The massiveness of both the buildings and the complex as well as its industrial, architectural language with its interlocking courtyards, bridges, and catwalks, offered the unique opportunity to experiment with open spaces, structural elements, and indoor-outdoor connections. The result is transparency that encourages experimentation and collaboration within the framework of a place known for centuries as a center for human innovation. The museum continues a tradition of innovation and experimentation in a manner that is sensitive to the original intent and heritage of the architecture and its integration of the landscape. By adapting the program to the buildings to preserve the texture and scale of the existing structures creates a variety of exhibition and performance spaces that continue to challenge the conventional notions of what a museum should be. The fact that the institution has no permanent collection promotes a mentality that allows it to evolve and inspire future generations continually.

The significance of MASS MoCA when looking at the project through the lens of historical preservation is most interesting due to its extensive history and the interpretive methodology of conservation or non-taxidermic process which has been employed in its adaptive reuse. The program of the museum similar to the architecture itself has continued to evolve overtime with the change of
ownership and specific needs of the users and its occupants. The preservation of this complex takes into consideration the complexes' ability to be responsive and adaptive over time, which has resulted in its ability to remain relevant and as a continued resource to the area.

The architectural authenticity of the site is embodied by the Mill Building Number II, which in 1982 was documented by the National Parks Service and placed on the National Registrar of Historic Places. The Red Brick exterior of the structure paired with an assemblage of mixed lite configurations of 19th Century windows, articulated with its red painted sash. The windows are approximately 14-inches deep with wide angled reveals. The original Renfrew factory structure was a three-story structure that is approximately 350 feet by 66 feet constructed with heavy timber framing.

![Image of Building No. 2 Façade](image)

The structure sits on a rough-cut marble plinth and was capped initially by an asphalt-sheathed, low-pitched gable roof. The exterior masonry walls are lain in running bond that ranges from 21 to 12 inches in thickness and is held together with iron tie rods and decorative plates that are located between each bay midway between the second and third stories. The original structure housed over two hundred looms and two water-driven turbines. While the original hip
roof and central cupola located at the center of the building were removed, the structure still hosts the original iron fire escapes that are attached to building's exterior. The interior space originally consisted of an open floor plan with exposed rough-hewn heavy timber and kingpin trusses. The brick walls and timber structure are progressively lighter on each level. The floors were originally 3 1/2 inches thick and were composed of a wide-board finished floor system while the ceilings were built with 4-inch beaded tongue-and-groove sheathing. On all levels, the vertical members are arranged in two parallel rows, spaced approximately 95 inches on center creating a center aisle for circulation and two slightly wider side aisles where workers would run the machines. The vertical structure was either nine-inch square chamfered posts (north half of the building) with square caps, or eight-inch round columns (south half of the building) with round caps which support the chamfered beams with ends set into the brick exterior walls. Anchor bolts through the beams on either side of each vertical support help tie the floor above to the framing structure.

The transformation of the former factory into MASS MoCA began with an 18-month demolition and hazardous materials abatement period. During this time, roughly 4,800 tons of construction debris was removed from the site.

Figure 74. Demolition, Debris + Hazardous Materials
The adaptive rehabilitation of approximately 450,000 square feet of the former industrial/manufacturing space included the whole structure demolition of five buildings and the complete renovation of fourteen buildings. The remediation scope of work included the removal of almost 40,000 linear feet of pipe, 130,000 square feet of transite panels, 260,000 square feet of flooring, as well as roughly 820,000 square feet of failed lead painted surfaces. The total construction cost of the decontamination and demolition work alone cost nearly 8.5 million dollars.

Phase 1 of the museum’s adaptive rehabilitation was completed 1999 with a total of 160,000 square feet of refurbished space. The project has served as a catalyst that has revitalized the city of North Adams while preserving the massive nineteenth-century historic mill complex. The primary task in the new work was the project team's ability to grapple with reprogramming the spaces to meet the needs of a modern cultural use while being sensitive to the cultural heritage of its creation.
The team often had to ask themselves "how is it possible to change a place without denying its past life and inhibiting its future destiny?" The spatial configurations of the new program capitalize on the original factory's open floor plans, the exposed structure including kingpin trusses, columns, rough-hewn beams, double height exhibition spaces with upper clearstory glazing and painted masonry walls.

![Kingpin Truss + Material Authenticity](image)

Figure 76. Kingpin Truss + Material Authenticity

The idea of openness in the sense of spatial configuration, as well as the aesthetic transparency of the material articulation, express the layers of the structure to the viewer. It is this sense of openness in the architecture and its heritage that became the parti for the museum that promotes a level of active engagement and interpretation by the visitors while circulating through the museum. The project's phased development also allowed for the opportunity for the team to continually rediscover the intimacies of the place over an extended

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period. Only through the team's meticulous restoration efforts were the visitors able to experience the juxtaposition of the layers of the historic site and the ongoing repurposing of new spaces. This vision, while economically more palatable due to the limited money spent on new materials was shadowed by the cost of employing skilled artisans who were tasked with re-pointing and reworking the existing elements to maintain the integrity of the structures.

Figure 77. Repointing Masonry

The amount of care and time poured into the reuse process has substantially reinforced the visitor’s experience as he or she can both visually and physically connect to the campus as a ruin and as a new museum through its innovative design.

The museum is reactionary to the more typical attitudes of preservation and architecture where perfection or the architect’s original intent is held paramount. Instead, the unique design of the mill structure is often left as is, to emphasize the physical effects of enduring time and the natural forces of the site, which in many instances calls attention to the flaws or characteristics that were intentionally left in place during the project. The structures successfully exhibit the physical weathering and traces of imperfection that provide a humanistic character to the museum.
The program organization which was based on the function of the day has resulted in an eclectic assemblage of indoor and outdoor spaces that are knitted together by exterior structures including bridges, loading docks, and open courtyards which have taken on specific interpretive programs including café spaces, outdoor performance areas, and a courtyard cinema.

Figure 78. Courtyard Cinema

Memory is inscribed on the surfaces of the architecture, not as scars, but as reminders of the passage of time. The museum is a work of art. The museum tells the story of this ‘place,’ which would be otherwise unimaginable or unwarranted by an architect setting out to design a new structure. The architecture of MASS MoCA is a living archive that maps the progression of architectural change and innovation the region has experienced over the last two hundred years. The industrial heritage of the campus includes large remnants and features that also exist in the landscape, which add to the vibrancy of this project and as the campus acting as a single artifact.

The general success of the project especially when considering the monumental task of taking on a project of this scale has primarily been contributed to its ingenuity and the successful collaborations with local, regional and globally recognized artists and institutions. Currently, MASS MoCA has partnerships with over twenty local institutions including; Jacobs Pillow, City of North Adams, The Clark, SOL LeWITT Studio, High, Yale University Art Gallery,
Wilco, Hall Art Foundation, Williams College Museum of Art, Freshgrass, Assets for Artists, Storey Publishing, Williams College, Massachusetts College of Liberal Arts, Williamstown Film Festival, Public Theater, Norman Rockwell Museum and the Williamstown Theatre Festival. These partnerships have resulted in the successful programming of the museum for the next 25 years. The future programming of the museum has also led to continuous growth in annual visitors.

In 1999, when MASS MoCA opened its doors, it received over 80,000 visitors. While impressive, after only 17 years of operation that number has grown to over 160,000 in 2016. This growth in visitation would be considered substantial for any museum; however, it is even more special when considered that 160,000 visitors is roughly ten times the total population of the city of North Adams. This critical statistic resonates how vital the success of MASS MoCA has been in the revitalization of the surrounding area. In 2016 a comparative operating cost analysis was conducted which revealed the operating costs of MASS MoCA in comparison to four other high profile art institutions in the country.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Operating Cost (square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASS MoCA</td>
<td>$17.44</td>
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<tr>
<td>ICA Boston, MA</td>
<td>$169.19</td>
</tr>
<tr>
<td>Norman Rockwell</td>
<td>$174.07</td>
</tr>
<tr>
<td>MASS MOCA</td>
<td>$145.92</td>
</tr>
<tr>
<td>Chicago MCA</td>
<td>$409.47</td>
</tr>
</tbody>
</table>

Figure 79. Operating Costs (sf)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Operating Cost (per visitor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASS MoCA</td>
<td>$31.61</td>
</tr>
<tr>
<td>ICA Boston, MA</td>
<td>$39.28</td>
</tr>
<tr>
<td>Norman Rockwell</td>
<td>$37.67</td>
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<tr>
<td>LA MOCA</td>
<td>$60.57</td>
</tr>
<tr>
<td>Chicago MCA</td>
<td>$115.06</td>
</tr>
</tbody>
</table>

Figure 80. Operating Costs (visitor)

The comparison revealed that while MASS MoCA has a much higher number of visitors and a more expansive space to maintain the operating costs are still lower than the other four institutions, which is interesting considering the others are all relatively new structures. This comparison is even more significant
when one considers the embodied energy of reusing the existing factory these costs are amplified given the reduction in total carbon footprint by adaptively reusing the original mill structure. Also, to help minimize the operating cost of the project, the museum invested in renewable energy and successfully integrated a solar array across the campus.

Figure 81. Solar Readiness

The solar array produces nearly 25% of the total energy consumed by the museum.

As MASS MoCA enters the twenty-first year of master planning and campus design work it ushers in another ambitious feat with Phase III of the project. Phase III intends to double the museum's current exhibition space through repurposing the remaining vacant buildings found on the campus. The additional space will include 90,000 square feet of exhibition space, as well as provide better workshops, and the necessary amenities to better host larger music and cultural festivals. In comparison, the final exhibition space will be equivalent to five times that of the recently completed Whitney Museum in Manhattan designed by Renzo Piano.
The scope of Phase III will also include the restoration of the Hoosic River, which will support the design of a forty-mile pedestrian friendly bike route that will traverse between the campus buildings and the branches of the Hoosic river. The new trail will connect MASS MoCA to the base of Mount Greylock the highest mountain in Massachusetts as a cultural corridor unifying northern Berkshire County.

While the Hoosic River has historically been the backbone of the city’s economy, periodically in significant storm events, the river has directed floodwaters through the town. During the 1920s to stimulate continued economic growth, the community sought an engineering solution from the U.S. Army Corps of Engineers to control the river volume and in doing so constructed a 15-foot-high concrete chute and earthen walls that would protect the city from flooding.
For over 100 years, the chute has dramatically impaired the local river ecology and has subsequently destroyed one of the city's most significant assets. While MASS MoCA continues to evolve into a world-renowned center for culture, the river that flows through the campus has inhibited the city's renaissance. Phase III of the MASS MoCA project aims to restore the river to its predevelopment condition which will enhance public access to the water's edge, and rethink its flood protection strategy.

Phase III will continue to foster the museum's initiative to work collaboratively with multiple stakeholders including the local community-based non-profit Hoosic River Revival, the Massachusetts Department of Ecological Restoration, the Landscape Architecture firm Sasaki, and a river restoration specialist Inter-Fluve to re-envision the Hoosic River. The revitalization project will allow nature to inform design.
The re-design of the waterway is targeted to better understand the landscape from the perspective of a pre-human settlement condition. The new design will strive to reestablish the river’s connection to its historic floodplain, which will promote easier access to the water for the public as well as encourage natural wildlife habitats, improve water quality, promote biodiversity and restore in-stream connectivity. This strategy results in a design that is mostly self-maintaining, reducing overall long-term maintenance costs.

The plan for the river restoration project will celebrate the Hoosic River as a connecting feature through the city, improving access between Main Street, MASS MoCA, Heritage State Park, and the Massachusetts College of Liberal Arts campus. The scenic multi-use trail that will run north-south along the entire 1.5-mile length of the South Branch, tying into proposed extensions of the Mohawk and Ashuwillticook recreation trails. As part of its forward-thinking vision for North Adams. These efforts complement the ongoing planning efforts throughout the city. Since the inception of this project, Hoosic River Revival has worked closely with local and state-wide partners to facilitate the process, which the team anticipates to be completed by the year 2020.

While Phase III of MASS MoCA begins to gain traction, it has been faced by a growing concern of the public due to the general awareness of the implications that the campus has historically played concerning the public health of North Adams. While the goal of Phase III of the project is to undertake a regional design that will positively foster a healthy local ecosystem it has also raised significant concerns especially concerning the site’s existing conditions as a brownfield site. The site's heritage as a former industrial manufacturing site, especially during the years of World War II where the Sprague Electric Company operated has raised several concerns related to the overall health of the site. At
its height, the Sprague Company was at the forefront of testing and using chemicals, and explosives for its weapon development at the North Adams site. MASS MoCA’s heritage, its recent redevelopment and its general proximity to the Hoosic River has heightened a genuine concern among the community concerning the site’s potential contamination of an even broader context. These concerns ultimately resulted in the Environmental Protection Agency (EPA) conducting a thorough environmental site assessment (ESA) where it was determined that the site was confirmed to be a brownfield site.

![Figure 85. Brownfield Testing, MASS MoCA](image)

The EPA defines a brownfield as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”⁶ The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 made the owner of any property liable for the contaminants found on the property. CERCLA’s retroactive liability has made the performance of an ESA a practical necessity for any potential buyer of the property, who naturally do not want to assume liability for the cleanup of any contaminants.

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⁶ US Environmental Protection Agency (EPA). https://www.epa.gov/brownfields
found there. As a result, MASS MoCA has invested a tremendous amount of its
resources to manage and mitigate the effects the site will have on the larger
Berkshire County area. According to the EPA “there are presently over half a
million brownfields in the United States, but this number only includes sites for
which an ESA has been conducted.” The actual number of brownfields is
undoubtedly many times greater.

The revitalization of an unproductive brownfield has become an important
issue for federal, state, and local governments. Many contaminated brownfield
sites have sat in idle and have been unused for decades because the cost of
cleaning these sites has historically been astronomical with little evidence of
successful remediation. The cost of the clean-up of brownfield sites is often
higher than the land itself, which has resulted in very few places pursuing
treatment. This mentality is discouraging because most brownfield sites exist in
prime locations, which have reasonable access to transportation or town centers
and are typically in proximity to significant residential developments which has a
potential to host a stable local workforce due to early inclinations of
development. This practice has resulted in a process that has systematically
labeled brownfield sites as some of the most contentious development sites
given their social, political, ecological, cultural, economic and aesthetic
implications. While the remediation and redevelopment of brownfield sites have
the potential to be considered as the key to creating new jobs, expanding the
tax base, improving local environmental health and a way to revitalize the
economy of local communities few municipalities have undertaken on this
initiative in the same manner that North Adams and MASS MoCA has.

7 US Environmental Protection Agency (EPA). https://www.epa.gov/brownfields
Most often pollutants on a brownfield site are found in the soil, groundwater and often are even present in the air as a result of spills, off-gassing or long-term accumulation due to repeated releases. Contaminates most commonly found in brownfield sites include PCBs, oils, sludge, resins, chlorinated solvents, heavy metals, and mercury and often resulting in the degradation of local and even regional ecosystems.

Currently, only some jurisdictions mandate that known brownfield sites need to be treated or require owners and developers to have active strategies in place to manage known contaminants. Conventional contaminant remediation practices include; ‘pump-and-treat’ method which entails cleaning polluted groundwater through extraction, filtration and recharge methods and ‘dig-and-haul,’ which includes cutting out large areas of earth and then shipping it to dedicated contaminated areas. Both processes are extremely expensive, labor intensive, and most often result in the further and more active degradation of a site’s ecology. Due to the general inability to successfully manage known brownfield sites through conventional methods for remediation and the growing number of known impacts on public health, which the EPA has directly linked to brownfields, there is currently significant exploration in alternative methods for handling this real problem. The most cost-effective solution that has progressively demonstrated positive results is the strategic implementation of phytoremediation and phytotechnologies on brownfield sites.

Phytoremediation is the "Use of plants to remediate contaminated solids, sediments, surface water, or groundwater." The success of phytoremediation depends on the appropriate identification of contaminants through the extensive soil and water testing of a particular site.

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By understanding the chemical makeup of the soil and water, plant specialists can successfully target specific contaminants for remediation by determining which phytotechnology is most appropriate for dealing with the particular contaminate. Phyto-technologies refer to the processes in which plants manage targeted pollutants. The most common Phyto-technologies employed are Phyto-degradation where the plant destroys the contaminant, Phyto-volatilization where the plant releases the contaminant as a gas, Phyto-extraction where the plant stores the contaminant and requires regular plant harvesting, Phyto-stabilization where the plant holds the contaminant in place typically in the soil, Phyto-hydraulics where the plant pulls the contaminant from surface-runoff or groundwater, and Phyto-metabolism where the plant uses the pollutant as a nutrient in its growth. Phytotechnologies are specific to every plant species, and most species are only able to perform a single phytotechnology efficiently. The key takeaways for understanding the appropriate use of phytotechnologies are to understand the medium in which the contaminants exist in the water, soil or air. To employ phytotechnologies, one must know whether the contaminants are organic or inorganic. Through frequent testing, the identification of specific chemicals or pollutants must be targeted to
prescribe which phytotechnology and plant species might be most effective. The selection of plants for this function is crucial as every plant has a unique capacity to survive in a polluted microenvironment. The successful growth of any plant is based on its regional aptitude or ability to grow in the specific climate which promotes the use of native species. The implementation of phytotechnologies for brownfield sites is still experimental, and there still needs to be extensive data collected regarding the successful remediation. The use of phytoremediation as a primary strategy for cleaning contaminated sites has proven to be a strategy that encourages re-greening historically impervious surfaces, promotes biodiversity, and is ultimately a much more cost-effective method when considering labor, dollar value and associated carbon footprint in comparison to active interventions.

The significance of any project that tackles cultural heritage at this scale is through its interpretive methodology of conservation or non-taxidermic process which has been employed in its adaptive reuse. The essential element that must be emphasized in this project is the ability of the program of the museum similar to the people, landscape, and architecture to continually evolve with the change of ownership and specific needs of the users and its occupants. The preservation of this complex takes into consideration the complexes’ ability to be responsive and adaptive over time, which has resulted in its ability to remain relevant and as a continued resource to the area.

MASS MoCA successfully fosters new paradigms in the arts, historic preservation, conservation, architecture, landscape architecture, regional planning and community development, but most importantly it serves as an excellent example of the current methods of design professionals working with the rural-post-industrial landscape of this region. While much can be learned from the process and goals set and met by this case study it cannot simply be
replicated for the next mill downriver and nor should it be. MASS MoCA has been such a successful project because it is original it has taken preconceived notions of what a mill and a museum are and has done it in a manner that has re-stimulated the cultural heritage of the community while providing shock therapy to the stagnant economic condition. The question that needs to be addressed is how other rural post-industrial landscapes in the region survive and continue to be positive representatives for the strength, ingenuity, and identity of the place which they have helped define when resources are scarce, and geographic isolation stifles decisive intervention.
A. Precedents Overview

The precedents used in this thesis were selected based on their shared relationships related to how design engages ‘place.’ Each precedent is responsive to the unique physical features and nuances of the site. They are focused on the tactility of making. Each of these precedents articulates how the process of making is an essential component in the fruition of the design intervention. This mentality is also suggestive of the critical role participation plays when engaging place either through community participation in the physical construction of the design which encourages memory and ‘place attachment.’ The concept of change is also a common thread shared by each of these precedents expressed through their temporality or their ability to adapt to change over time. The designs are focused at the moment where they carefully consider time as a variable in the design process that is uniquely addressed. While the array of designs articulated in these precedents are very different, they all blur the boundaries between landscape and architecture providing interpretive architectonic design interventions that are derived almost organically in the landscape. With this attitude, each is reflective of heightened awareness concerning how the intervention participates in the ecology of place both by calling attention to real ecological issues, but also philosophically regarding how they are interconnected holistically with the landscape, people, and architecture of the ‘place.’ These precedents while not all examples of contemporary design they all share a common attitude that is reflective of a shift in the design profession today which is focused on relatively small meticulously
crafted design interventions that have the potential to have a profound impact on 'place.' The scale of each of these projects allow them to be accessible to a broader audience. This shift is also reflected in how the designs consider the cultural heritage of 'place,' which is articulated in the design process as a way to both promote integrity but also as a method of conveying the uniqueness of 'place.'

![Figure 87. Rivers + Tides [Andy Goldsworthy]](image)

**B. Rivers and Tides [Andy Goldsworthy]**

Andy Goldsworthy is an English sculptor, artist and environmentalist. His work embodies a sensibility that Art is a form of nourishment. Art is dialogue with the human being and place through material practice. Goldsworthy’s work tries to understand the relationship between human energy in the landscape. His series of works entitled "Rivers and Tides" focus on expressing the dialogue between the freshwater river and saltwater ocean at the moment where the two come together. These works are targeted on a sense of discovery focused on trying to capture life in the landscape, the intangible and often fleeting flow that can be seen in nature that reflect growth and change. His work uses found materials to
construct reactions to observations to this idea of a living landscape.

Goldsworthy, methodically assembles his interventions in a manner which reflect their compatibility with time. This act is emphasized in the tedious work employed in the building of each sculpture is ultimately only a portion of the process as the period of reflection where the final resolution of the conceptual construct is then overcome or destroyed by the life which was the source of the original inspiration. In one particular design Goldsworthy responds to the confluence of a river meeting the waves crashing into the shoreline which creates a whirlpool effect. He is inspired by the flow of energy and obsessive with regard to the organic forms nature creates. This disruption or life in this place results in an abundance of driftwood to be scattered along the shore. Goldsworthy collects this material to construct an interwoven assemblage of the driftwood creating abstracted whirlpool. The individual pieces have a linear trajectory expressive of the movement he observes. The driftwood is methodically positioned using a sensibility toward the hierarchy of the girth of each member, large pieces making up the base as smaller segments are layered upon one another slowly inching inward to create a dome-like structure with an open oculus at the top. The sculpture sits above the actual whirlpool on a rock outcropping which Goldsworthy has chosen based on his understanding of the natural tidal patterns of this place, again expressing his sensitivity to the element of time in his work. In this moment, he sketches new observations of the composition. Upon completion, one has the vantage point of seeing the built structure in the foreground with the whirlpool swirling behind, calling the observer’s attention to not only the sculpture but a heightened awareness to the natural life of the place. As time moves on Goldsworthy captures the gradual rise in the tide by video. As the ocean rises it begins to splash on the sculpture, then submerges the base and continues to increase eventually lifting the
sculpture off of the rock formation. At this moment, the driftwood begins to float on the water and despite the turbulence remains almost entirely intact. The sculpture then starts to spin in the whirlpool, slowly rotating in the pool. As the structure revolves, in the vortex individual pieces of driftwood become dislodged from the primary structure, but continue to circulate in the currents of the pool. Eventually, the structure is disassembled, yet the individual pieces seem to reiterate the flow of the current of this place emphasizing their unique trajectories that are in somehow in concert with one another and seems to fill the pool in concentric rings spatially. As more time passes the individual wood pieces crash into one another, they hit the shore and some make their way out to the ocean. Each piece seems to now have their own life and own path. Time continues to pass and Goldsworthy’s structure no longer exists. The whirlpool reclaims its original identity. The majority of the wood washes back up on the banks of the shoreline. He reflects on the idea of very thing that brings his work to life will ultimately cause its death. We are exposed to a state of equilibrium. Goldsworthy’s work stands in high contrast to many other sculptors as his work is temporary, it is a dialogue between the artist and the place. If not captured by video a viewer would have to be present for the entire process of siting, gathering, constructing, reflecting and destructing to truly experience his work. In this process, there is no period of research or resting once in a place he is straight to work and ultimately straight to discovery. He comments how from his perspective humans are the strangers in the landscape. He mentions how people are out of touch with their environment, and thus he advocates for a process that encourages critical observation paired with physically working with the medium of the 'place.' Goldsworthy’s work offers a method for which found materials in the landscape can offer a way for a person to be able to shake hands with the 'place,' much like meeting a new person.
C. High Tide [Carolina Aragón]

High Tide was an art installation designed by landscape architect and artist Carolina Aragón. The installation was selected to participate in "The Local," a public art initiative developed by the Rose Kennedy Greenway Conservancy in Boston, MA which aims at connecting communities of Boston through creativity along the Greenway.

The installation populated the once manicured lawn of the North Street Park which sits in front of a local municipal building that is in proximity to the heavily trafficked, Hanover Street located along the Rose Kennedy Greenway. Hanover Street is the main artery that connects downtown Boston with its historic North End. The installation injected life into this somewhat uninhabited parcel. The design is comprised of a field of white fiberglass rods that host a series of dichroic plexiglass disks which resemble the tall grass, movement and light conditions experienced in a natural saltwater marsh. The Dichroic plexiglass is a material that actively changes color based on the orientation of light and one's
viewing angle. As the plexiglass disks were designed to both pivot around the rods as well as bounce through the use of a spring-loaded counterweight they were highly kinetic which enabled them to be responsive to the wind patterns of the site. The continuous reflection and refraction of the moving colored light produced by the art were captivating for visitor’s as they passed by which physically drew them into the site. Once people engaged with the art, they began to move through and around the installation touching the disks as they passed through. While the installation is extremely playful, it also can inform the public about the condition of this local landscape. The artificial marsh calls specific attention to the saltwater marsh that once thrived along the entire inner-harbor of Boston’s shoreline. This marsh edge which was a natural protective barrier for the mainland eventually was decimated due to the settlement, the need for transportation within the harbor and ultimately as a result to the city of Boston’s infill agenda over the last two centuries. High Tide also calls attention to the critical issue of sea level rise and climate change as the organization of the installation depicts the anticipated sea level rise that will impact the city in the years to come. The design can convey the idea of change to the public through both its appealing kinetics and its profoundly rooted sensitivity toward the specific heritage of this landscape that has had a profound impact on those who interact with it, encouraging lasting memories and awareness of critical environmental issues. The fact that this was a temporary installation that was achieved with a relatively low budget emphasizes the potential for small-scale design to make a dramatic impact. Aragón's artwork blurs the lines between sculpture architecture and landscape design which seeks to connect communities to their local landscapes by creating interactive installations that act as environmental sensors, which are reactive to changes in local atmospheric conditions.
D. **Oyster-ecture [Kate Orff, SCAPE]**

Located in Brooklyn's Gowanus Canal in Red Hook, Oyster-ecture responds to the loss of oyster reefs in New York's inner harbor which has long since evaporated from its coastlines primarily due to urban development.

The idea for Oyster-ecture was a direct response to the devastating effects Hurricane Sandy had on New York City. The management and attenuation of storm-water surges are an ever-pressing matter for the city especially when considering the continuously changing tidal conditions due to sea level rise. New York's previous needs to accommodate a rapidly growing and more densely populated urban landscape promoted the perpetuation of developing every square-inch. This practice led to the construction of the massive retaining wall structures that today line the majority of New York's ocean frontage. The effects of these walls have decimated the local ecosystems and wildlife habitat along the shoreline and inner harbor and have resulted in
unchecked tidal currents moving through and within the harbor. This infrastructure has allowed for higher volumes of boat traffic which has led to further contamination of the harbor which is compounding due to the pollution attributed to stormwater runoff from urban development and pollution associated to centuries of human habitation with little concern for the water quality. Today, more than ever designers and ecologists are calling for more passive and ecologically sensitive interventions which target the loss of ecological habitat, water quality, as well consider ways to reactivate the shoreline for the people who have in recent years been deterred from using the area along the coastline due to its lack of appeal. The design operates under the pretense that New York will only experience more rapid densification in the years to come. It is the physical presence of the piles, netting matrix and vegetative layer that would also protect the shoreline from both shifts in rising sea level and storm surges efficiently attenuating the effects of wave disturbance on the existing retaining walls along the harbor which consider the impact of the design is looking into the future.

Kate Orff and her landscape architecture firm, SCAPE took on these design challenges in their recent proposal which was titled, "Oyster-tecture." What SCAPE did was they looked at the past, present, and future and proposed a sensitive design intervention that directly responded to variables within each period in mind. They looked at the history and recognized how before settlement the shoreline of New York was populated with natural marshes. Today we know that salt-water marshes are the effectively the liver of any coastal mainland. As stated above it was the loss in these buffers due to decisions that promoted development where we see the instance when the effects of development will have negatively lasting impressions on coastal ecosystems. While SCAPE did not propose the restoration or reconstruction of these saltwater marshes along
the entire inner harbor due to space, efficiencies of inner-harbor boat traffic and many other apparent variables but they recognized that the loss of habitat that the salt water marsh provided was something they could respond. They identified how Oysters which historically thrived in these coastal environments acts as a sort of biological-engineer that are both resilient to contaminated water, but more importantly actively process contaminants in water. The key was to restore habitat along the shoreline then, and what they proposed was a series of areas where wooden piles which were already an aesthetic regularly found in the old dry-docks that populated the inner coastline which would support a series of layers of fishing nets that would provide the oysters with a new habitat. The new habitat is layered to provide zones of ecological function. These zones include a layer for public access to the water above, a layer to host saltwater vegetation, a layer to shield the oysters from waterfowl as well as point of access for biologists to survey and analyze the oyster’s function. The structure would also provide another zone below that would be free from the disturbance of water traffic which would provide new habitat for fish and other aquatic wildlife in the harbor.

The beauty of the proposal is that it challenged conventional attitudes toward how designers or urban planners have addressed water quality which would employ this use of massive infrastructure and active systems for remediation that would require extensive investments, as seen in the Boston Harbor’s water treatment facility by using nature to clean the contaminated water. Rather than invest in costly infrastructure that would require substantial maintenance, take years to approve and construct and would perpetuate the use of fossil fuels to run they decided to invest energy in education. By educating the public about the positive effects, oysters have on the local ecology as well as the harmful impact humans have had on their local
environment they could develop a community-based initiative which not only cleans the water but also engage people in a manner that could efficiently re-activate the area along the water’s edge.

![Figure 90. Ise Jingu Grand Temple](image)

E. Ise Jingu Grand Temple

The Ise Jingu Grand Temple is considered to be the soul of Japan. The Grand Shrine is a Shinto Temple that is a dedication to the sun goddess. Thought to have been initially constructed in 4 BCE the shrine is an essential destination for thousands who embark on the spiritual pilgrimage to this ‘place.’ The architecture of the Temple is one that expresses extreme simplicity. Every 20 years the Temple is dismantled and is then reconstructed using new materials with the exact specifications of the former structure. This process highlights the power related to the physical practice of making and the human condition related to the concept of ‘place.’ The structure is built in a manner that honors the heritage, ultimately finding a balance between an architecture that is forever new and ancient.
A. Place Imagination: Intent + Scope

The goal of the design portion of this thesis was to promote design interventions that respond to the local condition of place that bridge poetics of place with the science of 'place.' This attitude is achieved through a constellation of humble vignettes that were responsive to the unique physical features and micro-conditions found in the rural-post-industrial landscape of Woronoco. The proposed interventions foster design experimentation rooted in the exploration of theory, heritage, representation and an analysis of the forces of place all of which are continually changing. The introduction of these interventions operates within a framework that one can only protect place if he or she is in love with that place or has topophilia. The goal was to use my love for this place and the skills as an architect to make the dynamics of this place more accessible to a broader audience. The design of each intervention evokes a participatory action by the visitor, encouraging engagement which has the potential to foster new memories and deepen connections with this 'place.' While the design interventions do not host a specific function or program, they promote activity or ecological services that result in each intervention having its own identity which is emphasized to the visitor. Each of the proposed interventions responds to the unique physical features and microenvironment of the place resulting in a level of expressive integrity in the articulation of each intervention which is drawn from the specific heritage of this 'place.' The interventions aim at promoting an interpretive dialogue with place that plays off the individual’s emotional response while attempting to enrich one’s experience. This is achieved by reflecting on the cultural significance through the expression
of material, the process of making and the encouragement of dwelling in this 'place.'

To deepen the participatory element of 'curating place,' each design focuses on highlighting the tectonics of the intervention which is emphasized through the process of making. The act of making is fundamentally one of the most profound ways in which people can learn from a 'place.' The physical interaction of working with materials in a specific landscape focuses the individual's attention to nuances of that particular landscape forcing a dialogue which the individual must engage. Elements found in the landscape such as a particular rock formation or crevice become very apparent when they can have an impact on the making process. These elements may otherwise go unnoticed if they are not interacted with through the making process. It is the tactility of working with our hands and material paired with cognitive processing through the act of making that stimulates resonating memory. The memory of place can foster topophilia or love of 'place.' It is our love for 'places' which stimulates their continued use and sustainability over time.

Today, Woronoco is caught in a moment between revitalization and allowing nature to reclaim it. Therefore, the intent during the design and testing phase of this thesis was not to take a stance of promoting one or the other but focus instead on this moment in time as an opportunity to connect and re-connect the community to this 'place.' Each vignette is sensitive to the moment and encourages an open dialogue concerning how it embraces change through its temporality, seasonal change, natural degradation and natural growth.

The goal was to develop a series of design strategies that respond to the physical features, cultural and ecological influences of this place and promote interventions that may enrich the local condition and reconnect the community to this place through the process of making. Each intervention hopes to Illustrate
how this strategy of curating could be adopted as a precursor to further development or more ecologically responsive design interventions.

Figure 91. Focus Area

B. Focus Area

After a thorough analysis of the genetics of 'place,' there was an intent to look at the micro-environments within a framed focused area that could be more deeply investigated to test how one might use design to 'curating place.' This process revealed eight moments in the landscape that were geographically separated and were unique from one another. These moments were expressive of critical changes in the landscape including river bank, river edge, river bottom, glacial terrace, forest and the summit of the mountain. Due to the layers of human occupation of this 'place,' these momenta also offered a dialogue between the unique landscape features with the architecture including the dam, the bridge, hydro-power tube and the mill. The interventions also honed in on articulating the specific heritage of these moments. This heritage included expressing the geological makeup. As well as the Native American occupation of this place responding to canoe making, use of the river for fishing, trade, and seasonal migration. European settlement was also considered responding to the
farming and timber harvesting practices as well as outdoor recreation. The industrial heritage also was considered, specifically focused on the infrastructure created for specific functions in the paper-making process. The objective was to promote activity or ecological services in these moments in a way that might reconnect a visitor to this heritage. This effort included how one might use or access the river, restore wildlife habitat, improve water quality, remediate soil, resist monocultures, physically make, connect wildlife corridors, and observe this ‘place.’ These moments found in the landscape were further investigated as a series of vignettes which integrated schematic design interventions to experiment with oh design could be used as a tool to curate each condition.

Figure 92. Focus Area Vignettes
1. **Vignette A: Mill Pond [river access]**

This design intervention focused on developing a strategy for making the river's edge accessible. The intervention was located at the confluence of the Potash Stream above Mill 1 to activate outdoor recreation in this area. The Westfield River has been used in many ways throughout its history including; a primary source of food, trade, travel, irrigation, outdoor recreation and eventually energy production. The river is the life of this place. The use of the River dates back to the early Native American occupation of this place. Today, the millpond at Strathmore Paper Mill is the finish-line for the oldest consecutive running whitewater canoe race in the country. While easy access to the river is scarce throughout the Hilltowns of rural Western, MA yet the river continues to be used for outdoor recreation primarily paddling and fishing. The goal of the intervention would be to ultimately activate the river, encouraging more people of the community to use this resource.
Figure 93. Focus Area A [photo]

Figure 94. Focus Area A [diagram]
2. **Vignette B: Dam [aquatic habitat restoration]**

The focus of this intervention is to investigate how design might enable the ability to reintroduce fish habitat along the hard-constructed edge of the dam. Salmon Falls, a natural rock formation which consists of a vertical drop of over 30’ was named for the native grounds which hosted an abundance of shad, salmon and trout species that were harvested here. The introduction of the dam to harness power for the mill resulted in the inability for anadromous species to thrive here. Today, only introduced rainbow trout genuinely thrive in the Westfield River as they are stocked periodically throughout the year by local fisheries. While the dam still provides hydro-power to its surroundings and mitigates the destructive potential of seasonal melting and significant storm events on settled areas down-river it has created a pond condition in the river. This slow-moving water above the dam has resulted in the river bed to have been covered by fine silt, sand, and decomposed organic matter which has covered any original rock formations that would have served as critical habitat for native species.
Figure 95. Focus Area B [photo]

Figure 96. Focus Area B [diagram]
3. **Vignette C: Mill 1 [maker space]**

This intervention will aim to adaptively reuse a portion of the Strathmore Mill 1, which has its vibrant history of making to establish a new connection to this tradition. The use of local materials to construct canoes and fishing rods is a process that while was derived from the original need to survive in this rural place it became an element that connected people. The practice of making connected tribes with one another it has inherently informed the heritage of the 'place,' a heritage that passed to the early European settlers of this area and persists today. While today we rely less on this practice there has been a resurgence in both the practice of making and the use of local materials. The particular space that was investigated for this intervention was an outlier as it is a concrete structure that was the last appendage of the predominate masonry mill. The building adjoined to the oldest standing structure at Mill 1, and its vintage, materials used in its construction and the juxtaposition between the two provide an appealing dialogue concerning the progression dialogue of construction at the Mill. The fabrication of both canoes and fly rods at this location will again hopefully encourage and support people's connection with this place through outdoor recreation and the process of making.
Figure 97. Focus Area C [photo]

Figure 98. Focus Area C [diagram]
4. **Vignette D: Bridge [wildlife crossing]**

The goal of this intervention is to establish a wildlife bridge that will connect the east and west banks of the river to support wildlife connectivity from Tekoa Mountain to the Blandford forest. The concrete bridge located south of Mill 1 on the east side of the Westfield River and Mill 2 on the West side of the Westfield river spans high above Salmon Falls connecting the manufacturing portion of the Mill (Mill 2) with the storage area of the (Mill 1). While the structure of the bridge itself is a hidden gem of this place, it is even more interesting given its functionality as it is a multi-modal bridge. The top surface provided continued transportation of paper goods from one side of the river to the other. Under the main deck exists a fully enclosed passage used for workers to pass from one side to the other as to not interrupt vehicular traffic and provide workers a safe and protected passage that was not subject to the harsh New England seasonal weather. The goal of this intervention is to establish a wildlife bridge that will connect the east and west banks of the river to support wildlife connectivity from Tekoa Mountain to the Blandford forest which has been ultimately severed by the damming of the river, and more dramatically by the MA Turnpike.
Figure 99. Focus Area D [photo]

Figure 100. Focus Area D [diagram]
5. **Vignette E: Hydro Station [living machine]**

The intent of this intervention was intended to investigate the continued use of the hydro station, but introduce a living machine that ultimately slows, treats and cools the water used in this process before returning to the Westfield River. The practice of harnessing the power of water for energy is almost as old as mill themselves. The hydropower dam at Mill 1 is in comparison with other hydro systems rather non-intrusive or disruptive to the ecology of the area as it consists of a single run of pipe that converts gravity flow of the water into power.

![Figure 101. Focus Area E [photo]](image)

![Figure 102. Focus Area E [diagram]](image)
6. **Vignette F: Glacial Terrace [community cultivation]**

The design intervention for this area focuses on a hybridized platform of cultivation that will focus on forward-thinking forestry practices mixed with community gardens as both an economic and ecological resource for the town. Throughout the history of this place much like activities such as fishing, hunting, and canoeing there has also been a long history of cultivation. While the Native Americans of this area farmed using small crops dispersed in small clearings of the forest the European Settler farming consisted of large swaths of cleared forested land to raise their crops. While the two methods were remarkably different, they were both concentrated on the natural glacial terraces along the river. These areas overtime would then support development such as the construction of the Boston & Albany Railroad corridor as well as the construction of Mill 2. Even during the history of the paper mill when agriculture was much less of a focus for the inhabitants of this place gardening and subsistence farming were heavily active due to Robert Mosses utopia company town. Horticulture and agriculture were celebrated at annual awards for best gardens among the village, and even stimulated programs like the 4H clubs were young people would showcase what they had grown at local gatherings and even expositions like the Eastern States. The design intervention for this area will be focused on a hybridized platform of cultivation of what is today a mowed grass lawn along the southern face of Mill 2 which will focus on forward-thinking forestry practices mixed with community gardens. The goal will be to develop a strategy for the cultivation of wood as both an economic and ecological resource for the town as well as promote community gardening.
Figure 103. Focus Area F [photo]

Figure 104. Focus Area F [diagram]
7. **Vignette G: Mill 2 Brownfield [constructed wetland]**

This intervention will intend to reclaim this area as a constructed wetland that deploys phyto-technologies and bio-remediation as a method for managing the contaminants found in the soil and runoff of this known brownfield. The process of making, especially the context of early industrial manufacturing always runs in parallel with detrimental effects on the local environment. For years Mill 2 operated using hazardous chemicals that were instrumental in paper-making. The contamination of the soil resulted in an extended period where the river downstream of the mill was heavily contaminated. While manufacturing has stopped these chemicals have now become a part of the landscape composition and has the buildings of the mill deteriorate, they will continue to leach in the soils, plants, and water if unchecked. A condition of the deactivation of the mill was to dedicate an area of the landscape as essentially a leach-field were these chemicals, heavy metals, and contaminants would be stored. Today, this area of the landscape is a fenced-in enclosure with a mowed lawn above with pipes that exhaust potential off-gassing from the soil. This intervention will intend to reclaim this area as a constructed wetland; data suggests that even in comparison of expensive active industrial remediation systems, bio-remediation or the use of plants to actively process contaminants is the most successful approach for efficiently mitigating more significant contamination in the landscape.
Figure 105. Focus Area G [photo]

Figure 106. Focus Area G [diagram]
8. **Vignette H: Tekoa Mountain [observatory]**

The intervention will focus on the phenomenological human experience, by designing an observatory that showcases the extensive views of the Berkshire Range, the Westfield River Valley, and Westfield Plateau. Tekoa Mountain provides the highest elevation point in this place. It is positioned between the Westfield plateau roughly a 400’ drop in elevation to the East and the Woronoco Village to the West. The mountain has a long history as hunting grounds (for Native and Europeans), it hosts a unique habitat for rattlesnakes influencing its other name of (Rattlesnake Mountain). The mountain is the subject of many stories or folklore including Folley's Forge, counterfeiter’s cave, been subject to significant natural and anthropogenic disruptions, primarily forest fires, and is an essential showcase of the geological history and formation of this place which has defined this place. The intervention will aim to stimulate these overlapping and dynamic relationships of this place by providing an observatory at the highest point. The goal will be to encourage outdoor recreation, primarily hiking as a point of destination providing extensive views of the Berkshire Range to the West, the Westfield River Valley to the North and South and the vast Westfield Plateau.
Figure 107. Focus Area H [photo]

Figure 108. Focus Area H [diagram]
C. Place Selection: Curated Focus Areas

Figure 109. Intervention Focus Areas

The interventions call direct response to the microenvironments and uniqueness of the conditions found in this landscape. These two interventions share a common bond through the emphasis on developing a process of making through the use of Strathmore paper and use of digital fabrication technologies. This common thread between the two intervention is a direct response to the tradition of making, specifically the making of paper in this 'place.' Paired with today's digital fabrication technologies these interventions considered new ways to use Strathmore paper as the medium for architectonic interventions. The decision to explore two interventions rather than a single intervention was intended to convey the spectrum of which this sensitive attitude toward 'pace' might be explored as a way to have the methodology be accessible to a much broader audience. This intent was to convey that this process has the potential to be implemented in other 'places.' These two micro-environments found in this place were selected due to their polar oppositeness. The "Tekoa Nest" focuses on the human experience at the summit of the mountain, "River Coral" is located in the river bottom and focuses on ecological
function. However, both interventions are rooted in 'curating place' by reflecting on the heritage, encouragement of participation in the making process, experimentation as well as re-presenting the local community to this 'place.'

Figure 110. Physical Contextual Model
D. River Coral

1. Overview

The first design intervention entitled "River Coral" is a design that is much less anchored in the human condition and is focused rather on ecology. Located in the river-bottom of the Westfield River above the Strathmore Dam the "River Coral" design intervention is responsive to the effect of early industrialization on specifically river ecology. The Dam sits above what was once known as Salmon Falls a natural cascading geological feature that drops roughly 30’. This natural feature was the primary reason why industrialization came to Woronoco in the 1870's. Salmon Falls was originally named because when the Woronoak tribe thrived here, the river was teeming with Atlantic Salmon and shad which were caught here as the fish migrated upriver to spawn.

While the introduction of the Woronoco Dam and many others like it were constructed to harness power for the production of paper which brought economic stimulus to the area and protected communities downriver from flooding it ultimately had detrimental effects on the river ecology. The dam had a significant impact on the migration and habitat of the salmon and shad population that once thrived here which the location was originally named after "Salmon Falls." Due to an abrupt change in the river profile which artificially increased the height of the Falls the dam ultimately created a pond behind it. This pond condition results in the slowing of the flow of water moving over the dam which has led to the buildup of silt that has covered the natural geology of the river-bottom. The layers of silt have destroyed small aquatic wildlife habitat, and the slowing of the water has resulted in the pond condition to be un-aerated further decimating this ecosystem. This intervention aimed to respond to this condition by introducing a strategy to potentially reintroduce wildlife habitat through the implementation of an artificial coral structure in the river-bottom.
The coral structure is made up of a modular polyhedra component tessellation that is self-structuring as it creates space forming configurations in the river. The modular components are made of concrete that uses red-brick as an aggregate obtained from the failing industrial mill complex. The components are cast through the use of paper forms which use Strathmore pulpboard which has been cut with the use of a laser cutter. After the concrete had cured the paper forms were then burned away which is responsive both to the periodic wildfire and subsequent rejuvenation commonly seen in this 'place.' This practice also as a means to embed a carbon footprint on each component to stimulate immediate microorganism growth at its surface as soon as it is added to the primary structure. The use of paper as the form-making material for this design was used not only for its capacity to burn, but its thin sheets which are layered on top of one another to create the form create tiny stepped edges along which would serve to provide each component with more surface area. It is this increase in surface area that would help encourage microorganism activity. The tessellation of the structure is one that could be perceived to be self-generating. One could imagine that during summer months when the water level of the river is low individuals could add to the new reef and slowly it would grow over time. The initial design would be organized around the remnants of the first dam, pieces of which can be seen from above in the river bottom. While the "River Coral" may have the capacity to stimulate new wildlife habit on its own, it encourages a potential food source for other wildlife. The structure has the potential to aerate the water from above by creating small changes in the current. The ultimate goal is that the structure would be able to trap key nutrients especially the coarse woody debris that now flows over the dam in early spring which contains the essential building blocks for aquatic wildlife sustainability.
While the design is mostly invisible to the visitor's, the proposed design occasionally breaches the water's surface and even populates some of the banks to expose the intent of the design to visitor's. The exposed conditions of the design also aim to attract other wildlife species including semi-aquatic amphibians, predators, and waterfowl as an attempt to facilitate a complete ecosystem.

2. **Context**

![River Coral Contextual Map](image1)

Figure 111. River Coral Contextual Map

![River Coral Diagram](image2)

Figure 112. River Coral Diagram
3. **Design + Digital Modeling**

Figure 113. River Coral Digital Model [component]
Figure 114. River Coral Digital Model [cell]
Figure 115. River Coral Digital Model [tessellation]
4. **3D Printing: Massing + Growth**

![3D Printed Massing Growth Model](image)

*Figure 116. River Coral Digital Fabrication [3D printed, massing]*
Figure 117. River Coral Digital Fabrication [3D Printed, incremental growth]

Figure 118. River Coral Digital Fabrication [3D printed, large tessellation]
5. **Digital Fabrication: Laser Cutting**

![Diagram of River Coral Digital Fabrication (laser cut form)]

Figure 119. River Coral Digital Fabrication [laser cut form]
6. **Physical Modeling: Paper Forms**

Figure 120. River Coral Digital Fabrication [paper mold]
7. Physical Modeling: Casting + Burning

Figure 121. River Coral [casting]

Figure 122. River Coral [burning]
8. **Material Testing**

Figure 123. River Coral Material Testing [small units]

Figure 124. River Coral Material Testing [large masonry unit]
9. **Representation**

Figure 125. River Coral Rendering [nutrient catchment]

Figure 126. River Coral Rendering [growth]

Figure 127. River Coral Rendering [ecological activation]
E. Tekoa Nest

1. Overview

The ‘Tekoa Nest’ was an intervention that was derived from the intent of having a light touch on the rugged terrain atop the ledge of Tekoa Mountain, the highest point within the larger focus Area. The summit of Tekoa Mountain offers contextual views of the surrounding area including the Westfield Plateau roughly 1000’ below, the Westfield River Valley, the village of Woronoco as well as the foothills of the Berkshire Mountain Range. The goal of this intervention was to develop a temporary structure that might be constructed and re-constructed annually. The structure would serve as a destination that might emphasize the human condition at the summit. The intervention is a tensile structure made up of two-primary surfaces the bottom which is elevated off of the ledge below and the above surface which is draped above. The primary intent of the intervention was to create a phenomenological experience in this interstitial space between the ground and the sky on top of the exposed geology of the mountain through an ephemeral architectonic intervention that highlights the features of this unique landscape. This design would allow visitors to inhabit both within the tensile framework as well as on top of the top surface while being able to see through the entire structure. The structure’s light-touch on the landscape is emphasized by its primary structure, a series of thin vertical members that support the two transparent tensile surfaces. The structure is constructed out of a series of glulam-paper members which are joined through the use of pinned connections and a tensile weave. The use of a paper structure for this intervention was not only derived from a desire to respond to the heritage of paper-making here but also concerning how paper is a material of the moment finding its way in several cutting-edge structures. Paper is a lightweight material that has the structural capacity similar to wood but has the deforming
characteristics similar to steel where it does not break immediately but slowly deform. The advantage of paper structures over wood is that uses pulp that is manufactured into thin sheets without any imperfections. Paper structures offer an opportunity to use non-virgin lumber while using sustainable material. A drawback in the use of paper is its ability to resist weather or failure due to exposure to moisture, while the intervention was intended to be temporary this had little impact on the final design. A mock-up of a glulam-paper member coated with a carnauba was tested outdoors for four weeks after which showed no signs of delamination or material failure.

As mentioned earlier the process of making was an inherent component in the design of this intervention. The goal was to respond to the geo-location of the intervention at the top of the mountain by developing a construction technique that could be packed and then hiked up the mountain where it could be assembled. This focus encouraged the participatory action of those constructing the structure to physically interact with the mountain through the climb and eventually through the assembly of the structure. The use of simple pin connections and interlocking joint components further encouraged the idea of innovative ideas about making in this potentially difficult location as it stripped the need for power tools. Much like a tent the structure could be assembled and then disassembled using simple tools. To make assembly even easier, each component was engraved with a specific code which would allow members of the build-team to know which component went where ultimately streamlining the assembly process. Another critical feature of this design was the use of digital fabrication technologies primarily the use of a laser-cutter which enabled the manufacturing of each component to have an almost zero tolerance during fabrication. This level of precision would not have been attainable through the use of more conventional methods of fabrication. The purpose of digital
fabrication in this process was also used to emphasize emerging technological advancement in how we can make today, especially regarding paper structure. Ultimately, for a select few the process of hiking up Tekoa Mountain and assembling this structure would deepen the individual’s attachment to this moment in this landscape through the practice of making, but all of those who would visit the structure would receive highlighted contextual views and experience this landscape in a new way.

2. **Context**

![Tekoa Nest Contextual Map](image1)

Figure 128. Tekoa Nest Contextual Map

![Tekoa Nest Diagram](image2)

Figure 129. Tekoa Nest Diagram
Figure 130. Tekoa Nest Approach [photos]
3. **Design + Digital Modeling**

![Figure 131. Tekoa Nest Digital Model (axonometric view)](image-url)
Figure 132. Tekoa Nest Digital Model [plan]
Figure 133. Tekoa Nest Digital Model [elevations]
Figure 134. Tekoa Nest Digital Model [sections]
4. **Design Fabrication: Laser Cutting**

![Laser cut export file](image)

Figure 135. Tekoa Nest Digital Fabrication [laser cut export file]
Figure 136. Tekoa Nest Digital Fabrication [laser cut components]
5. **Physical Modeling**

![Figure 137. Tekoa Nest Physical Model (component assembly)](image-url)
Figure 138. Tekoa Nest Physical Model [components]
Figure 139. Tekoa Nest Physical Model [large joint detail]
Figure 140. Tekoa Nest Physical Model [large component assembly]
Figure 141. Tekoa Nest Physical Model [1:4 scale model]
6. **Material Testing**

Figure 142. Tekoa Nest Structural Testing [parallel bending]

Figure 143. Tekoa Nest Structural Testing [perpendicular bending]

Figure 144. Tekoa Nest Structural Testing [compression]
Figure 145. Tekoa Nest Structural Testing [results]
7. **Representation**

![Figure 146. Tekoa Nest Rendering [during assembly]](image)
CHAPTER XI

FINDINGS + CONCLUSIONS

These two interventions intended to try to articulate the spectrum in which the architect might consider ‘curating place’ rather than proposing two final fully resolved design solutions. The goal is to encourage highly interpretive and experimental interventions that are sensitive to the conditions and heritage of place while challenging conventional attitudes toward design, fabrication and material usage. Both of these interventions are focused on their process of making. It is a process derived equally through experimentation and testing as well as dwelling and engaging with the place itself.

While both interventions were tested at relatively large scales to move forward with either would require further investigation. Questions that immediately arise are the structural integrity of both systems over time how they might respond to extreme weather conditions, how they might be stored, repaired or added to. A more in-depth understanding of the embodied energy associated with each intervention would also need to be fully considered as well. This process has a potential of encouraging a lens of participation within the community which was not deeply investigated in this thesis. Through this process of ‘curating place,’ one might imagine how each of these interventions has the potential to engage a whole community in the making process. The community engagement component would require having materials readily available, having a dedicated space where making could occur, creating ways that would allow visitors to have ownership of the components they fabricated or even encouraging events that might bring the whole community together to ‘curate place’ such as a festival. The big question is how might this process be adapted to other ‘places’ both similar and different from Woronoco. How does someone learn about place through this method of intervention?
APPENDIX:
WORONOCO HISTORICAL TIMELINE

Pre-History

Glaciation

Forming of Glacial Lake Hitchcock

*Lake Hitchcock breaks through the natural levee in Ct and drains into Long Island Sound*

3,000 – 2,000 B.C.

Woronoak Native Americans thriving in area of Woronoco

11 Century

*Leif Erikson reaches the Americas*

1492

*Columbus lands in Central America*

*Samuel de Champlain scouts Cape Cod*

*French ship wrecks off the coast of New England, people aboard taken as prisoners of the Pawtuxet Native Americans*

1610

*The Great Mortality*

1620

*Pilgrims land at Plymouth*

1621

*Thanksgiving Day Feast*

1630

English settlement Springfield, Massachusetts

1640

Westfield plain becomes a beaver fur trading area (supported by the Woronoak Tribe). Edward Hopkins, Hartford's Assistant Governor, secures a grant of land
from the Connecticut General Court to establish the first plantation and trading post in Westfield, MA. Governor Hopkins is said to have taken special interest in the area and as a result decided to erect a trading house there to support the plantation.

1641
Historical Records document the purchase of land from the Woronoco Native Americans to English settlers.

1643
The land of Woronoco was disputed over among several colonies including: Plymouth, Connecticut, New Haven and Massachusetts.

1644
Decreed that Westfield, with all its houses and lands, should be under the jurisdiction of Massachusetts.

1647
Westfield is accorded to Springfield.

   It is ordered by this Court, that Woronoke upon the Connecticut River within this jurisdiction, shall be, and be reputed as a part of ye towns of Springfield, & liable to all charges there as other it's of the same town: until erecting some other plantation more convenient, it shall be thought fitt by ye Court to annex it to such new plantation. 9

In this transaction, it was noted that there was an exchange of wampum, beads or shells that were used commonly as an early form of currency.

1655
Springfield Town Meeting which included John Pynchon, Elizur Holyoke, George Colton, Benjamin Cooley, and Thomas Cooper made the decision to "dispose of the land at Woronoco to such men as they saw fit."

1660
Springfield Town meeting decides to create a plantation in Woronoco.

1664
Thomas Cooper takes a mortgage from Amoakusson who had owed him money. Amoakusson defaults on a mortgage and as a result signs over hundreds of acres including the area between Tomahaumucke Brook and the Woronoak Brook (Westfield River), extending to the junction of the two brooks near Union Street toward Pochassic as far as Wasapskotock "the land of the shining rock" (Prospect Hill).

Two Regicides of King Charles II, William Goffe, and Edward Whalley hide out in the English Grass Cave at Tekoa Mountain to avoid being sent back to England to be executed for crimes against the crown.

1669
Aliquot's land is purchased, and Westfield is granted a township status. At this time members of the community suggest the township should be named Streamfield, but it later becomes named Westfield as at the time it is the westernmost settlement in Massachusetts.

1675-1678
*King Phillips War*
King Phillip, was the chief of the Wampanoag Native Americans. He was the son of Massasoit who had joined the "pilgrims" for the first Thanksgiving Day feast. Phillip organizes several Native American tribes and hundreds of warriors to resist the effects of European settlement. The Plymouth and Massachusetts Bay authorities become aware of the organization of the tribes and initiate tactics to suppress the conflict. The Mohican Nation remains loyal to the English during the conflict.

1682
Elizabeth Sackett was abducted during a raid. She was assumed to have been killed at the age of 6.

1710
Elizabeth Sackett returns home with Native American husband son and daughter to the Sackett homestead in the village of what is today Woronoco.

1735
Blandford is settled and becomes known as the Suffield Equivalent due to its proximity and the ambiguously defined boundary with the neighboring state of Connecticut. This land would eventually be disputed over by the two states and would eventually become part of Massachusetts.

1737
Housatonic Road was constructed. The road would be the most important road in the region. It would provide a safe route of travel that would connect the area with commerce of the Connecticut Valley towns. The original road passed through Blandford along Ten Mile Pond where it turned briefly down what is today known as General Knox Rd, the road followed the winding Westfield River and passed by the Sackett homestead.
1740
The New Addition is surveyed. This survey revealed 5,879 acres located between Westfield and the Suffield Equivalent which would lead to major debates between the two States.

Matthew Barber purchased 400 acres on the north-west side of Ten Mile Pond. Barber is credited for building the first fulling mill (a mill used to shrink and thicken wool into garments) and a sawmill on the brook that runs out of the pond. This is the first example of industry in this 'place.'

1744
Due to escalating conflict between the Native Americans and European settlement a small military fort was Established in Blandford as part of the Hampshire Regiment. The small fort would be used to protect the Western Frontier. The entire Hampshire Regiment consisted of a total force of about 300 men.

1754-1763
*French and Indian War*

1769
Land near Ten Mile Pond is purchased by Steward Hazzard, Hazzard would rename the Pond Hazzard Pond. Hazzard would continue to improve the mills begun by Barber.

1770 - 1783
*Boston Massacre*
*Revolutionary War*

*General Washington resigns as Commander of the Continental Army*
1771
Isaac and Abigail Palmer two of the first settlers of the present-day village of Woronoco are thought to be two of the very first settlers here. This is marked by a small cemetery which hosts 11 headstones located on the floodplain between the Westfield River and Mount Tekoa.

1774
Ferry operates on the Westfield River near present day Strathmore Park.

1775
Richard Falley, a master armorer of Westfield, would build a small armory tucked into the side of Mount Tekoa near Meadow Brook. Falley served in the French and Indian War at the age of 16 in the Westfield Militia and would later serve in the American Revolution. Folklore about Falley’s secret armory was said to have been embellished by General Knox as he made his way through the New Addition when leaving Fort Ticonderoga. It is thought locally that Falley’s Forge inspired Knox to suggest to General Washington that the Continental Army construction the Springfield Armory as it would be hidden from British troops. A comrade of Falley’s during the French and Indian War was William Shepard who is most well known for being the general who put down Shays Rebellion. Falley’s Forge was said to have been located less than a half mile from Pochassic Road in a gorge that hosted many steep gullies. This location supported the narrative as the cascading Meadowbrook would have been likely used to power a water wheel, the dense forest canopy would conceal smoke and sound, an abundance of oak, maple, chestnut and mountain ash could have been used for gun stocks, and this location also had an abundance of flint from Hinckley’s ledge and plenty of wood to fuel the fire for the Forge.
Falley would be the great-grandfather of future US president Grover Cleveland

1776
General Knox passed through Blandford, Russell, and Westfield with a column of hundreds of men on foot and on horseback. The men directed ox-drawn sleds across the snow. The sleds carried 55 cannons and mortars, tons of cannon balls and barrels of gun powder that had been captured at Fort Ticonderoga which would be brought to Cambridge to supply General Washington with the desperately needed arms and munitions to drive the British out of Boston. This tremendous feat by Knox and his men which arguably set the stage for the remainder on the War was never forgotten in Woronoco and it would be commutated with statuary and the eventual renaming of a major road that is thought to have followed the parade of soldiers.

1786 - 1787
Shays Rebellion

1789
George Washington becomes the first American President

1792
The town of Russell, formerly part of the "New Addition" section of Westfield was incorporated as a town in the eyes of the State of Massachusetts. The early settlement around Hazard Pond (now known as Russell Pond today) would support the construction of a small grist mill, tannery, and sawmill that would make use of plentiful water flowing from the local streams.

1795
Robert Hazzard became the first town clerk of Russell and owns land around the entire lake and renames it Hazzard's Pond.
1804-1806
Lewis and Clark Expedition

1831
Several farms operate on the plateaus and glacial terraces along the Westfield River, based on the map a sawmill operated near what is today the Massachusetts Turnpike where the Blindfold Brook flows into the river.

1830-1840
The construction of a canal begins in an effort to supply water as a feeder to the Northampton and Farmington Canals which were thought to provide faster and more efficient transportation and shipment of goods with in the settlements of the region. The canal project would eventually stop as the amount of infrastructure required would be tremendous especially when considering the drastic seasonal changes of New England. The Canal would ultimately be forgotten with the emergence of the Railroad.

1840
It is documented in a historic interview that Simeon Mallory who was born on Russell Mountain in 1800 managed a store and fishing pole factory which used Blandford Brook to turn its water-wheel. This fishing pole factory is what many people believe is what is depicted in professor Hitchcock's geological study of the area.

1841
The Boston & Albany Railroad came through the Berkshire Hills. This would change the makeup of Russell forever.

The railroad would lead to the further development of the town. The town would subsequently be developed into three distinct villages joined by the Westfield
River, Woronoco, home of the Strathmore Paper Mills, Russell Village, site of charcoal and brick kilns and eventually the site of Westfield River Paper Company and Crescent Mills, home of Chapin and Gould Paper (Texon). The railroad provided local industries with easy access to tremendous water-power and easy transportation of goods and raw materials. Russell would change from a small isolated agrarian community with small lumber and grist mills to a prosperous town with jobs for all. The Industrial Revolution had arrived in Russell.

1858
Folklore of Counterfeiter’s Cave is propagated. A group of bandits were thought to have lived in the caves of Tekoa Mountain where it was believed that they were producing counterfeit money which they used in nearby Westfield.

1861 - 1865
Civil War

1870
The first map of Russell is drawn.

1871
Jessup and Laflin build the first paper mill on the Westfield River at present-day Woronoco

1872
The first dam is built on the Westfield River at present-day Woronoco used to harness hydropower for the Jessup and Laflin paper mill.

1887
Roswell Fairfield would buy the paper mill from Laflin and Jessup and would rename the village Fairfield.
1892
Strathmore’s predecessor company, Mittineague Paper Company, was established in Massachusetts. This mill like many others in the region were a direct response to the social and cultural movement that was thought to have been inspired by the Chicago World’s Fair. The Chicago World’s Fair brought with it a new era of architecture, art and industry that would flourish in the United States during this period.

1893
Fairfield loses village due to economic hardships

1895
Inspired by the beauty of Scotland's Strathmore valley, company founder Horace Moses adopts both the Strathmore name and the valley's natural icon—the thistle—as symbols of the superior quality of his paper. By 1895, the phrase "Strathmore Quality' began appearing in promotions throughout the region.

The early settlement near Hazard Pond survives today only as a ghost of what it once was.

Woronoco becomes a "company town" planned and owned by the Strathmore Paper Company, owner Horace Moses. New immigrants to the United States settle where there were jobs, and Russell had steady work to offer at its three paper mills. (Strathmore, Westfield Paper, Crescent Mills)

1904
Mill and Village renamed Woronoco
1911
Following a merger with the Woronoco paper company, Mittineague was re-incorporated as the Strathmore Paper Company. Book and cover papers were the leading category followed by writing and bond papers.

1914-1918
WWI

1919
Recalling his obstacles encountered early in his business career, Horace Moses (Strathmore's founder) co-founded Junior Achievement, which rapidly gained stature as an organization committed to reaching the values of entrepreneurship to young Americans.

1924
A Forest Fire would decimate much of the timber that populated Tekoa Mountain.

1929
A Hurricane leads to substantial flooding of the Westfield River which had devastating effect on the local village and prompted many challenges for the mill. The effects experienced by the hurricane would eventually lead to the construction of a series of control dams up-river.

1929-1939
Great Depression

1939-1945
WWII
1942
The year of Strathmore's 50th anniversary marked the production of nearly 30 million pounds of paper or 120 times that of the first year's output. Its printing and writing papers were sold nationwide through 150 different paper merchants with a combined sales force of 2,300 people.

1950
Throughout the 1950s, Strathmore deepened its relationships through a series of promotions that featured some of the leading graphic designers of the era: Lucien Bernhard, Saul Bass, Neil Fujita, Noel Martin and Lester Beall. Strathmore would go on to engage eminent illustrators including Paul Rand, Milton Glaser, Seymour Chwast and Herb Lubalin.

1999
Strathmore Paper Mill is abandoned.

Today
In recent years, Russell has seen the decline of the industry as the backbone of its economic well-being. All the three mills have been closed and have been abandoned. In many ways, Russell has become a suburb of Westfield, yet it clings to its association with the other surrounding Hilltowns. (Blandford, Huntington, Montgomery, Chester, Worthington, Middlefield)

"Russell is a special place where the hills are higher, the rocks are more plentiful, and the people truly care about their neighbors."


Historic American Engineering Record National Park Service, Northeast Region


Latour, B. (2008). *A cautious Prometheus?: A few steps toward a philosophy of design (with special attention to Peter Sloterdijk)*. Cornwall: Design History Society Falmouth.


McDonough, W. (2010). *Cradle to cradle: Remaking the way we make things*. Place of publication not identified: San Val.


Web:

Eisenman, Peter. Rural Studio Interview, SNAKEBIT WEB TRAILER, Archinect.com

US Environmental Protection Agency (EPA). https://www.epa.gov/brownfields