Architecture and Wilderness: An Exchange of Order

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ARCHITECTURE AND WILDERNESS:
AN EXCHANGE OF ORDER

A Thesis Presented
by
ASHLEY LEPRE

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

MASTER OF ARCHITECTURE
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ARCHITECTURE AND WILDERNESS:
AN EXCHANGE OF ORDER

A Thesis Presented

By

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I would like to thank my thesis advisor, Philip Tidwell, because the interest that I have taken in this work was undoubtedly sustained by his interest in architecture.

I would also like to thank the Department of Architecture for knowing and sharing so much.

And I would like to thank my family and my friends; I’ve been flattered by your enthusiasm.
If "wilderness" refers to those spaces that are unoccupied by humans while architecture is one major way that humans occupy space, the terms seem to be mutually exclusive. However, this thesis argues that wilderness and architecture have a fundamental similarity: they are both ways that humans understand and relate to the world.

This thesis looks critically at the notion of wilderness by acknowledging that throughout time and history, humans have understood wilderness in innumerable different ways and, as a result, have treated those spaces that are deemed wilderness in innumerable different ways as well. It acknowledges wilderness as a “profoundly human creation”¹ and from this admission, explores the utility of predisposition as a means by which to direct the built environment’s relationship to the unbuilt environment.

Ultimately, this thesis argues that when humans define wilderness in a particular way and then apply that label to a space, they have made a design decision. It investigates

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the ways in which architecture can apply the label of wilderness to new and even unlikely
types of spaces in order to expand the lens through which we, as humans, value and
appreciate this Earth.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>IV</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>V</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>IX</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td><strong>INTRODUCTION: TROUBLE</strong></td>
<td>1</td>
</tr>
<tr>
<td>1. THREE LENSES</td>
<td>3</td>
</tr>
<tr>
<td>1.1 A Dichotomy, a perception, a language</td>
<td>3</td>
</tr>
<tr>
<td>1.2 Two concerns</td>
<td>5</td>
</tr>
<tr>
<td>2. LOGICAL EXPANSION</td>
<td>8</td>
</tr>
<tr>
<td>2.1 Abstractions</td>
<td>9</td>
</tr>
<tr>
<td>2.2 Outposts</td>
<td>11</td>
</tr>
<tr>
<td>2.3 Terrariums</td>
<td>13</td>
</tr>
<tr>
<td>2.4 Vestiges</td>
<td>15</td>
</tr>
<tr>
<td>3. PERSISTING AND MUNDANE</td>
<td>18</td>
</tr>
<tr>
<td>4. ENTROPY AS AN EXCHANGE OF ORDER</td>
<td>20</td>
</tr>
<tr>
<td>5. EVIDENCE</td>
<td>24</td>
</tr>
<tr>
<td>6. RUST and CABLE, WATER and FIRE, CONCRETE and PAINT</td>
<td>27</td>
</tr>
<tr>
<td>7. MOMENTS OF EXCHANGE</td>
<td>29</td>
</tr>
<tr>
<td>7.1 Rain Pool</td>
<td>30</td>
</tr>
<tr>
<td>7.2 Concept</td>
<td>31</td>
</tr>
<tr>
<td>7.3 Form and details</td>
<td>31</td>
</tr>
<tr>
<td>7.4 Reflection</td>
<td>34</td>
</tr>
<tr>
<td>7.5 Fire and Wood Pool</td>
<td>38</td>
</tr>
<tr>
<td>7.6 Concept</td>
<td>39</td>
</tr>
<tr>
<td>7.7 Form and details</td>
<td>40</td>
</tr>
</tbody>
</table>
7.8 Reflection ......................................................................................................42
7.9 Apart Wall.....................................................................................................44
7.10 Concept .......................................................................................................44
7.11 Form and Details........................................................................................45
7.12 Reflections ..................................................................................................46
7.13 Bridge Pool ...............................................................................................48
7.14 Concept .......................................................................................................48
7.15 Form and details..........................................................................................49
7.16 Reflections ..................................................................................................51
8. CONCLUSION ...........................................................................................................54
BIBLIOGRAPHY ...........................................................................................................57
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: A dichotomy</td>
<td>4</td>
</tr>
<tr>
<td>2: A perception</td>
<td>4</td>
</tr>
<tr>
<td>3: A language</td>
<td>5</td>
</tr>
<tr>
<td>4: Human and wild spectrum</td>
<td>8</td>
</tr>
<tr>
<td>5: Klein Diagram</td>
<td>9</td>
</tr>
<tr>
<td>6: (left) Villa Mairea, Alvar Aalto, (center) Thorncrown Chapel, Fay Jones, (right) Falling Water, Frank Lloyd Wright</td>
<td>11</td>
</tr>
<tr>
<td>7: (left) Gemma Observatory, Annahain Winton Architects, (center) Norwegian Reindeer Pavilion, Snøhetta, (right) Forest Cabin, Bernd Reigger</td>
<td>13</td>
</tr>
<tr>
<td>8: (left) Bosco Vertical, Boeri Studio, (center) Habitat Wall, Joyce Hwang, (right) Central Park, Fredrick Law Olmstead</td>
<td>15</td>
</tr>
<tr>
<td>9: (left) Budludzha, Georgi Stoilov, (center) The Highline, Diller Scofido + Renfro, (right) Machu Picchu</td>
<td>17</td>
</tr>
<tr>
<td>10: Pre-Craig analysis of entropy on the site</td>
<td>22</td>
</tr>
<tr>
<td>11: Marking, leaving, arranging, traveling</td>
<td>25</td>
</tr>
<tr>
<td>12: Rust and cable</td>
<td>27</td>
</tr>
<tr>
<td>13: Water and fire</td>
<td>28</td>
</tr>
<tr>
<td>14: Concrete and paint</td>
<td>28</td>
</tr>
<tr>
<td>15: Site plan</td>
<td>29</td>
</tr>
<tr>
<td>16: Rain pool</td>
<td>30</td>
</tr>
<tr>
<td>17: Rain pool concept</td>
<td>31</td>
</tr>
<tr>
<td>18: Rain pool concept diagram</td>
<td>32</td>
</tr>
<tr>
<td>19: Rain pool section</td>
<td>33</td>
</tr>
<tr>
<td>20: Rain pool model photograph</td>
<td>34</td>
</tr>
<tr>
<td>21: Rain pool truss detail</td>
<td>36</td>
</tr>
<tr>
<td>22: Rain pool trough detail</td>
<td>37</td>
</tr>
</tbody>
</table>
23: Fire and wood pool ...................................................................................................39
24: Fire and wood pool concept....................................................................................40
25: (top) fire pool section, (bottom) wood pool section ..............................................41
26: Fire and wood pool sectional perspective...............................................................42
27: (left) fire pool model photograph, (right) wood pool model photograph ..........43
28: Apart wall ................................................................................................................44
29: Apart wall concept..................................................................................................45
30: (top) T-section detail, (center) plan, (bottom) section ...........................................46
31: Apart wall model photograph ................................................................................47
32: Bridge pool .............................................................................................................48
33: Bridge pool concept ...............................................................................................49
34: Bridge pool sectional perspective .........................................................................50
35: (left) elevation, (right) section ...............................................................................50
36: Bridge pool model photographs ..........................................................................51
37: wood frame corner detail ......................................................................................53
38: floor detail.............................................................................................................53

X
INTRODUCTION

The more one knows of its peculiar history, the more one realizes that wilderness is not quite what it seems. Far from being the one place on earth that stands apart from humanity, it is profoundly a human creation—indeed, the creation of very particular human cultures at very particular moments in human history.
—William Cronon, The Trouble with Wilderness

TROUBLE

This thesis begins with an exploration of the definition of wilderness and the idea that, throughout time and history, humans have understood wilderness in innumerable different ways and, as a result, have treated those spaces that they consider to be wildernesses in innumerable different ways as well.

When wilderness is understood as something void or hostile, the resulting treatment of places deemed to be wild may be consider them expendable, inaccessible and of no important value. This understanding of wilderness is, by no means, the sole cause of damage done by humans toward the Earth, to its inhabitants as well as other humans, but is undoubtedly a factor in the often-disappointing ways in which humans have labeled spaces throughout our planet. From the uncareful extraction of natural resources to the irreverent testing of new weapons, the labels that humans give to spaces have real and often detrimental impacts.

Alternatively, when wilderness is understood as something to be valued and respected, those spaces labeled wild may instead become protected, appreciated and taken care of with greater understanding. The Appalachian Trail, for example, is a nearly uninterrupted hiking route that spans from Georgia to northern Maine. It is considered an experience of wilderness and because of this it has been designated a place of value. It is
treated with a certain respect that would not be afforded to a nameless strip of forest running alongside a highway. In effect, this inches-wide trail spans nearly the entirety of the east coast of the United States but is built of little more than a series of small white blazes painted on a rock or a tree every 100 feet or so; The Appalachian Trail is a collection of symbols and a name. When humans define wilderness in a particular way and then apply that label to a particular space, they have made a design decision.
CHAPTER 1
THREE LENSES

This thesis investigates the ways in which architecture can apply the label of wilderness to new and even unlikely types of spaces in order to expand the lens through which we, as humans, value and appreciate this Earth.

1.1 A dichotomy, a perception, a language

If wilderness is understood as those spaces that are untouched or unoccupied by humans and architecture is understood as one major way in which humans occupy space, the terms seem mutually exclusive. However, this thesis argues that the terms architecture and wilderness have a fundamental similarity: they are both ways that humans understand and relate to the Earth.

To be clear, this thesis is also an exercise in measured skepticism. Its investigation of the ways in which definitions of wilderness impact human action develops alongside the argument that Bill Cronon puts forth in his essay titled, “The Trouble With Wilderness,” that, objectively speaking, wilderness is a man-made notion\(^1\). This thesis understands the relationship between human culture and wilderness through three different and sequential lenses: first as a dichotomy, next as a perception and finally as a language.

First, when the relationship between wilderness and humanity is viewed as a dichotomy it is viewed in its most common and apparent form. Though the precise definition and disposition of this entity are ever-changing, from the sublime to the peaceful to the hostile, the apartness remains. Ultimately, this is the lens through which one views an isometric drawing of a cube and concludes, “this is a cube.”

Second, this thesis considers the relationship between humanity and wilderness to be a perception and this is the more skeptical understanding. It is to say that because wilderness is defined strictly on human terms it is a constructed condition that does not truly exist outside of human perception. This is the lens through which one views that same isometric drawing of a cube and concludes “actually those are only two-dimensional lines on a page”.

The last lens through which the relationship between humanity and wilderness is viewed is as a language. This is to say that there can be value in both the dichotomous lens and the skeptical lens so long as neither is understood as the singular answer. The reality is that the dichotomous understanding is one that functions largely throughout
human culture and so it is not enough to simply declare its constructed-ness as grounds for dismissal for the notion of wilderness. Wilderness defines an important language that humans use to appreciate and understand the planet. By acknowledging both the importance of the notion of wilderness as well as its constructed-ness, humans can discover and articulate this relationship in new and meaningful ways. This is the lens through which one views the isometric drawing of a cube and then articulates the mechanism by which two dimensional lines are able convey three-dimensional form. By combining the first two lenses one discovers the useful language of isometric representation. Acts of representation such as isometric drawings use a set of rules to depict and operate on material things that are not, in fact, present. Similarly, this thesis identifies a set of rules that allow it to act and operate on the notion of wilderness even through it, in fact, is not objectively real.

![Isometric drawing of a cube](image)

**Figure 3: a language**

### 1.2 Two Concerns

It is necessary to discuss the reasoning behind two decisions that this thesis makes. The first is the use of the term “wilderness” and the second is the pulling apart the terms “human” and “wild” after having spent considerable time arguing and articulating their sameness.

First, on the use of the term “wilderness,” the question arises: why not *nature*, or *green space or the great outdoors*? “Wilderness,” may seem too extreme and specific of a
term. “Wilderness,” it has been noted, at least in The United States, is not so equivocal since being defined officially, albeit somewhat poetically, in the Wilderness Act of 1964 as, “an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain”.

When humans relate to the Earth, words matter. The ones chosen to describe a given space are the results as well as the causes of the ways that humans experience it. Though “wilderness” can feel misplaced, this gets at the very crux of the issue: that humans tend to define wilderness in opposition to themselves. When an experience of space begins to feel too familiarly human it ceases to seem a wilderness and when an experience of space begins to feel unfamiliar and remote from humanity, it begins to feel like a wilderness. All possible terms are versions of one another within the same spectrum. Each term on this spectrum has specific connotations. Nature tends to be positive and lack the potential for danger. Forest refers to a landscape that is distinguished, through ambiguously, from terms like jungle or woods. Green space seems to place human engagement at the center of its definition. Wilderness is a term with a history of change and that is useful in this context. It avoids specificity and connotations which would be confounding.

Second, in the following section this thesis’ will place the term “human” and the term “wild” on two ends of a spectrum despite having written of their sameness. Recall the three ways in which the relationship between “humanity” and “wilderness” were understood in the previous section: first as a dichotomy, next as a perception and finally as a language. Going forward, when “human” and “wild” are placed on two ends of a

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spectrum they should be understood not as “apart” but rather, “back apart”. When apart initially, it was as the dichotomy through which they are often perceived and of which Bill Cronon’s “The Trouble with Wilderness” is critical. When seen together, it was through the skeptic’s eye as culturally constructed idea. It is only by pulling them “back apart” that the impact of the term “wilderness” can be understood and directed toward a more inclusive and aware understanding and that is the aim of this thesis.
CHAPTER 2
LOGICAL EXPANSION

To dissect and expand the language of wilderness, this thesis places “human” and “wild” on two ends of a spectrum. It then considers that an architectural attitude toward wilderness is suspended somewhere between spaces that are human and spaces that are wild.

Next, a method of logical expansion is adopted that Roland Krauss uses in her essay titled, “Sculpture in the Expanded Field.” This method is called a “Klein Four Group” and originates in a mathematical context\(^3\). A Klein Diagram begins with two terms that are in strict opposition to one another, in this context: human and wild. Because these terms are in strict opposition, not human is another way of saying wild and not wild is another way of saying human. Further, if an architectural attitude toward wilderness exists between human and wild, then one must also exist between human and

not human, not human and not wild and finally, not wild and not human. The Klein diagram identifies four distinct architectural attitudes toward wilderness.

Figure 5: Klein Diagram

2.1 Abstractions

Architecture that abstracts its surroundings and incorporates them into its architecture are labeled abstractions. By imagining the space between human and wild not as a single node but rather a sliding scale, this thesis presents three prominent architectural precedents within this category.
Alvar Aalto’s Villa Mairea, and in particular the home’s iconic staircase, is an abstraction that sits closer to the human side of the human/wild spectrum. Built in Finland in 1938, the staircase abstracts the surrounding forest of Finland to create a forested condition within the home’s interior. Villa Mairea creates a reference that grounds the home to its location while the abstracted form itself, at least physically, stands apart from its surroundings in the sense that it is fully contained within the interior of the home.

Fay Jones’ Thorncrown Chapel built in Arkansas in 1980 occupies the middle ground between human and wild. The chapel is defined by the repetition of similar truss-like elements, aligned along the length of the chapel’s rectangular footprint. The form of the trusses abstracts the surrounding Arkansas forest while the space between trusses is enclosed by glass, positioning the actual forest as a backdrop. The repetition of the tectonic abstractions partitioned by glazing, creates interchangeability between the real and abstracted forest that is experienced from the interior and exterior of the chapel.

Finally, Frank Lloyd Wright’s 1935 Falling Water, through its form, positioning and materiality, creates an architecture that is inseparable from the singular instance of its site. The vertical stone elements extend the hilly ground upward while the horizontal masses cascade downward toward the river it sits above. The stone floor of the interior catches the light in such a way as to appear to be flowing water while glass, stone and wood coordinate to offer views not only outward but also upward and downward.
Ultimately, rather than recreate the surrounding wilderness, it extends it. Occupants to exist, not alongside the river but within it.

2.2 Outposts

Architecture that positions itself within a non-human or wild space, in order to provide human access to that space is labeled, *outposts*. If abstractions are architecture that brings the outside in, outposts are architecture that brings the viewer out. While outpost architecture may or may not derive its form from a logic of abstraction, the defining component of this architecture is its intent to establish a connection between humans and a particular wilderness.

The Gemma Observatory designed by Anmahain Winton Architects, for example, is a small observatory that allows humans to engage with the night sky from a remote site on a rocky clearing in the forest of New Hampshire. The program of observatory is one that fosters an explicit connection between humans and a type of space which is space itself. By minimizing its footprint and locating itself remotely, The Gemma Observatory announces itself as a moment that exists in a non-human space. By siting itself at a position of privilege within the landscape, it acknowledges itself as architecture; as a brief human interruption whose program might be simplified to “appreciation”.

Figure 6: (left) Villa Mairea, Alvar Aalto, (center) Thorncrow Chapel, Fay Jones, (right) Falling Water, Frank lloyd Wright
Whereas the Gemma Observatory takes a low poly, rocky geometry, the form of The Norweigian Reindeer Pavilion by Snøhetta relates more starkly to its site. The pavilion provides humans with a means by which to visit a remote and glacial region of Norway. Its massing is that of a glass and steel viewing box whose presence within the landscape is both small and announced. The interior contains a hanging fireplace and an organically-shaped wooden mass whose curves create seating areas. Ultimately, the design is simply a box, seating and fire: three basic elements of human occupation frankly placed within a non-human landscape.

Finally, Waldsetzkasten by Bernd Reigger is a small outdoor education classroom situated in the Austrian forest. Its shelf-like façade allows students to collect forest findings and display them on the building’s exterior, therefore completing the façade. Here, the building, though small and remote, is subject to a likely unintentional irony. It attempts to strengthen the connection between the building and the site by allowing the façade to contain parts of its site. And yet, by removing pieces of the surroundings and placing them on display on what is, in effect, a piece of human furniture, this design places its surroundings in an explicitly human context. Though perhaps unintentional, this irony delivers an astute and biting assertion of the inseparability of human spaces from wild spaces and the misgivings we, as humans, often have in our perception of the latter.
2.3 Terrariums

Architecture that is considered, by humans, to be a non-human space and yet, exists entirely on human terms is labeled *terrariums*. This condition is exhibited with clarity in the case of the 2009 highrise residential towers named *Bosco Verticale*, located in Milan, Italy and designed by Stefano Boeri, Giovanni La Varra, Gianandrea Barreca. *Bosco Verticale*, which translates to *vertical* forest, is a pair of residential towers that are occupied by over 900 trees. The result is two green and white towers with organically defined edges that contribute something new to a typical skyscraper-defined skyline.4

While, to many, such a design is an exciting innovation in bridging the space between “human” and “wild,” this “vertical forest,” whose trees and plants are painstakingly maintained through intricate and heavily engineered building systems, exists entirely on human terms and by extensive human effort. Unlike a traditional forest, this vertical forest will perish the moment that it becomes a non-built space or, the moment that architecture withdrawing its direct influence.

Central Park, designed by Fredrick Law Olmstead in 1857, provides a respite from the urban environment in the center of Manhattan. Though there is much to

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appreciate about Central Park, it is misunderstood when it is seen as a preserved moment of nature protected from urban development. In fact, Central Park is a fully designed space that does not preserve or even resemble the pre-Manhattan landscape. The seven ponds and lakes throughout the park are man-made. Precisely-shaped, forested areas are composed largely of planted trees growing out of imported soil. Further still, a zoo within the park seems to go so far as to present the park as just one layer of a Russian nesting doll of precisely designed environments. The irony here is that every “effort” to protect the park from interruptions of human influence, are, in fact, instances of human influence. This is a truth that should not be surprising given that Olmstead acquired the project by winning a “design” competition\footnote{Heckscher, Morrison H. 2008. “Creating Central Park.” The Metropolitan Museum of Art Bulletin 65 (3): 1-74. doi:10.2307/25434142. http://www.jstor.org/stable/25434142.}.

The terrarium condition can be seen also in decisions that humans make regarding the intended use or occupants of a space. Joyce Hwang’s “Habitat Wall” proposes a building façade that is intended to be inhabited by bats as a way of reconciling this human-pest relationship. This design, if occupied as intended, creates a habitat for non-human creatures and in this sense is seen as a non-human space. Putting aside skepticism regarding such a proposal’s potential to function as intended, the bigger issue is that this is not a proposal to expand or protect bat habitats but rather a proposal to change their habitat by luring them into a designed and human-controlled space. If the human-pest relationship is a disagreement, this is a proposal not to resolve but to win. What could be more human?
Terrariums identify an architectural attitude of which this thesis is, at times, critical. Because the hope in dissecting the relationship between spaces that are human and spaces that are wild is not to re-establish the relationship as an objective dichotomy but rather to pull the terms apart to acknowledge this dichotomy as a perception and therefore to direct its impact. This criticism is not so much of the manner with which these buildings exist but more so of the manner in which they hope to be understood. This thesis aims to encourage humans to question themselves when they understand wilderness. Terrarium architecture often encourages humans to forget or ignore their hand in the creation of a “wild” space. To understand, for example, *Bosco Verticale* as a prototype for how human and wild may become one, is to forget their sameness in the first place. Further, failing to see the distinction between harvested trees on life support and tress that grow from the Earth’s crust, is an oversight. If structures like *Bosco Verticale* would like to exist, this thesis would prefer that they understand themselves as highly engineered, designed and constructed experiments and not as solutions to the oppressive potential of development on the beauty of the Earth.

2.4 Vestiges

Finally, the category that is of particular interest to this thesis is labeled “vestiges”. This category contains architecture that is in some state of abandonment or entropy. These spaces are being considered instances of wilderness in the sense that they
are ignored and unoccupied by humans. Yet, they are ignored and unoccupied by humans because they bear persisting scars of human occupation. Vestiges present an interesting set of challenges because there is something compelling about their entropic state and yet to apply an architectural attitude toward its expression would seem to undermine the condition. Three architectural attitudes toward vestiges are illustrated in the case studies below: total abandonment, recreated entropy and constant renewal.

Budludzha, designed by Georgi Stoilov, is an abandoned communist monument in the mountains of Bulgaria that demonstrates an architectural attitude of total abandonment. This attitude is to say, ‘leave the site as it is. For the occasional explorer it will be a fascinating place to visit, but eventually it will fully decay’. The attitude of total abandonment can hardly be called an architectural attitude nor will it sustain the condition in question. Eventually, without some form of human intervention, Budludzha will collapse and deteriorate beyond recognition.

In cases of Machu Picchu, an attitude of perpetual renewal is taken. Here, through sustained effort, an ancient ruin is frozen at a particular moment of entropy. The result is a meticulously maintained, open-air museum. However, preserved entropy is oxymoronic; in as far as the architectural intent is to create a genuine interaction with entropy, cases like Machu Pichu fall short. Additionally, it is not a feasible or justifiable approach to the vast majority of architectural ruins. A 30-year-old abandoned hospital, for example, may be a deeply fascinating space and yet, there can be no expectation that it should receive the care and maintenance of an over 5,000-year-old ruin.

The appeal of entropy and the architectural imperative to confront such conditions is being approached in today’s architectural landscape, in particular, on the urban scale.
The 2009 Highline, located in Manhattan, is one such example. The Highline is located on what used to be a 1.45-mile-long, elevated railroad track located on the west side on Manhattan. The resulting elevated, fully landscaped, linear park acknowledges both the infeasibility of fully demolishing such a massive infrastructure as well as the intrigue of the railway in its overgrown and entropic state. A fascination and appreciation for the entropic state of the railway is evident in details such as the concrete pavers seen throughout the park. After clearing the highline of actual weeds and overgrowth, the pavers reintroduce the overgrown aesthetic by creating spaces through which curated vegetation may grow. Despite the good that can be said for the Highline, this approach of wiping away entropy and then bringing it back through meticulous recreation it is not a fully resolved approach to the entropic state of architecture; at least not within the context of this thesis. This thesis aims to develop an architectural attitude toward vestiges that addresses these criticisms.

Figure 9: (left) Budludzha, Georgi Stoilov, (center) The Highline, Diller Scofidio + Renfro, (right) Machu Picchu
CHAPTER 3
PERSISTING AND MUNDANE

In order to further investigate these questions of wilderness, architecture and entropy, the site chosen as a test case for this thesis is the abandoned Mt. Tom Ski Area, which was a small ski area and waterpark in Holyoke, Massachusetts between 1963 and 1998. This site was selected for two reasons. The first is that the vestiges of human occupation that exist on this site are not ones that can easily or readily be erased; the concrete foundations of the abandoned swimming pools would take considerable effort and resources to remove. The decaying buildings also would be an extensive cleanup effort. The cut slopes will exist in juxtaposition to the full-grown forests beside them for many years to come. In other words, the vestiges on the site are persisting.

The second reason is the site’s mundanity. An approach to this site should be situated somewhere between total abandonment, constant renewal and recreated entropy. Unlike The Highline, this site does not cut through any major cities and it is not located at or particularly near any down town areas. Instead, it is sited partially up a mountain, off an unmaintained access road. The attitude of recreated entropy, as seen in the case of The Highline, is too high-resource and high-impact for the site. Unlike Machu Picchu, this site does not have any widely agreed upon architectural or historical significance. It is therefore unreasonable to propose that its current, though compelling, state be preserved through ongoing and precise human effort. The attitude of total abandonment is not a fitting solution because such an attitude is not so much architectural action as it is inaction. While the site may be compelling in its current state, the attitude of total
abandonment will not sustain this condition nor will is challenge and expand the way in which the site is understood or not understood as an experience of wilderness.

The vestiges of Mt. Tom are both persisting and mundane and because of this, the architectural moves on this site should be measured and modest; this calls for a more rigorous dissection of this condition of wilderness, its qualities and what architecture’s role is in interacting with them.
CHAPTER 4

ENTROPY AS AN EXCHANGE OF ORDER

We tend to think about material as static things, but avant garde scientists take a more radical view. They see materials as processors, as capable of physical computation, as capable of orchestrating phenomena. This understanding comes from seeing the world as a giant molecular storm made up of a great number of atoms. All materials come from this storm, and all materials return to it.

– Salmann Craig, On the Forces That Shape Trees or How to Steal Order from the Molecular Storm

In the opening of his essay titled, On the Forces That Shape Trees or How to Steal Order from the Molecular Storm, Salmaan Craig challenges popular notions on the distinction between living and non-living matter by instead regarding all matter as “processors” or even “processes”. A rock may be, by all observable measures, inert while the growth of a flowering tree is plain to see. Yet, Craig argues that this distinction can be understood as a matter of time and scale. The tree may flower, shed its leaves or reshape its branches all within the course of months. Yet on a larger time scale, the rock erodes, sequesters carbon and is a surface on which chemical reactions occur. In this sense, neither are inert and both are platforms on which atoms take particular forms at particular times and do particular things.

Wood is a clarifying type of matter to consider because it is more readily understood as a material that sits somewhere between living and non-living. It is perceivably clear that a piece of dimensional lumber comes from a tree; its rings are

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6 Salmaan, Craig. 2017. On the Forces that Shape Trees, Or how to Steal Order from the Molecular Storm
visible, its size is determined by the size of a tree, it even smells “alive” or “fresh” when cut. Though it is common to say that a tree is living while lumber is most commonly considered non-living, that wood might be a living material is a notion that humans seem closer to accepting than the notion that steel is living. Afterall, evidence for this seems to exist in the labels such as a live edge table top or the statement that a fallen tree is dead.

Craig challenges the distinction between living and non-living with respect to all matter and this idea becomes relevant to the exploration of entropied architecture as a condition of wilderness. Craig’s argument calls into question what exactly entropy means in the context of this site. A pre-Craig analysis of entropy within the context of this site might have been as follows.

Entropy is the movement from order to disorder. Therefore, if something is in a state or order is can be inferred that is was previously in a state or disorder. And because entropy is the lowest energy state, it can be asserted that something in an ordered state experienced some sort of ordering event or ordering force. As long as the forces that created the state of order remain, so will the ordered state. When these forces leave or a disordering event occurs, the state of disorder returns.

In the context of the site, this analysis would suggest that the original state of disorder was the forested mountainside. The disordering event was human occupation at which point the ski area and waterpark were established. The occupied ski slope and waterpark is the ordered state. The disordering event was human abandonment at which
point the site began to move back into a state of disorder leading to its current, abandoned condition.

![Figure 10: pre-Craig analysis of entropy on the site](image)

The conclusion might seem to be that wild spaces are entropic while human spaces are ordered. But applied to the site, the conclusion doesn't hold. Entropy as simply meaning the deterioration of order is being both advanced and resisted on the site. In the crumbling and falling of the built structures there is a collapse of order. But in the moss and plants that grow in those freed spaces there is an emergence of highly ordered biological structures; the growth of a plant is the opposite of entropy.

Craig’s argument furthers the incompatibility of this conclusion with the site. If all matter may be understood as processors or processes and all scales become relevant to the discussion, then entropy within the site finds itself confounded by scale. Craig’s argument steals clarity from the assertion that the Mt. Tom site is in a state of entropy or is experiencing entropy because of the innumerable ways in which the materials or processes throughout the site may be understood. The entropy that occurs on the scale of the building is unlike the processes occurring on the surfaces of those building materials and so on.

To say that the site is in a state of disorder is to refer to the collapse of a specific order and that is the human order that was imposed on the site when it became a ski slope and waterpark. As the site sits abandoned, that order continues to fall as another takes its
place. Ultimately, this thesis argues that entropy, in this context, is an exchange or order—a type of reoccupation. This thesis asks how architecture can foster participation in this exchange rather than resistance, the latter of which is architecture’s general attitude toward the collapse of human order.
CHAPTER 5

EVIDENCE

In his essay titled, “A Tour of the Monuments of Passiac, New Jersey,” Robert Smithson adopts a naive, somewhat detached perspective as he spends a day exploring Passaic, New Jersey, photographing and documenting industrial infrastructure as monuments. Importantly, he does not adopt a blank-slate perspective—he calls each monument by name, a “bridge”, a “pumping derrick,” a “sandbox,”—but rather a perspective that suspends the common meanings or sentiments of these things. He simply allows himself to see, consider and treat these moments with the level of attention and analysis that he would a monument. This exploration develops an understanding of the built environment that resists intuitive perceptions. A middle ground not unlike this is where an approach to the Mt Tom site should exist.

Unlike Smithson, however, the vestiges of Mt. Tom should not be understood as monuments; as previously discussed, they should not they be protected, ignored nor mimicked. But like Smithson, this thesis must establish an architectural attitude that can understand the site in a way that resists intuitive perceptions. It must understand and engage the site as something between the “wilderness” it once was and the “human space” it was after that. Looking at the site through a Smithson-inspired perspective reveals moments in which humans have engaged the site as neither a waterpark/ski slope nor an undeveloped mountainside; as neither a human space nor a wild space. Evidence

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of this type of engagement can be categorized into four actions that have been taken by humans on the site post-abandonment: marking, leaving, arranging and traveling.

The act of marking, which is demonstrated through the graffiti that covers nearly every eligible surface, is an act that treats the structures as neither proper, inhabitable buildings nor as expendable interruptions to be ignored. Instead, these small acts of vandalism actually instill meaning and program into their hosts rendering them fascinating and indeterminate surfaces for expression.

The act of leaving refers to the things that humans have brought to the site, post-abandonment, and then left there. Litter, scrap wood and emptied spray paint bottles sprinkle the site and congregate in pockets that settle among standing water and the growth of new plants.

The act of arranging refers to the ways in which humans have gathered and manipulated objects found on site. Throughout the site, scrap wood and stones have been arranged to burn. These items are taken out of their original context and given new meaning.

Figure 11: Marking, leaving, arranging, traveling

growth of new plants.

The act of arranging refers to the ways in which humans have gathered and manipulated objects found on site. Throughout the site, scrap wood and stones have been arranged to burn. These items are taken out of their original context and given new meaning.
The act of traveling refers to the ways in which humans, simply by traveling and re-traveling particular paths, establish and maintain those paths and give the site a particular spatial quality. Moments throughout the site such as the decaying wooden stairway leading to the tops of the waterslides, or the abandoned pools that make their way up the mountain side, function as small destination points and compel visitors to walk between them by similar paths. Meanwhile, moments that do not attract interest, such as some of the smallest structures on the site, are overtaken by regrowth.

These four identified actions are evidence of a manner in which humans can interact with the site as a unique condition of wilderness. Architecture that engages the site’s existing conditions, extends the exchange that is evidenced through marking, leaving, arranging and traveling.
CHAPTER 6

RUST and CABLE, WATER and FIRE, CONCRETE and PAINT

A material palate was developed through observational data gathered onsite. Rust is prevalent throughout the site. Within these designs it is introduced through sheet metal, metal posts, and various bolts, anchors and screws. Cable is featured in every design and is not only a material choice but a force. Each intervention utilize tension in a way that is readily observable.

Figure 12: rust and cable

The filling, emptying, falling and protection from water are important themes throughout each intervention. The existing conditions of the site engage different forms of water—from standing water to rain—in different ways. It stands in opposition to the existence of wood on the site. Wood that currently exists throughout the site often shows signs of having been burned; at times the burning appears to have been controlled while at others, it appears to have been more destructive.
Concrete functions throughout the site as large pre-existing foundations for structure and as canvases for painting. Throughout the design proposals, it is harnessed as a structural asset. In instances where new concrete is introduced, it is embraced as a potential surface for further marking.

Figure 13: water and fire

Figure 14: concrete and paint
CHAPTER 7

MOMENTS OF EXCHANGE

This thesis proposes four architectural interventions at particular moments of abandonment throughout the site. Each intervention aims to address two goals. The first is to engage, respect and reflect the site’s existing conditions. In doing so, the architecture creates a platform on which visitors may engage the existing conditions of the site beyond but in a similar vein as the aforementioned acts of marking, leaving, arranging and traveling. The second is to encourage an experience of the wilderness, that, like the site itself, is out of the ordinary. Similar to the acts of marking, leaving, arranging and traveling, these interventions or moments of exchange create lines of exchange between visitors and the site’s unique condition of wilderness.

Figure 15: site plan
7.1 Rain Pool

The first moment of exchange, the Rain Pool, and it is sited on the emptied wave pool at the base of the ski slopes. The 8,200 square foot emptied pool is a vast dessert of concrete. However, its surfaces are decorated with graffiti of different colors, sizes, ages, ambitions and sentiments. At the corners, rain water pools and tall grass grows amongst empty spray cans, abandoned furniture and the remnants of past festivities. The footprint of the pool narrows at its far and deep side (tile figures at the pool’s edge and alongside the concave pool ladder indicate a maximum depth of six feet) while it spreads in a wide arc at its shallow end which slopes to meet grade. The effect is reminiscent of a theater or a stage. If it were, then attention would be directed at its back end and onto the decaying façade of an associated pool house. But in this case, the show is held within the vastness of these intricate surfaces.

Figure 16: Rain pool
7.2: Concept

The moment of exchange is an open-air structure that encourages one to sit outside in the rain, feet dangling over the edge of the pool, and watch as rain that falls overhead is directed back into the pool. It is as if a portion of the pool’s surface is suspended briefly elsewhere and then returned.

Figure 17: Rain pool concept

7.3: Form and Details

The hypothesis is that if the rain water that falls onto the pool’s surface is a translation of the pool’s surface area, then a perception of the rain will also be a perception of the pool’s vastness. The form is derived as follows: the pool’s footprint is approximately 8,200 square feet. An architectural intervention that covers an area of this size will be too heavy-handed an effort to respect and honor the sites existing conditions. And yet, the vastness is precisely the phenomena which this moment of exchange hopes to engage. To address this, a second hypothesis is that if humans are, in many cases, able to conceptualize the multiplication of something by two, and if an architectural
intervention can create an experience of half the size of the pool, then it will meaningful imply an experience of the whole. Therefore, the first operation was to divide the pool’s footprint in half. The second operations was to shift this approximated 4,100 square foot footprint 15 feet to the side to reveal the vast openness of the empty pool. The third operation was to divide this shifted footprint into three-foot wide tectonic elements to further break down the scale of the intervention. The fourth operation was to shift these tectonic partitions vertically in order to create an inhabitable space below. The fifth operation was to pull the inner edge of each tectonic piece upward to meet a projected slope. There are two effects of this pulling operation: first, it creates vertical spaces between members while remaining an unbroken footprint in plan and therefore a covered space for visitors. Second, it angles each three-foot member downward into the pool, allowing each member to now be understood as a trough directing rainwater back into the pool.

Figure 18: rain pool concept diagram
Each trough is supported on both ends by steel posts. The bottoms of the posts are bored directly into the concrete while the tops attach to steel rods. The steel rods are sandwiched between two 2x4 sections of dimensional lumber which span the length of each trough and are stiffened by cable trusses. The troughs themselves are composed of two pieces of bent sheet metal that attach to the outside edges of the spanning 2x4s. A sheet metal catch pan is attached above the two sides of the trough. The catch pan holds the profile of the sheet metal troughs while also catching rain water which would otherwise fall on the spanning lumber. Washers maintain a gap between the spanning lumber to allow for drainage of any water that does advance past the catch pan.\footnote{See figures 20 and 21 for details}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{rain_pool_section.png}
\caption{Rain Pool section}
\end{figure}
7.4: Reflection

The success of this moment of exchange is its ability to capture a particular phenomenon of the site and define a unique space in which to experience that phenomenon. In capturing the phenomenon of the pool’s vastness it addresses this thesis’ hypothesis that an architectural engagement of the site’s vestiges that is free of its prior “human” meaning, will create an opportunity for visitors to engage with the exchange of order that occurs in this condition of wilderness.

Further iterations of the rain pool might consider the gradual thickening of posts as they increase in height and similarly, there might be a more rigorous sizing of each truss based on the trough’s individual span and load. However, such iterations may or may not prove effective; the intent of the current version is to create a structure that is minimal, simple and light. Therefore, precisely sized structural variability may produce

Figure 20: rain pool model photograph
an overly parametric aesthetic that is not structurally necessary or conceptually related to the design intent. Further, such changes may greatly increase the complexity of construction.
Figure 21: Rain pool truss detail
Figure 22: Rain pool trough detail
7.5: Fire and Wood Pool

The second moment of exchange, the Fire and Wood Pool, is sited on two abandoned pools that were once terminal pools of waterslides. The larger of the two pools is filled with standing water. Logs and large branches have fallen into the pool. In the summer, small turtles sometimes stand on the logs or even on a floating, crumpled spray paint bottles. An office chair exists in the middle of this pool, soaking in the murky water and surrounded by the encroaching overgrowth of trees that border the 20’ by 25’ pool. The chair evokes an embodied reaction: observers cannot help but imagine themselves either sitting in the chair or simply existing, by some other means, in the middle of this strange space. Carved into the concrete back edge of the pool are two semi-circles, presumably where the water slides once entered the pool. The standing water rises exactly to the bottom edges of these semicircles and no higher, leaving the standing water 6 inches shy of the top of the pool.

Standing at the downhill edge of the pool and facing upward, a smaller 10’ by 10’ pool sits a few feet to the right of the larger pool’s top right corner. This pool does not have the semicircular cuts and because of this it is filled to its top with standing water. In the winter this water freezes and is covered with snow and the pool is easy to overlook. In the summer the forest grows in and this even more hidden by the landscape.
7.6: Concept

In the larger of the two pools, a series of cylindrical concrete steps rise to the surface of the standing water to create a hidden walkway out into the middle of the pool where one arrives at a fire pit area that sits slightly above the water’s surface. This is the fire pool. Beside the fire pool, the smaller pool’s downhill edge is removed and the earth behind it is excavated 100 feet out to meet the existing grade of the hillside. This act of removal empties the pool and leaves the concrete to serve as a makeshift foundation for a woodshed. Additionally, it defines a path of travel up through the trench. This moment of exchange is the wood pool.
7.7 Form and Details

The concrete cylinders that form the stepping stones are each 1.5-feet-wide. They rise exactly to the height of the bottom of the semicircles to be flush with the water’s edge. The central fire pit cylinder is 4-feet wide and rises to this same level. The sitting stones are also 1.5-feet wide but rise six inches higher than the stepping stones. They are positioned 6 inches from the fire pit. This allows water to flow between the fire and the sitting stones. The fire stone is wide enough that visitors can rest on the sitting stones with their feet on the fire stone and still have space for a small fire in the center. Every concrete cylinder is smooth so as not to trap water or dictate any precise use. It is not essential that they be used in the intended way.

The woodshed is composed of two pairs of continuous metal frames. The profile of the frames is a right triangle where the corners opposite the right angles meets the ground. The corners adjacent to the right angles are attached to cables that help to balance
the frames. The cables are tied back to anchors that screw in to the edge of the pool. A linear segment of the frame extends from the bottom corner of the triangle to the edge of the pool and then slightly up the pool wall. Here the frames are bolted into the concrete of the pool’s wall. The wood for burning is stacked between the two frames and there are two sets of these which hold up a simple sheet metal roof. This splitting allows for two separate stores of wood, one older and drier the other newer and less ready to burn.

Figure 25: (top) fire pool section, (bottom) wood pool section
7.8 Reflection

One strength of the fire pool is the que it takes from the cuts in the pool’s edge. This condition is directly responsible for both the existing condition of the pool’s standing water as well the proposed intervention. Further, the strangeness of the program—the hesitation as to whether or not this pool could really be used in this way and the thought that perhaps it could—is in keeping with the overarching task of this thesis which is to present a new and unlikely space as an instance of wilderness and to create an experience of wilderness that, like the site itself, is out of the ordinary.

The particular geometry, placement and orientation of the fire pool underwent many iterations thus far and could likely go through more. It battles with competing notions about the level of practicality at which it would like to exist. Taken to its theatrical extreme, it may be one small and lonely seat and one small lonely fire or even less. Conversely, if it hopes to be a functional space for marshmallow roasting and campfire songs, it may want to be somewhat less precarious and cumbersome. In this case, perhaps the seating should be continuous and wide enough for people to easily pass one another. But this begins to compete with the modest scale of the pool.
The strength of the wood pool is largely in its foundation which is derived from a simple act of subtraction that has meaningful consequences that are specific to the site. The method of removing one wall and then excavating the earth out to meet the existing grade of the hillside is only possible because of the pool’s unique condition of being embedded in a slope. This move takes what was the pool’s defining phenomenon and reverses it. Initially, the pool was filled and overgrown to the point of invisibility. By subtraction the pool is emptied of water and the resulting 100-foot-long trench declares itself as a new path of travel. Additionally, the act of splitting the wood storage into two separate stores not only creates a new and an old pile but also balances and supports the simple metal roof which shelters the cut wood. Both acts reinforce the program of the fire pool, strengthening the partnership between the two pools.

The rotation of the woodshed frames may be reconsidered in future iterations. The intent was to catch the cross sections of the stacked wood from the path of approach as well as to suggest the change in direction one must make to travel from the wood pool to the fire pool. But perhaps instead the cross sections of the stacked wood should be oriented along the section of the site that is most informative. That section is the one cutting lengthwise through the trench and revealing the method of subtraction.

Figure 27: (left) fire pool model photograph, (right) wood pool model photograph
7.9: Apart Wall

The third moment of exchange, Apart Wall, addresses the challenge of the existing and decaying buildings scattered throughout the site. It does this by looking at one small building located at the corner of the path of travel between the other moments of exchange. The building is 500 square feet with a 20’ by 25’ footprint. Three walls and a roof are in advanced states of decay. Evidence of a small loft space can be seen from the perimeter of the building. One of the 20-foot walls stands more preserved than the rest. Its exterior is marked by scattered graffiti and long grass grows several feet up against the facade. The interior side of the wall is made of dark wood with evidence of burns.

Figure 28: apart wall

7.10 Concept

This moment of exchange proposes removing the portions of the building that are in the most advanced states of decay, leaving just a floor plate and one wall standing. The wall is held standing by cables that pull from both sides of the window openings and attach to the ground. The result is a lone wall, partially decayed; it is maintained but not preserved and the methods of its maintenance are announced.
7.11 Form and Details

Cables attach to both the interior and exterior sides of each window opening on all four sides. The cables are attached to anchors in the ground. On the interior side, the anchors are screwed directly into the concrete of the remaining floor plate. On the exterior side the anchors are screwed into concrete bases that take the shape of the window to which the cables are attached. At the windows, cable clevises attach to the flanges of steel T-sections which are inserted into the wall at all four sides of the window opening. The T-sections are held in place by bolts that pass through both the wall and the webs of the T-section.

Figure 29: apart wall concept
Figure 30: (top) T-section detail, (center) plan, (bottom) section

7.12 Reflections
Like the wood pool, Apart Wall is also partially executed by subtraction. Its strength lies in the self-aware quality of how the one wall is preserved. The cables do not hide themselves nor do they protect the wall from any aggressive conditions other than gravity. Additionally, the effect of the intervention creates an implied contrast between indoors and outdoors that is made more explicit with the removal of the actual enclosure.

Future iterations might reconsider the way the cables attach to the ground. Rather than at one point, perhaps they could attach at multiple points along a projected perimeter. Additionally, future iterations might consider the utility of symmetry. In its current iteration there is symmetry between the interior and the exterior cables. There may be value in this as it may increase the illusion of interior and exterior contrast. Alternatively, testing of various orientations could yet reveal a valuable alternative.

Figure 31: apart wall model photograph
7.13 Bridge Pool

The last moment of exchange is called Bridge Pool and it is sited on the upper most terminal waterslide pool. A 40’ by 50’ pool is partially filled with standing water. Like the rain pool, its partial emptiness allows for elaborate markings of graffiti. Unlike the rain pool, the rectangular footprint inspires a more regularly partitioned understanding of canvas space. When the water, for whatever reason, is clearer, graffiti can be seen through the water on the bottom of the pool and this tells a story of chronology. On other days the water is murky or frozen.

Figure 32: bridge pool

7.14 Concept

A partially covered bridge spans the 40-foot length of the pool. It is held both up and down by cables in tension and these cables attach to the tops of metal posts that are bored directly into the floor of the pool. This becomes a design that is only practical
because of the site’s existing conditions. Were there not already a large, abandoned pool, one would need to create a 40’ by 50’ concrete foundation and this would be an oversized effort for this bridge. Alternatively, 60 individual concrete bases for each metal post would be no better option.

![Figure 33: bridge pool concept](image)

### 7.15 Form and Details

The bridge is composed of a series of eleven wood frames built of 4x4 wood posts. One frame is held up by cables while the next is fastened down and so on. Each vertical post is sandwiched between two horizontal post. A steel rod passes through the point where all three posts meet and cable clevises are attached to both ends of the steel rod. This detail is the same at both the top and bottom corners of the bridge. From the bottom corners the cables pull the bridge upward. They attach to the tops of the taller metal posts and, in order to reduce moment forces in the taller posts, are then fastened to eye hooks screwed into the side of the pool. From the top corners the cables pull the bridge downward and are attached to the tops of the shorter metal posts.

The bridge enclosure is composed of sheet metal that is placed against the outside edge of the wood frames and then pulled inward by interior cables. The profile of the
sheet metal varies to create the narrowest and most open moment at the center of the bridge.

The floor is also composed on 4x4 wood posts. Two-inch cuts allow the floor boards to interlock with the bottom edges of the wood frames to provide lateral stiffening.

A gap is left between the edge of the pool and the bridge. The bridge is lifted slightly above the level of the pool and is left free to swing. This allows visitors to experience the structure more fully when they take their initial step onto the bridge.

Figure 34: bridge pool sectional perspective

Figure 35: (left) elevation, (right) section
7.16 Reflections

The strength of the bridge pool is its engagement of the pool to support a structure that would not otherwise be practical. In doing so it creates a unique space that visitors may experience as a direct result of the site’s vestiges. The diagrammatic clarity of the bridge’s structure makes this intention more accessible to visitors.

The dimensions of the bridge’s profile underwent many iteration (figure: iterations) as did the method of enclosure. In an earlier iteration, the enclosure was conceived of as a plywood rectangle that sits within the braces. By moving each face of the enclosure to the outside of the braces and pulling then inward against the braces, the observable tension that hold the bridge up is reflected in its method of enclosure. The

Figure 36: bridge pool model photographs
final dimensions of the bridge are 8’ by 12’ while the original dimensions were 10’ x 10’.

Decreasing the width allows the bridge to occupy less of the pool’s footprint. The increased height in conjunction with the narrower width creates a sense of structural precariousness through its altered center of gravity. This precariousness is in keeping with this design’s goal to allow visitors to experience the structure.

While the method of enclosure is in keeping with the structural design goals, given the 12-foot height and the enclosure’s need to be symmetrical to easily keep forces balanced, an issue emerges in that the open parts of the bridge are always at least six feet high which is, for many, above eye-level. Future iterations might take this issue on and consider different geometries for the enclosure.
Figure 37: wood frame corner detail

Figure 38: floor detail
CONCLUSION

While this thesis is premised on an examination of the notion of wilderness, in fact, it deals with two notions that are laden with human predispositions. While it examines how humans relate to space through notions of wilderness, it simultaneously examines how architecture relates to space through the ways in which it confronts abandonment within the built environment. Abandonment can render a space a wonder of the world or invisible simply depending on the meanings that we, as humans, perceive in each instance. This thesis positions itself between two matters of pressing relevance; between questions of how we, as humans, relate to the beauty of the Earth and questions of how we, as humans, relate to the spaces throughout the Earth that we have marked and left.

In addressing the former, this thesis seeks an expanded lens through which to label and value wilderness. This thesis has argued that our understanding of wilderness mirrors and defines our attitudes toward the Earth. When we undervalue wilderness or define it too narrowly, we undervalue the Earth and respect it too sparingly.

As with wilderness, humans tend to assign value to abandonment quite narrowly. Historical and architectural value seem necessary to pique human interest. However, as more and more spaces are subject to abandonment throughout the American landscape, architecture will need to consider its attitude toward these spaces; all of them and not just the readily compelling ones.

The Highline or any number of adaptive reuse mill building projects demonstrate initial contact between abandoned human spaces and architecture. However, architecture has not been eager to engage abandoned spaces that are of less immediate intrigue.
Shopping malls, office buildings and strip malls are building types experiencing abandonment throughout the built environment, but they are seldom the subject of enthusiastic architectural inquiry. They are ignored by humans because of the scars they bear of human occupation. They are persisting and mundane. They will not be honored as historical relics. They are not likely to attract high budgets for endlessly imaginative design solutions.

This thesis calls attention to the malleability of two value-laden notions in order to acknowledged and examine the power of their influence throughout the architectural landscape and beyond. By suggesting that there is crossover between what is abandoned and what is a wilderness, this thesis hypothesizes that wilderness and abandonment might gain strength from one another; an abandoned space is a wilderness and as a result, that wilderness is one of compelling peculiarity.

Ultimately, this thesis aims to turn human predisposition against itself; it identifies human bias toward space and instead of seeking to erase it, studies its properties. Bill Cronon compliance argues that wilderness is a “profoundly human creation”. But while Cronon’s argument might lead many readers to avoid the term wilderness, this thesis draws an opposite conclusion. It examines the constructed-ness of wilderness as one examines the innerworkings of a machine; not to eliminate but rather to recreate. The acknowledgement that wilderness is a human creation, that the true and pure wilderness does not and cannot exists, equates to the acknowledgement that, for better or for worse, the delicate state of our world as we know it is in the hands of humans. There is consequence in what we do and what we do not do, in what we value and in what we ignore. If Cronon’s analysis is true, that the choices and values of humans
hold important power over this Earth, then we must address human subjectivity with as much urgency as human knowledge. The success of this thesis would serve as evidence that such an approach can be born of critical self-awareness and there is optimism in that.
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