

**INSIDE & OUTSIDE, A SPECTRUM:  
Exploring Threshold as an Organic Architecture  
in South-Eastern Ontario**

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
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# ABSTRACT

This thesis is a study of the spectrum between inside and outside, or the architectural concept of threshold, through the design of an artist studio and pavilion. It is explored across a continuity of three case studies by architects of the design philosophy of Organic Architecture and is being viewed through Aldo van Eyck's notion of threshold, or the "in-between."

Frank Lloyd Wright, E. Fay Jones, and Ian MacDonald, three architects from varying generations, are of the design philosophy of an Organic Architecture. They have each created spaces that are filled with transformative threshold conditions. I began by speculating that designing with this philosophy inherently creates architecture that has a meaningful sense of threshold – **an artful bridge between inside and outside.** While reviewing three major case studies by these architects, I have developed a broad yet concise understanding of threshold. As a progression of ideas, I worked chronologically beginning with Wright (1867-1959), then his apprentice Jones (1921-2004), and finally Canadian architect MacDonald (1953-present). Although my thesis is framed as a

dichotomy – inside and outside – the focus is on the middle ground between the two, a continuity and transition through spaces.

In this thesis I have created my own lexicon of architectural characters as a way to broadly understand threshold, I have cumulated lessons from an Organic Architecture, and developed a way to analyze the final design proposal. Through all of this I believe I have developed a nuanced method of understanding threshold. I believe this has begun a journey for me of creating a contemporary interpretation of an Organic Architecture and of threshold.



Figure 1: Texas Dog Run House

This work is dedicated to my Grandfather, Roy Harold Martin, for being the person I needed in my corner and for being the role model that helped create great opportunity in my life. Thank you for believing in me at every turn.

With love and the utmost respect.

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Thank you all.

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## INTRODUCTION

I have created a framework for myself that I believe is both interesting and represents a nuanced strategy to combining two monumental architectural theories: that of threshold and organic architecture. These are not aimed to be critically reviewed in an oppositional way but in a complimentary way. The aim is to view a progression of the work of one theory through the critical lens of the other: hypothesising that organic architecture naturally creates transformative threshold conditions, connecting inside with outside in a significant way, and resulting in notable architectural work that has a lasting impact on the field of architecture. I set out to draw my own opinions on the concept of inside-outside and the spectrum between the two and showcase these findings, qualities, and open-ended definitions through a theoretical project, on a real site, that may some day become a real building.

## **PART 1**

### **THEORETICAL FRAMEWORK**

#### **Key Concepts**

Aldo van Eyck's concept of Threshold, the Architectural work of Frank Lloyd Wright, E. Fay Jones, and Ian MacDonald (three architects whose design philosophy is strongly linked to the philosophy of Organic Architecture), redefining the architectural idea of threshold, what I call inside-outside.

#### **Proposed Relations**

An Organic Architecture inherently creates buildings with significant threshold conditions, without doing so directly through the lens of a dichotomy.

#### **Relevant Theories**

Aldo van Eyck's theory of the "in-between" and Frank Lloyd Wright's theory of an "organic architecture".

#### **Problem**

Buildings typically do not address threshold conditions well enough; they lack an expressive connection and spatial experience between the interior and exterior of architecture.

#### **Objective**

To explore three specific case studies, that fall within the design philosophy of an organic architecture, through the lens of Aldo van Eyck's philosophy and work on threshold, specifically as seen through van Eyck's Sonsbeek Pavilion project. The three case studies will be, starting with Wright and moving through his figurative successors, Frank Lloyd Wright's Teater Artist Studio, E. Fay Jones' Thorn-crown Chapel, and Ian MacDonald's Wychwood Park House.

#### **Research Question**

How can the projects of Wright, Jones, and MacDonald be viewed through the lens of Aldo van Eyck's work on threshold in a way that the topic of inside-outside can develop, nuance the definition of threshold, and contribute positively to the field of architecture?

#### **Sub-Questions**

How can the barrier between inside and other be broken down, reinvented, and made a more significant experience in its own?

#### **Theoretical Framework**

Aldo van Eyck defines threshold as roughly the "in-between" and puts a very strong focus on the importance of the dichotomy that sits on either side of that in-between. Frank Lloyd Wright, E. Fay Jones, and Ian MacDonald are three architects from varying generations who design spaces that are filled with transformative threshold conditions. In this thesis I will use van Eyck as a lens to explore the concept of threshold in the work of Wright, Jones, and MacDonald. The commonality between these three architects and their work is that of a strong relationship to the design philosophy of organic architecture. I begin by speculating that the process of designing organic architecture inherently creates architecture that has a meaningful sense of threshold – an artful bridge between inside and out. Through case studies and my own eventual design process I aimed to showcase and develop arguments to support this hypothesis and develop a thorough yet broad understanding of what a threshold can be. Although my thesis is naturally framed as a dichotomy – inside and outside – the focus is on the middle ground between the two, a continuity and transition through spaces. Thematically, the case studies I am looking at are reviewed chronologically

beginning with Wright (1867-1959), then Jones (1921-2004), then MacDonald (1953-present), as a kind of continuity of ideas and development of design philosophy. The aim is to critically analyze these case studies through the lens of threshold, specifically van Eyck's iconic model of threshold seen in the Sonsbeek Pavilion diagram. Through all of this I will develop a nuanced method of understanding threshold. I believe this will also in some way create a contemporary interpretation of an organic architecture and of threshold.

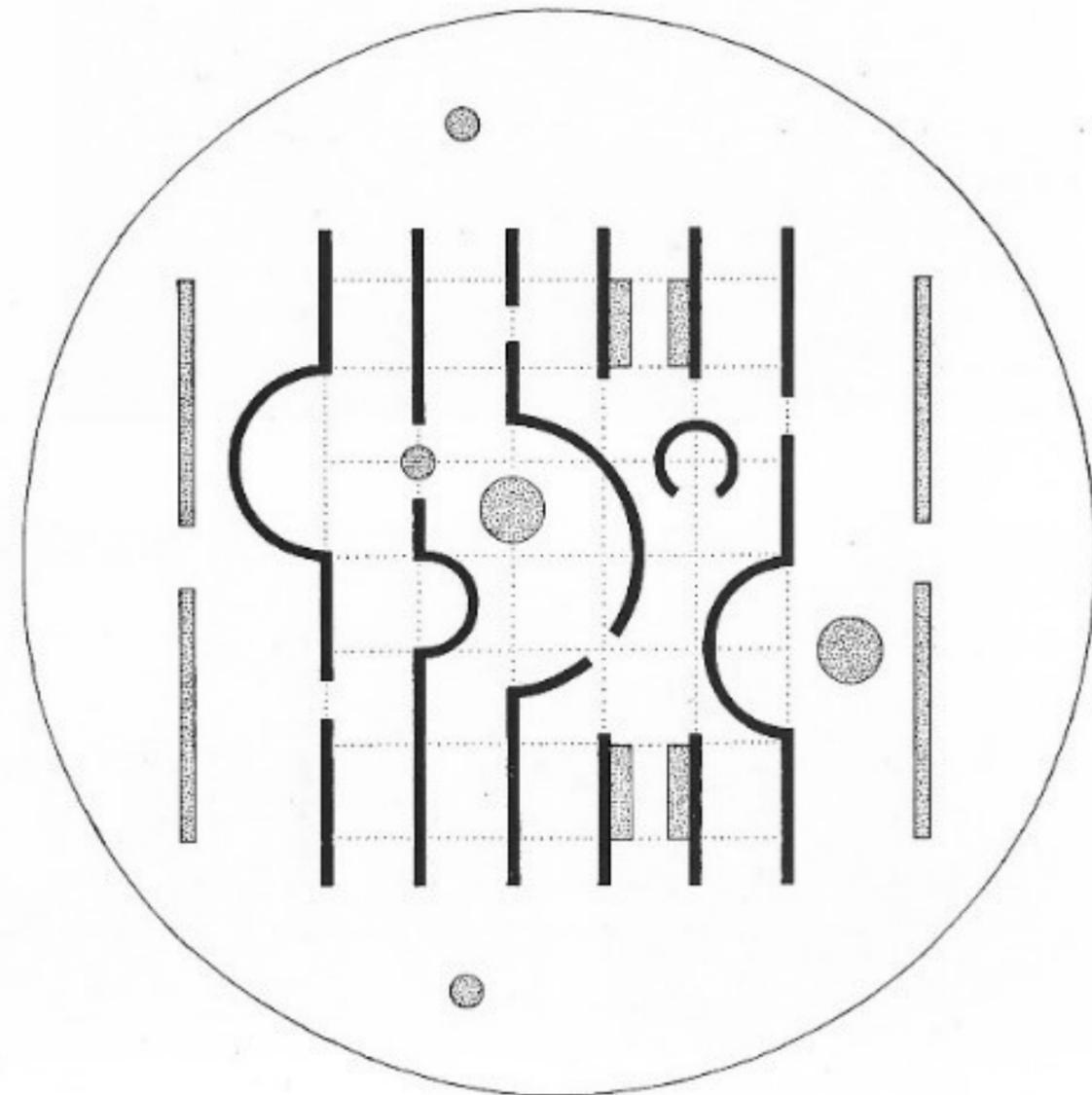


Figure 3: Diagrammatic Plan of Sonsbeek Pavilion by Aldo van Eyck (1966)

## THRESHOLD

Beginning with threshold – I wish to contextualize the concept and introduce Aldo van Eyck’s influence on it. The principle definition of the word threshold, as found in the Oxford English Dictionary, is “the floor or ground at the bottom of a doorway, considered as the entrance to a building or room.”<sup>1</sup> This is a common understanding of what is meant by the term. In construction or as an architectural specification it would typically mean the building component or strip of material that joins the flooring together from one room to another. In the realm of architectural design and theory though, threshold has a much more poetic and expansive meaning. This can be seen in the following quote from Kate Nesbitt’s book *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory*: “Thus Heidegger says: ‘A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing.’ A boundary may also be understood as a threshold, that is, as an embodiment of a difference.”<sup>2</sup>

1 “Threshold Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner’s Dictionary at OxfordLearnersDictionaries.Com,” accessed December 22, 2020, <https://www.oxfordlearnersdictionaries.com/definition/english/threshold>.

2 Kate Nesbitt, ed., *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory, 1965-1995*, 1st ed (New York: Princeton Architectural Press, 1996), 436.

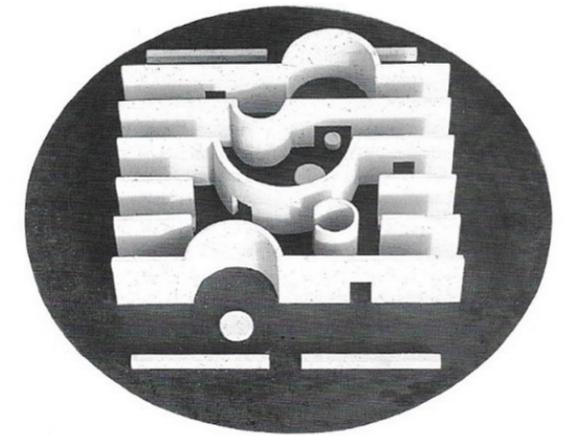


Figure 4: Conceptual Model of Sonsbeek Pavilion

Nesbitt also states that “Boundary and threshold are constituent elements of place. They form part of a figure which discloses the spatiality in question.”<sup>3</sup> It can be seen here that threshold is viewed synonymously with boundary but also that there is a richness to the meaning surrounding it.

3 Nesbitt, 49.

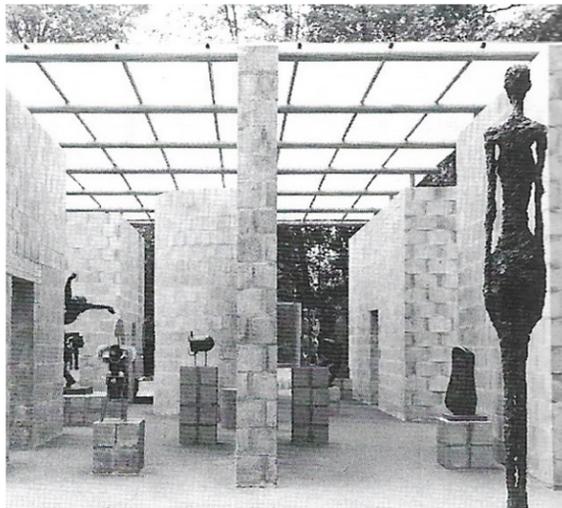


Figure 5: Interior View of Sonsbeek Pavilion



Figure 6: Interior View of Sonsbeek Pavilion

In 1959, Dutch Architect Aldo van Eyck gave a presentation at the last meeting of the CIAM (International Congresses of Modern Architecture) in Otterlo, Netherlands where he presented his concept of the “in-between”. American architect Louis Kahn also presented at this event and mentioned van Eyck’s expose in his closing notes stating “I would like to show my appreciation to Aldo who simply talked about a door. I

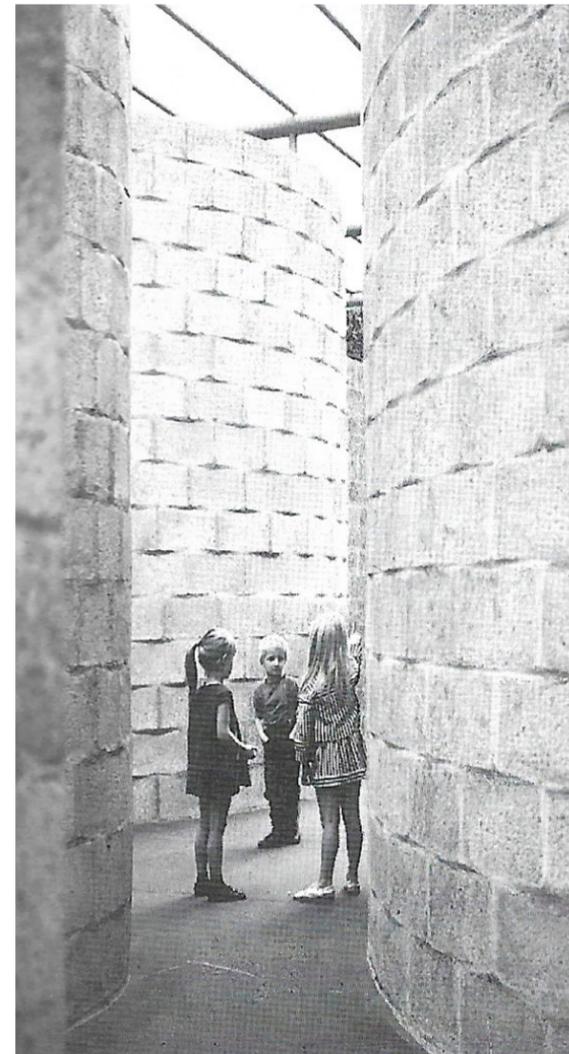


Figure 7: Interior View of Sonsbeek Pavilion

think it is a wonderful thing to review the aspects of architecture from that sense... it can lead a man to realizations which go far beyond the problems of the door or a gateway.”<sup>4</sup>

Van Eyck started his exposé at the CIAM with an introduction stating his belief that, in architecture and urbanism,

<sup>4</sup> Louis I. Kahn and Robert C. Twombly, *Louis Kahn: Essential Texts* (New York: W.W. Norton, 2003), 56.



Figure 8: Interior View of Sonsbeek Pavilion

one “can best provide for a basic reality by providing for the twin reality from which it was arbitrarily split.”<sup>5</sup> He believed one should “always aim at the twin image, at the apparent opposite: if it is a real split phenomenon you’re concerned with, aim at this half if you don’t want to miss that half – do this both ways simultaneously. (It is not the same as aiming somewhere between the two – you’ll miss both if you do that.)”<sup>6</sup>

Francis Strauven, in his attempt to explain van Eyck’s Otterlo presentation, quotes van Eyck as saying “man still breathes in and out. Is architecture going to do the same?”<sup>7</sup> Strauven continues on to say that human existence is partly defined by “interiority-exteriority”, among other dualities, and that “if there is to be any question of a reasonably

<sup>5</sup> Strauven, *Aldo van Eyck*, 352.  
<sup>6</sup> Strauven, 352.  
<sup>7</sup> Strauven, 351.

harmonious existence, [they] must not be split apart and separated but mutually reconciled. Correspondingly, architecture must reconcile the polarities with which it is confronted within its own spatial-formal realm.”<sup>8</sup> These polarities or “dual-phenomena” are later listed as “open-closed” and “inside-outside”, among others.<sup>9</sup>

The focus of van Eyck’s theory behind reconciling spatial polarities was to establish an “in-between” – “a place where they can be made to interact, an articulated ‘doorstep.’”<sup>10</sup> At Otterlo van Eyck finished his presentation discussing architecture as this doorstep, which “establishes the in-between that reconciles conflicting polarities such as public and private space.”<sup>11</sup> He denounced modern architects, saying they were “so poor in spirit that they provide doors two inches thick”, between “such fantastic phenomena” as inside and outside, saying it was “hair-raising, brutal – like a guillotine. Every time we pass through a door like that, we are split in two...What then, I ask, is the greater reality of the door? Well, perhaps it is the localized setting for a wonderful human gesture: Conscious entry and departure. That’s what a door is; something that frames your coming and going, for it is a vital experience

<sup>8</sup> Strauven, 351.  
<sup>9</sup> Strauven, 351.  
<sup>10</sup> Strauven, 352.  
<sup>11</sup> Robert McCarter and Herman Hertzberger, *Aldo van Eyck* (New Haven ; London: Yale University Press, 2015), 82.

not only for those that do so but also for those encountered or left behind. A door is a place made for an occasion that is repeated millions of times in a lifetime between the first entry and the last exit.”<sup>12</sup>

As previously mentioned, van Eyck believed the best way to do something justice was to find its antipole to re-establish an equilibrium. He believed that to best stretch out this notion of a doorway, to develop a threshold, one must find a true “twin image” or dichotomy to work around. There is value in this notion of thinking but, rather than aiming at the black and white ends of the spectrum, this thesis will put far more focus on the in-between, the threshold, and how this idea of threshold can be expanded upon and how the lines between inside and outside can be blurred.

Robert Venturi, an American architect from roughly the same generation as van Eyck, developed monumental ideas around the idea of *contradictory levels: the phenomenon of ‘both-and’ in architecture*. The idea here is that to limit things to concise, non-contradictory compositions (either-or) is to limit the architecture. When one allows themselves to open their mind to the idea that designs and buildings can be filled with contradictions, or, ‘yet’s (both-and), they can create a more vivid experience in

<sup>12</sup> McCarter and Hertzberger, 83.

their architecture. As an example, Venturi speaks of Le Corbusier’s Shodan House and calls it “closed yet open – a cube, precisely closed by its corners, yet randomly opened on its surfaces.”<sup>13</sup> He also speaks of the phenomenon of flowing spaces and its implications for the both-and argument: “Even ‘flowing space’ has implied being outside when inside, and inside when outside, rather than both at the same time. Such manifestations of articulation and clarity are foreign to an architecture of complexity and contradiction, which tends to include ‘both-and’ rather than exclude ‘either-or.’”<sup>14</sup> Venturi believes that to develop architecture that is full of such complexity is to create architecture that is more elevating. He writes, “simultaneous perception of a multiplicity of levels involves struggles and hesitations for the observer, and makes his perception more vivid.”<sup>15</sup> The design project that has been developed for this thesis is a showcase of such complexity and is an attempt to create a variety of complex experiences where the user feels both inside and outside.

A project by van Eyck that blends the dichotomy and starts to create spaces that are both inside and outside is

<sup>13</sup> Robert Venturi, *Complexity and Contradiction in Architecture*, 2d ed, The Museum of Modern Art Papers on Architecture (New York : Boston: Museum of Modern Art ; distributed by New York Graphic Society, 1977), 23.

<sup>14</sup> Venturi, 23.

<sup>15</sup> Venturi, 25.

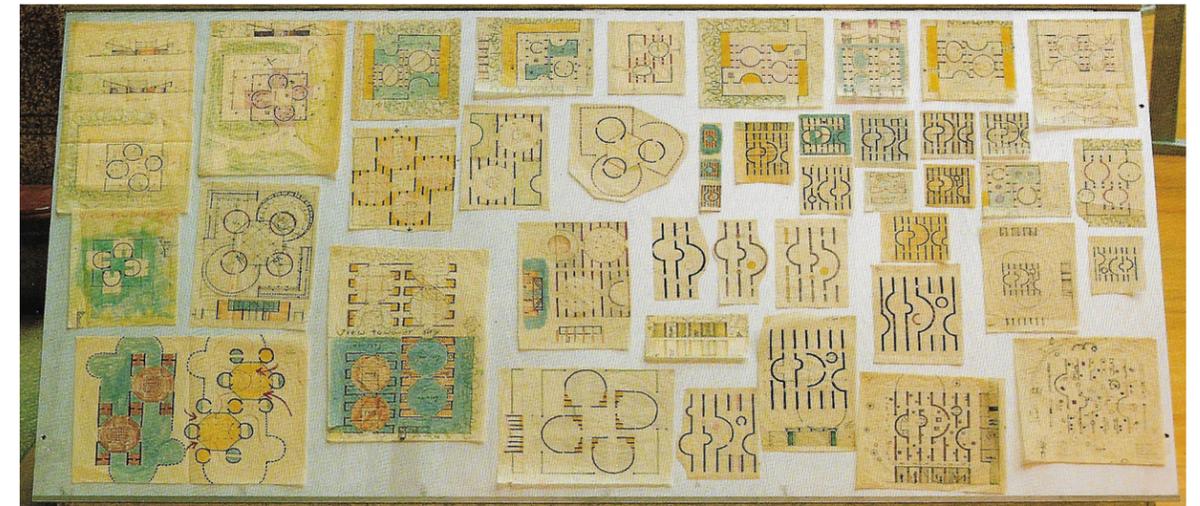


Figure 9: Iterative Sketching Process from Designing Sonsbeek Pavilion

the Sonsbeek Pavilion that was built in Arnhem, Netherlands in 1966. This project epitomizes the diagrammatic concept of “threshold”. A nearly endless array of threshold variations can be viewed in this project – from simple doorway conditions, to drawn out entrances that leave one questioning whether they are within or without the pavilion, and to far more poetic and sub-conscious senses of space such as the outer bays that “form an ambiguous inside-outside space in front of the largely solid outer walls.”<sup>16</sup> According to Robert McCarter’s interpretation of the plan “a closer examination reveals that the parallel walls define not a square but a rectangle that is longer in the direction of the walls, the difference being precisely two bays.”<sup>17</sup> This pavilion, which was designed through the iterative planning process as seen in the image

<sup>16</sup> McCarter and Hertzberger, 147.

<sup>17</sup> McCarter and Hertzberger, 147.

above, acts as a parti diagram capturing the essence of van Eyck’s concept of threshold. It is a mode of drawing and diagramming I use in trying to spatially understand the following organic architecture case studies, and a mode I used to develop my own spatial planning.

Lastly, defining the word threshold in one concise definition is not a reasonable goal. This is the type of word that, much like Wright’s organic architecture, is elusive when trying to fix to one single definition. My aim in this thesis was to develop my own thinking on threshold and begin to define it in many broad strokes or a variety of definitions.

## PROGRAM

The program is multifaceted: Pavilion meets Artist Studio in a blend.

Pavilion – inspired by the theory and pavilion in the previous chapter and the idea of using an architectural pavilion as a way of exploring this architectural theme of threshold in the final design.

Artist studio – initially inspired by making sense for the users but came to have a sort of higher meaning, as art itself does. An Organic Architecture, as will be seen in the following chapters, tries to reach for something more, something higher, something more truthful and meaningful than a trend.

# An Organic Architecture

The Architecture of Democracy



# FRANK LLOYD WRIGHT

Figure 10: Cover of Frank Lloyd Wright's *An Organic Architecture*, a Publication of Wright's Four 1939 Lectures at the RIBA.

## AN ORGANIC ARCHITECTURE

An Organic Architecture is a design philosophy, which is the common thread between the three main upcoming case studies in the following chapter.

In May of 1939 Frank Lloyd Wright gave four lectures at the Royal Institute of British Architects (RIBA), London, UK. The lectures were celebrated at the time as:

“the most remarkable events of recent architectural affairs in England.”<sup>18</sup>

Not long after, the lectures were published under the title *An Organic Architecture* by Lund Humphries.

In these lectures, Wright sets out to define what he means by an *organic* architecture, as well as, to impart the importance of it to anyone who is present. The tone of these lectures seems of a man genuinely trying to find a way to impart his divine architectural discoveries and truths to the world, in hopes of making a positive change not just architecturally but societally. It was quoted by Andrew Saint that “in a way they were not lectures at all. Wright himself preferred to

<sup>18</sup> Frank Lloyd Wright, *An Organic Architecture: The Architecture of Democracy* (London: Lund Humphries, 2017), 0.

regard them as conversations, pep-talks or chats of the kind he loved regaling his apprentices with by the Taliesin fire-side.”<sup>19</sup>

Similar to his use of the word Usonia, Wright is not forthright in his definition of the word *organic*, but I believe I have come to understand the essence of what he means, and will begin to define it. Essence is a coincidental key term here. Roughly at the mid point of the first lecture Wright states the following about *organic*: “‘Organic’ is the word which we should apply to this new architecture. So here I stand before you preaching *organic* architecture; declaring organic architecture to be the modern ideal and the teaching so much needed if we are to see the whole of life, and to now serve the whole of life, holding no ‘traditions’ essential to the great TRADITION.”<sup>20</sup>

What I gather from this quote, alongside the rest of the first lecture, is that what Wright means by *organic* is something of a ‘truth’ – something honest, something pure, something that comes to life from a site almost of its own accord. This something almost becomes the muse that speaks through an architect if that architect is willing to be honest and open enough. To do this they must not allow things such as classical styles or temporary trends to disfigure the architecture

<sup>19</sup> Wright, 9.  
<sup>20</sup> Wright, 22.

as it comes to life. If one can create architecture in this way – honestly, organically – they will get closer to creating an architecture that says more about culture, society, and humanity than most existing buildings do. There is a sense of aiming toward an archetypal goal. Not that there is one archetypal house or building, but that each site has a theoretical archetype, and the more organic the architecture that is created for that site, the closer one has gotten to the archetype. Aiming for something like a truth or archetype is often viewed as aiming for something divine. In a secular sense, looking to say something important about humanity or our world, something that inherently creates more order and structure to our world.

Although Wright never clearly defined what was meant by organic architecture, one of the key components was an instinctive design process that results in an architecture where the buildings and inhabitants can “live in harmony with the natural environment.”<sup>21</sup>

<sup>21</sup> Filiz Sönmez, “‘Organic Architecture’ and Frank Lloyd Wright in Turkey within the Framework of House Design” (Architecture Thesis, 2006), 51, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.633.7278&rep=rep1&type=pdf>.

E. Fay Jones, a very notable apprentice of Wright’s, wrote of organic architecture: “This esoteric term, somewhat difficult to define, has its roots in the late-eighteenth and early-nineteenth-century Romantics like Blake, who glorified nature, and in philosophers like Schopenhauer and Emerson, who found interconnections in nature at all scales.”<sup>22</sup>

More specific definitions, which I have accumulated of my own opinion through my research can be seen below:

- The building is of the site, not on it
- Style or trend have no place in organic architecture
- There is a seed germ idea and a generating nucleus – all parts relate to the whole and the whole relates to all parts
- Natural and local materials are best and should be used in ways that make sense to their nature
- The hearth is at the centre of the home

<sup>22</sup> Euine Fay Jones, *Outside the Pale* (Fayetteville: University of Arkansas Press, 1999).xi.

As a final note on organic, I will end with the following quote from Wright’s lectures at the RIBA in 1939:

“Out of the ground into the light – yes! Not only must the building so proceed, but we cannot have an organic architecture unless we achieve an organic society! We may build some buildings for a few people knowing the significance or value of that sense-of-the-whole which we are learning to call ‘organic’, but we cannot have an architecture for a society. We who love architecture and recognize it as the great sense of structure in whatever is – music, painting, sculpture or life itself – we must somehow act as intermediaries – maybe missionaries.”<sup>23</sup>

<sup>23</sup> Wright, *An Organic Architecture*, 25.



Figure 11: Taliesin West - Frank Lloyd Wright’s Winter Home and School



Figure 12: Archie & Patricia Teater's Artist Studio

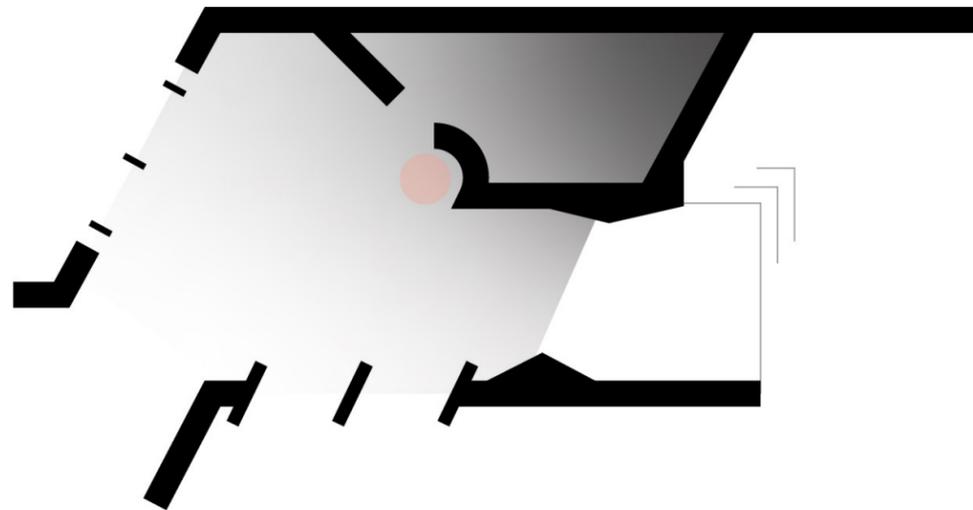


Figure 13: Interpretive Threshold Parte Diagram of the Teater Artist Studio

## Frank Lloyd Wright | Archie & Patricia Teater Artist Studio

Hagerman Valley, Bliss, Idaho, USA

Designed 1952

Built 1957

This project is an artist studio Wright designed for Archie Teater, an American landscape and genre artist. Archie and Wright both shared a deep love of landscape, a value true to this project, to most of Wright's work, and to the upcoming and current architect Ian MacDonald. This was the only artist studio designed by Wright that was actually built, other than his own.<sup>24</sup> In this project, the plan and building read as, simultaneously, a strong shelter and a completely open space connected deeply with the site and nature around it. This project also showcases threshold in the sequenced and gradual movement from the approach of site to the inhabitation and experience within.

"The Teater studio is a reflection of its geography and landscape, which were always an important influence on Frank Lloyd Wright's architecture."<sup>25</sup> When Wright would move locations, he did not bring that style with him. It is important that the building grows of its site and that the two are linked. "The studio at Teater's

<sup>24</sup> Henry Whiting, *At Nature's Edge: Frank Lloyd Wright's Artist Studio* (Salt Lake City: University of Utah Press, 2007), 3.

<sup>25</sup> Whiting, 26.



Figure 14: Archie & Patricia Teater's Artist Studio

Knoll is a premier example of organic architecture at its best, where the fundamental integration with nature blurs the meeting of building and nature."<sup>26</sup>

Approaching the studio, it appears "The studio had been intended to grow out of the earth."<sup>27</sup> Characteristic of Wright's work, one has to travel around the building to locate the front door. They have to "experience Nature, with her sublime vistas of the canyon, and the mighty road of the river, before entering the interior."<sup>28</sup> Once inside, "the massive stone walls and gently sloping roof create a sense of shelter that is palpable, even primal."<sup>29</sup> In Whiting's writing on the studio, "from inside, the studio and yard are an oasis in this harsh desert, lush and shaded. From a distance, the studio appears like another spring, with

<sup>26</sup> Whiting, *At Nature's Edge*. Inside cover.

<sup>27</sup> Whiting, 6.

<sup>28</sup> Whiting, 4.

<sup>29</sup> Whiting, 4.



Figure 15: Teater Artist Studio Site

its attendant vegetation, emerging from the cliffs, so naturally does it blend with the native landscape.”<sup>30</sup> This idea of the house blending in with the site speaks to the idea of the approach or journey – not knowing what one is approaching and experiencing an ever changing building as one approaches it. Then, the journey continues as one enters and moves further inside, yet stays connected with the site. This creates a greatly extended and more experiential journey/threshold from outside to inside.

<sup>30</sup> Whiting, 7.

In *At Nature's Edge*, a book written about the life of the Teater Studio, E Fay Jones writes in the forward, “At final resolution, site and building should achieve a kind of singularity or oneness, a harmonious and ideal relationship. You’d like to have it appear that man and nature planned and arranged everything by mutual agreement and that each benefited immeasurably from the other.”<sup>31</sup>

<sup>31</sup> Whiting, *At Nature's Edge*. ix.



Figure 16: Teater Artist Studio Interior



Figure 17: Teater Artist Studio Interior

### Takeaways from Frank Lloyd Wright / Archie & Patricia Teater Artist Studio and An Organic Architecture

- Something honest and true to itself, not ever developing for the sake of a trend
- Something not fake, shallow, or false - not trying to be something it is not
- Materials being true to their nature
- Something that develops naturally from a germ idea; designing through an open-minded process independent of styles or tastes – “the part is to the whole as the whole is to the part.”<sup>32</sup>
- Arguably, something more timeless
- Something that comes to life from a site almost of its own accord. Building rises out of the ground, from its site. It is of its site, inspired by its site. The buildings and inhabitants can “live in harmony with the natural environment.”<sup>33</sup>
- We must act as “intermediaries” for the muse to work through us.<sup>34</sup>
- The idea that the building aims to connect with its site, this creates a blend between interior and exterior and creates a building that seems almost as though the entire thing is a blur, or the entire building is a threshold
- Never quite a doorway condition in the Teater Studio
- Entrance is not easy to find, creating a situation where one is forced to journey around and appreciate the natural beauty of the site – in a sense this is also giving back to the site

<sup>32</sup> Whiting, 21.

<sup>33</sup> Sönmez, “‘Organic Architecture’ and Frank Lloyd Wright in Turkey within the Framework of House Design,” 51.

<sup>34</sup> Wright, *An Organic Architecture*, 25.

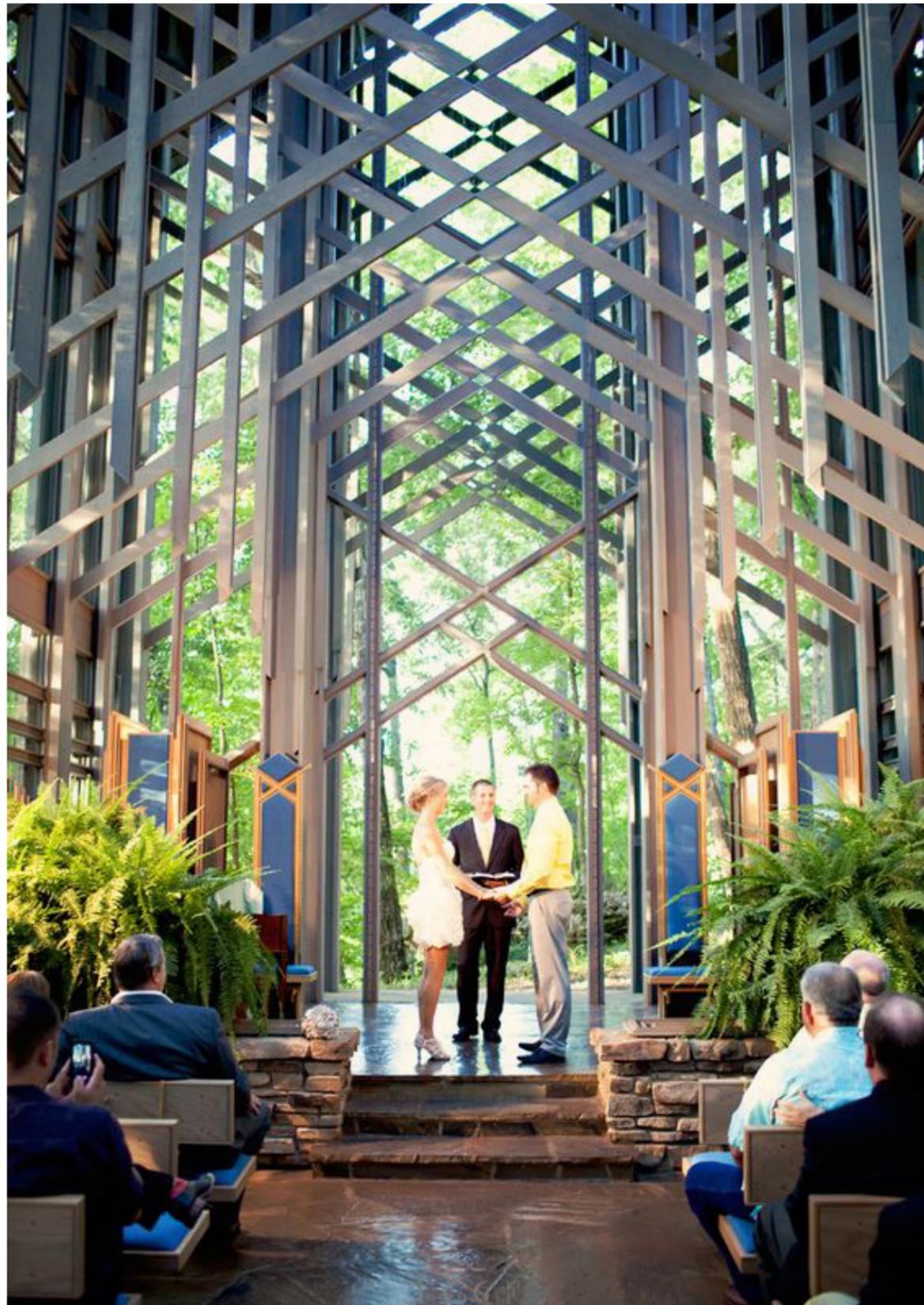


Figure 18: Interior of the Thorncrowne Chapel

## E. Fay Jones | Thorncrowne Chapel

Eureka Springs, Arkansas, USA  
Built 1980

E. Fay Jones, an American architect from Arkansas knew Frank Lloyd Wright for the last ten years of his life and spent some of that time under his tutelage. Wright's design philosophy of organic architecture can be read in much of Jones' text yet Jones asserts, "I've never tried to be a little Frank Lloyd Wright." Jones' own blend of education and experiences allowed him to build on Wright's ideas, refashioning them according to his own vision.<sup>35</sup> There is certainly truth to this and Jones stands out from all of Wright's other apprentices, notably as the only one to receive the AIA's Gold Medal (1990). Jones adds, on the notion

35 Jones, *Outside the Pale*. ix.

of organic, "Organic architecture has a central generating idea which establishes the principle characteristics – the essence, the nucleus, the core."<sup>36</sup>

The project that Jones won the Gold Medal for was the Thorncrowne Chapel. This project is a chapel in the woods of Eureka Springs, Arkansas. It is included in this thesis because it really seems to capture the notion of the inside-outside relationship that I am obsessed with developing. Jones took particular note of architect Richard Neutra's "interest and skill in creating transparent boundaries between outside and in"<sup>37</sup> and did this theme justice with his Thorncrowne Chapel. In regards to a spectrum between inside and outside, the chapel sits near one end of this spectrum where one can sit within an interior space that

36 Whiting, *At Nature's Edge*. ix.  
37 Jones, *Outside the Pale*. xi.

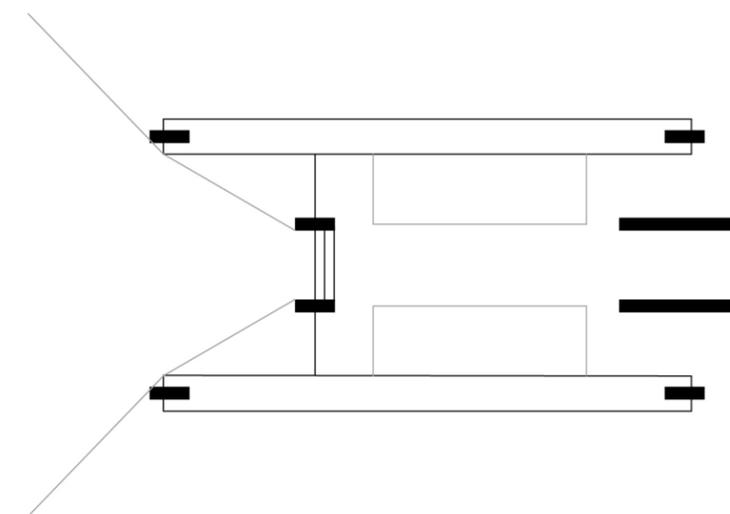


Figure 19: Interpretive Threshold Parte Diagram of the Thorncrowne Chapel

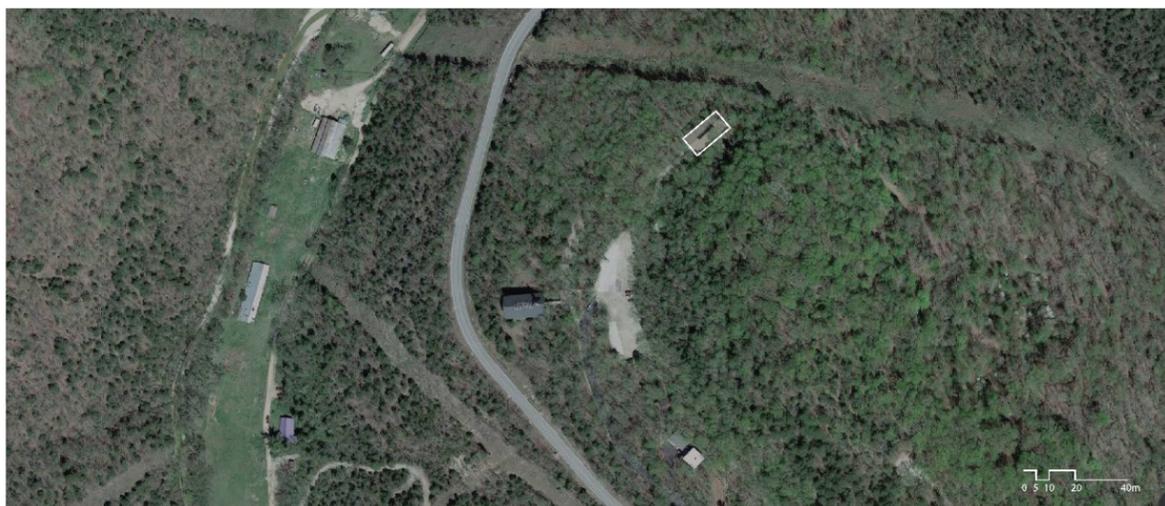


Figure 20: Thorncrown Chapel Site

hardly feels they have left the exterior world at all. In fact, Jones may have found a way to heighten the connection to the exterior world.

One of the ways he may have created these significant spaces is by putting a focus on dichotomy, similar to van Eyck. Robert Adams Ivy Jr. notes that “An interplay of opposites characterizes Jones’ architecture, providing a tension and the opportunity for resolution. Open versus enclosed spaces, exteriors flowing into interiors.”<sup>38</sup>

38 Jones, viii.

On a similar note, I’ll conclude on Jones with the following quote from a *Outside the Pale*: “There are a lot of these transitional areas where you’re trying to string out these inside-out relationships in a horizontal way. In these areas, there can be no typical openings; there must be an extension of ceiling materials from inside to outside, and stone floor materials going from inside to outside without interruption.”<sup>39</sup> – Jones

39 Jones, 70.

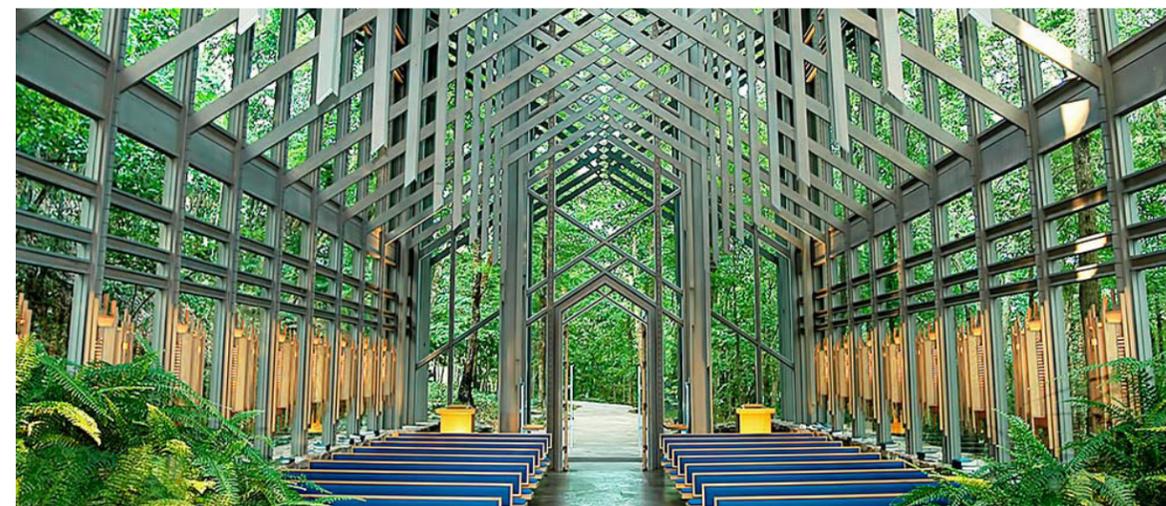


Figure 21: Interior of the Thorncrown Chapel

### Takeaways from E Fay Jones / Thorncrown Chapel

- “Organic architecture has a central generating idea which establishes the principle characteristics – the essence, the nucleus, the core.”<sup>40</sup>
- Hardly a sense of interior – so open and light
- It seems as though there is not even glass in this building and that it is completely open to the outside, but there is glass, it is an enclosed space – the window detail is key to this feeling of being outside even when one is inside
- To have the architecture heighten the experience with the exterior world, with nature. Creating a spiritual threshold between building and nature. Such an ideal can also be seen in Tadao Ando’s Church on the Water project. In discussing Tadao Ando and Japanese architecture, Kate Nesbitt talks about de-emphasizing the physical boundary between residence and surrounding nature and establishing instead a “spiritual threshold.”<sup>41</sup>
- There can be no typical openings; extending materials from inside to out in the ceilings or of the floor without interruption

40 Whiting, *At Nature’s Edge*. ix.

41 Nesbitt, *Theorizing a New Agenda for Architecture*, 460.



Figure 22: Interior of the Wychwood Park House

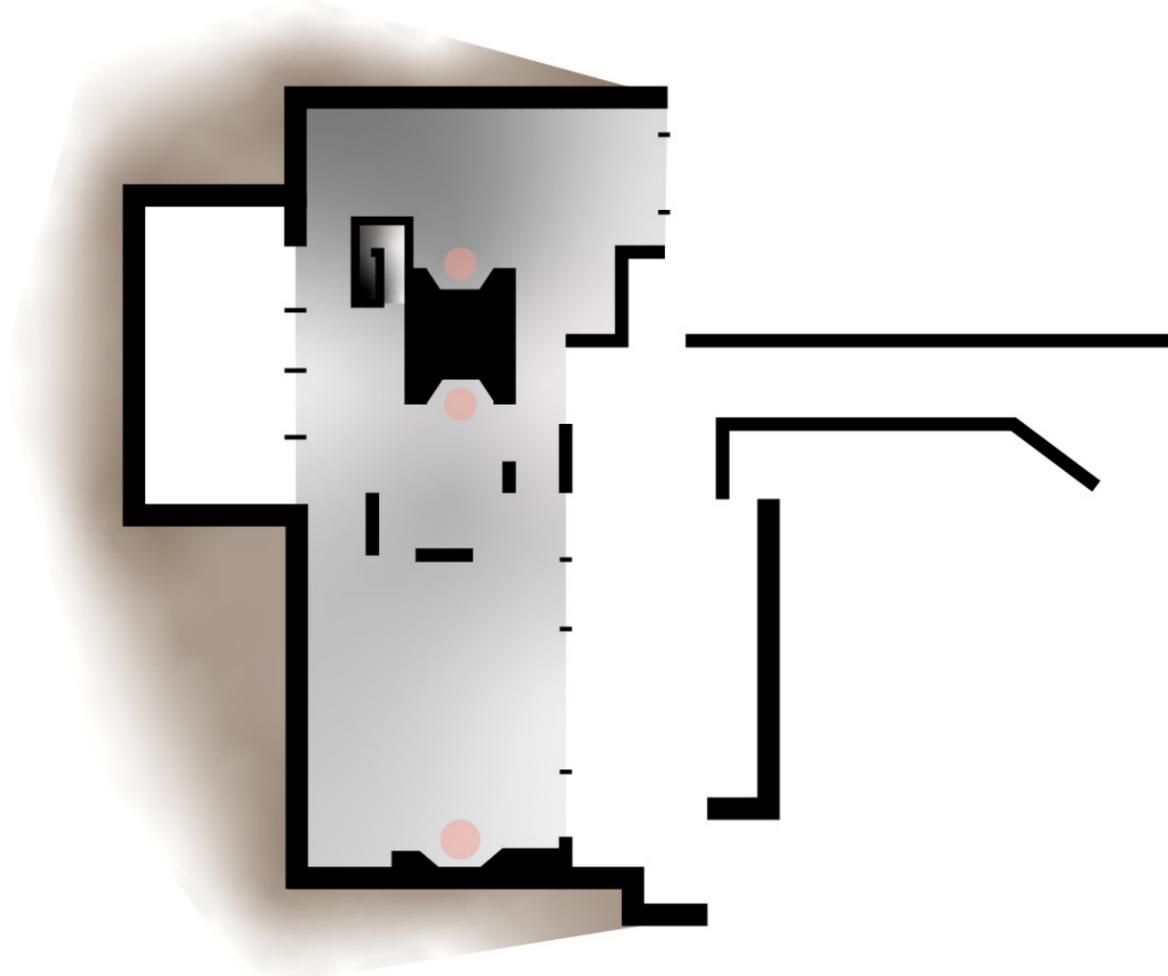


Figure 23: Interpretive Threshold Parte Diagram of the Wychwood Park House

## Ian MacDonald (IMA) | Wychwood Park House

Wychwood Park, Toronto, Ontario,  
Canada

Built 2002

Wychwood Park House is a project Ian MacDonald designed in the Wychwood Park, a downtown Toronto location with a significant tree population. It involved an extensive renovation and expansion on an existing home, with neighbouring buildings in close proximity, although one would not know this upon review of the interior photos. In this project, like all of MacDonald's, the interior of the home has a connection with the surrounding nature by way of framing the views from particular spaces. This project also has a great sequence of travel from exterior to interior as one enters from the site over a drawn-out exterior stair, across a small courtyard, and then into the interior space where one will find the living area, kitchen area, and family room along the ground floor journey. These interior spaces have their own unique way of reconnecting with the exterior world from within a space that has a sense of comfort and shelter.

This connection between interior and exterior is often done with careful consideration of how the interior spaces can be located to best relate to the exterior, with the use of a middle ground

playing a key role. One of the tools used by IMA to create this connection to the exterior is that of removing distractions by "carefully sculpting the interior of the house in order to create a unified composition."<sup>42</sup> In doing so the ideas of "foreground, middle distance, surrounding landscape, and horizon"<sup>43</sup> are noted. This can be seen in the Wychwood Park House from the Kitchen where a light well space is dug and left between the house and the neighbouring property. From the kitchen looking out, one's eyes are drawn out and up a landscaped dry stack stone wall flourishing with greenery in the summer months.

MacDonald also points out the importance of the Hearth as an architectural foundation. Focussed on inhabitation, MacDonald notes their recognition of the "power of the hearth." The hearth is one of the elements that helps create spaces that satisfy human's "fundamental impulses to feel secure and be hidden from view while, at the same time, to be aware of the world."<sup>44</sup>

<sup>42</sup> Brian Carter and Ian MacDonald, eds., *Boundary, Sequence, Illusion: Ian MacDonald Architect*, Documents in Canadian Architecture (Halifax, Nova Scotia, Canada: Dalhousie Architectural Press, 2019), 4.eds., *Boundary, Sequence, Illusion: Ian MacDonald Architect*, Documents in Canadian Architecture (Halifax, Nova Scotia, Canada: Dalhousie Architectural Press, 2019)

<sup>43</sup> Carter and MacDonald, 4.

<sup>44</sup> Carter and MacDonald, 4.



Figure 24: Wychwood Park House Site

The idea of the journey is also a key element to MacDonald. He notes that the buildings they create are “buildings that reveal surprises slowly and offer carefully choreographed experiences and sequences of discovery.”<sup>45</sup> This begins to open up a more nuanced definition of threshold and begins to provide evidence of the relevance of my interpretation of threshold as a psychological journey. Furthering this idea of a sequence of experiences, when asked how the central relationship to nature can be highlighted in an automobile-centred culture with continuing urbanization, IMA replied that they achieve this “through careful configurations of dwelling: editing views, seamlessly integrating indoor and outdoor living spaces, and artfully designing thresholds so as to create a sense of continuous spatial flow.”<sup>46</sup>

45 Carter and MacDonald, 4.  
46 Carter and MacDonald, 4.

Relating to the ideas previously seen in the Threshold chapter, specifically the ideas seen in van Eyck’s work like the Sonsbeek Pavilion, “IMA continuously explores the threshold as a place to inhabit.”<sup>47</sup> One way this is done is by creating spaces that extend the interior space to the exterior. “In this condition one can inhabit a room that is simultaneously inside and out – a particularly satisfying experience in the cold Canadian Climate.”<sup>48</sup> The cold climate in Canada makes MacDonald’s strategies to use the threshold as a mediating zone between inside and out especially relevant. “Thickening a wall, creating a ledge, or locating a lounge at a glass wall defines the warm interior yet integrates it with a natural landscape and weather that is often extreme yet also spectacular. Consequently, IMA invites the inhabitant to linger between inside and outside. The artful

47 Carter and MacDonald, 4.  
48 Carter and MacDonald, 4.

concealment of structure and window framing creates an unexpected sense of being outside while in the comfort of an enclosed space.”<sup>49</sup>

The Wychwood House “aims for a paradoxical condition of ‘cozy open spaces,’”<sup>50</sup> in order to try to address a modern problem in architecture of interi-

49 Carter and MacDonald, 5.  
50 Carter and MacDonald, 21.

or spaces being overly transparent and leaving users feeling exposed. This project incorporates long standing domestic elements such as the hearth, garden, and private-public relationship, with “with considerable attention to the crafting of material, and to the compression and release of space.”<sup>51</sup>

51 Carter and MacDonald, 21.



Figure 25: Interior of the Wychwood Park House

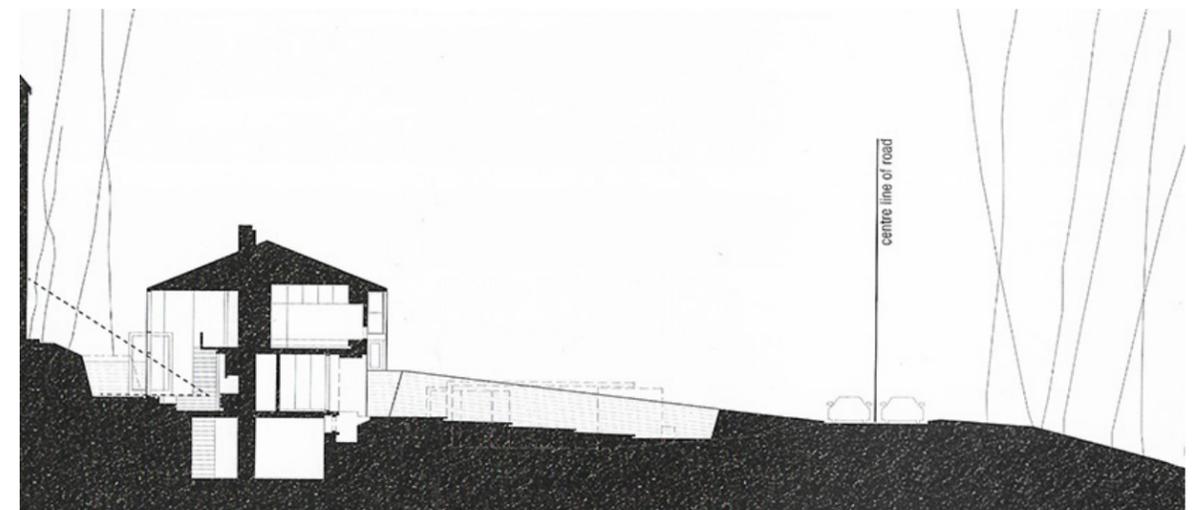


Figure 26: Section Drawing of the Wychwood Park House



Figure 27: Interior of the Wychwood Park House

### Takeaways from Ian MacDonald / Wychwood Park House

- The power of the Hearth to create a space that feels secure and interior, in order to allow a level of mental comfort enhancing one's ability to appreciate the exterior world
- The importance of siting in terms of calculating what and how views will frame the landscape
- The importance of the ideas of comfort, warmth, and security for defining "inside"
- The idea of the journey – carefully revealing previews and experiences that create a sequence of events that draw people further in and enhance the entire experience
- Threshold conditions that can be inhabited
- The compression and release of space
- The idea of cropping and using the middle distance to draw the eye to connect the user with the nature/exterior in the distance
- Also the idea of choosing the building and room location appropriately to have the building be able to crop these views

## DESIGN PRINCIPLES GATHERED FROM THE ORGANIC CASE STUDIES

Below is a compilation of the values gathered from studying the organic architects. The items in **red are from Wright**, **green are Jones**, and **blue are MacDonald**. They have been re-ordered as they relate to one another.

- The **design** should be **honest and true to itself**, never developing for the sake of a **trend** and never something shallow or false. Arguably, developing timelessness is the goal
- **We must act as “intermediaries”** for the muse to work through us.<sup>52</sup>
- **Materials being true to their nature**
- The **hearth** as the centre or heart of the building
- The power of the **Hearth** to create a space that **feels secure and interior**, in order to allow a level of mental comfort enhancing one’s ability to appreciate the exterior world
- The importance of the ideas of **comfort, warmth, and security** for defining “inside”
- **Seed Germ idea** - “the part is to the whole as the whole is to the part.”<sup>53</sup>
- “Organic architecture has a **central generating idea** which establishes the principle characteristics – the essence, the nucleus, the core.”<sup>54</sup>
- The building should **not be on the site**, but **of the site**. Something that comes to life from a site almost of its own accord. The building and inhabitants can “live in harmony with the natural environment.”<sup>55</sup>
- The architecture should heighten the experience with the exterior world, with nature. Creating a spiritual threshold between building and nature. Such an ideal can also be seen in Tadao Ando’s Church on the Water project. In discussing Tadao Ando and Japanese architecture, Kate Nesbitt talks about de-emphasizing the physical boundary between residence and surrounding nature and establishing instead a “**spiritual threshold**.”<sup>56</sup> The way the nature is framed and viewed creates this relationship

52 Wright, *An Organic Architecture*, 25.

53 Whiting, *At Nature’s Edge*, 21.

54 Whiting, *At Nature’s Edge*. ix.

55 Sönmez, “‘Organic Architecture’ and Frank Lloyd Wright in Turkey within the Framework of House Design,” 51.

56 Nesbitt, *Theorizing a New Agenda for Architecture*, 460.

- The idea of **cropping** and using the middle distance to draw the eye to connect the user with the nature/exterior in the distance
- Try to **avoid a shallow doorway condition**
- There can be no typical openings; **extending materials from inside to out** in the ceilings or of the floor without interruption
- **Entrance not easy to find** - create situation where one is forced to journey around and appreciate the natural beauty of the site and building
- The idea of the **journey – carefully revealing** previews and experiences that create a sequence of events that draw people further in and enhance the entire experience
- The architecture should connect with the site in a way that creates a **blend between interior and exterior and creates a building that feels like an ongoing threshold** condition rather than having left the exterior world for the interior. It’s as though one is inhabiting the threshold condition
- **Threshold** conditions that can be **inhabited**
- Hardly a sense of interior – so open and light. At the Thorncrown Chapel it seems there is not even glass in the building and that it is completely open to the outside. The **window details** are key here
- The importance of **siting** in terms of calculating what and how views will **frame the landscape**
- **The compression and release of space** is important
- Site selection should involve pre-conceiving an idea of how the building, rooms, and openings will **relate to the land** and crop the **views**

I also created a synthesis of ideas diagram, which can be seen on the following page. This diagram compiles words each architect would associate with interior, exterior, and the spectrum between. This served me well as a way to start to compare and contrast the different generations, as well as, further develop and solidify my own views of what is meant by each: inside, outside, and the spectrum between (threshold).

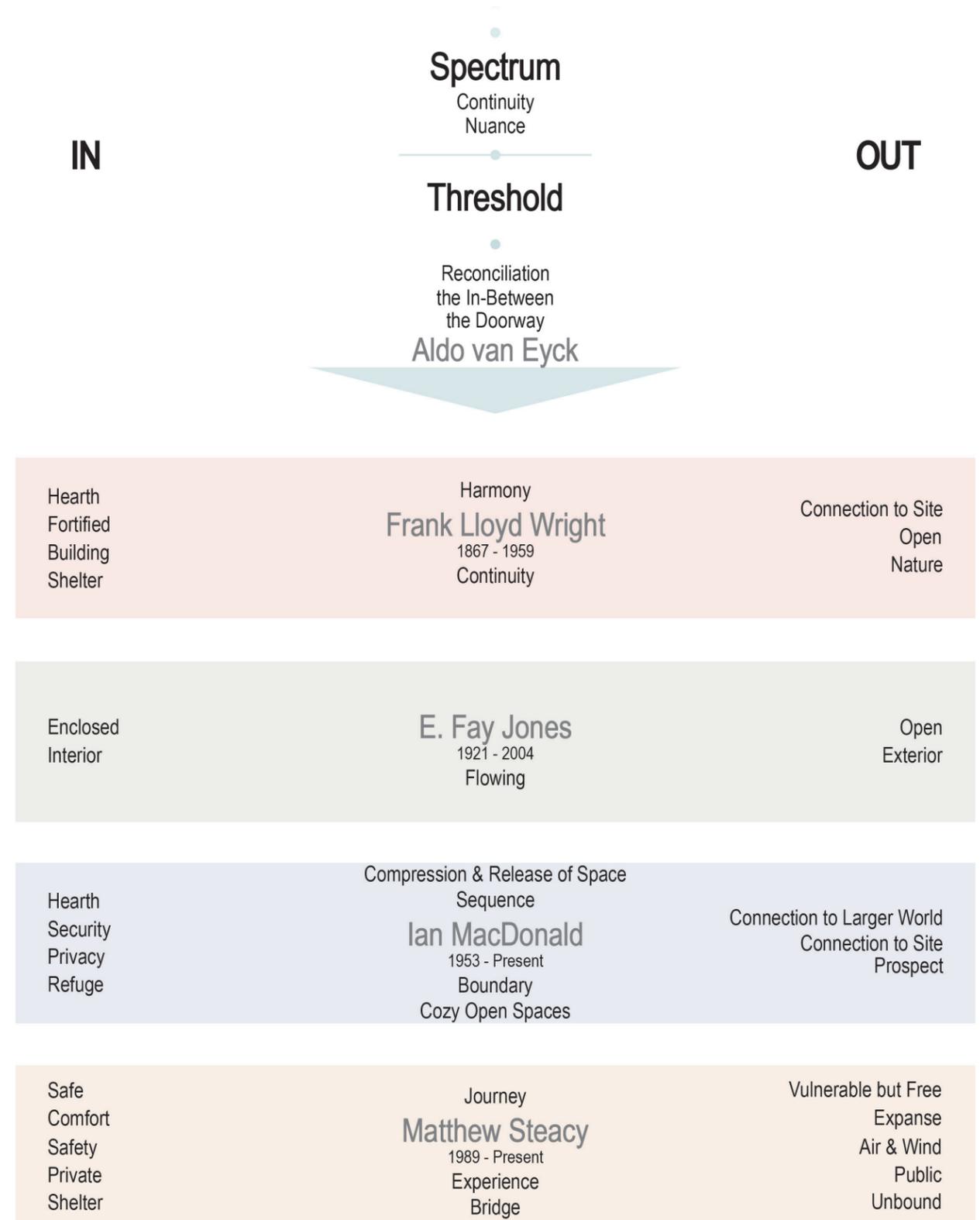


Figure 28: Inside-Outside Idea Synthesis Diagram

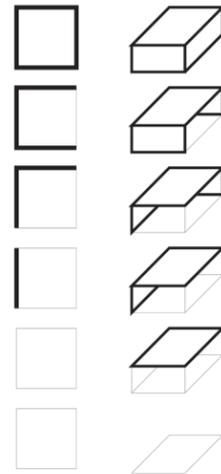
## THE CHARACTERS OF INSIDE-OUTSIDE

In aiming to define or redefine threshold it was clear that there was not going to be one simple definition or interpretation. So, I began developing “characters”, each of which was its own definition or sub-concept of the idea of threshold. This is a lexicon of my own that I created to help me understand and map out what this word or idea means and can mean. I began creating them based around the case studies and theories of threshold I had researched. Once these characters began to inspire a design, the design then began to inspire new characters. In the end, this process allowed me to define the idea more broadly and more honestly and later became an arsenal of twenty-four characters that I could incorporate into my design. Each of the characters can be seen on the following pages.

1 THRESHOLD;  
THE JOURNEY



2 THRESHOLD;  
BREAKING DOWN THE BARRIER



3 THRESHOLD;  
THE DOORWAY



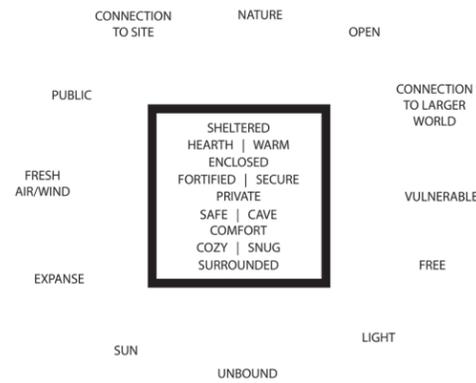
4 THRESHOLD;  
THE EXTENDED DOORWAY



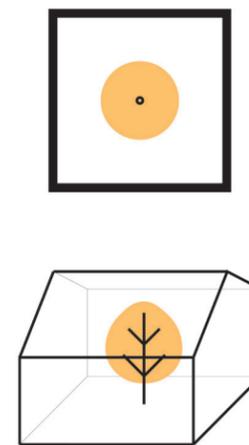
5 THRESHOLD;  
THE WINDOW



6 THRESHOLD;  
THE DICHOTOMY



7 THRESHOLD;  
THE INTERIOR THAT FEELS EXTERIOR



8 THRESHOLD;  
THE EXTERIOR THAT FEELS INTERIOR

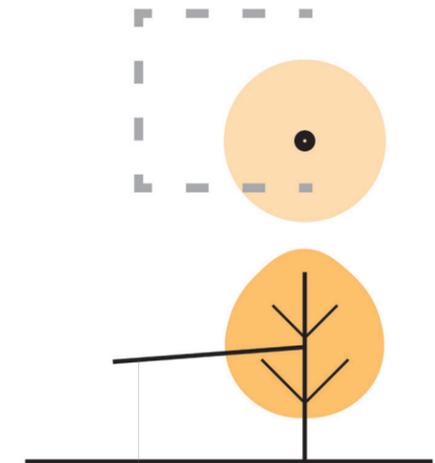
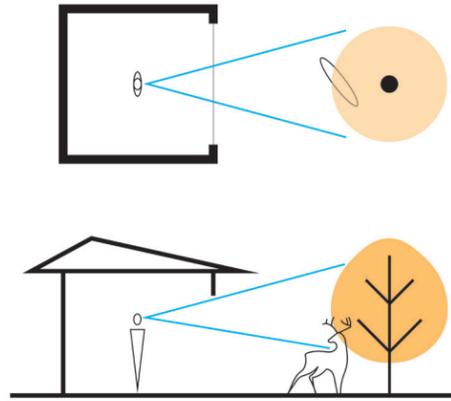
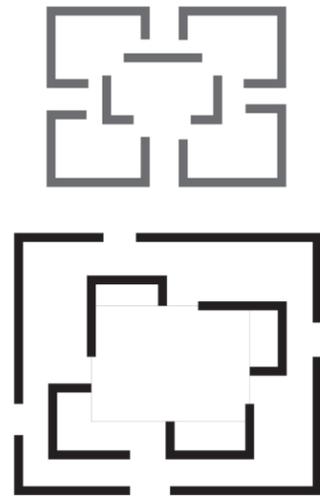


Figure 29: Inside-Outside Characters 1 - 8

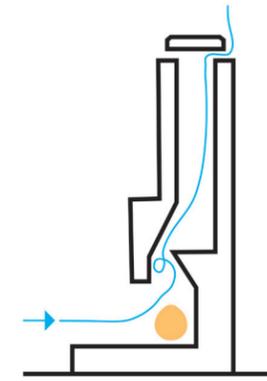
9 THRESHOLD:  
THE CONNECTION BETWEEN INDOOR AND OUTDOOR,  
VISUALLY



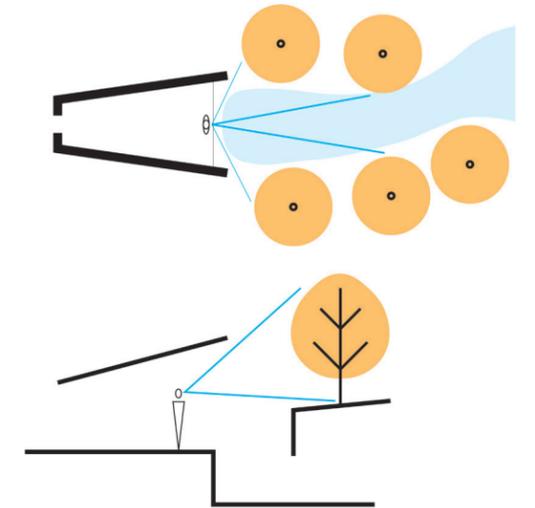
10 THRESHOLD:  
CONFUSING THE BARRIER/PsYCHOLOGICAL  
PERCEPTION



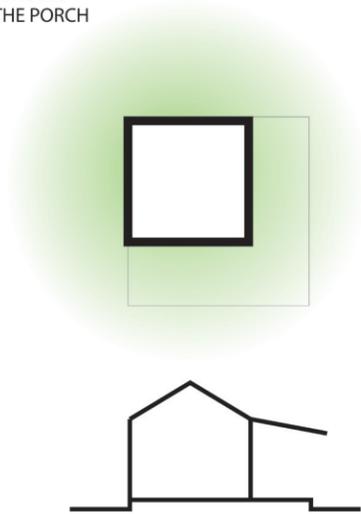
11 THRESHOLD:  
THE FIREPLACE/HEARTH



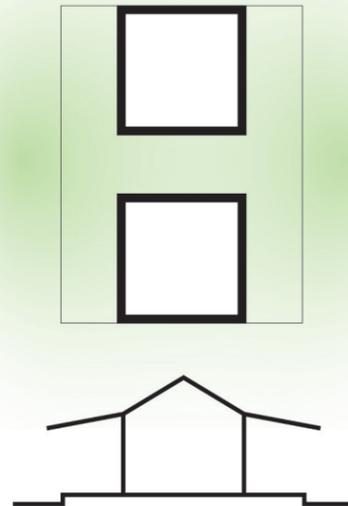
12 THRESHOLD:  
THE SPIRITUAL THRESHOLD BETWEEN BUILDING AND  
NATURE



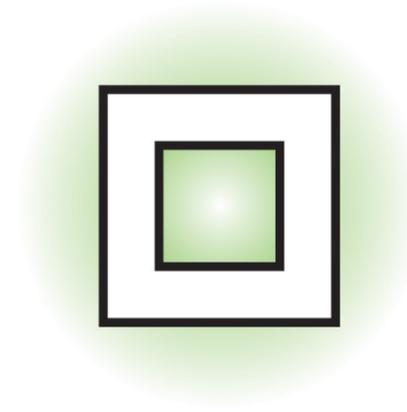
13 THRESHOLD:  
THE PORCH



14 THRESHOLD:  
THE TEXAS DOG RUN FORMAT



15 THRESHOLD:  
THE COURTYARD / BOUNDING THE EXTERIOR W WALLS



16 THRESHOLD:  
INSINUATED THRESHOLD - KNEE HEIGHT WALL

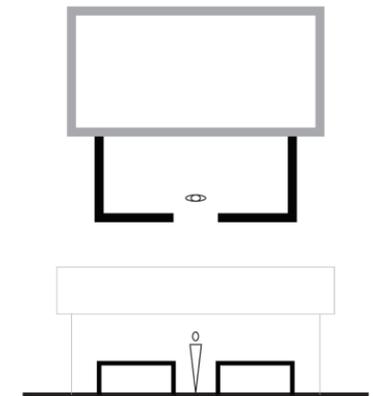
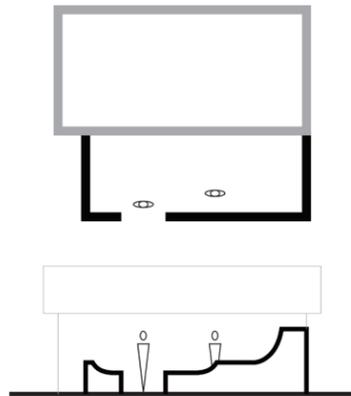
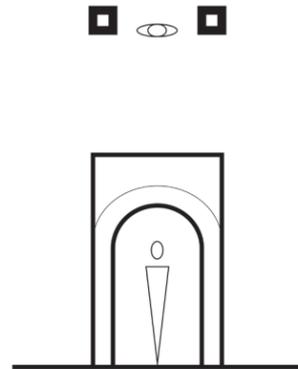


Figure 30: Inside-Outside Characters 9 - 16

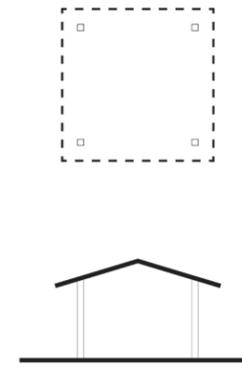
17 THRESHOLD;  
INSINUATED THRESHOLD - WALLS AT VARYING HEIGHTS



18 THRESHOLD;  
THE ARCHWAY AND THE HEADER



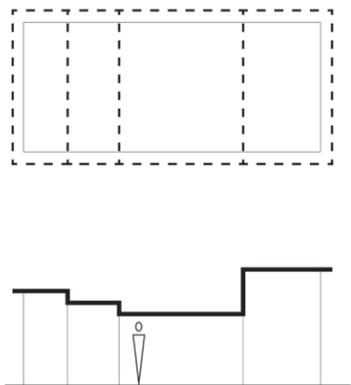
19 THRESHOLD;  
THE ROOF



20 THRESHOLD;  
THE FLOOR



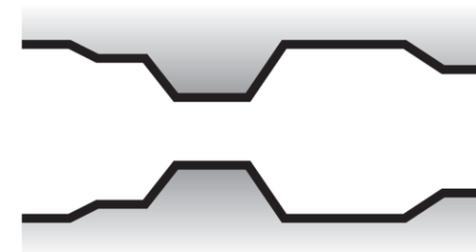
21 THRESHOLD;  
THE CEILING



22 THRESHOLD;  
THE WALL



23 THRESHOLD;  
THE COMPRESSION AND RELEASE OF SPACE



24 THRESHOLD;  
THE VERTICAL THRESHOLD

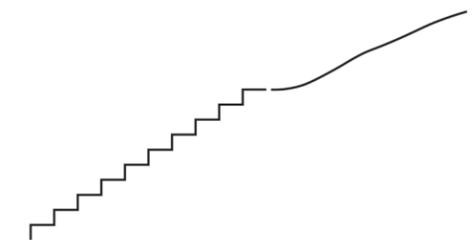


Figure 31: Inside-Outside Characters 17 - 24



Figure 32: Swooping Roofs

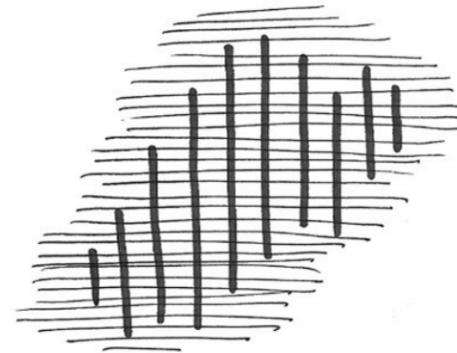


Figure 33: Linear Wall Sequence

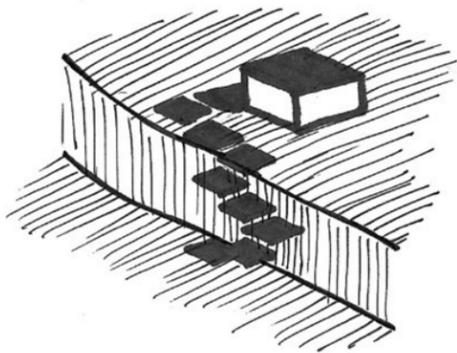


Figure 34: Vertical Threshold

## DESIGN PRINCIPLES AND CHARACTERS MEET THE SITE

Put simply, the design developed from introducing the characters and design principles to the site in unison. When I first started introducing these characters and design principles to the site, I started with three specific moves.

The first, was these swooping roofs (Fig. 32). This was initially inspired by the pavilion that I had built on site, which taught me how simply turning the roof slope and changing its colour can create a more subtle architecture that sits within the site better - more of the site than on the site.

The second diagram shows a linear sequence of walls (Fig. 33) that acted as a diffusion from the exterior space to the interior space that would grow from within. This took inspiration from the Sonsbeek Pavilion process sketches discovered in the study of Aldo van Eyck.

The third, was a series of degrading architectural components that quickly began to meander down the top of the cliff and eventually down the side of the cliff, creating the beginning of a vertical threshold (Fig. 34).

From here, as the building designs grew, rather than trying to pick one or two specific definitions or conditions of threshold, my aim was to include as many of the characters and principles that I could. The intention was to design a building that showed the depth and complexity of the inside-outside threshold topic. This is an idea that would be supported by Robert Venturi's work on contradictory levels and the phenomenon of "both-and" in architecture. Venturi wrote "even 'flowing space' has implied being outside when inside, and inside when outside, rather than both at the same time. Such manifestations of articulation and clarity are foreign to an architecture of complexity and contradiction, which tends to include 'both-and' rather than exclude 'either-or'."<sup>57</sup>

<sup>57</sup> Robert Venturi, *Complexity and Contradiction in Architecture*, 2d ed, The Museum of Modern Art Papers on Architecture (New York : Boston: Museum of Modern Art ; distributed by New York Graphic Society, 1977), 32.



Figure 35: Site Photo of Cliff and Landscape

## THE SITE

The site of the project is within a residential property on Beaver Road, Ganoque, Ontario, Canada. Initially, there were three sites being considered, all of which were based around a 14-metre high, 3,500 square-metre cliff. Site one, which is the chosen site for the project, is located near the top of the cliff but is sheltered by a high ridge from the prevailing Western wind. Site two was located on the lower shelf of the cliff, where the design ended up arriving in part, and site three was located at the South side of the cliff.

The site that was chosen, site one, offered a connection to the surrounding area that had been less affected by human intervention and could frame views in ways that could connect the user to parts of the site where the land owner could have control of those connections in the future. This site also forced the longest and most interesting approach to the site, relating to the journey character. To get to the site, one must enter at one of the few low points of the cliff, up a fairly steep rock, and through a clearing in the brush and trees – already a natural threshold condition exists. Once through this clearing and meandering up the sloped cliff surface, the cliffs edge acts as a boundary, in some sense like walls that do not allow access to come or go

without travelling backward to the initial entrance through the clearing. Although one is completely outside and in nature, they have already entered into a space without even knowing it. From here, travelling up toward the building the most prominent sounds are the snow or moss under foot and the varying wind sounds. There is a point, just above the main tree line, where the sound of wind changes from a sharp noise traveling through the trees to a deeper more hollow wind travelling freely above the trees. The user has now also passed through a vertical threshold. This site was chosen because these experiences are natural occurrences on the site that had already spoke to the seed germ idea of threshold.

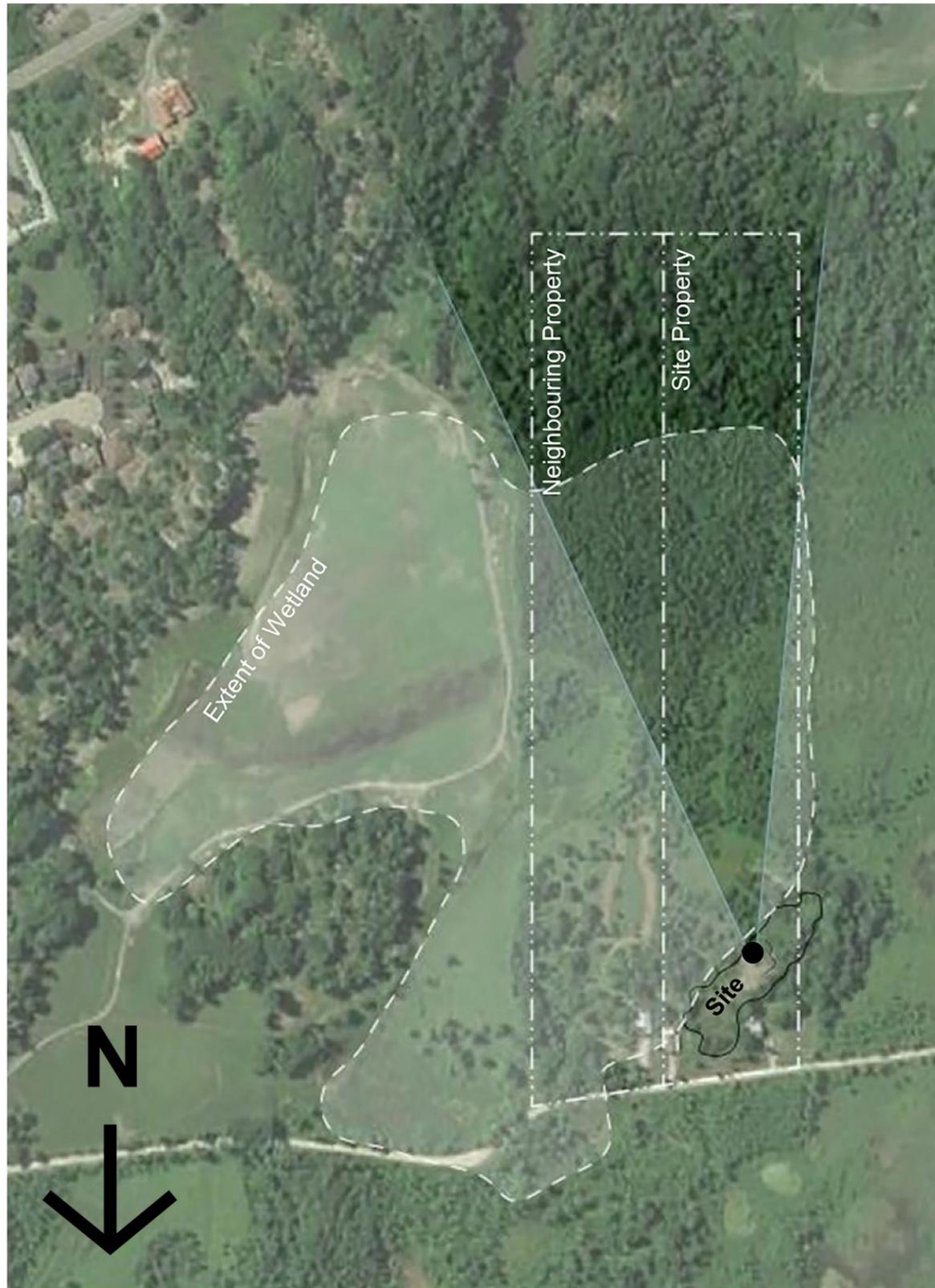


Figure 36: Site Plan Drawing at the Scale of the Property

## The Site at the Scale of the Property

In the image below, we can see the primary view from the site. This view is in my opinion the most spectacular view from the property. It was chosen partly for this reason but also because of long term considerations. In the drawing on the left, we can see the property lines around the site, as well as, the neighbouring property. Considering the long

term possibility of how the neighbouring land may be developed aided in choosing the specific site for the project and affirmed the importance of the primary view looking South. The property to the right may someday be developed, but it is cropped out by the high shoulder of the cliff and the properties to the left are primarily wetland.



Figure 37: Site Photo of Primary View from Proposed Building Location

## The Site at the Scale of the Cliff

Here we start to see the site at the scale of the cliff in which it inhabits. We can see the building above, as well as, the smaller scale architectural intervention at the base of the cliff, which is a stair and railing that would lead the user to enter. We can also see the existing garages and sheds, as well as, the existing house on the right.

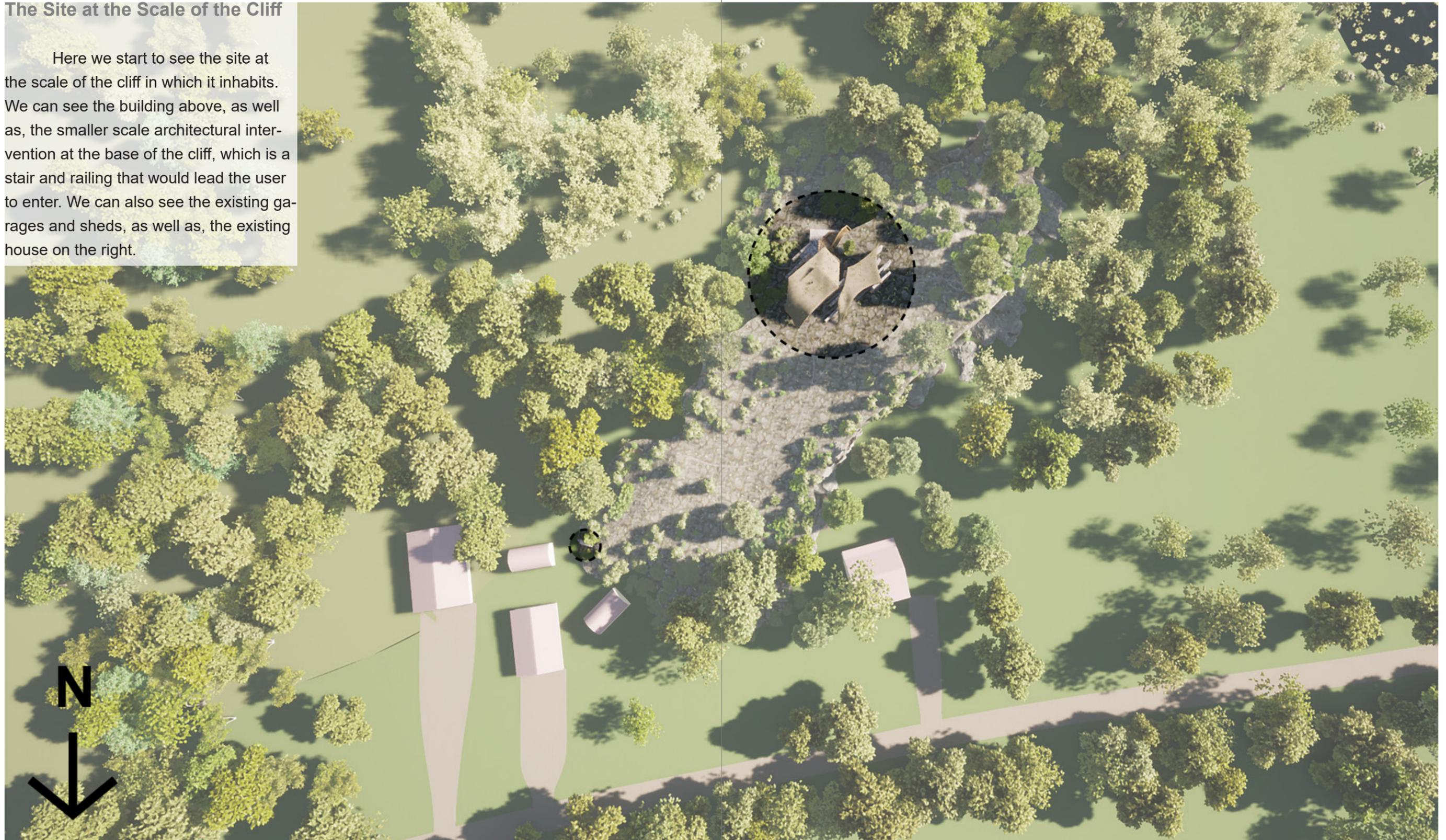


Figure 38: Site Plan Drawing at the Scale of the Cliff

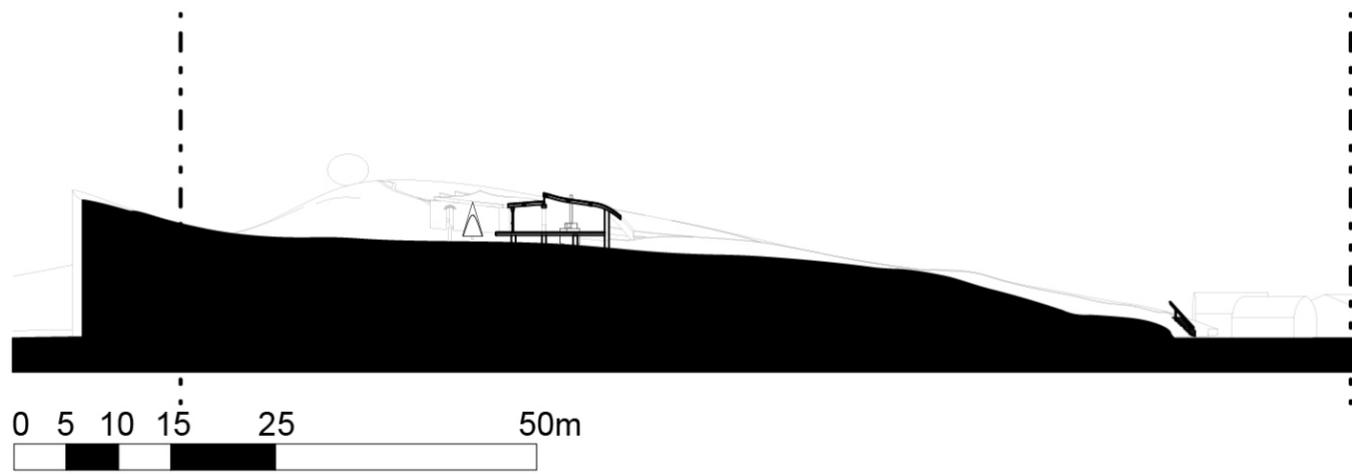


Figure 39: Site Section 1 (Cliff)

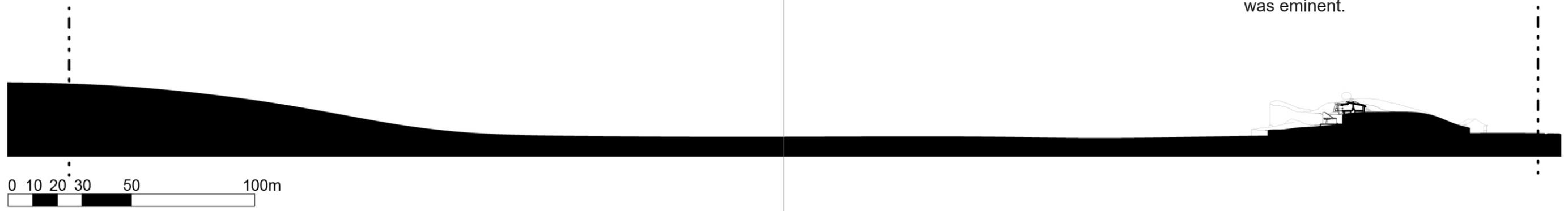


Figure 40: Site Section 2 (Property)

### Site Sections and Building Grids

Here one can start to see the cliff and site in section. The lower section shows how the cliff and building sit within the land in reference to the neighbouring landscape. We also see both the main cliff and lower rock shelf. Section A cuts through the length of the cliff and shows the gradual rise of the rock out of the earth.

In the key plan one can see a series of grids. The grids were inspired by reviewing the site views, property, and neighbouring properties. The orange was created to align the building with the cliff edge, while the blue was created at a 45-degree angle to the cliff to align the roof structure with the most prominent view. This is the most spectacular view from the site but there is more to it than this. The building was to have a strong relationship with the exterior world and site so considering the long-term possibilities of the neighbouring properties was eminent.

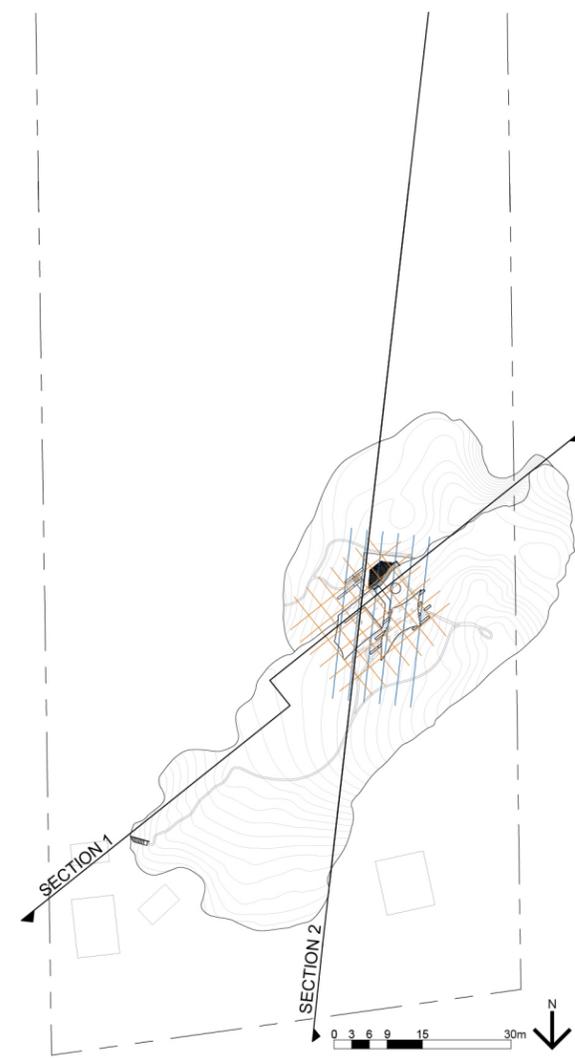


Figure 41: Key Plan for Site Sections and Building Grids

## Site Massing

Below is an image showing the massing of the cliff and building design. We can see the existing home and road in the background. To the bottom right we see the stair and rail that would draw people into and up the cliff. The prominent wind is shown here as well. The prevailing West wind is blocked by a high shoulder of the cliff, leaving the South-East wind feeling like the most notable on the site. When I walked the site blind-folded in order to better understand it acoustically and experientially, one of the most prominent noises, second only to the sound of snow, leaves, and moss beneath my feet, was the sound of the wind. The sound and feeling helped me feel more connected with the site.

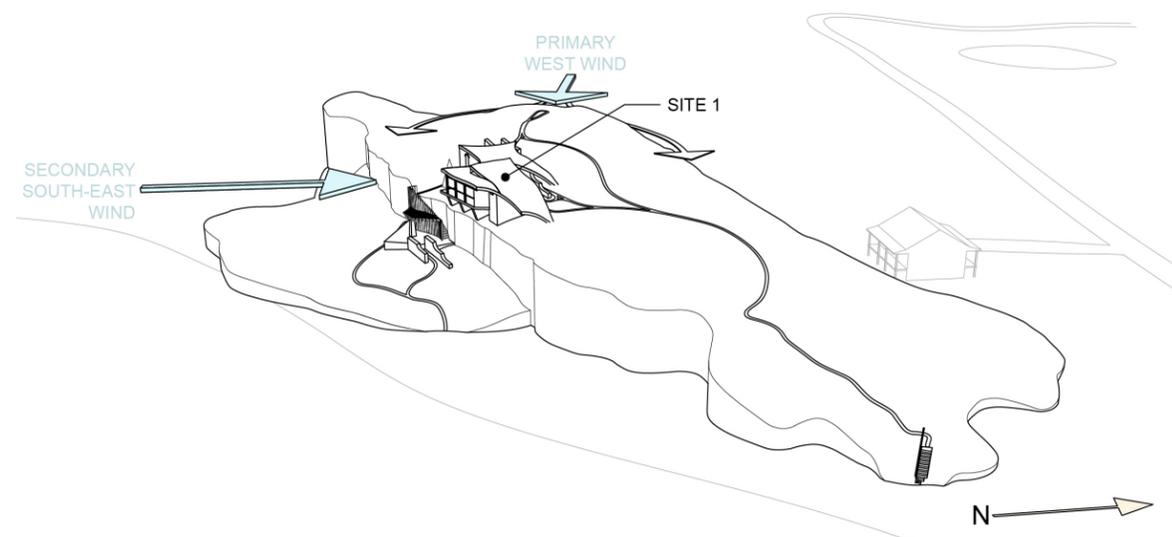


Figure 42: Site Massing Diagram showing Building and Winds

## PART 2 THE DESIGN

Moving now more directly into the design: for the sake of showcasing the design, the project has been broken down into these four sequences or segments, which I have named the Journey, the Diffusion, the Shelter, and the Vertical Threshold. The key plan below shows the paths that correlate with these sequences.

### The Journey

### The Diffusion

### The Shelter

### The Vertical Threshold

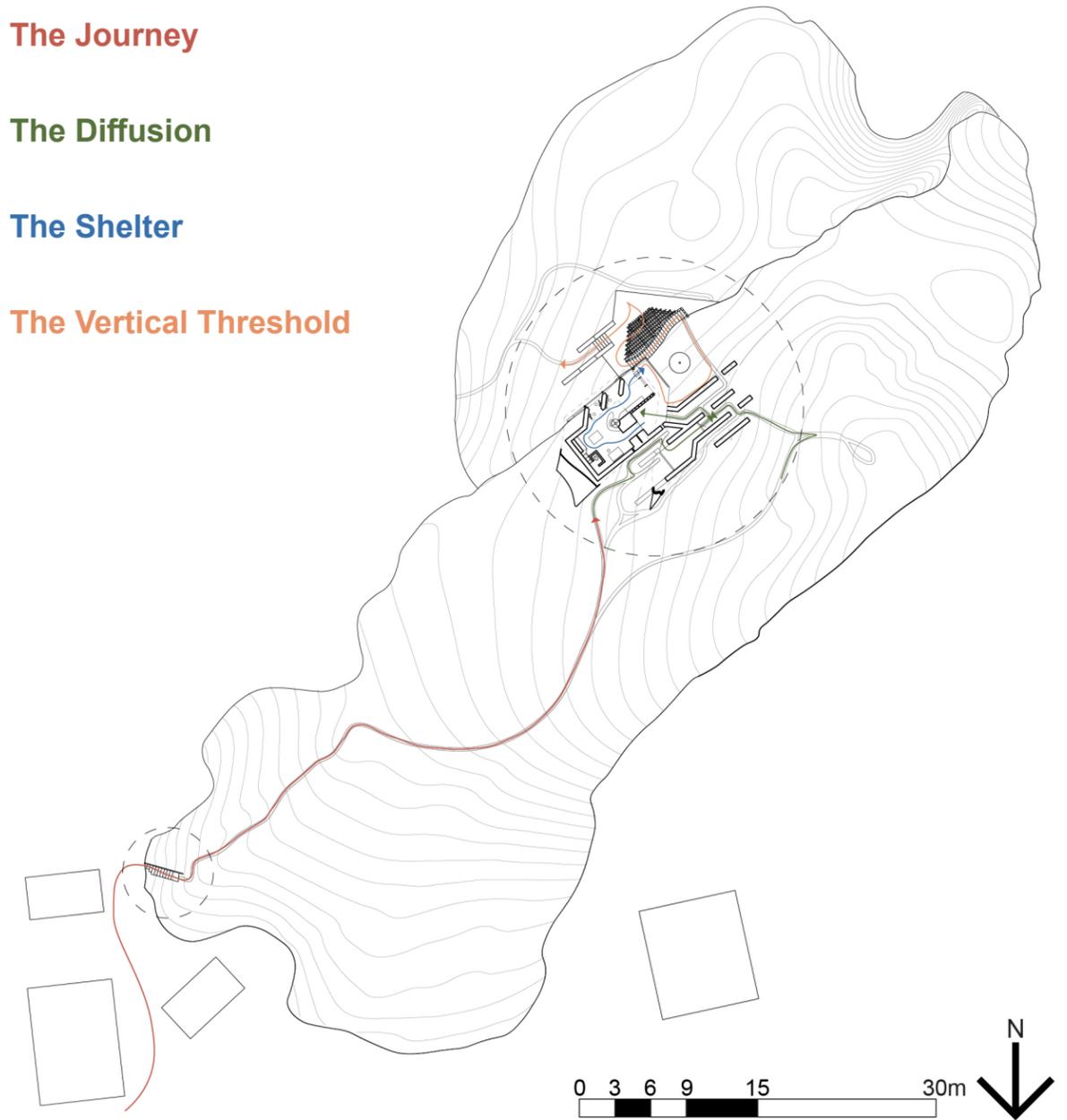
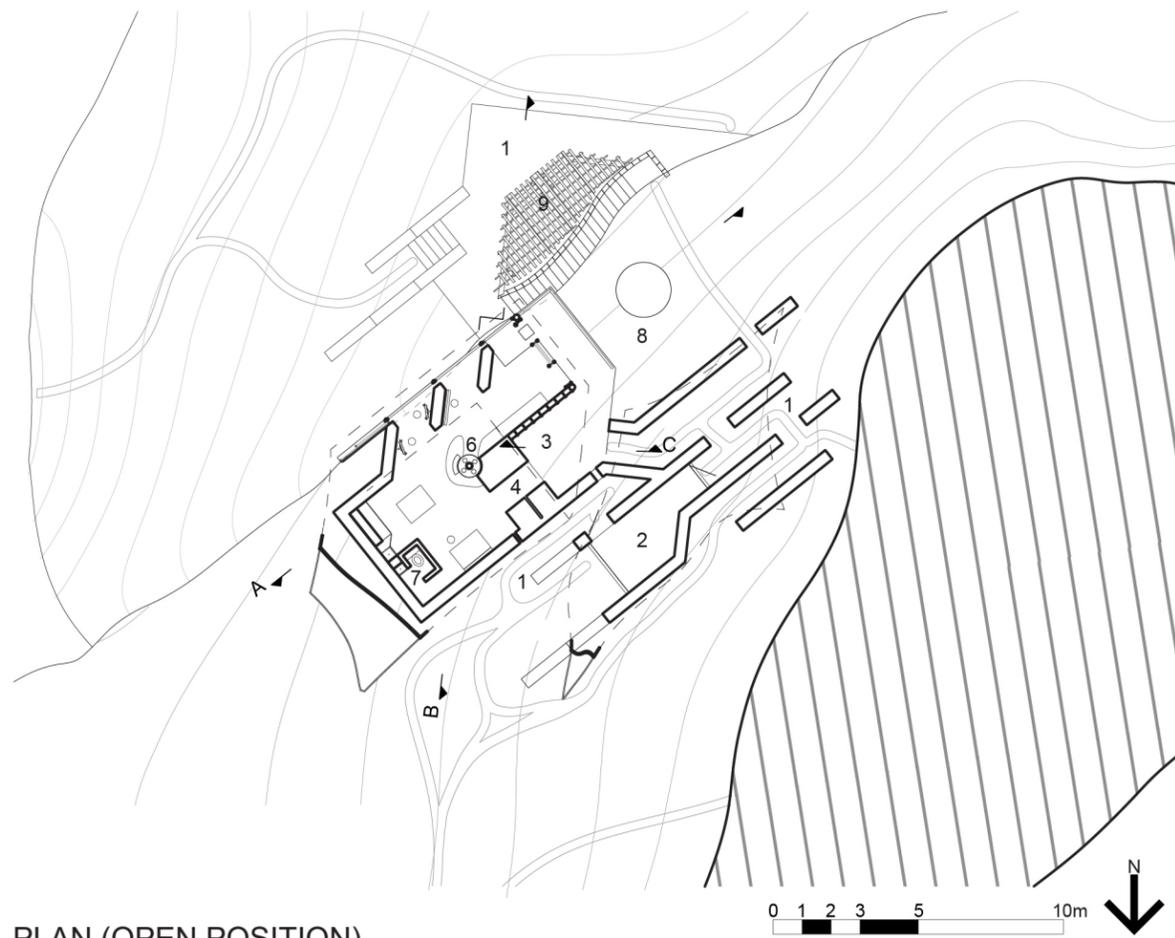


Figure 43: Site Plan Showing Design Segment Paths

In the main floor plan below, one can see the linear sequence of walls became the diffusion between spaces, with a gallery area denoted here by the number 2. The main entrance is a transition through a deep stone mass. The plan below shows the building in an 'open' position, while the plan to the right shows the building with the glass walls and entrance closed. The hearth is located centrally and is a design that incorporates a transforming wood stove atop a stone hearth with an interpretation of an inglenook that stretches along the wall. 8 denotes a courtyard that developed around one of the more lively existing trees on the site and, below at 9 and 10, one can see a lower veranda and pergola accessed by a stair that hugs the cliff edge.

- 1 Diffusion
- 2 Gallery
- 3 Alcove
- 4 Threshold
- 5 Studio
- 6 Inglenook
- 7 Water Closet
- 8 Courtyard
- 9 Pergola
- 10 Veranda



PLAN (OPEN POSITION)  
Figure 44: Floor Plan in an Open Position



PLAN (CLOSED POSITION)  
Figure 45: Floor Plan in a Closed Position

## The Graph

In order to represent my interpretation of the spectrum between inside and outside I developed a format of graphing the experience. This experience is determined by several factors that involve how the user's senses would dictate whether they feel less or more inside or outside. Below is an example of a typical doorway that could be found in a home or office – an inch or two in depth, within a wall that is six or so inches in depth. One can see this graph is a simple and sharp transition; moving from outside, opening a thin door, travelling through a thin wall, to then shut the door and find oneself on the other side.

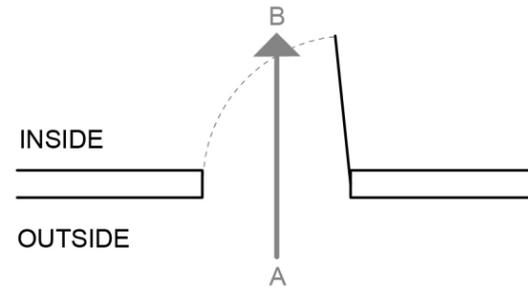


Figure 47: Path Key Plan - Doorway

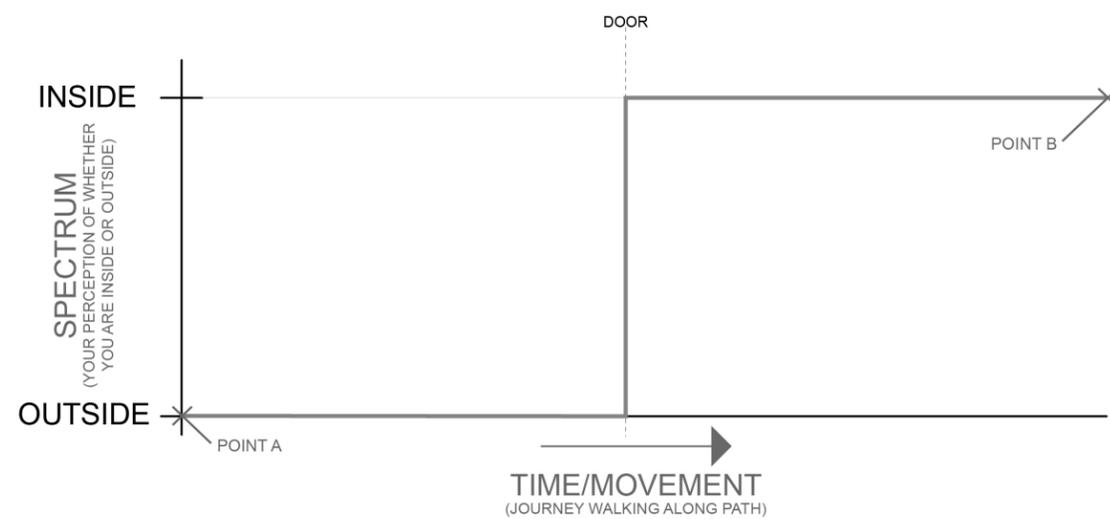


Figure 46: In-Out Spectrum Graph - Doorway

## The Journey

For each of the upcoming graphs, which represent the experience of moving through the project, there will be a key plan showing the path that is being graphed. As previously noted, and better demonstrated here, the idea behind these graphs is they are a perceptual representation of one's psychological experience of being inside or outside as they move through spaces. There are also notes at some of the more significant transitional points in the graph. In this example moving through an archway of bushes and later being bound by the cliff edge creates a slight sense of being within a space. The following pages will showcase renderings of significant locations along *The Journey* pathway.

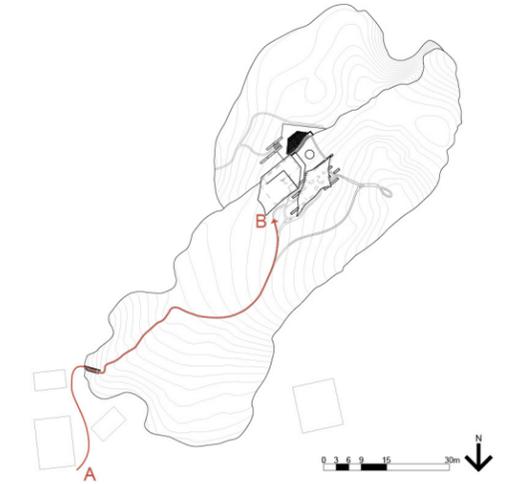


Figure 49: Path Key Plan - The Journey

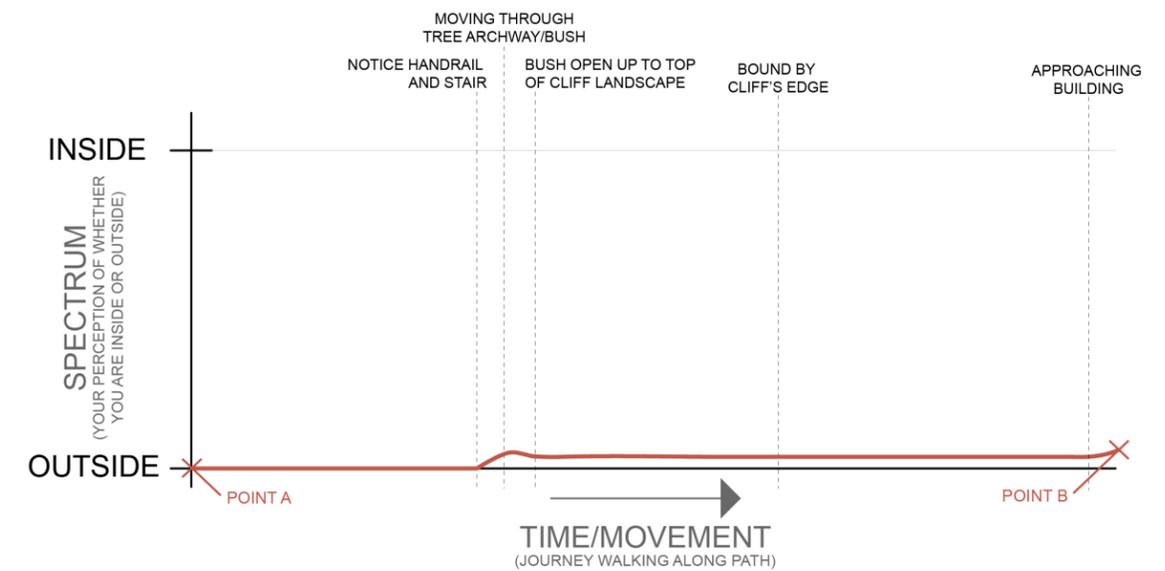


Figure 48: In-Out Spectrum Graph - The Journey

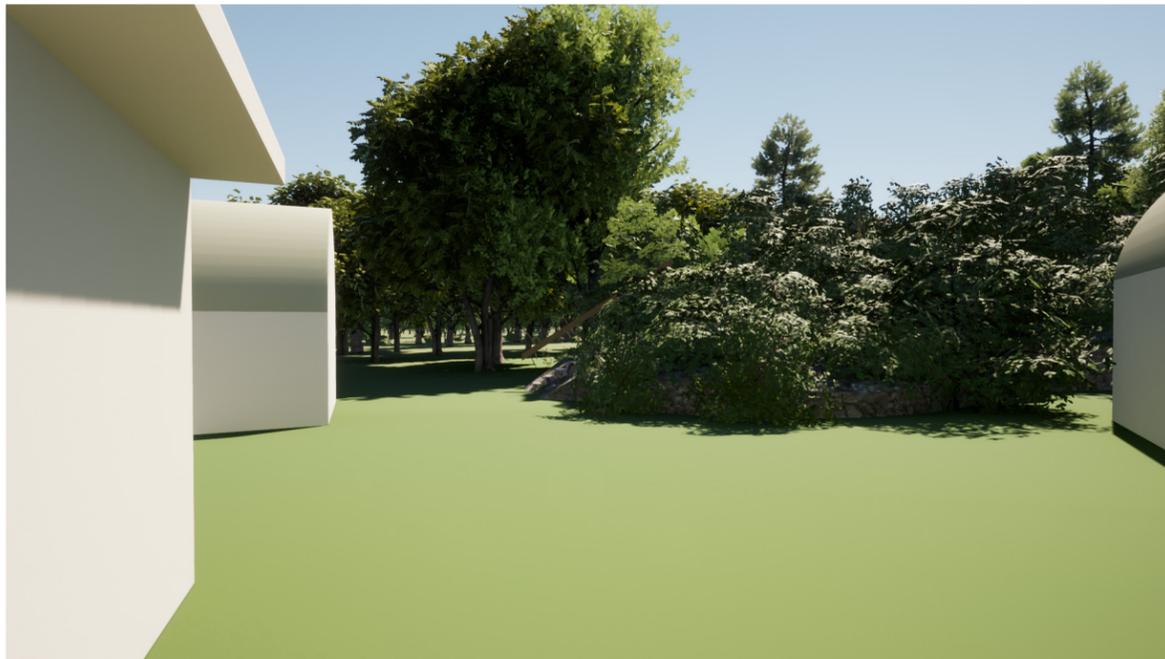


Figure 50: Design Render - Site Entrance

The view from alongside the existing garage, where one starts to see something that looks like steps and a railing ahead.

### Characters Involved

The Journey  
The Vertical Threshold

### Senses Involved

The feeling of soft ground beneath the feet  
  
The sound of the wind rustling through the trees  
  
A glimpse of a handrail and stair in the distance



Figure 51: Design Render - Site Entrance Stair

The set of stairs that begin the architectural intervention, assisting the user up the steep portion of the cliff. In this case some of the senses involved are the feeling and sound of stepping from soft grass up to stone stairs and the feeling of the wooden rail on the hand.

### Characters Involved

The Journey  
The Extended Doorway  
The Courtyard/ Bounded Exterior  
The Insinuated Threshold  
The Archway

### Senses Involved

Change in Material Density  
(Soft Ground to Hard Stone)  
  
Change in Sound Beneath the Feet  
  
Feeling of Wood Handrail  
  
Sense of transitioning from one world to another as one passes through an extended archway of trees into the open area of the cliff top



Figure 52: Design Render - Building Approach

Making one's way through the previous greenery and now about halfway up the cliff. One is starting to get a better look at the building and is intrigued to walk toward it or up to the highest point of the cliff.

### Characters Involved

The Journey

### Senses Involved

The sound of moss, leaves, and rock under the feet

A transition in the sounds of the wind as one passes through a vertical threshold above the tree line



Figure 53: Design Render - Building Approach

Getting closer to the diffusion area where one can start to get a glimpse of the gallery. One is looking directly through the diffusion area, specifically the gallery, which is bound on either end by glass.

### Characters Involved

The Journey  
The Window

### Senses Involved

The smell and feel of the wind from a higher level above the treeline

**The Diffusion (Path 1)**

The next sequence is The Diffusions pathways. This segment has a couple alternate paths. The first, seen below, goes through the gallery area. Some of the key moments here are getting a very small glimpse into the studio through a window, as well as, stepping up onto a wooden floor in the gallery area from the cliff, into a room bound by two opaque walls and two transparent walls. The following pages will showcase renderings of significant locations along *The Diffusion* pathway.

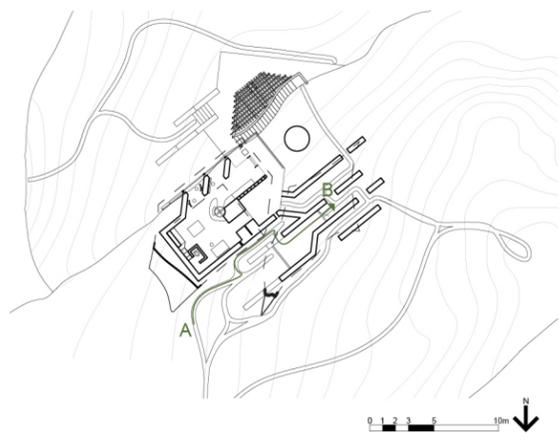


Figure 55: Path Key Plan - The Diffusion (Path 1)

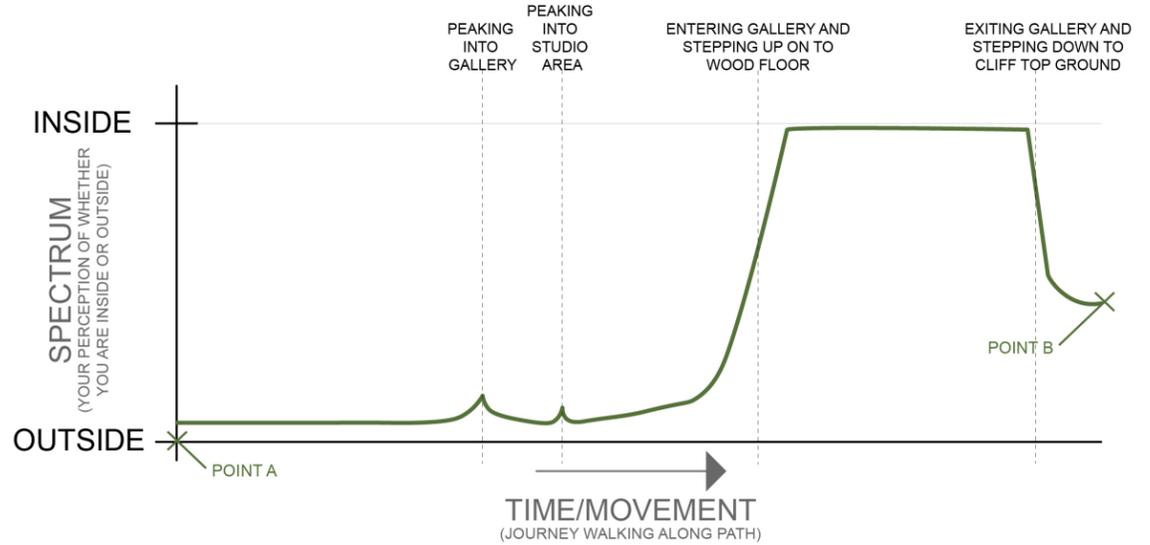


Figure 54: In-Out Spectrum Graph - The Diffusion Path 1



Figure 56: Design Render - Gallery Approach

Standing within the walls of the diffusion area looking at the glass door that is the entrance to the gallery. A stone arch is noticed, which is intended to be the least refined header condition in the project.

### Characters Involved

Extended Doorway  
 Exterior that feels Interior  
 Confusing the Barrier/Perception  
 Insinuated Threshold - Walls at Varying Heights  
 The Roof  
 The Wall

### Senses Involved

A sense of shelter as the user is now sheltered from the feeling of the wind  
 A different acoustical experience of the wind and footsteps



Figure 57: Design Render - Inside Gallery

This is a render from inside the gallery and ahead is another glass door that would allow one to exit the gallery area, with a step down from a wooden floor to the stone cliff top below.

### Characters Involved

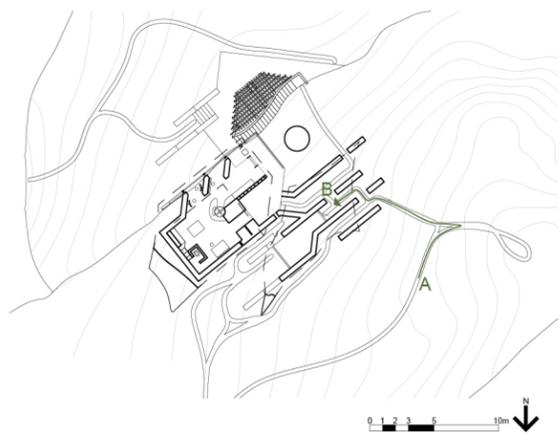
Breaking down the Barrier  
 The Doorway  
 The Extended Threshold  
 The Window  
 The Labyrinth  
 The Roof / Ceiling  
 The Floor  
 The Compression and Release of Space

### Senses Involved

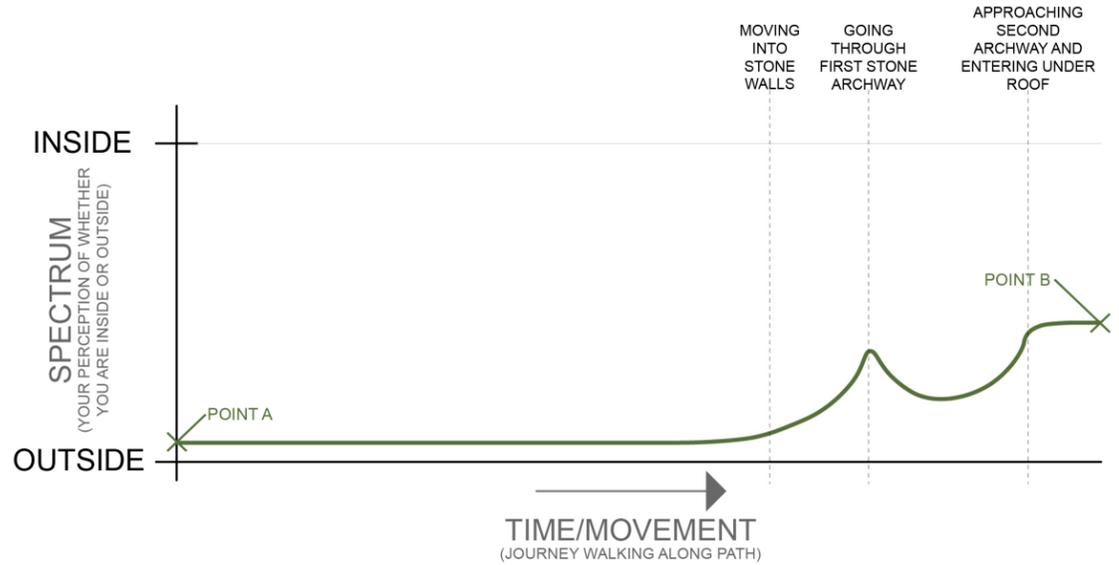
The transition in sound of the feet on the cliff to the feet on a wooden floor  
 The feeling of a softer material under the feet  
 The feeling of the wind eliminated

**The Diffusion (Path 2)**

This graph is the second path of the Diffusion area. One would have continued beyond the building to the highest point on the cliff and then turned around to see a view of the building below. The following pages will showcase renderings of significant locations along *The Diffusion* (Path 2) pathway.



**Figure 59:** Path Key Plan - The Diffusion (Path 2)



**Figure 58:** In-Out Spectrum Graph - The Diffusion Path 2



Figure 60: Design Render - The Diffusion

A view of the building below including a glimpse of an opening in one of the stone walls that would draw the viewer into the diffusion space.

### Characters Involved

The Journey  
The Labyrinth

### Senses Involved

The wind sound and feeling is most high here

A sense of intrigue of what lies below within the stone walls



Figure 61: Design Render - Entering the Diffusion

Getting closer to the opening one would notice another opening further in. One might notice the header conditions begin to become more refined the closer they get to the main building. The walls are constructed with site found red granite and the archways would be made of the same stone, while the header nearest the building would be a refined granite header beam.

### Characters Involved

The Doorway / Archway  
The Wall

### Senses Involved

A sense of comfort as one becomes more sheltered from the wind

A sense of entering a space as one walks below a notable stone arched header

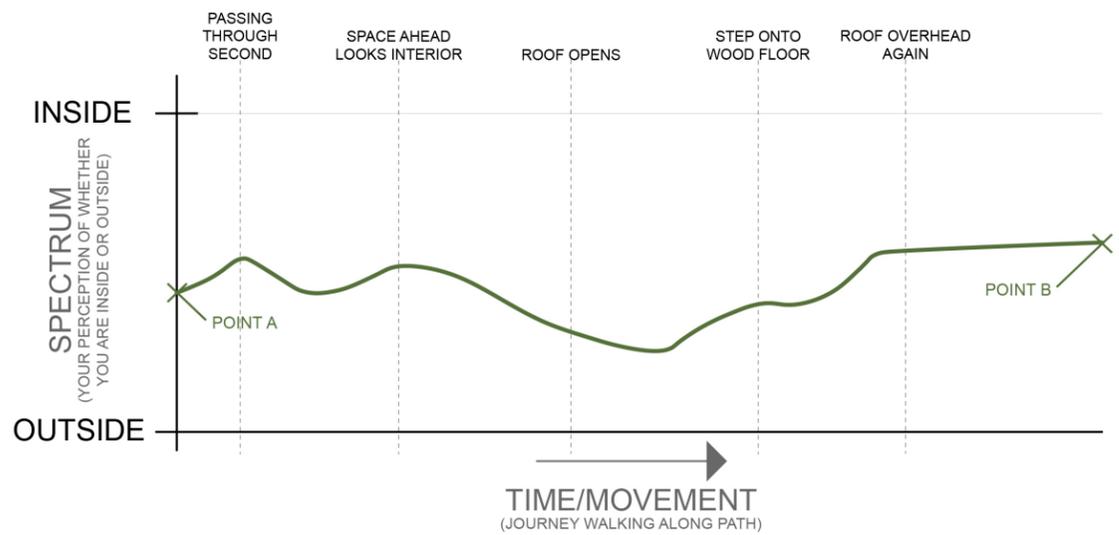
A sense of intrigue as they notice the following header is different

**The Diffusion (Path 3)**

Path 3 starts where the previous two ended within the Diffusion area. It passes through one of the most experimental and experiential moments in the project, which has been named the alcove area. The following pages will showcase renderings of significant locations along The Diffusion (Path 3) pathway.



**Figure 63:** Path Key Plan - The Diffusion (Path 3)



**Figure 62:** In-Out Spectrum Graph - The Diffusion Path 3



Figure 64: Design Render - Inside the Diffusion

This view shows the introduction of another wood floor element ahead and the walls have begun to feel more encompassing. The occupant is also under a wooden roof structure now. It may begin to feel as though they have entered inside a new space.

### Characters Involved

The Extended Doorway  
 The Exterior that feels Interior  
 The Texas Dog Run  
 The Roof / Ceiling  
 The Compression and Release of Space

### Senses Involved

An echoing of varying sound travelling through the hallways  
 The feeling of the cold, strong stone wall on the hand



Figure 65: Design Render - Approaching the Alcove

As one goes further in they notice a break in the ceiling but also the first introduction of a warmer wooden wall and there is a very deep opening in a mass of stone ahead that reveals a sliver of the interior and eventually is recognized as the entrance into the Shelter area. As they are drawn further into this alcove space, the wall to the right will eventually end as the occupant enters the alcove and will be left with an opening to the right that frames a portion of the major view.

### Characters Involved

The Journey  
 Breaking down the Barrier  
 The Extended Doorway  
 The Building-Nature Spiritual Threshold  
 The Texas Dog Run  
 The Roof / Ceiling  
 The Floor  
 The Compression and Release of Space

### Senses Involved

Changing sound of wind and birds as the ceiling opens up  
 A change in light  
 The sound and feel of transitioning from stone and moss below the feet to wood

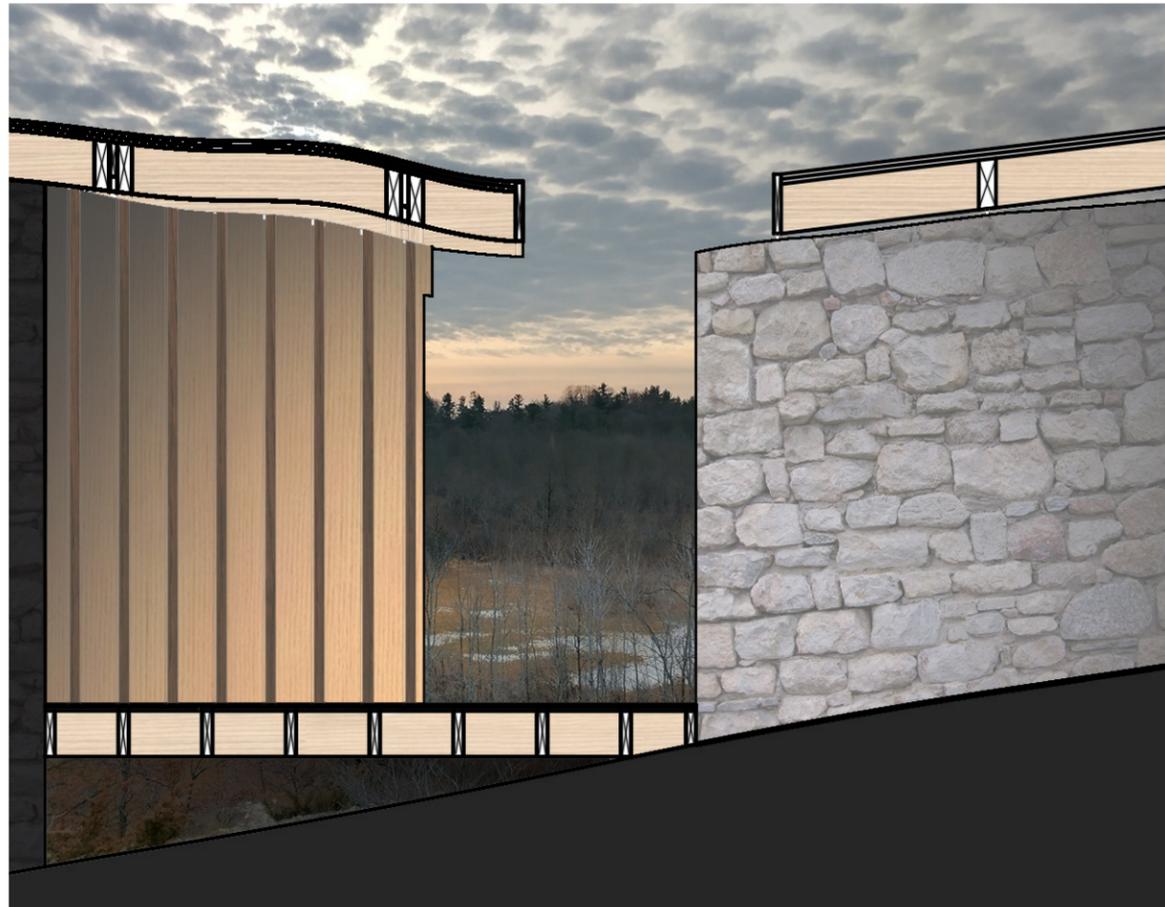


Figure 66: Building Section C - Alcove

Above is a section through this alcove area that shows the introduction and elimination of floor, wall, and ceiling elements as one moves through the space. It also shows this view that is suddenly framed in a moment where one simultaneously realizes they are very much still outside.

## The Shelter

Next one would move through the alcove area, drawn in toward a deep opening in a thick stone wall. After passing through this stone wall one would feel very much inside, with a strong hearth immediately to the right. As one moves further into the space their eyes would be drawn further to the right, along the line of the roof structure above, to the primary view framed by a sequence of linear walls. One would again feel connected to the site and exterior world through glass that seems as though it does not exist, leaving them feeling as though they are still outside. The following pages will showcase renderings of significant locations along *The Shelter* pathway.

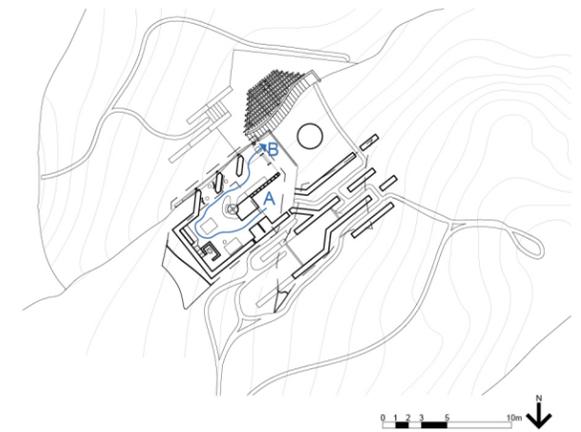


Figure 67: Path Key Plan - The Shelter

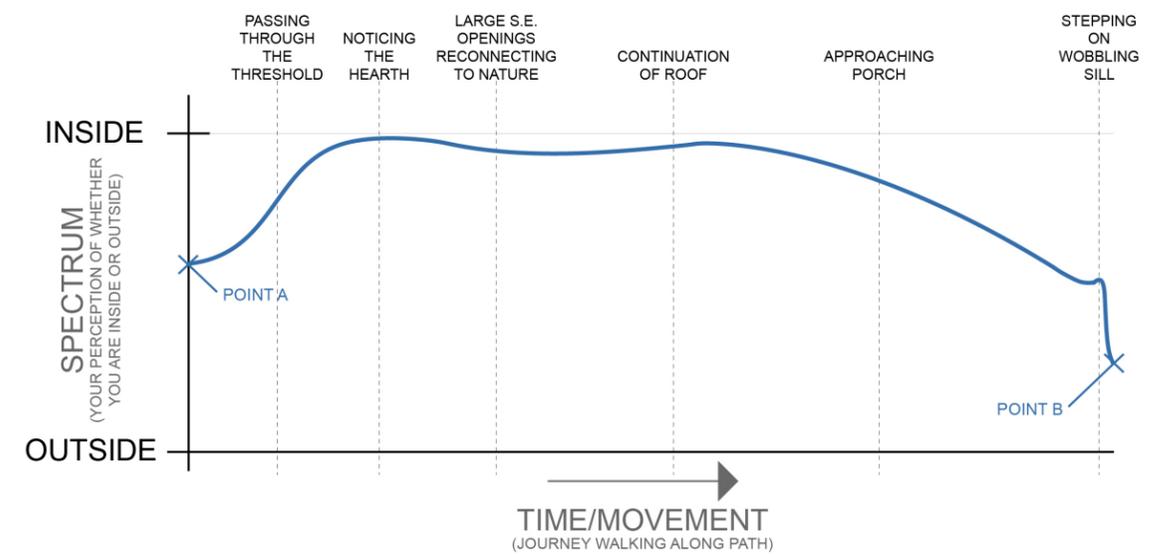


Figure 68: In-Out Spectrum Graph - The Shelter



Figure 69: Design Render - Alcove and Threshold

Now within the alcove area, a deep opening is ahead. When the glass door is in the open position the opening through the mass of stone is a deep and dramatic opening, a literal extended threshold. When the door is in the closed position it is a very transparent piece of glass, which allows the opening to be equally as impactful in either position, and maintains the connection between inside and out.

### Characters Involved

- The Journey
- Breaking Down the Barrier
- The Doorway
- The Extended Doorway
- The Exterior that feels Interior
- The Porch
- The Roof
- The Floor
- The Wall
- The Compression and Release of Space

### Senses Involved

- A transition in acoustics as one moves from an open area, between a wooden and stone wall, and finally through a much tighter section of thick stone walls
- A sense of entering a space through a strong and dominant threshold
- The feeling of stone and wood on the hand



Figure 70: Design Render - Interior Looking Toward Primary View

Once having passed through the threshold area, the primary view will begin to reveal itself between the large louvered walls to the occupant's right. The further in one goes, the more of the view they will see. Immediately to the right once the occupant enters, is the central wood stove, atop a stone hearth that wraps around the corner to create an inglenook on the opposite side of the stove.

### Characters Involved

- The Journey
- The Window
- The Interior that feels Exterior
- The Visual Connection between In & Out
- Confusing the Barrier/Perception
- The Fireplace/Hearth
- The Building-Nature Spiritual Threshold
- The Ceiling
- The Compression and Release of Space

### Senses Involved

- A notable transition in light quality
- A sense of security from the strong surrounding walls and the sight of the hearth
- The sound of crackling wood in the wood stove
- The feeling of warmth from the stove
- The smell of the wood stove burning



Figure 71: Design Render - Window View from the Interior

In this view there is a window that frames the exterior cliff from a vantage point that makes it appear the user is within a building that is within the cliff itself, creating a further sense of security and shelter. One might also notice a refined granite header.

### Characters Involved

The Window  
 The Dichotomy  
 The Visual Connection between In & Out  
 The Fireplace / Hearth  
 The Ceiling

### Senses Involved

A sense of comfort feeling as though one is within the ground or cliff  
 A different acoustical value now that the user is contained within 2-4 stone walls



Figure 72: Design Render - Interior View Looking Toward the Patio Exit and Open Walls

Moving deeper into the Shelter area, the major view becomes more apparent and the user is drawn through the space. The louvered stone walls create spaces for the artist to work. As one ventures through the space and beyond the wood stove hearth, to their right the stone inglenook becomes a wooden bench to store firewood and the glass walls ahead all open up to create a space completely open to the outside world.

### Characters Involved

The Journey  
 Breaking Down the Barrier  
 The Window  
 The Dichotomy  
 The Interior that Feels Exterior  
 The Visual Connection between In & Out  
 The Fireplace/Hearth  
 The Building-Nature Spiritual Threshold  
 The Ceiling  
 The Wall  
 The Compression and Release of Space

### Senses Involved

The visual connection to the nature as the frame of the view is ever changing through the louvered stone walls  
 A sense of being welcomed by the stone hearth/inglenook on the far side of the wood stove  
 The sound of birds and the wind through the open glass walls or against the closed glass

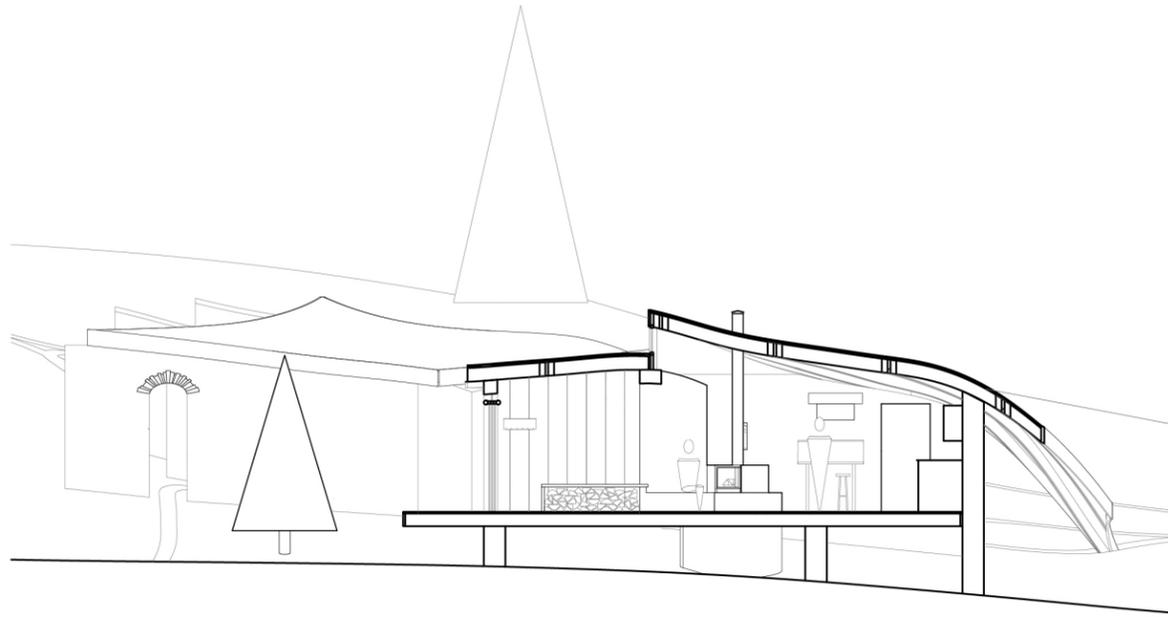


Figure 73: Building Section A

Here is a longitudinal section of the shelter showing a bit of an interior elevation in the background. One can see here that the structure of the building is a wood frame floor assembly that hangs off of the exterior stone walls and the stone hearth, as well as 3 major stone piers below the floor that act as beams. Above is a series of curved laminated wood beams that span from the stone walls to a wooden girder above the glass, which is itself supported by wooden posts.



Figure 74: Design Render - View Looking Back at the Patio Exit

After moving through the louvered space, one can venture through to a patio, which is located adjacent to the courtyard. While passing under the supporting roof beam, there is a detail at the sill where a portion of the floor is made to slightly move, or rock. This is done with the aim of bringing a moment of awareness to the user. This is made especially shocking by the proximity to the edge of the porch and cliff.

### Characters Involved

- Breaking Down the Barrier
- The Window
- The Dichotomy
- Confusing the Barrier/Perception
- The Porch
- The Courtyard
- The Floor

### Senses Involved

- A sense of instability on the portion of the floor below that is made to rock
- A new found awareness of one's situation due to the aforementioned moment

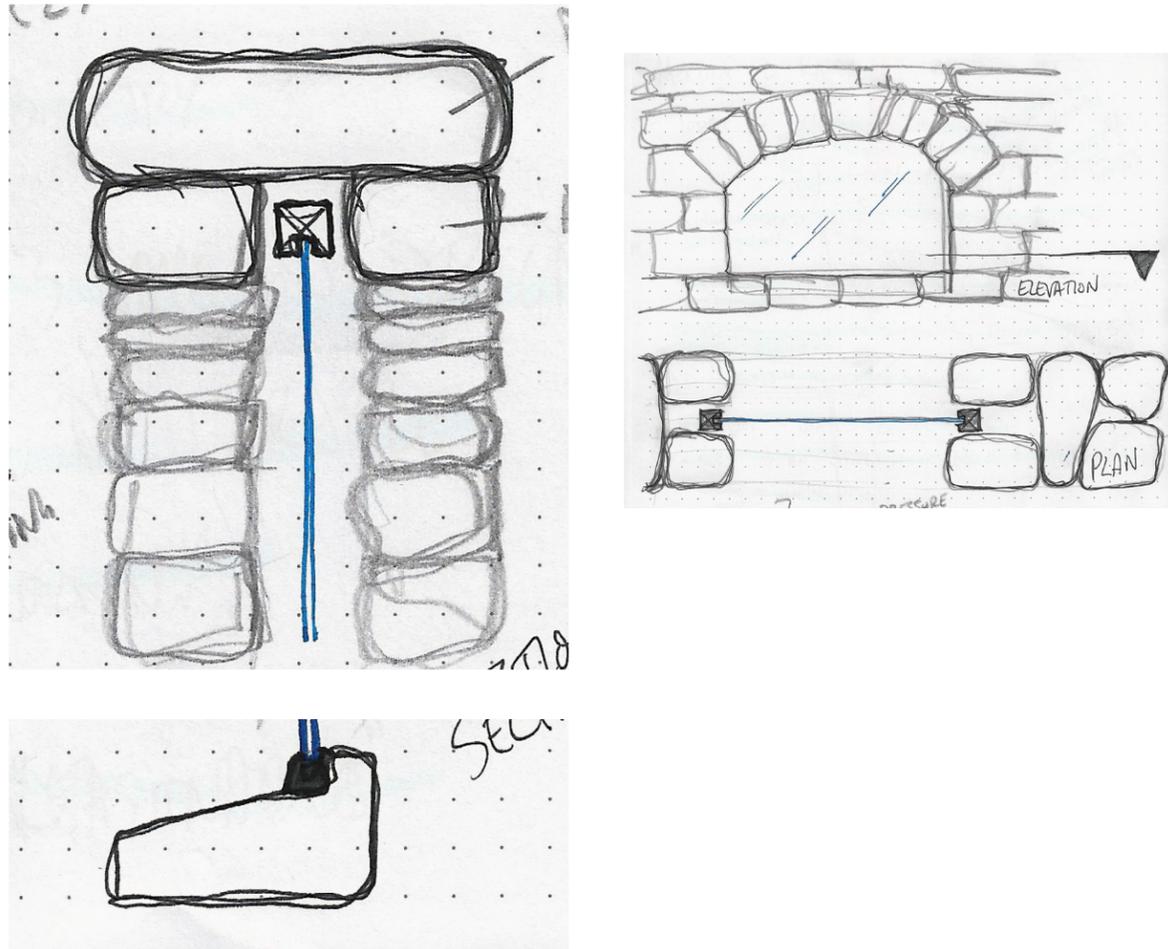


Figure 75: Window Frame Details (Sketch) - Stone

For detailing both the stone and wooden framed windows, I took inspiration from the Thorncrown Chapel project and its ability to be completely framed in with glass in a way that an individual almost does not think there is any barrier between the inside and outside. The individual thinks they are in a space that is completely open to its surrounding site. The idea with this detail is to hide the frames of the glass. Above is the stone detail.

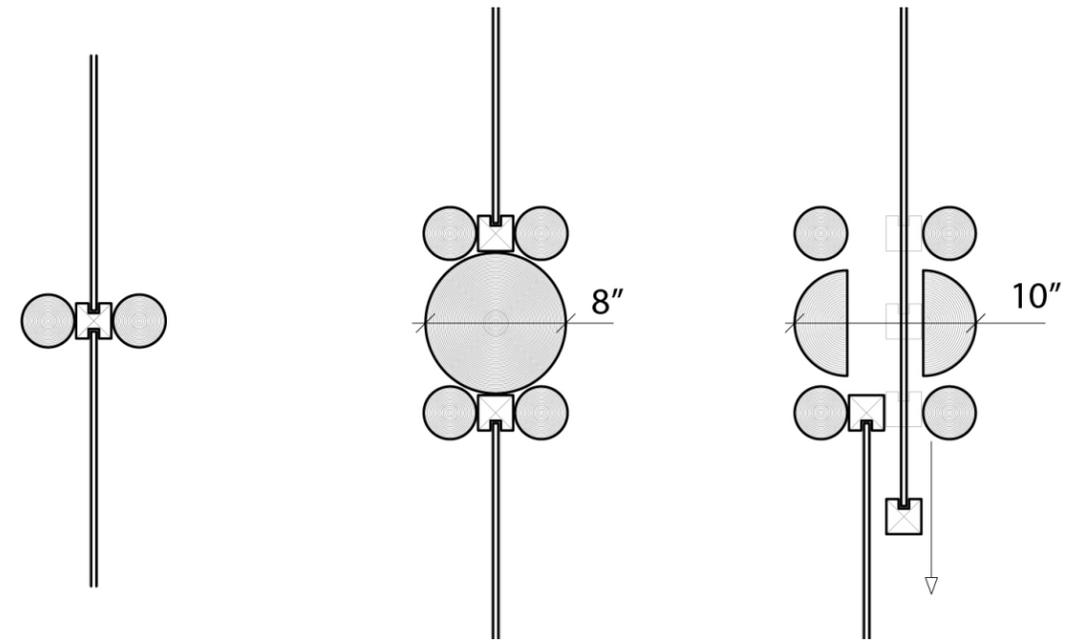


Figure 76: Window Frame Details - Wood

Above are details for wood framed glass. Refined, square frames are hidden behind round members that stretch from floor to ceiling like trees. The detail on the right shows how the moving wall panels would slide past each other and fit within the wall's structure.

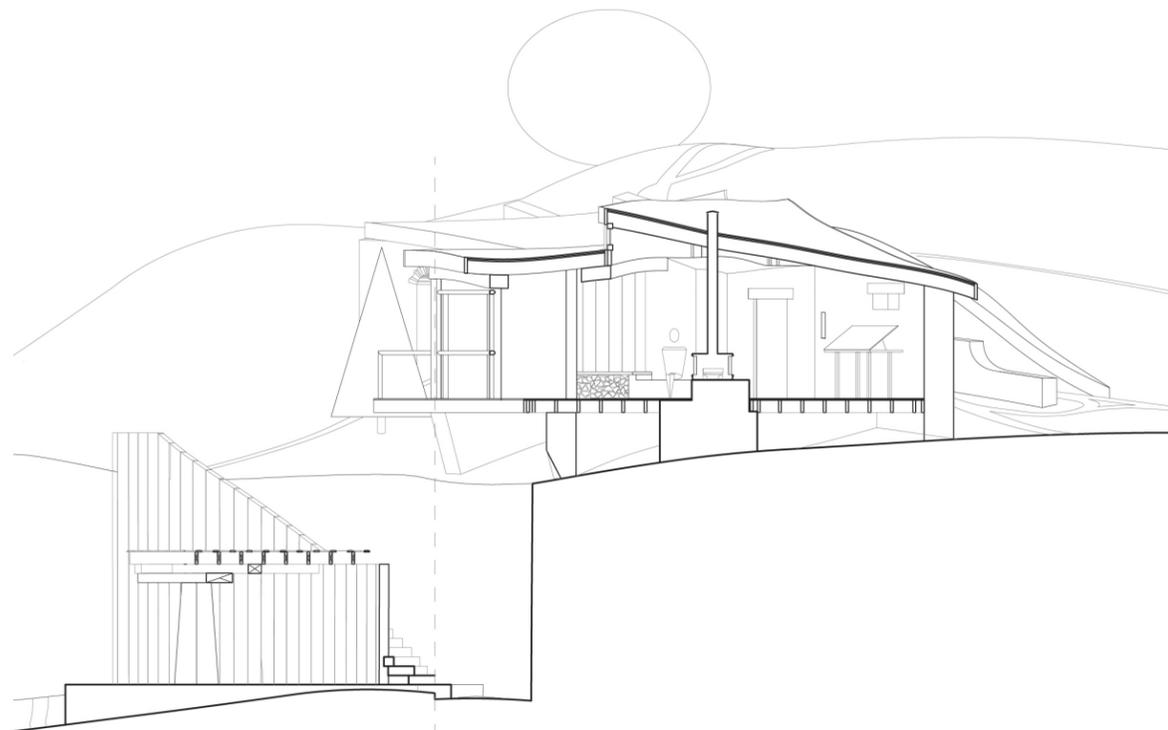


Figure 77: Building Section B - Connection between Lower and Upper Levels

A second building section showing, in part, the connection between the upper portion of the architecture and the lower portion, as well as the difference in height. This section cuts through the centre of the hearth, showing how it is a primary component of the structure, and jogs to show the stone patio or veranda below, as well as, the pergola structure and beginning of the steps.

## The Vertical Threshold

Now, the final path - the Vertical Threshold. This path begins at the Shelter patio, moves through the courtyard, and travels down the staircase. The following pages will showcase renderings of significant locations along *The Vertical Threshold* pathway.

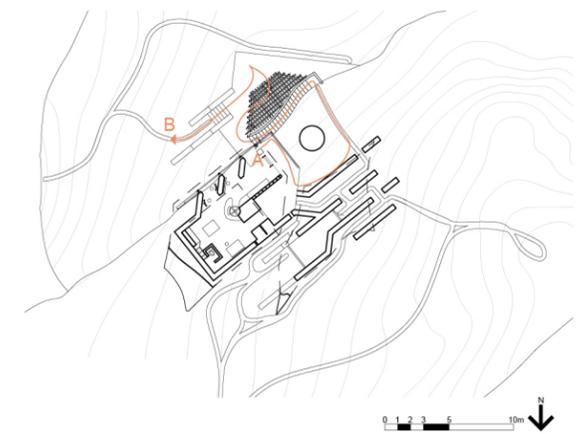


Figure 79: Path Key Plan - The Vertical Threshold

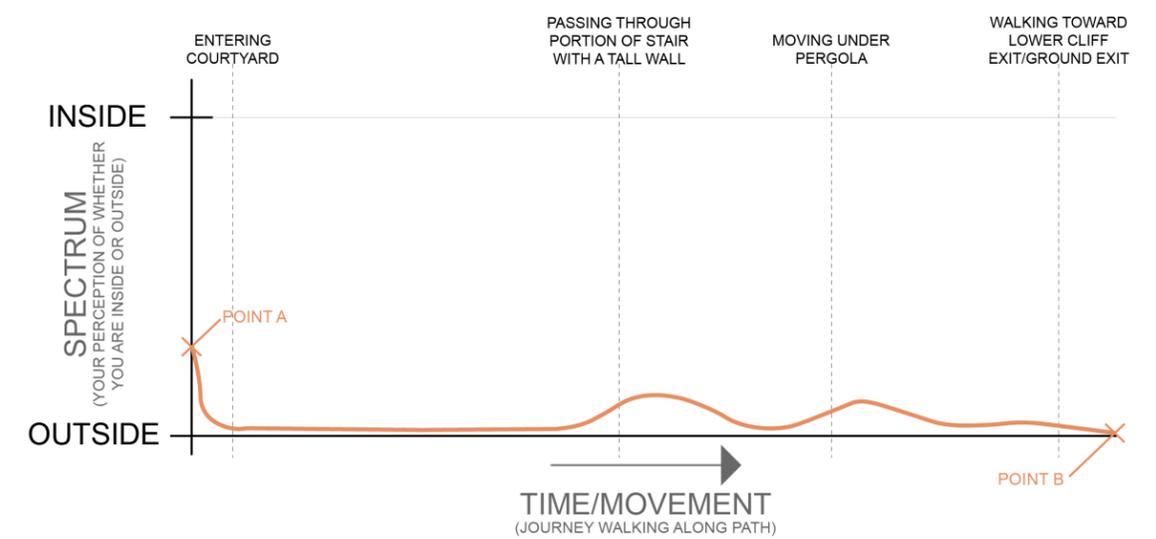


Figure 78: In-Out Spectrum Graph - The Vertical Threshold



Figure 80: Design Render - Viewing the Vertical Threshold

A look at the wooden staircase of the *Vertical Threshold*. One can also see that below is the lower shelf of the cliff, which has limited access, similar to the main cliff. Beyond this lower portion of the cliff is the ground below.

### Characters Involved

- The Journey
- The Courtyard
- The Vertical Threshold

### Senses Involved

- The South wind is most strong here
- The sound and feeling of wind, connecting the individual with nature and the site
- The feeling of the soft wood on the hand
- The transition of the footsteps to a thicker and softer type of wood, providing a different acoustical value than the previous wood floors



Figure 81: Design Render - Traveling Down the Vertical Threshold

A look down the staircase. The walls are left higher at the bottom to support the roof structure but mainly to create a moment where the walls are above head level so one has to transition through a compressed space where on one side there is a tall, solid, wooden wall and on the other is the cliff face.

### Characters Involved

- The Journey
- The Extended Doorway
- The Exterior that feels Interior
- Insinuated Threshold - Walls at Varying
- The Wall
- The Compression and Release of Space
- The Vertical Threshold

### Senses Involved

- A transition in the wind noise as one transitions below the treeline
- The sound and feeling of soft, solid lumber beneath the feet and along the hand
- One step that is a harder and denser material - from spruce to heat-treated ash to spruce



Figure 82: Design Render - From Lower Veranda Looking Out

A render at the bottom of the stairs, on the patio looking out onto the land. One can also see there are two stone walls to the left that encase a stair with a few steps leading down to the lower cliff top. These walls are sort of remnants of the series of walls that make up the diffusion area.

### Characters Involved

The Journey  
 The Exterior that feels Interior  
 The Building-Nature Spiritual Threshold  
 The Porch  
 The Roof

### Senses Involved

The sound of the wind and nature momentarily being altered as one passes between an area where they have the cliff wall on one side and a solid wood wall on the other

A transition from soft wood beneath the feet to a dry-laid granite stone patio



Figure 83: Design Render - View of Building Design Looking from Below

This is a view that one would see as they leave the patio and move down the path toward the exit of the lower cliff. This is the view one would see looking back as they exit, or alternatively, one could enter the entire project this way and do the entire sequence in reverse. Once the project was given a second access point it was important that it was designed in a way that could be experienced in either direction. The stone structure of the shelter below can also be seen from this angle.

### Characters Involved

The Journey  
 The Window  
 The Dichotomy  
 The Labyrinth  
 Insinuated Threshold - Walls at Varying  
 The Compression and Release of Space  
 The Vertical Threshold

### Senses Involved

The sound and feeling of leaves, moss, and cliff under the feet as one ventures from the stone patio to the cliff top and through the brush to exit the cliff from the lower level

## MATERIALITY

The project is constructed with two major materials: site found red granite and locally sourced wood. Additionally, the roof material takes inspiration from the cliff. The roof tops are extensive green roof assemblies topped with soil and stone to allow the roof to grow lichen and moss to match the cliff top, which is covered in lichen and moss.



**White Ash**  
(Fraxinus Americana)

Used for Interior Structure, Flooring, and Furniture

Figure 84: Material - White Ash



**Heat Treated Ash**  
(Fraxinus Americana or Fraxinus Nigra)

Used for exposed Exterior Structure and Flooring

Figure 85: Material - Heat Treated Ash



**Red Granite (Raw)**

Site-found Stone. Used for Dry Stack Masonry Walls

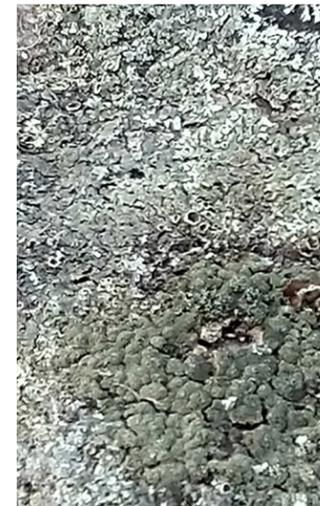
Figure 86: Material - Raw Red Granite



**Red Granite (Refined)**

Refined Red Granite. Used for Headers closer to interior and Sinks

Figure 87: Material - Refine Red Granite



**Moss**

Found naturally covering cliff top. Used for Roof Covering as top layer of Extensive Green Roof system

Figure 88: Material - Moss



**Lichen**

Found naturally covering cliff top. Used for Roof Covering as top layer of Extensive Green Roof system

Figure 89: Material - Lichen



**Eastern White Pine**  
(Pinus Strobus)

Used for Roof Structure (CLT)

Figure 90: Material - Eastern White Pine



**Eastern Red Cedar**  
(Juniperus Virginiana)

Used for Exterior Finish Wood (Fascia, Pergola)

Figure 91: Material - Eastern Red Cedar



Figure 92: Design Render - Birds Eye View from the East



Figure 93: Design Render - Birds Eye View from the South

## THE ENTIRE EXPERIENCE

A brief reminder of the first graph that was seen, the typical doorway. It can be seen that it is a simple and sharp transition of moving from outside, opening a thin door, travelling through a thin wall, to then close the door and find oneself on the other side.

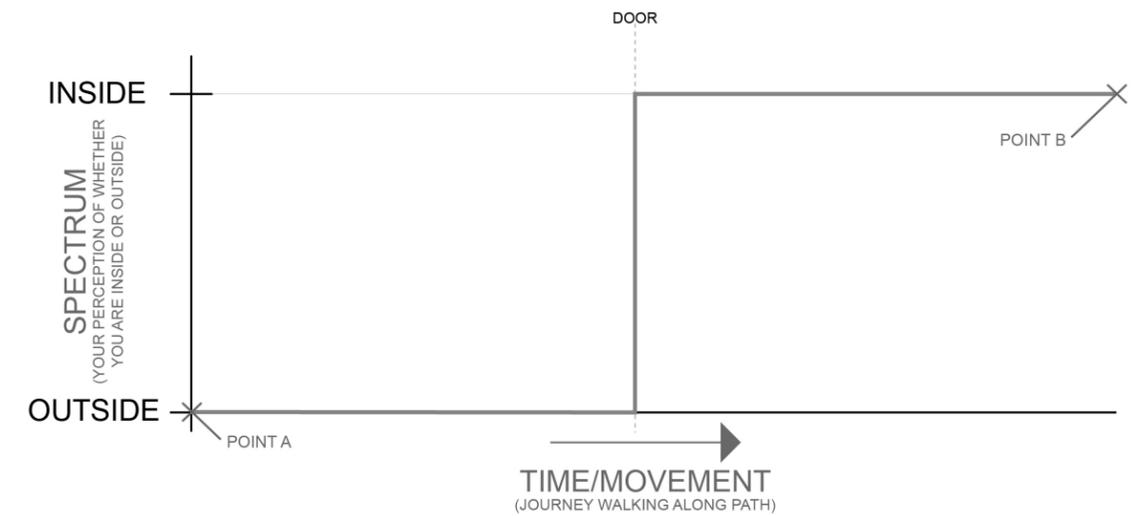


Figure 94: In-Out Spectrum Graph - Doorway

In stark contrast to this, we see below a compilation of all the previously seen graphs. These graphs show the entire sequence of moving through the project and the variable and ever-changing nature of the experience of perceiving oneself as more inside or outside. Figure 95 is of the entire experience of the design proposal, while the graph below it is this same sequence in reverse, as previously mentioned.

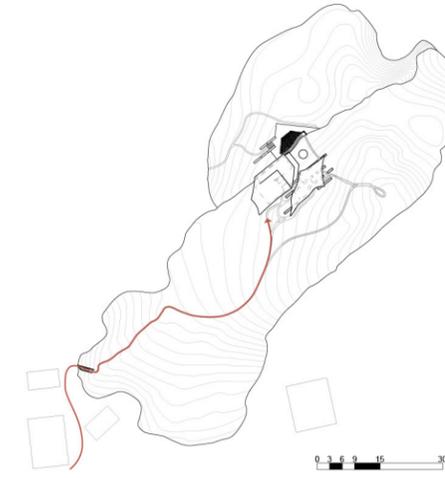


Figure 97: Path Key Plan - The Journey

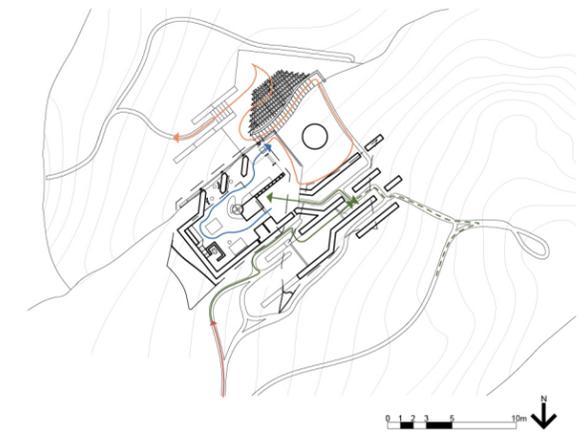


Figure 98: Path Key Plan - The Diffusion, Shelter, and Vertical Threshold

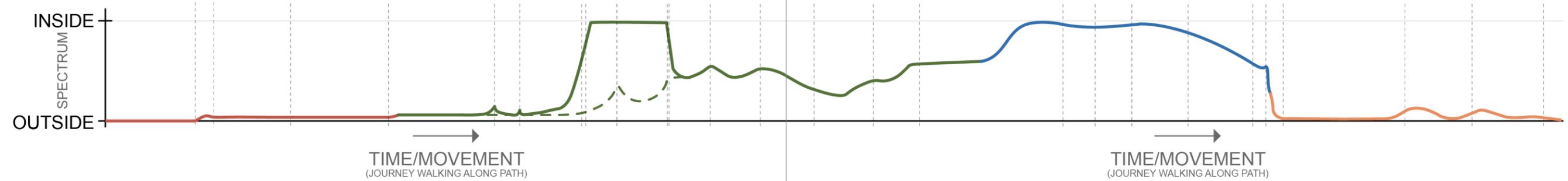


Figure 95: In-Out Spectrum Graph - Entire Experience

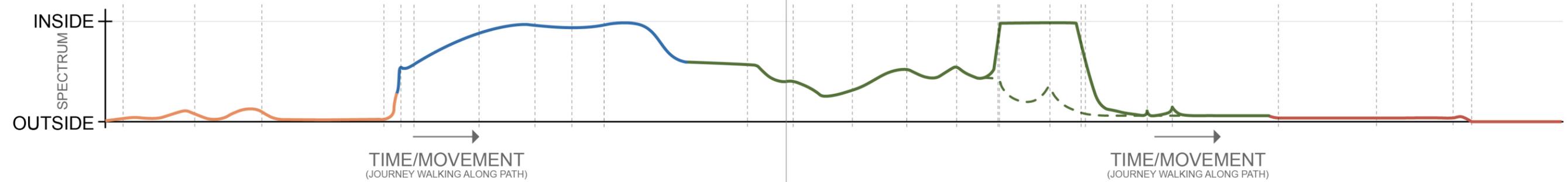


Figure 96: In-Out Spectrum Graph - Entire Experience in Reverse

## CONCLUDING THOUGHTS

The intent with this thesis was initially to explore the ideas of inside and outside in architecture. This came to be theoretically grounded in studying the architectural concept of threshold through Aldo van Eyck, as well as, the design philosophy of an Organic Architecture through its creator Frank Lloyd Wright and his successors E. Fay Jones and Ian MacDonald. The aim of the thesis eventually became to, in some honest and open way, quantify threshold and showcase the concept.

I hypothesized that the process of designing Organic Architecture inherently creates buildings with transformative threshold conditions, and I stand by this. The only adjustment I wish to make to this statement is that these transformative threshold conditions are not simply threshold moments, but in most cases the entire building becomes a threshold condition – an inhabitable threshold as MacDonald would say.<sup>58</sup>

At the beginning of the thesis I was faced with van Eyck's notion that if one aims in the middle of a dichotomy, they will miss both antipoles.<sup>59</sup> At first I mistook this to mean putting focus on the in-between to be an incorrect approach. Despite this I put my focus on the idea of the spectrum in-between the two antipoles of inside and outside: the idea that the black and white were not going to be the focus, the more interesting grey between them would be most noteworthy. I do not regret this approach but I believe in some sense I have come full circle to understand that it would be impossible to study the spectrum between the two without constantly referencing the ends of this spectrum – inside and outside. Possibly this is what van Eyck means.

I discovered that perceiving one's location in reference to inside and outside is multifaceted – it depends on an abundant number of perceptions ranging from: solid architectural components that define space, to materiality, to acoustical cognitions, even to one's sense of security and safety within shelter.

I also learned that defining a theoretical concept like threshold is best explored through a complex study of as many definitions as possible. Many of these definitions can be seen in the chapter on the Characters. I will list some of the definitions below that I have developed over the course of the thesis, ending with my current favourite.

- Threshold is about feeling a transition and being made to be conscious of that transition rather than barely noticing it has happened;
- Threshold is about materiality – some materials create a sense of warmth and security that belong to a more interior sense of a space. Drawing these materials out could start to blend the interior and exterior;
- Threshold is about form – extending roof lines, raising walls, and doing these things with great intention;
- Threshold is about all of the senses – sight, sound, smell, touch, temperature, and I believe all of these things compile into conscious and subconscious perception. I believe the relationship between these is about perception;
- Threshold is an artful bridge or blend between inside and outside.

Lastly, I have discovered a way to represent architecture that I am very excited about – this way of graphing the experience and graphing buildings. I believe this is going to be a tool that I use in the future. I have begun to think about other design ideas and how they would be represented as a graph first; the idea of starting with a graph and what various graphs could look like; the idea of how I could transform those graphs into architecture; how I can bring the graphs to life. This has become a way of thinking about architecture that I personally find very interesting and inspiring. Combining all the graphs from this project into one overall curve made me feel like I had done what I set out to do. I feel as though I created this architectural experience through my building design that plays with the notion of threshold well, as well as created a way to show the flowing spectrum between the two poles of inside and outside through my graphing.

58 Carter and MacDonald, 4.

59 Strauven, 352.

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