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James Robert Maveety
University of Tennessee, Knoxville

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To the Graduate Council:

I am submitting herewith a thesis written by James Robert Maveety entitled "Phenomenology in Dwelling: Culture and Meaning of Place; A Proposal for a Mountainside Dwelling." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

Hansjoerg Goeritz, Major Professor

We have read this thesis and recommend its acceptance:

Barbara Klinkhammer, Scott Wall

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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PHENOMENOLOGY IN DWELLING:

CULTURE & MEANING OF PLACE

A Proposal for a Mountainside Dwelling

A Thesis Presented for the
Master of Architecture Degree

The University of Tennessee, Knoxville

James Robert Maveety

May 2008

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ACKNOWLEDGMENTS

I wish to thank all those who helped me complete my Master of Architecture degree. I would like to thank Hansjoerg Goeritz for his guidance. I would like to thank Barbara Klinkhammer for her direction and patience. I would like to thank Scott Wall for his consideration and counsel.

I also would like to thank my wife, Ashley Maveety, and my studio colleagues whose suggestions and encouragement made this work possible.

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ABSTRACT

This is an exploration into the design and perception of domestic space through a combination of a vernacular analysis and an investigation into phenomenology. A study of the phenomenology of architectural building materials within the context of a cultural background will provide insight into methods through which the quality of a space may be enhanced by the infusion of cultural meaning through vernacular inspiration. The knowledge gained from this investigation will lead to a design that will use a translation of vernacular building methods to reinforce and give meaning to the elements of domestic space.

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PREFACE

"Phenomenology" reveals essences to the senses; this thesis is driven by the architectural idea that meaning may be derived from sensory perception and a translation of traditional. This thesis will investigate how cultural context and meaning can be manifested in the phenomenology of a dwelling's building materials and techniques; and in doing so will seek to establish an understanding of the perception of meaningful space.

The final product of this investigation is a proposed mountainside residential structure, designed to convey and advance the meaning of place by transforming the vernacular types of the cantilever barn and dogtrot house into a modern residence. The dwelling will respond to the site's geographic context, cultural context, and ecological context. The dwelling will be constructed of materials and spaces carefully selected and organized to showcase their sensory qualities.

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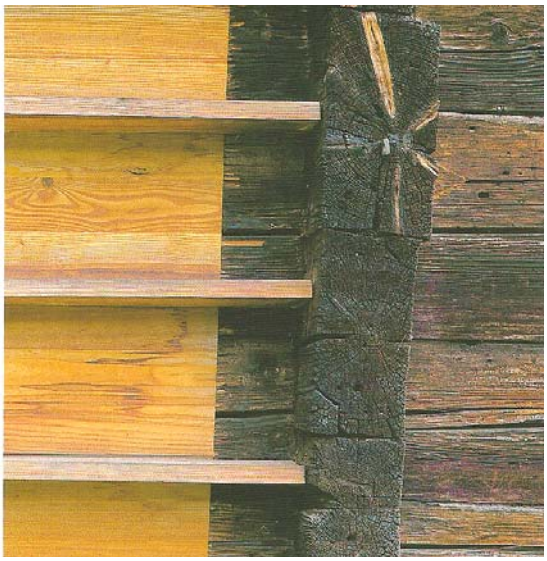

Figure 1-1 – Exterior Wall Detail, Gugalun House (Zumthor)

Chapter 1: Thesis Statement

This is an exploration into the design and perception of domestic space through a combination of a vernacular analysis and an investigation into phenomenology. A study of the phenomenology of architectural building materials within the context of a cultural background will provide insight into methods through which the quality of a space may be enhanced by the infusion of cultural meaning through vernacular inspiration. The knowledge gained from this investigation will lead to a design that will use a translation of vernacular building methods to reinforce and give meaning to the elements of domestic space.

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Figure 2-1 - Entrance Detail. Langston Hughes Library (Author)

Chapter 2: Phenomenology

> "We could think of the sense of touch as the unconscious of vision. Our eyes stroke distant surfaces, contours and edges, and the unconscious tactile sensation determines the agreeableness or unpleasantness of the experience." (Pallasmaa)

"Phenomenology" actually encompasses all sensory elements with one of the strongest senses being touch. The tactile is real and tangible. The sense of touch can activate the mind and contribute to meaning in a space. At a glance we can imagine how most materials will feel intuitively, and if we imagine the texture is pleasant we may even be drawn to reach out and confirm our prediction.

Our perception of the agreeableness or unpleasantness of an experience is one that we develop automatically. During our daily routines we travel through our residential and commercial spaces and our reactions to our surrounding are usually minor. But when an impression is made by a space, that space is usually exceptional. And the beauty or the lack of appeal of a space is the product of many elements, including materials,

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organization, details, or light. In addition to the senses of touch and sight, materials are also perceived by their characteristic sounds and smells.

The ability of specific materials to express tactile and sensory traits lies in their unique characteristics. **Steel** is synonymous with strength, but is also closely connected to the sense of sound because of its characteristic to reverberate sound. The rich tones and natural grain patterns found in **wood** are known for evoking feelings of warmth. Figure 2-2 shows a cross section of hardwoods and softwoods revealing variation in tone and grain. Similar to steel, **concrete** conveys strength and mass as well. In addition to structural support, concrete can convey phenomenological weight in its articulation; Figure 2-3 reveals a variety of textures, aggregates, and pigments used on concrete. The transparent nature of **glass** allows natural light in and provides vision out. **Water**, though not explicitly used as a building material, can be integrated with a design to convey a sense of tranquility.

An examination of material characteristics as related to phenomenology also requires an investigation into the larger scope of how those characteristics respond to a material's environment. Material is simply one element of the complexity of architecture, and as such materials work in coordination with their surroundings. A material cannot be analyzed without evaluating how it responds to its site, climate, context, and technology.

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Figure 2-2. Softwoods and Hardwoods. (Herzog)

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Figure 2-3. Concrete Aggregates, Colors and Textures. (Kind-Barkauskas)

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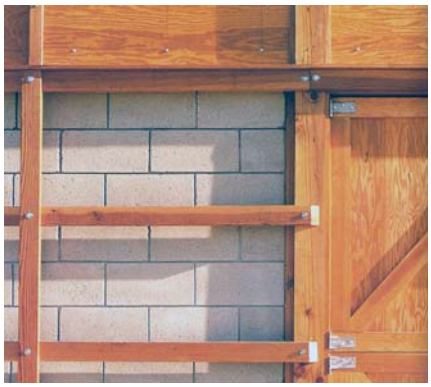

Figure 2-4. Wood and Metal in June Moore House. (Blackwell)

Figure 2-5. Wood and Block on Barn House. (Blackwell)

Additionally, interesting dialogues arise from the juxtaposition of materials. In Figure 2-4, the metal handrail creates an interesting contrast to the primarily wood interior and structure. Since a characteristic of steel is strength, the safety of the handrail is reinforced.

The detail of the exterior of Marlon Blackwell's Barn House shown in Figure 2-5 illustrates a combination of wood and concrete block. The juxtaposition here creates aesthetic interest in the texture and composition of the two materials. But once again the perception of these two materials heightens the combination. We know without touching the Barn House that the concrete block would feel rough and heavy, while the wood would feel smooth and light. Even the application of the wood visually reveals the lightweight characteristic of the wood.

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Figure 3-1. *The Primitive Hut*. Frontispiece, Essay of 1753, Marc-Antoine Laugier

Chapter 3: Dwelling Components

The space within a dwelling takes on a sacred meaning to the inhabitants. Home is a place where one feels comfortable and safe. Dwelling is a typology that dates back to the beginning of civilization, and an early manifestation is that of the primitive hut.

An archetypal image of the primitive hut is found on the frontispiece to Laugier's Essay of 1753, which urged contemporary architects to keep in mind the primitive origins of architecture. The ethereal image depicts a home in simple and comfortable harmony with nature. In Joseph Rykwert's *On Adam's House in Paradise: The idea of the Primitive Hut in Architectural History*, Rykwert discusses Laugier's image and describes the move

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of man from the primordial habitation of caves to houses made of wood. The cave provided shelter, but was too dark. In contrast, Rykwert writes of the house, "True, the cold and the heat will make him feel their excesses in the house, which is open on all sides; but then he will fill the in-between spaces with columns and so find himself secure." (Rykwert, 44)

Gottfried Semper's *The Four Elements of Architecture* also revisits the primitive hut when identifying the primary job of architecture as shelter. Semper argued that it is not simply materials and techniques, but culturally specific techniques that ground dwellings in cultural traditions. Semper identified the four elements of architecture as earth, hearth, roof and enclosure. Earth, or mound, orders and defines the site, separating sacred from profane. The hearth is the original gathering space and the other three elements protect it. The roof structure includes the framework of the dwelling, and provides protection. And enclosure refers to the lightweight membrane that provides privacy. These four elements will serve as a lens to focus on the culturally specific techniques that ground dwellings in cultural traditions.

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Fig. 4-1 - Dwelling in Cades Cove (Dixie)

Chapter 4: Cultural Context

> "A place is a space which has a distinct character... Architecture means to visualize the genius loci [spirit of a place], and the task of the architect is to create meaningful places, whereby he helps man to dwell." (Norberg-Schulz)

Vernacular building techniques using traditional building materials have been preserved at the Museum of Appalachia. This living history museum of the culture of pioneers, the mountains, and early artifacts of the Southern Appalachian region of the United States is located in Norris, Tennessee. The Museum preserves a culture by collecting traditional art forms and music and provides a venue for artists and craftsmen. In addition to daily music performances, the Museum archives collected oral histories and traditions. The museum itself uses local building materials grounded in vernacular construction methods, thus giving an impression of daily life in this region during pioneer times. Studying the Museum in terms of Semper's four elements of architecture clarifies the role that materials play in the cultural context of Appalachia.

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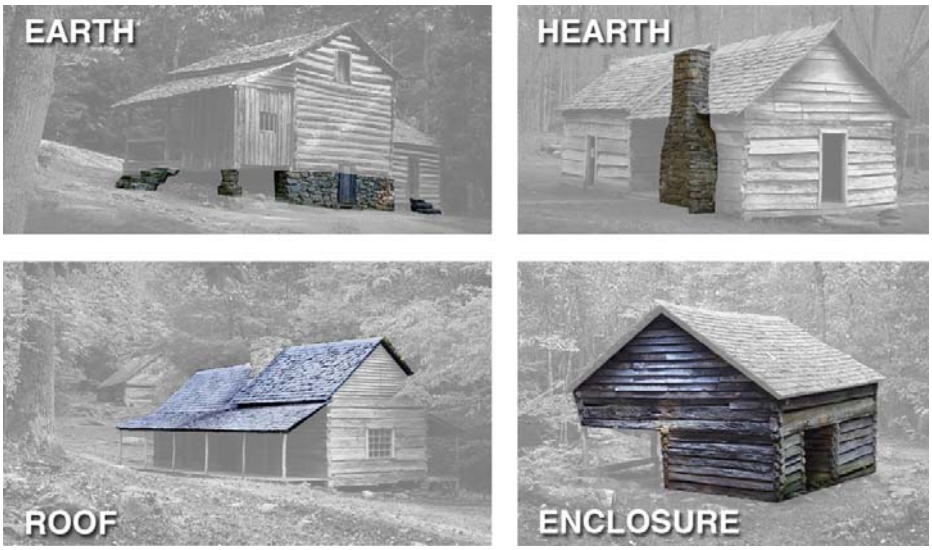

Figure 4-2 - Four elements of architecture in log cabins (Author)

In terms of the element, **earth**, the buildings are raised off of the ground on stone foundations. The stone foundation provides a level plinth to build on in the mountainous topography. Raised wood floors are also a feature of Appalachian vernacular that responds to runoff water due to mountainous topography. The dwellings at the museum each have a centrally located **hearth** made of local stone material. The hearth was the gathering space, for its warmth and light, as well as the cooking space. The **roof** is typically wood shingles and the framework is all heavy timber assembled in traditional joinery. When metal roofing became accessible to this region, it also became a popular material choice for its durability compared to wood shingles. The element of **enclosure** was pronounced due to the scarcity of glass for windows. Since the walls were made of thick timber, the contrast of light and dark is very high from outside to inside.

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Figure 4-3. Log Joining Detail at Corners. (Dixie)

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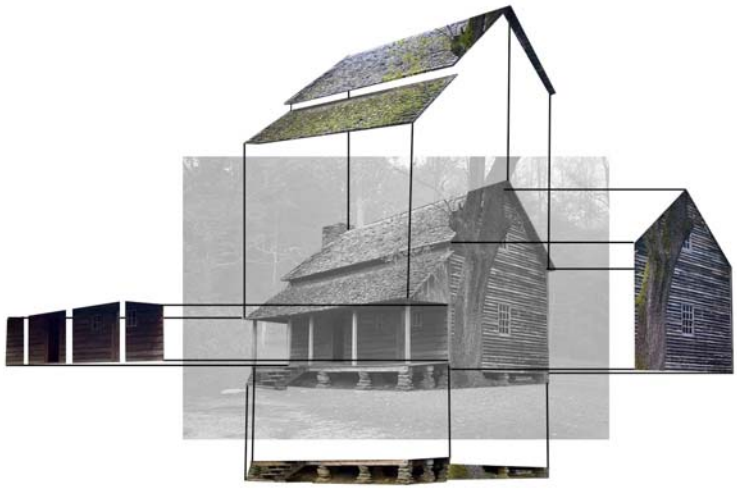

Figure 4-4 - Exploded elements of dwelling (Author)

Within the cultural context of southern Appalachia, these building traditions were passed down by generations and evolved to the regional climate. As traditions are passed down they become embedded in the culture of a place and phenomenology is connected to that culture. Meaning is conveyed through the tangible elements of architecture within the expression of materials when the sensory perception of a material communicates cultural implications. Or rather certain materials have a dialogue in a cultural context, and as such these materials derive meaning from place. The tactile experience of these materials configured in harmony psychologically reinforces the elements of dwelling. Native materials offer a sense of natural comfort. The stone reinforces the sense of stability and strength in the foundation and hearth. Heavy timber reinforces the sense of strength and warmth. In this way cultural context provides a milieu in which to design; next we will look at how social structure may set up similar conditions.

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Figure 4-5 - Typical Shaker Dwelling

Social Structure and Place

Cultural context is in part defined by the social structure of a place and is a key element of civilization that organizes communities on many scales. The social structure of the southern Appalachians is historically rural and agriculturally based. In order to establish an understanding of the impact of social structure on place, take for example the Shaker religious community. Because the Shakers offer a contrasting perspective of society to the Appalachians, an analysis of their social structure and minimalism will support this analysis of cultural meaning and phenomenological building materials.

Pleasant Hill, Kentucky, is the site of a Shaker religious community that was active from 1805 to 1910. Today the community remains preserved as it was then; the site is now a National Historic Landmark and a popular tourist destination. Shaker Village of Pleasant Hill reveals the social structure of their community in their architecture. As it was a cardinal tenet that the sexes be separated, the family dwellings were built to allow for minimum contact between men and women. The typical dwelling had two entrance doors, two staircases, and separate halls leading to the sleeping chambers. Although

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there was a common dining room, the sexes ate at separate tables. Shops were located with principle division of labor in mind: sister's shops (the laundry, dairy, nurse shop, etc.) were near the dwelling house; the brethren's shops (broom, cooper's, garden seed, medicinal herb, etc.) were farther away. The farm buildings, such as barns and mills, were usually nearer the border of the family domain. Even when the occupations required some collaboration, as in the herb industry, men and women rarely worked together.

Shaker society created a unique place that is fundamental and structured in tradition on every scale. Meaning within an architectural structure can be derived from significance that is related to the cultural background of a place. Meaning can also be derived from transforming tradition. The next chapter will analyze four precedents that have cultural foundations in tradition yet employ a transformative abstraction of tradition to derive new meaning.

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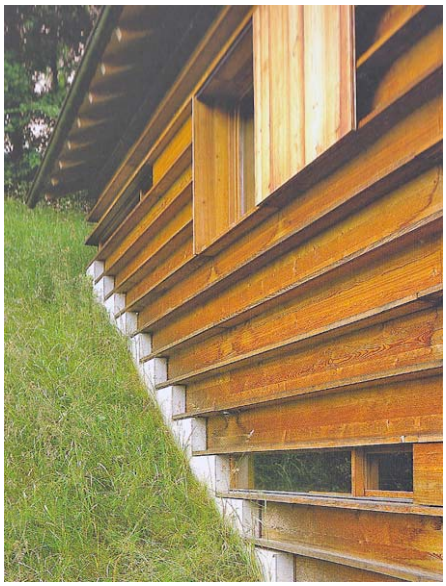

Figure 5-1 - Gugalun House (Zumthor)

Chapter 5:

Precedent Analysis: Transforming Tradition

By applying a knowledge of building materials and techniques it is possible to modernize traditional forms while respecting their origins and clearly conveying cultural meaning. Two such precedents, which weave their respective cultural backgrounds into their redesigns, are Maya Lin's "Langston Hughes Library" and John Pawson's "House in Tunis" or "Medina House." Each of these projects includes a discourse of cultural meaning within their adaptive reuse of existing buildings. Another two such precedents which use the transformative process of abstraction are Tadao Ando's "Azuma House" and Peter Zumthor's "Gugalum House."

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Figure 5-2 - Detail at log crib base (Author)

Langston Hughes Library

Maya Lin's Langston Hughes Library on Haley Farms in Clinton, TN is a precedent that ties an adaptive reuse to a vernacular material palette. Programmatically this barn has been renovated to house a reference library of African-American Literature. Lin described the project: "The idea was to maintain the integrity and character of the old barn yet introduce a new inner layer. The integration of old and new allowed me to leave exposed and untouched the main body of the building yet build the library within the existing structure."

Meaning is manifested in the barn's exterior and interior. The restored structural members forming the exterior allude to the barn's past and to the regional history of eastern Tennessee. Meanwhile the renovated interior suggests new life via the implications of growing knowledge associated with libraries while preserving the past through education.

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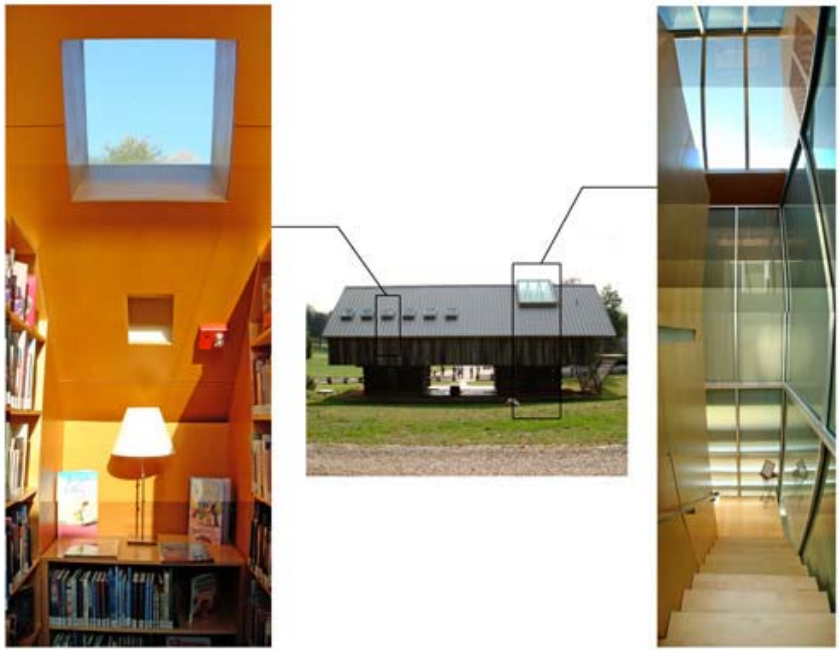

Figure 5-3 - Interior Perspectives. Langston Hughes Library (Author)

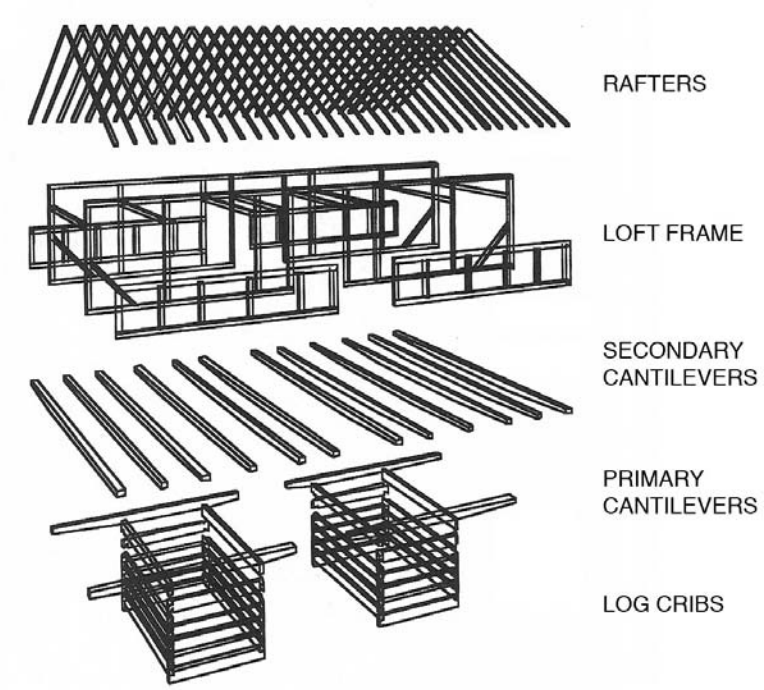

Figure 5-4 - Cantilevered Barn Structural Components (Moffett)

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Figure 5-5 - Courtyard and terrace, Medina House (John Pawson)

Medina House

In the dramatically different cultural context of the Mediterranean coast of North Africa, the house in Tunisia, by John Pawson, is another example of a design that respects and responds to it's cultural environment.

In the essay, "House in Tunis", published in *Nest* in 2001, Pawson reflects on the process of renovating this dwelling. He was intrigued early on by the history of the house, a typical seventeenth century extended family residence near the sea and the desert. The extended family accommodation not only reveals local tradition, but also formally arranges the house. Each family group had living and sleeping quarters off of the central courtyard. Pawson's design responded to the cultural context in his use of local stone for the floors and stucco facades.

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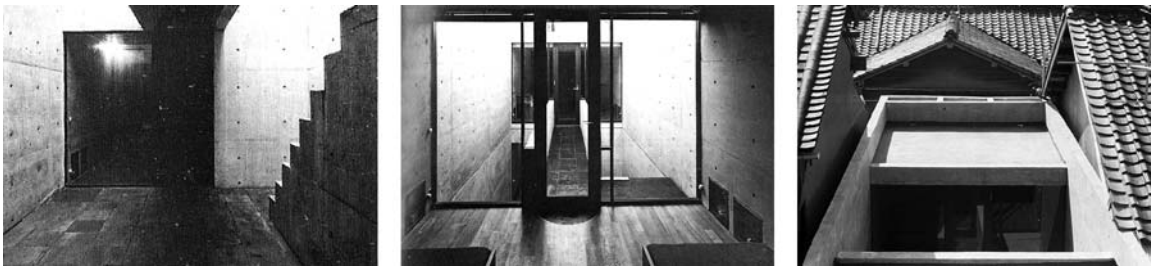

Figure 5-6 - Ground floor, upper floor, and roof. Azuma House

Azuma House

Tadao Ando's Azuma House is located in Osaka, Japan among traditional row houses. In the "Azuma house" Ando has transformed the traditional row house into a modern dwelling with the incorporation of site cast concrete with a simplified row house organization of space. Visually and tangibly the site cast concrete reinforces the enclosure and phenomenology of the dwelling.

Traditional Japanese row houses, or machiya, have a central courtyard. Contextually with its neighbors the Azuma House has an interior courtyard that offers a place for relaxation and contact with nature. The house, a uniform concrete box, is divided into three equal segments; the central one is the courtyard. In addition to offering natural light, the courtyard serves as a focal point for family life and makes the compact space seem larger.

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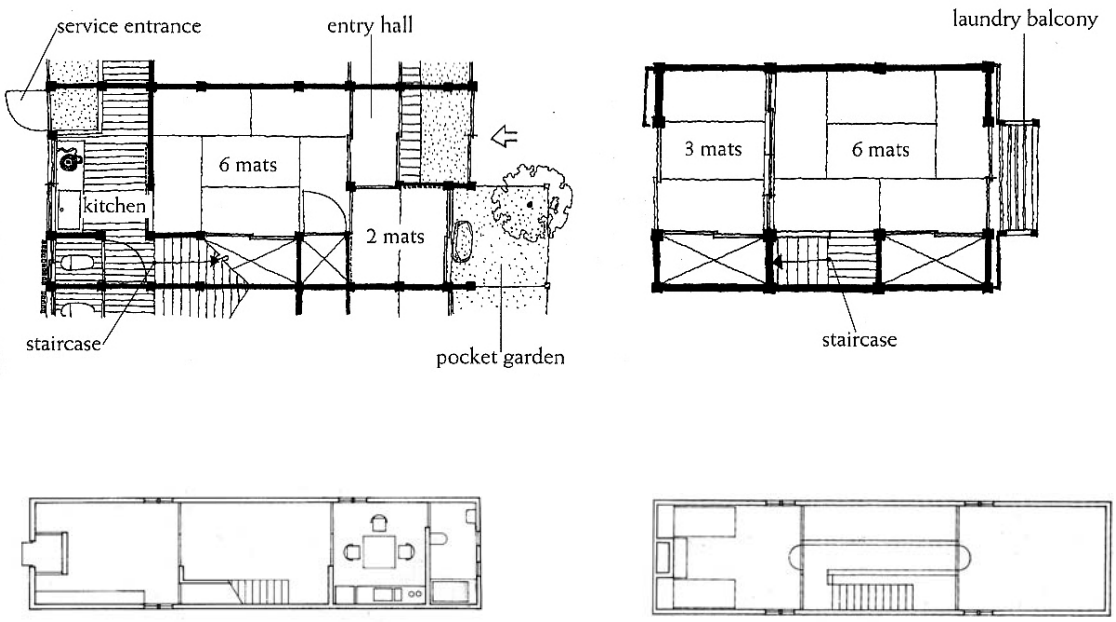

Figure 5-7 – Azuma House plans compared to traditional Japanese row house

Figure 5-8. Section Perspective, Azuma House

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Figure 5-9 - Original house, 1927 (Zumthor)
Figure 5-10 - Gugalun House, 1994 (Zumthor)

Gugalun House

Another example of transforming the traditional is Peter Zumthor's "Gugalun House." The Gugalun house is an addition to a mountain farming family's house in Switzerland that dates back to 1706. The addition reinterprets the heavy timber façade's horizontality. The new metal roof unifies the old and new structures. All of the materials used in the addition are essentially the same type used in different techniques. Phenomenology on the exterior of the house arises in the dialogue of the old and new facades. Meaning appears in the way Zumthor thoughtfully unified the addition to the existing building and site.

The transformative process of abstracting traditional building techniques into today's architecture reveals regional cultures and infuses meaning in space. Meaning is present in all aspects of a region's culture, from a vernacular building technique to the organization of a town.

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Figure 6-1 – Southwest view of Asheville, NC

Chapter 6: Site Selection

The site is located off of Town Mountain Road in Asheville, North Carolina. Geographically, Town Mountain Road offers a connection from downtown Asheville on College Street at its southern end to the Craven Gap intersection with the Blue Ridge Parkway. Just as downtown Asheville serves as a node for Western North Carolina's culture, the Blue Ridge Parkway is also a major cultural element of Western North Carolina and the Southeastern United States. The Parkway stretches from Charlottesville, Virginia at its northern end to the Great Smoky Mountains National Park at its southern end. The parkway follows the ridgeline of the Appalachian Mountains and offers spectacular views of the mountains. Economically, the Parkway contributes to the tourism of Western North Carolina. From end to end Town Mountain Road offers beautiful views of the city of Asheville and the surrounding mountains. The dwelling will benefit from the close proximity to downtown Asheville and the Blue Ridge Parkway.

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Figure 7-1 – Big Level Drive Site

Chapter 7: Site Analysis

The site proposes physical challenges which the architecture must respond to as well, namely the dynamic mountainous topography. These attributes have borne influence on the building techniques and materials employed historically in mountainous regions and specifically in Appalachia. The regional climate of Asheville is generally temperate, and the regional topography is mountainous throughout Western North Carolina. The urban density of Town Mountain Road gradually gradients from dense residential to sparse residential and to dense wooded mountainsides at the intersection to the parkway, which is National Park Service land.

Starting at the downtown (southern) end of Town Mountain Road, the road immediately increases in elevation and follows the ridge of Sunset Mountain. The site is located between two mountains at the northern end of Town Mountain Road, Peach Knob and Rice Knob. Detailed drawings of the Site Analysis are provided in Appendices A and D.

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Figure 7-2. Bark Texture. (Author)

Incorporation of site and program

This integration of mountainside site and residential program provide the necessary components to investigate phenomenology and meaning in a cultural context. Some elements of the site that will provide inspiration for the design include the dramatic topography, the regional climate, the mountain views to the west of the site, as well as zooming into specifics such as individual trees. Figure 7-2 shows the rich texture of bark on a tree at the site.

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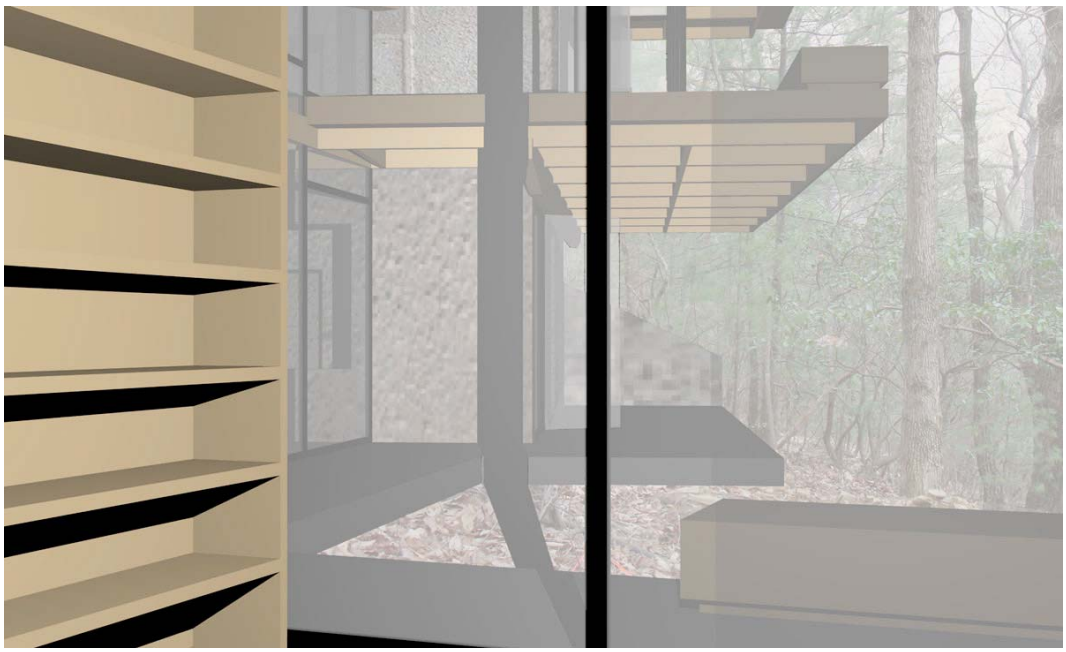

Figure 8-1. Perspective from study towards master bedroom.

Chapter 8: Program Description

General Quality of Space

Each of the spaces in the dwelling will exhibit phenomenological qualities derived from the organization of space and the composition of the material palette of wood finishes and concrete block mass walls. The way in which wood, concrete, metal, and glass are utilized on the interior and exterior of the dwelling will showcase their essential qualities and engage all of the senses in the way they are perceived. Concrete Block walls form the structural cores of the residence and will convey an essence of mass, strength, and efficiency in each of the spaces of the residence. The floor framing of glulam beams are exposed to convey the essence of the lighter weight natural material.

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Figure 8-2. Perspective of dining room from kitchen.

The entrance to the residence is carved out of the hill below big level drive. The driveway follows a retaining wall down into the porte-cochere, a covered vehicle parking and entrance. From the covered entrance the circulation continues on a new axis into the living room where the fireplace is the central element. From the living room, public circulation continues through the breezeway into the kitchen and dining room. Private rooms are located on the lower level and public guest spaces and the roof deck are located on the upper level.

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Figure 8-3. Perspective from the master bedroom toward the mountain view west.

Private space including the study and the master suite are located on the lower level. Upon entering the lower level there is a transitional lounge space that connects passage to the master suite, the door to the study, mechanical storage laundry spaces and access to the outdoors.

The upper level is accessed from the porte-cochere opposite from the entrance on the main level. The Upper level contains two guest bedrooms that share a full bath, a guest lounge that features a central fireplace element, a secluded covered deck, and the large roof deck above the kitchen and dining room.

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Quantitative assessment of program:

Table 1. Programmatic Square Footage. (Author)

Lower Level	
Master Bedroom	900 Sq. Ft.
Master Bathroom	500 Sq. Ft.
Private Lounge	410 Sq. Ft.
Mech. / Storage	150 Sq. Ft.
Study	330 Sq. Ft.
Lower Level Deck / Patio	90 Sq. Ft.
TOTAL INDOOR AREA	2290 Sq. Ft.
TOTAL COVERED OUTDOOR AREA	90 Sq. Ft.
Main Level	
Porte-cochere Entrance	1000 Sq. Ft.
Living Room	560 Sq. Ft.
Kitchen	480 Sq. Ft.
Dining Room	330 Sq. Ft.
Main Level Decks	900 Sq. Ft.
TOTAL INDOOR AREA	1370 Sq. Ft.
TOTAL COVERED OUTDOOR AREA	1900 Sq. Ft.
Upper Level	
Guest Bedrooms	470 Sq. Ft.
Guest Bathroom	120 Sq. Ft.
Guest Lounge	690 Sq. Ft.
Upper Level Deck	980 Sq. Ft.
Roof Deck	1890 Sq. Ft.
TOTAL INDOOR AREA	1280 Sq. Ft.
TOTAL COVERED OUTDOOR AREA	980 Sq. Ft.
TOTAL UNCOVERED OUTDOOR	1890 Sq. Ft.

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Emergency Exterior Door or Window Egress

Basements and each sleeping room below the fourth story must have an exterior door or window for emergency escape and rescue. Escape windows must have a sill height of not more than 44 inches, a minimum clear opening dimension of 24 inches high by 20 inches wide, and a minimum clear opening area of at least 5.7 square feet. Emergency escape windows and doors are permitted to open onto interior atrium balconies, provided that a second exit access that does not pass through the atrium is available. Emergency escape windows and doors are not required for:

- Occupancy R-3 bedrooms and basements in fully sprinklered buildings
- Occupancy R-3 bedrooms, where the door from the bedroom opens to a fire-rated corridor with access to two remote exits in opposite directions.
- Basements with a ceiling height of less than 80 inches.

Table 2. Specification of Occupancy Group. (Allen)

Occupancy Group	Description
R. Residential	Residential uses include facilities where people live and sleep when not in a supervised setting that would be classified as an Institutional use. The applicable residential sub-group is
	R-3: This group includes one- and two-family residential occupancies.

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Table 3. Construction Types and Applicable Codes. (Allen)

Construction Type	Applicable Code
Type V-A: 1-Hour Wood Light Frame Combustible	Load bearing walls and floors have a 1-hour fire-resistance rating.
Type V-B: Unprotected Wood Light Frame Combustible	Allows the structure of the building to remain exposed or to be finished with materials do not have a sufficient fire-resistance rating to satisfy a higher classification of construction.

Table 4. International Building Code for R-3 Residential. (Allen)

Occupancy	R-3: Residential
Maximum Travel Distance from Most Remote Point to Nearest Exit Enclosure (Sprinklered)	200 Feet
Maximum Travel Distance from Most Remote Point to Nearest Exit Enclosure (Sprinklered)	250 Feet
Maximum Travel Distance to Two Independent Egress Paths	75 Feet
Largest Room That May Have Only One Door	10 Occupants
Maximum Length of Dead-End Corridor	20 Feet
Minimum Clear Corridor Length	36 inches within dwelling units
Minimum Net Clear Egress Door Width	32 inches for doors part of required egress
Minimum Stair Width	36 inches with in a dwelling unit
Additional Requirements	Exterior door or window egress is required

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Table 5. Height and Area Limitation. (Allen)

Occupancy Type	Height and Area Limitation
R-3 (residential one- and two-family)	V-A: 1-hour fire rating: Unlimited height and area (3 stories max.) V-B: Unprotected: Unlimited height and area (3 stories max.)

International Residential Code

Residential one- and two-family dwellings not more than three stories in height and with separate means of egress are governed by the requirements of the *International Residential Code*, a separate but related code developed by the International Code Council for buildings of this type. For buildings such as these, use the following preliminary guidelines:

- Building height is limited to three stories.
- Exterior walls of separate buildings facing within 3 feet of each other must be 1-hour rated, and free of openings.
- In Group R-3 residential buildings, a residential sprinkler system is permitted. In this case, read from the columns in the table for unsprinklered systems.

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BIBLIOGRAPHY

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Abrams, David. *The Spell of the Sensuous, Perception and Language in a More-Than-Human World.* (New York: Pantheon Books, 1996)

Allen, Edward and Iano, Joseph. *Architecture Studio Companion, Third Edition.* (New York, New York: John Wiley and Sons Inc., 2002)

Blackwell, Marlon. *An Architecture of the Ozarks: The Works Marlon Blackwell.* (New York: Princeton Architectural Press, 2005)

Davies, Colin. *Key Houses of the Twentieth Century.* (New York, New York: Laurence King Publishing, 2006)

Farrelly, E. M. *Three Houses Glenn Murcutt Architecture in Detail.* (New York, New York: Phaidon, 1993)

Frampton, Kenneth ed. *Tadao Ando: Buildings, Projects, Writings.* (New York, New York: Rizzoli, 1984)

Herzog, Thomas et. al. *Timber Contruction Manual.* (Basel, Switzerland: Birkhauser, 2004)

Holl, Steven. *Questions of Perception: Phenomenology of Architecture.* (Tokyo, Japan: Architecture + Urbanism, July 1994)

Kind-Barkauskas, Friedbert et. al. *Concrete Construction Manual.* (Basel, Switzerland: Birkhauser, 2002)

Lane, Barbara Miller. *Housing and Dwelling: Perspectives on Modern Domestic Architecture.* (New York, New York: Routledge, 2007)

Lin, Maya Ying. *Boundaries.* (New York: Simon & Schuster, 2000)

MacKeith, Peter. *Archipelago: Essays on Architecture for Juhani Pallasmaa.* (Finland: Rakennustieto, 2006)

Moffett, Marian and Wodehouse, Lawrence. *East Tennessee Cantilever Barns.* (Knoxville: The University of Tennessee Press, 1993)

Neutra, Richard. *World and Dwelling.* (New York, New York: Universe Books, 1962)

Ngo, Dung. *Tom Kundig: Houses.* (New York, New York: Princeton Architectural Press, 2006)

www.manaraa.com

Norberg-Schulz, Christian. *The Concept of Dwelling: On the Way to Figurative Architecture.* (New York, New York: Rizzoli, 1985)

Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology in Architecture.* (New York, New York: Rizzoli, 1980)

Pallasmaa, Juhani. *The Eyes of the Skin: Architecture of the Senses.* (England: John Wiley & Sons Ltd., 2005)

Pawson, John. *Works.* (New York, New York: Phaidon Press Inc, 2005)

Rykwert, Joseph. *On Adam's House in Paradise: The idea of the Primitive Hut in Architectural History. second edition.* (London, England: The MIT Press, 1981)

Seamon, David. *Dwelling, Seeing, and Designing: Toward a Phenomenological Ecology.* (Albany, New York: State University of New York, 1993)

Zumthor, Peter. *Atmospheres: Architectural Environments, Surrounding Objects.* (Basel, Switzerland: Birkhauser, 2006)

Zumthor, Peter. *A Way of Looking at Things.* (Tokyo, Japan: Architecture + Urbanism, February 1998)

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APPENDICES

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APPENDIX A

SITE SELECTION

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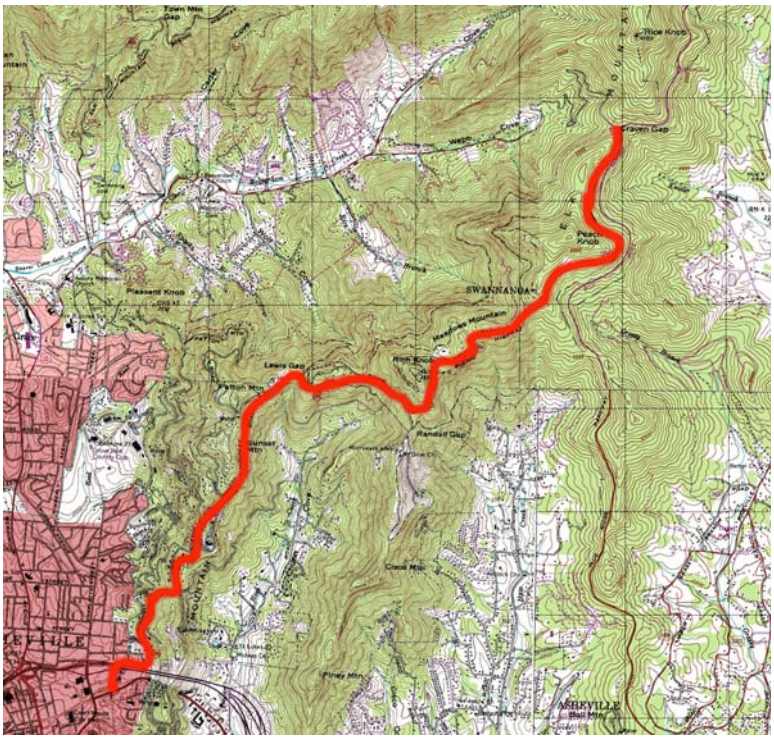

Figure A-1. Town Mountain Road Topography. (USGS)

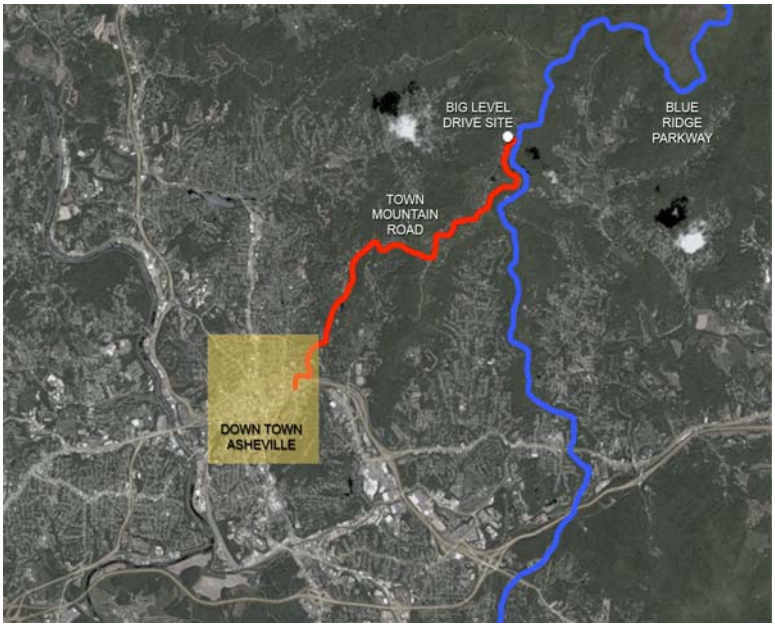

Figure A-2. Town Mountain Road context.

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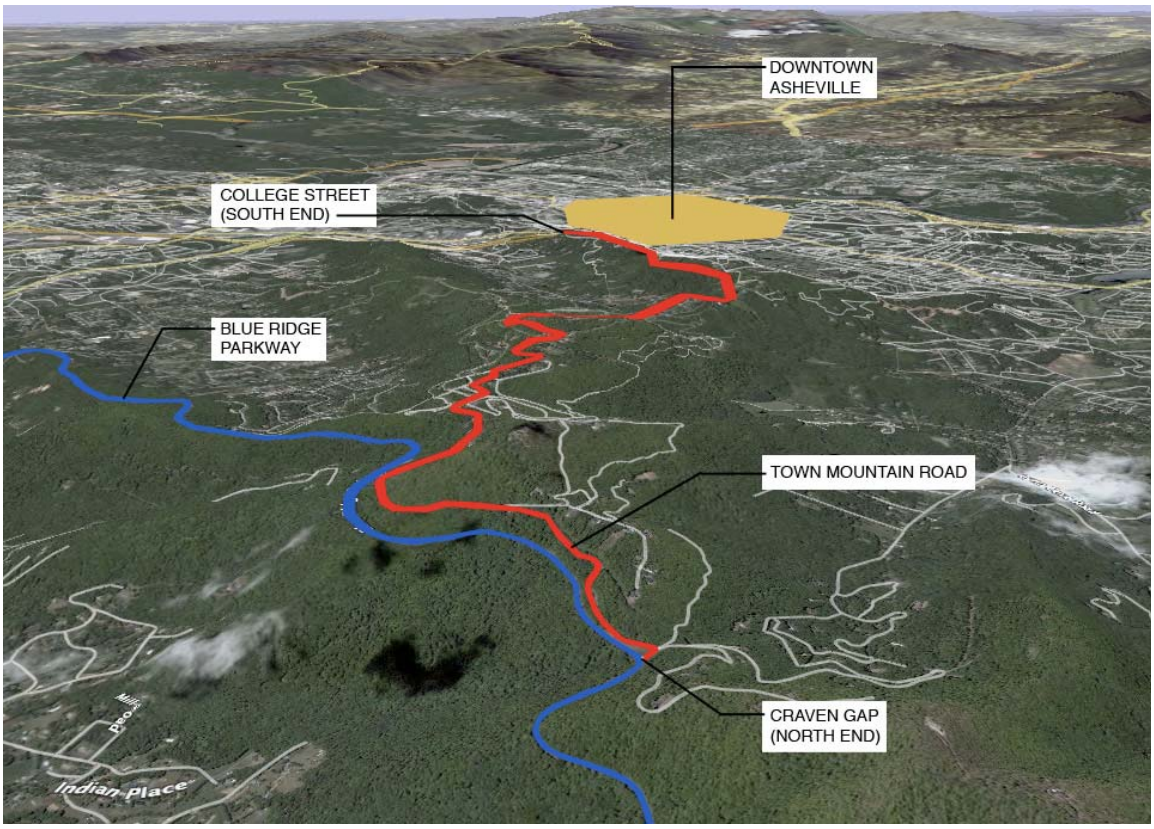

Figure A-3. Southwestern aerial view. This view shows Town Mountain Road connecting the Blue Ridge Parkway to downtown Asheville.

Figure A-4. Town Mountain Road View. (Author)

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Figure A-5. Town Mountain Road View. (Author)

Figure A-6. Downtown Asheville End of Town Mountain Road. (Author)

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Figure A-7. View South of Big Level Drive Site. (Author)

Figure A-8. View West from Peach Knob. (Author)

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Figure A-9. Craven Gap Intersection of Town Mtn. Road with Parkway. (Author)

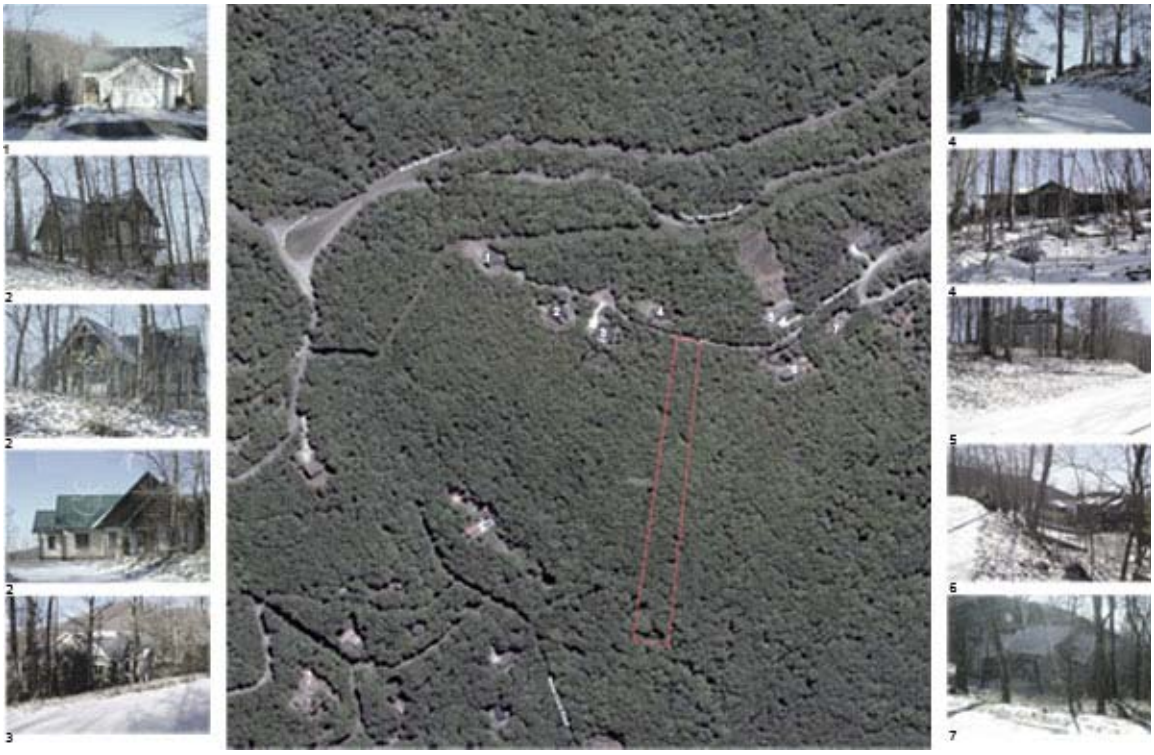

Figure A-10. Big Level Drive Neighboring Houses.

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Figure A-11. Site Panoramas.

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APPENDIX B

PRECEDENTS (CASE STUDIES)

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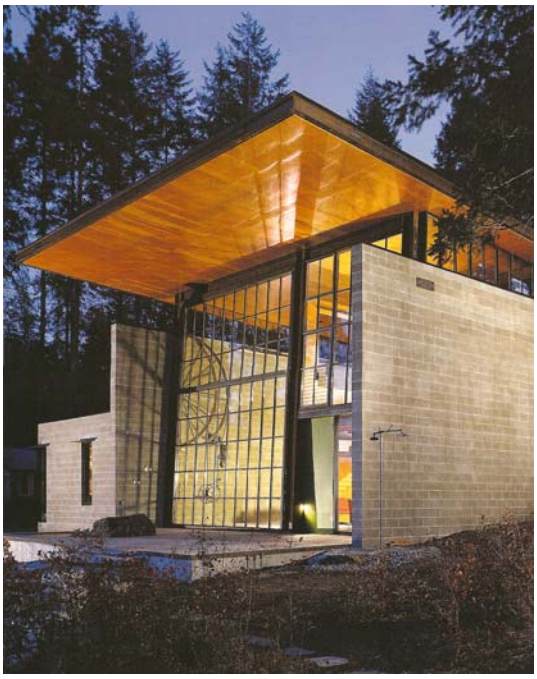

Figure B-1. Chicken Point Cabin. Hayden Lake, Idaho. Tom Kundig. 2000-2003. The Chicken Point Cabin is a vacation house for a family in Idaho. The result is a simple form of concrete block and a large pivoting picture window that opens to the lake.

Figure B-2. Lake View**.** The concept was to keep the house simple and for it to open to the lake.

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Figure B-3. Entry. A nineteen-foot metal door heightens the dramatic entry sequence.

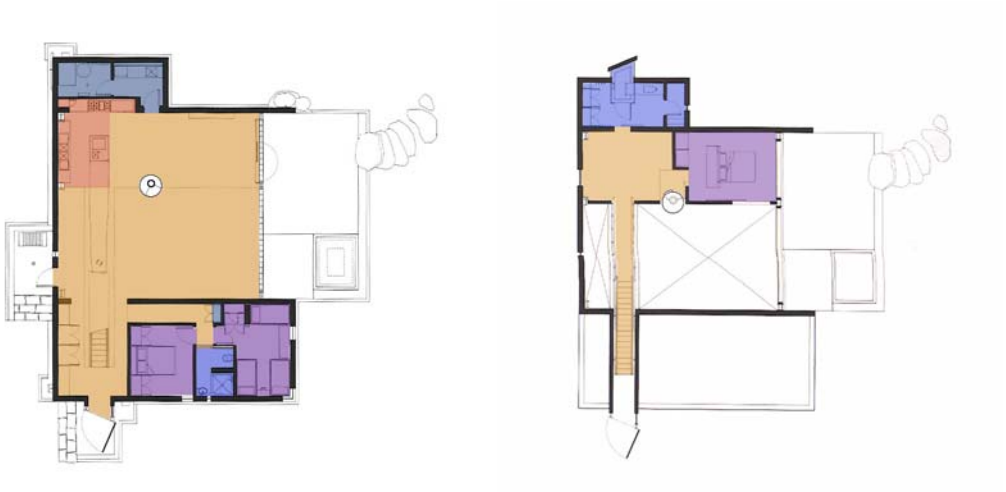

Figure B-4. Floor Plans. The ground floor is a large open space with a kitchen in the back, children's bedrooms to one side, and mechanical need to the other. The second floor contains a sitting room and master bedroom lofted above the ground floor open space, and a master bathroom.

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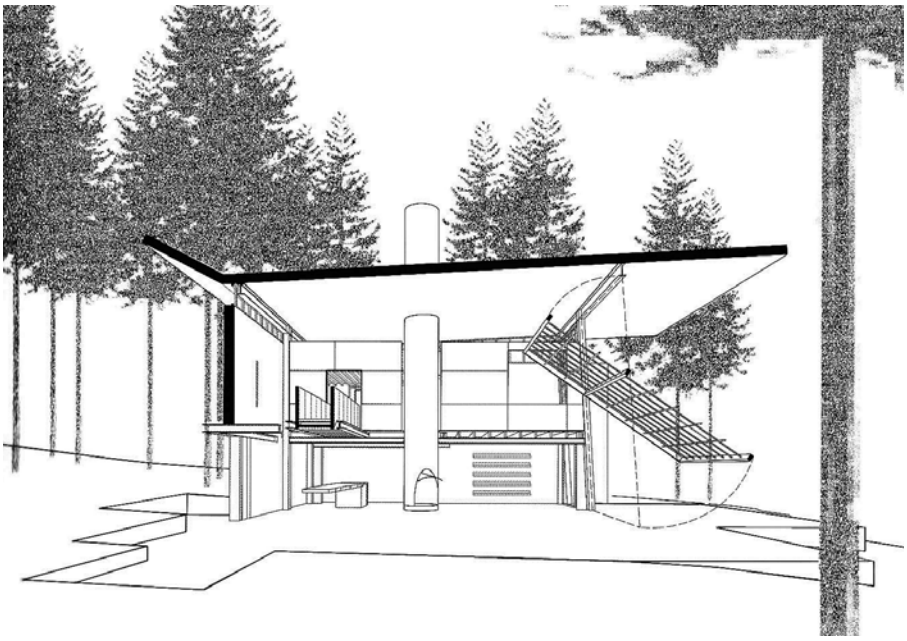

Figure B-5 - Cross Section through Livingroom.

Figure B-6. Structural Fireplace Element**.** The fireplace serves as a focal point, but also as the central structural post.

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Magney House. Glenn Murcutt

Figure B-7. Magney House. Bingie Point, Moruya, Australia.
Glenn Murcutt. 1982-1984. (Phaidon)

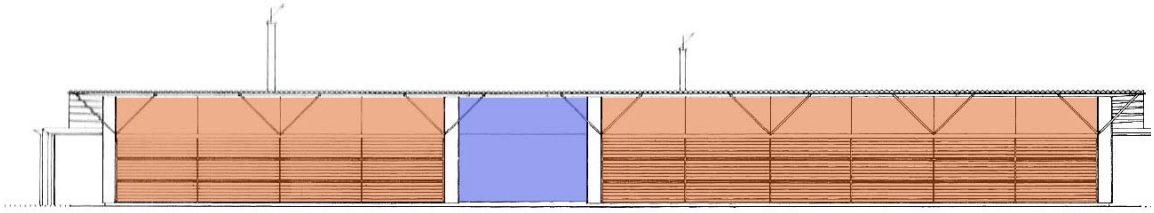

Figure B-8. North Elevation**.** The Magney House is located in a harsh environment, and uses many features to work with its site. This north elevation shows the house's breezeway in blue. The breezeway provides passive ventilation.

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Figure B-9 - The clerestory highlighted in blue is shaded by the roof overhang and is operable to allow passive ventilation. (Phaidon)

Figure B-10 - The water-collecting roof is a response to the dry climate. The roof collects rainwater and stores it in a cistern. (Phaidon)

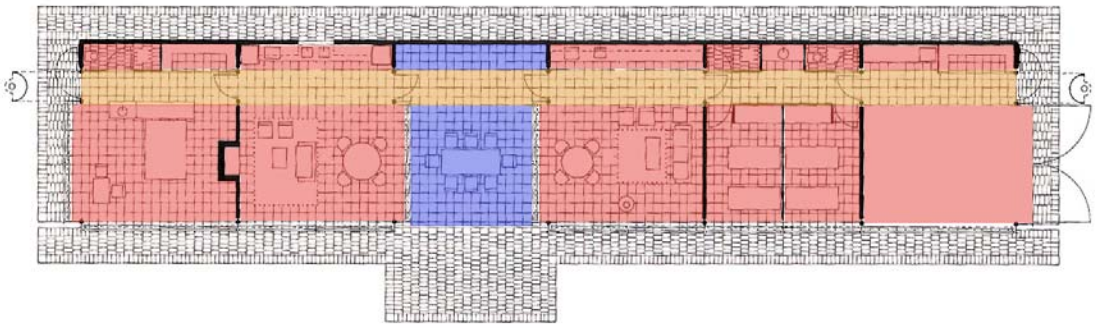

Figure B-11. Floor Plan**.** The floor plan reveals a simple organization along straight circulation path. The breezeway, shown in blue, is centrally located. The footprint of the building is very small. (Phaidon)

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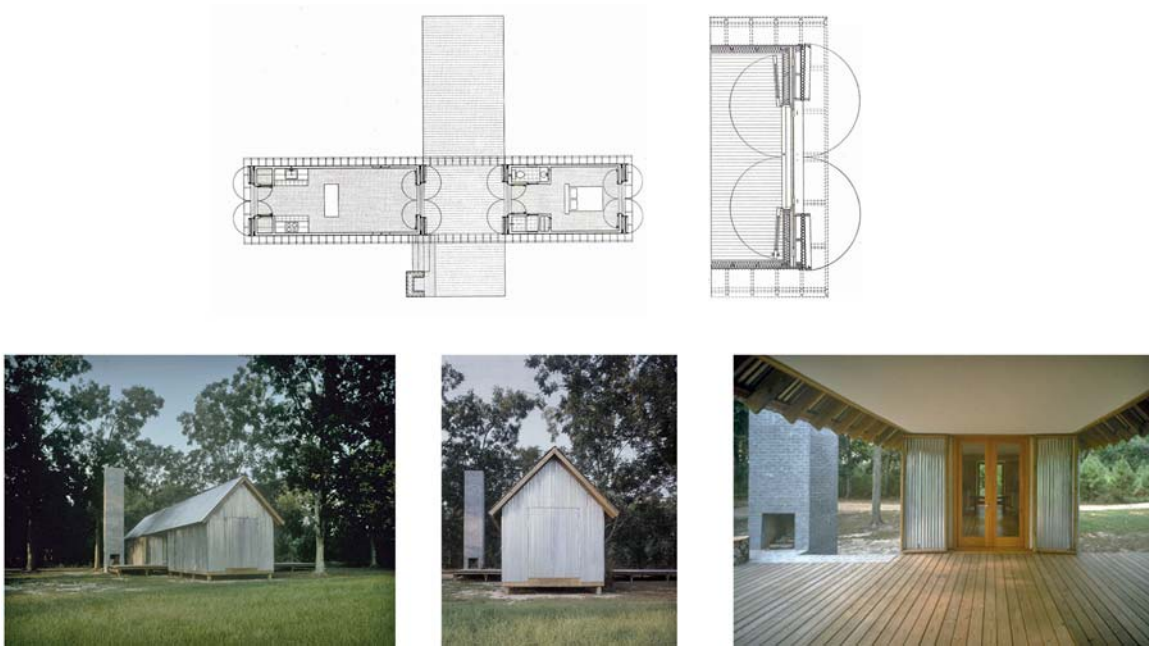

Figure B-12. Zachary House, Lousiana.

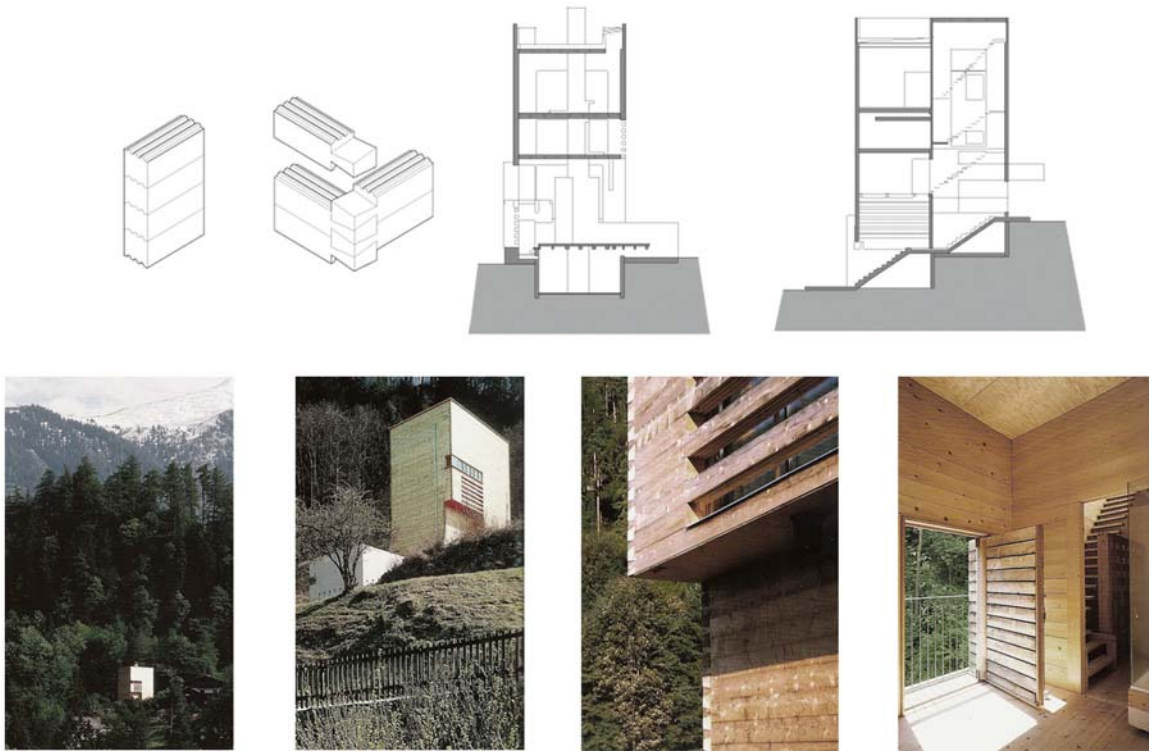

Figure B-13. Single Family House, Austria.

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Figure B-14. Cantilevered Barn Details.

Figure B-15. Vernacular Elements Collage. (Author)

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APPENDIX C

DESIGN PROCESS

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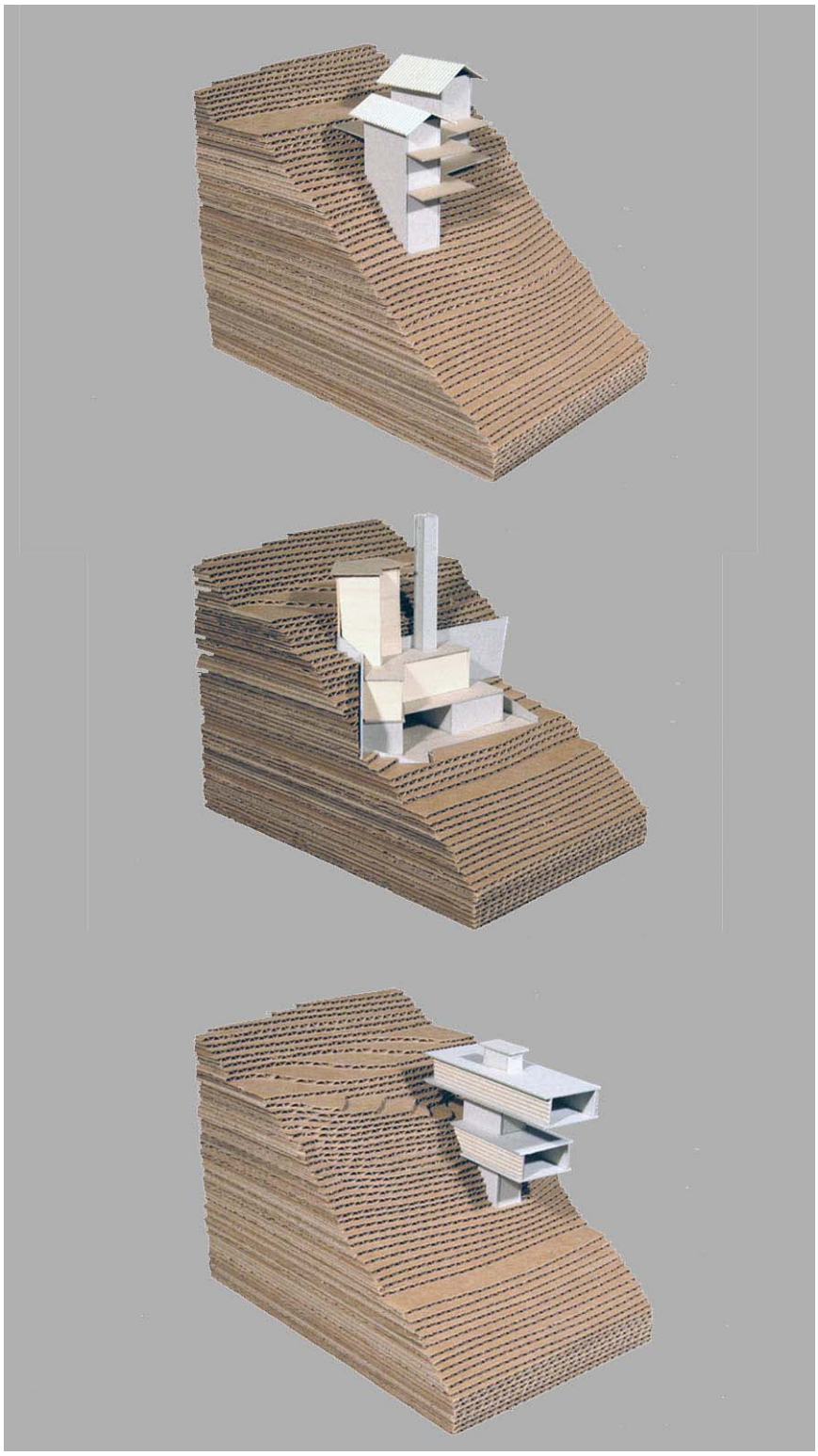

Figure C-1. Initial Study Models

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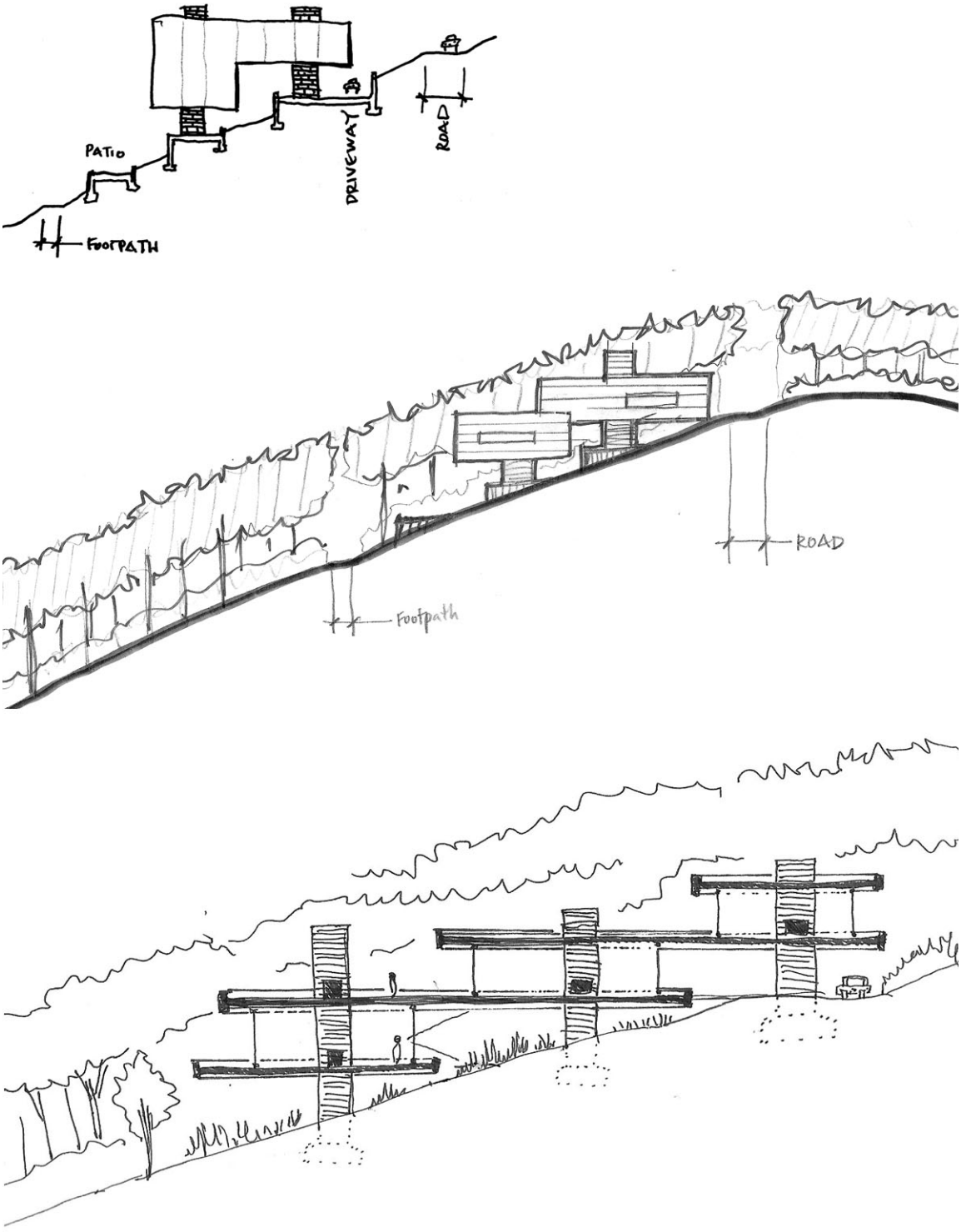

Figure C-2. Process Sketches

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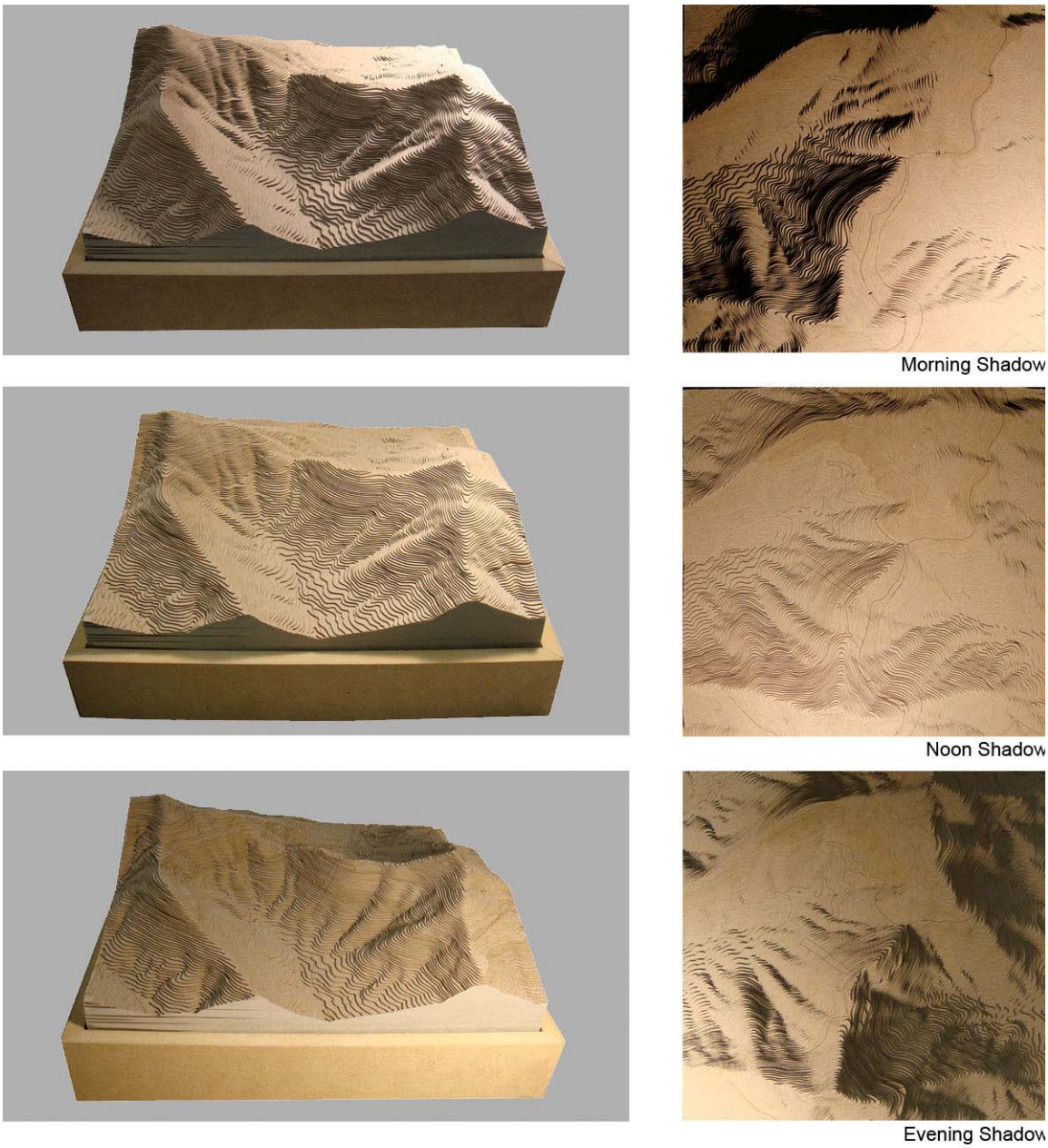

Figure C-3. Site Model.

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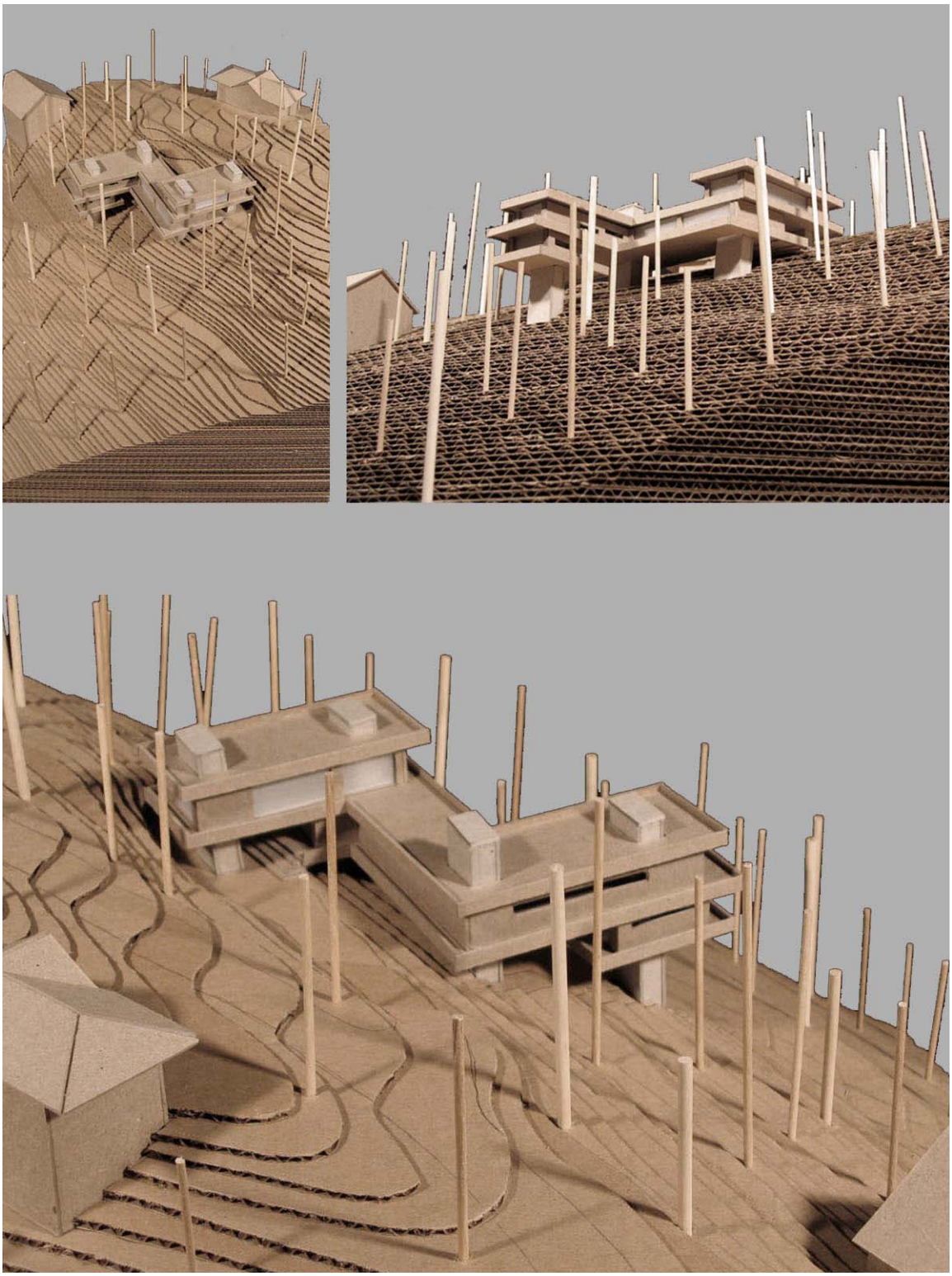

Figure C-4. Study Model.

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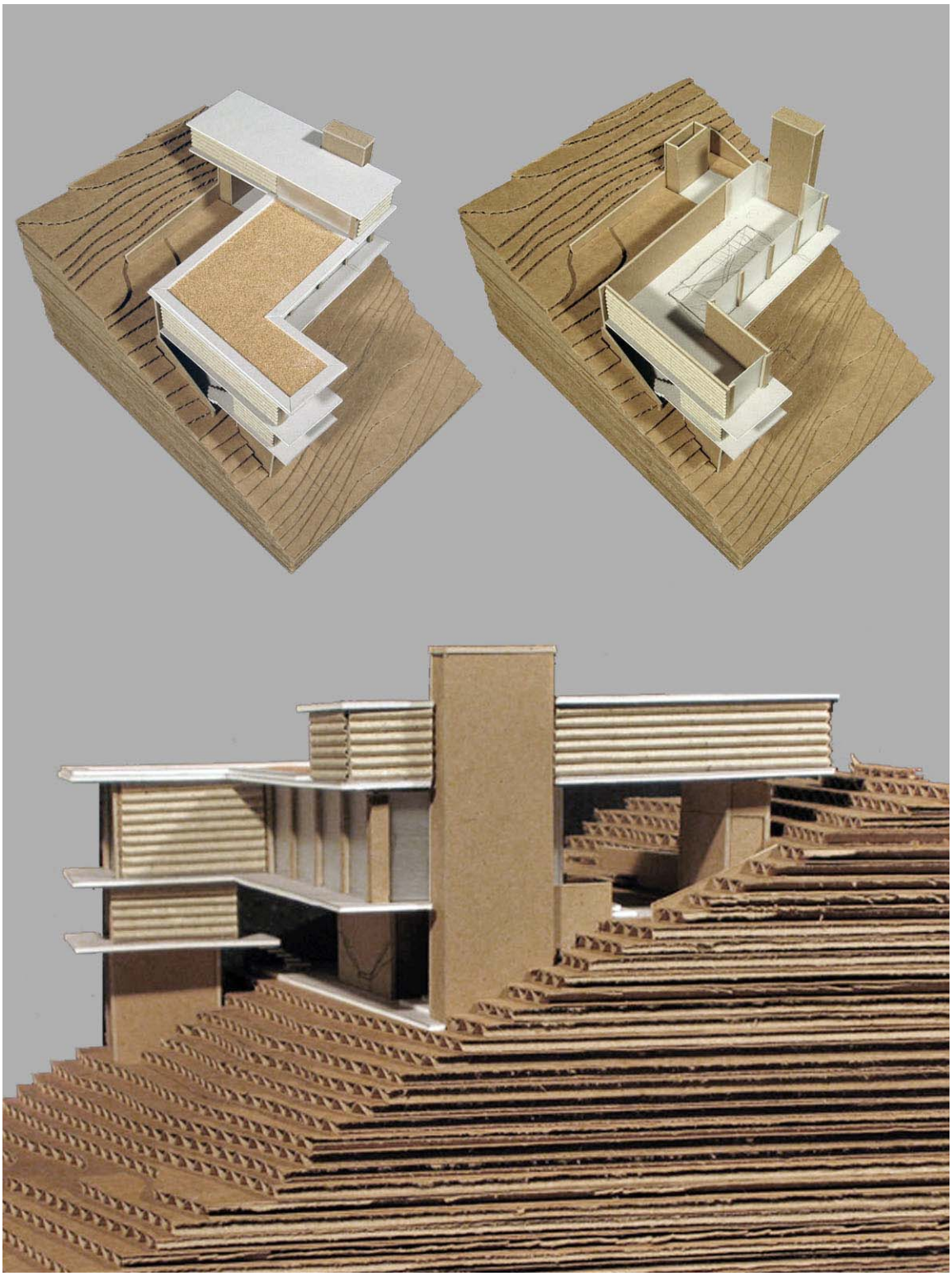

Figure C-5. Study Model.

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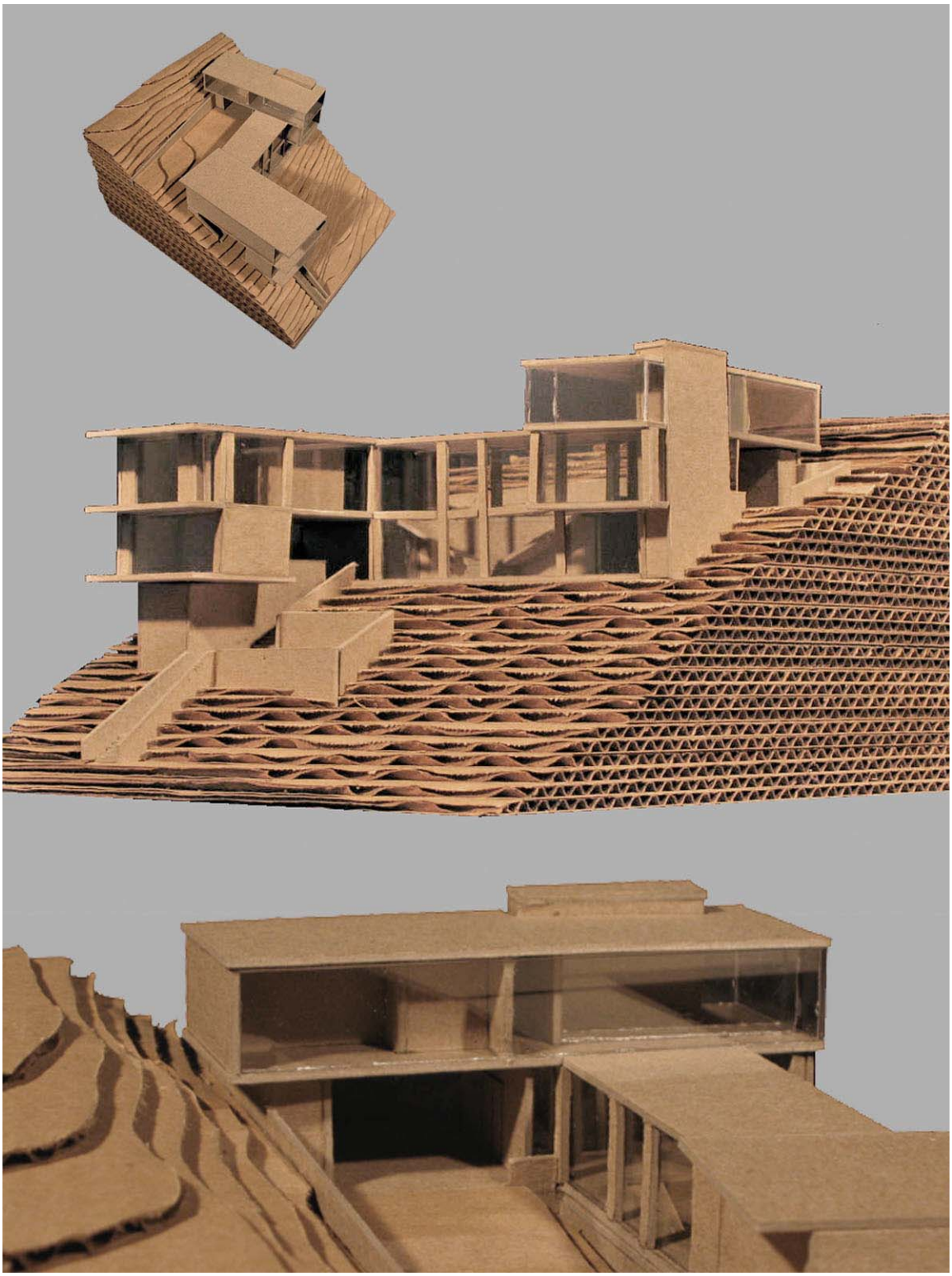

Figure C-6. Study Model.

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APPENDIX D

FINAL DESIGN

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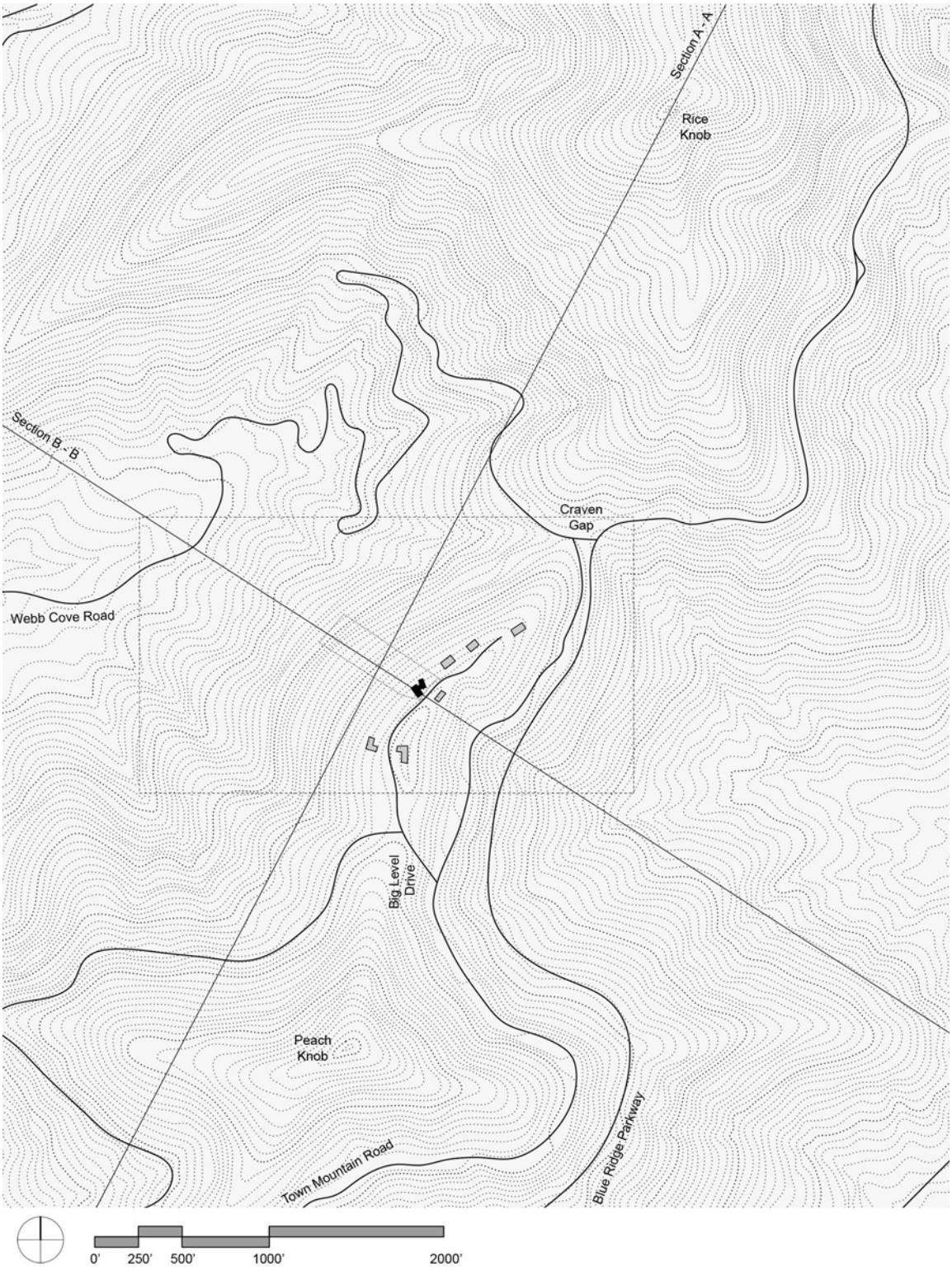

Figure D-1. Site Plan.

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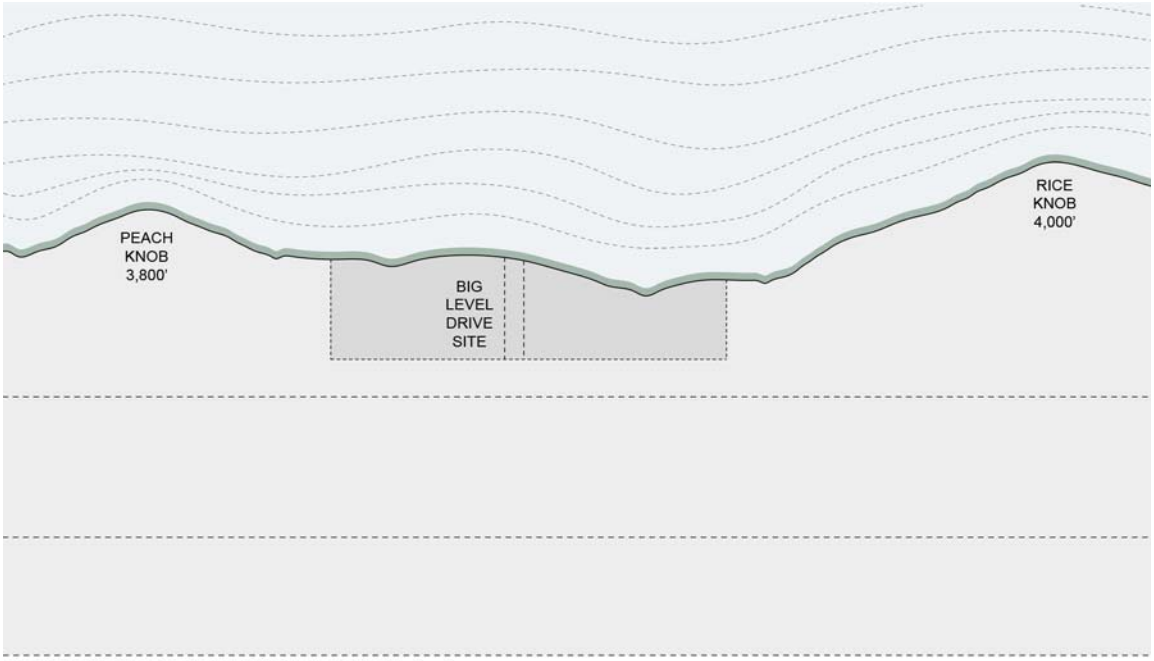

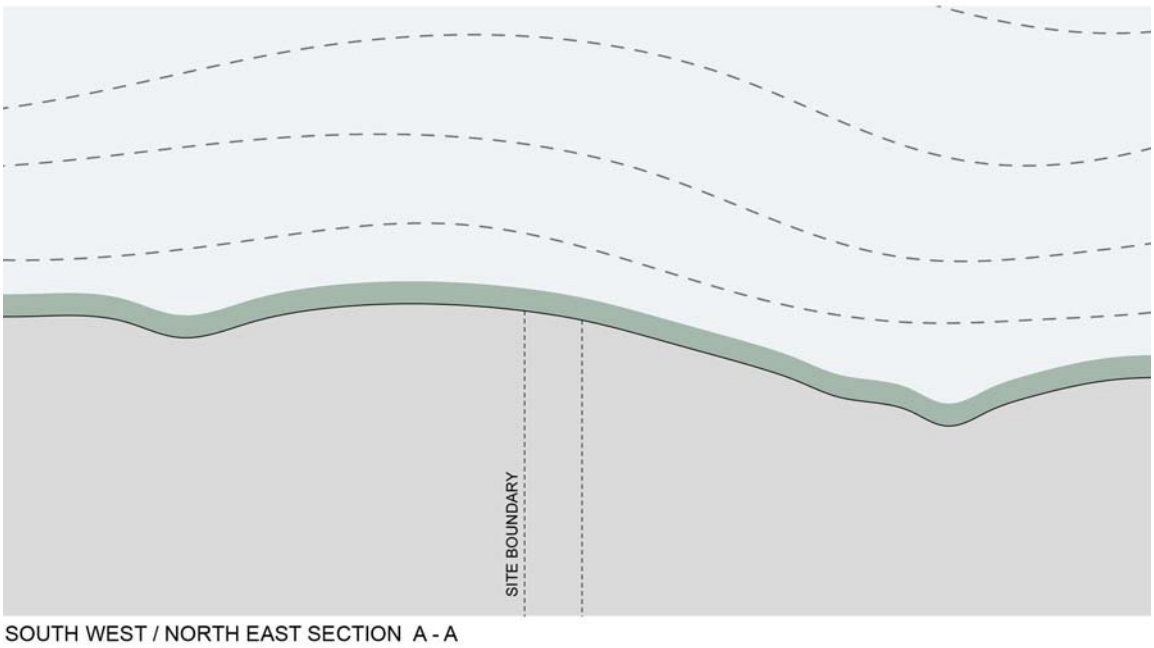

Figure D-2. Site Section A-A.

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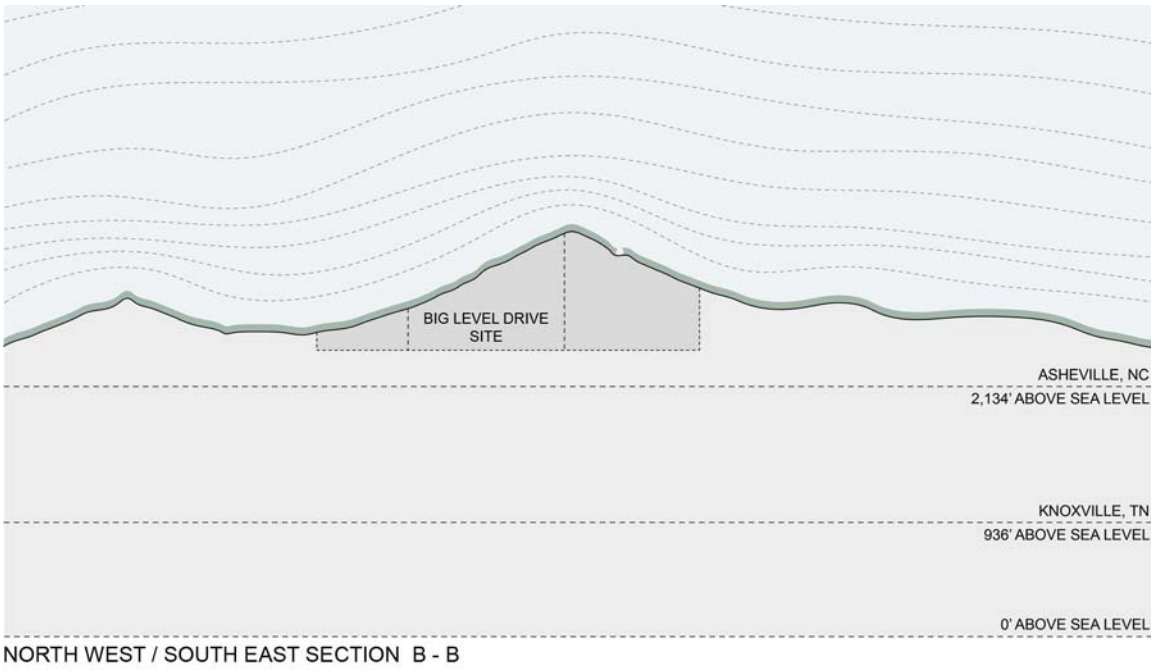

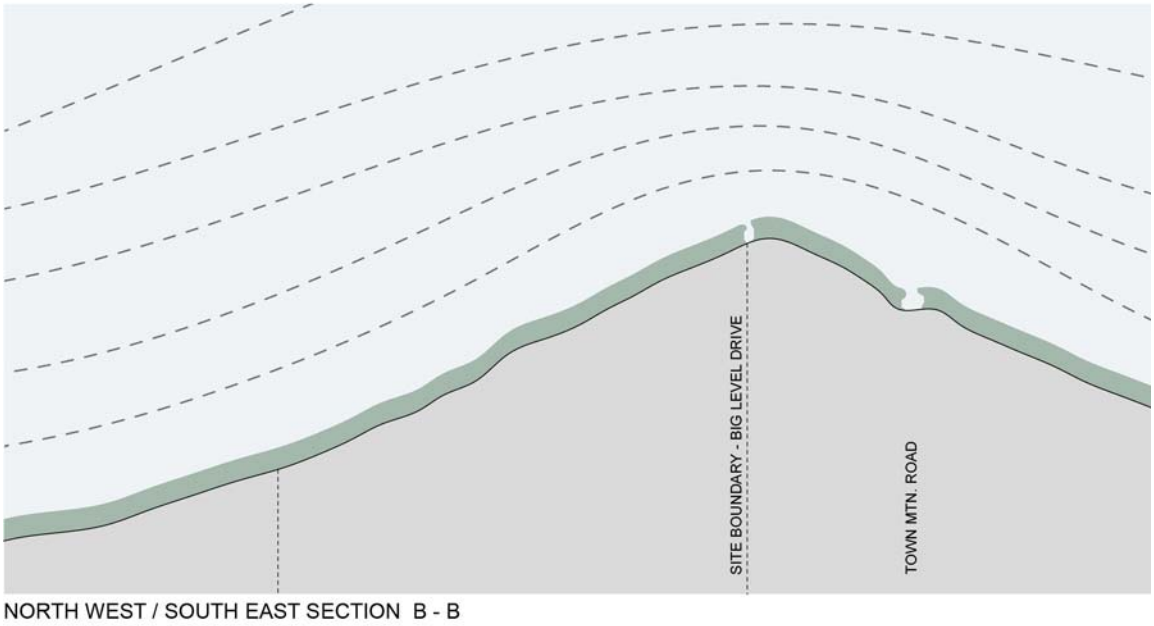

Figure D-3. Site Section B-B.

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Figure D-4. Site Plan.

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Figure D-5. Roof Plan.

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Figure D-6 Lower Level Plan

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Figure D-7 Main Level Plan

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Figure D-8 Upper Level Plan

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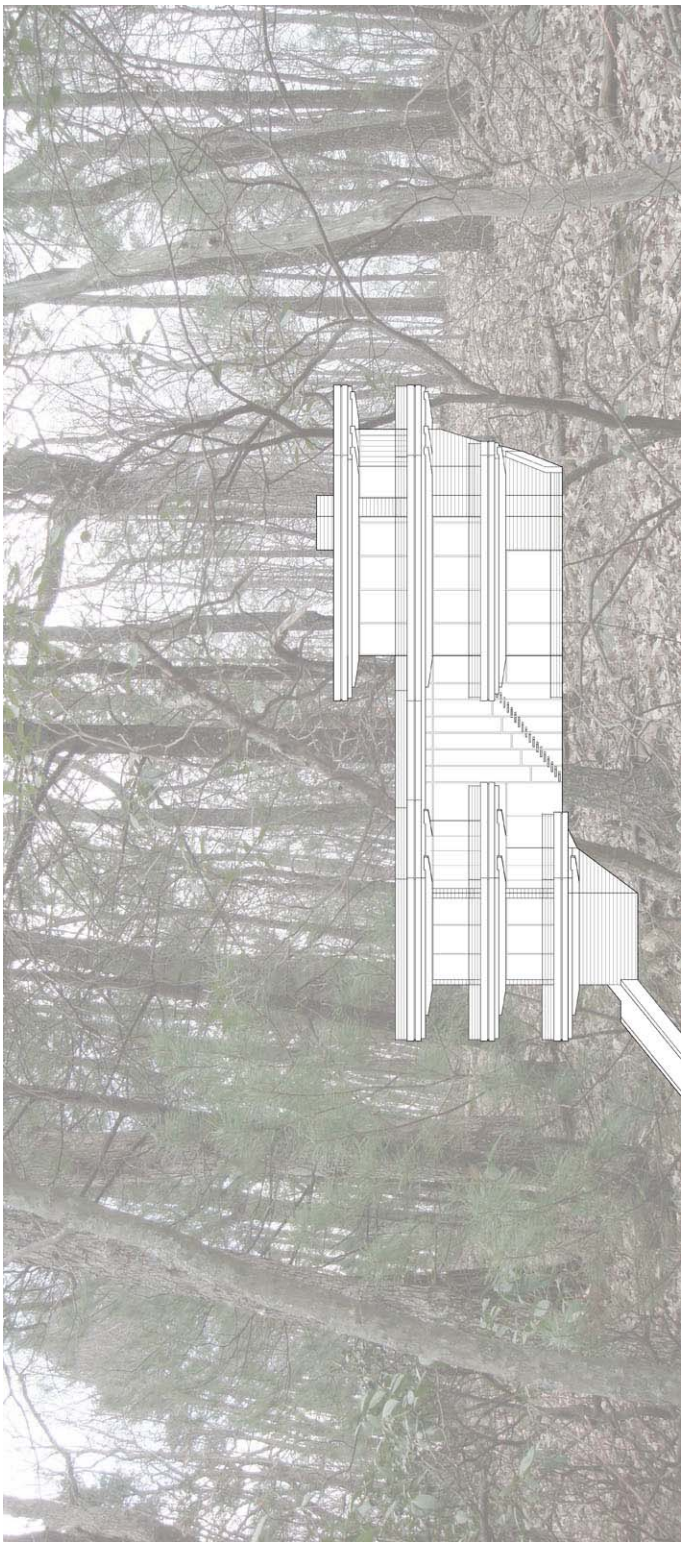

Figure D-9. Northwest Elevation

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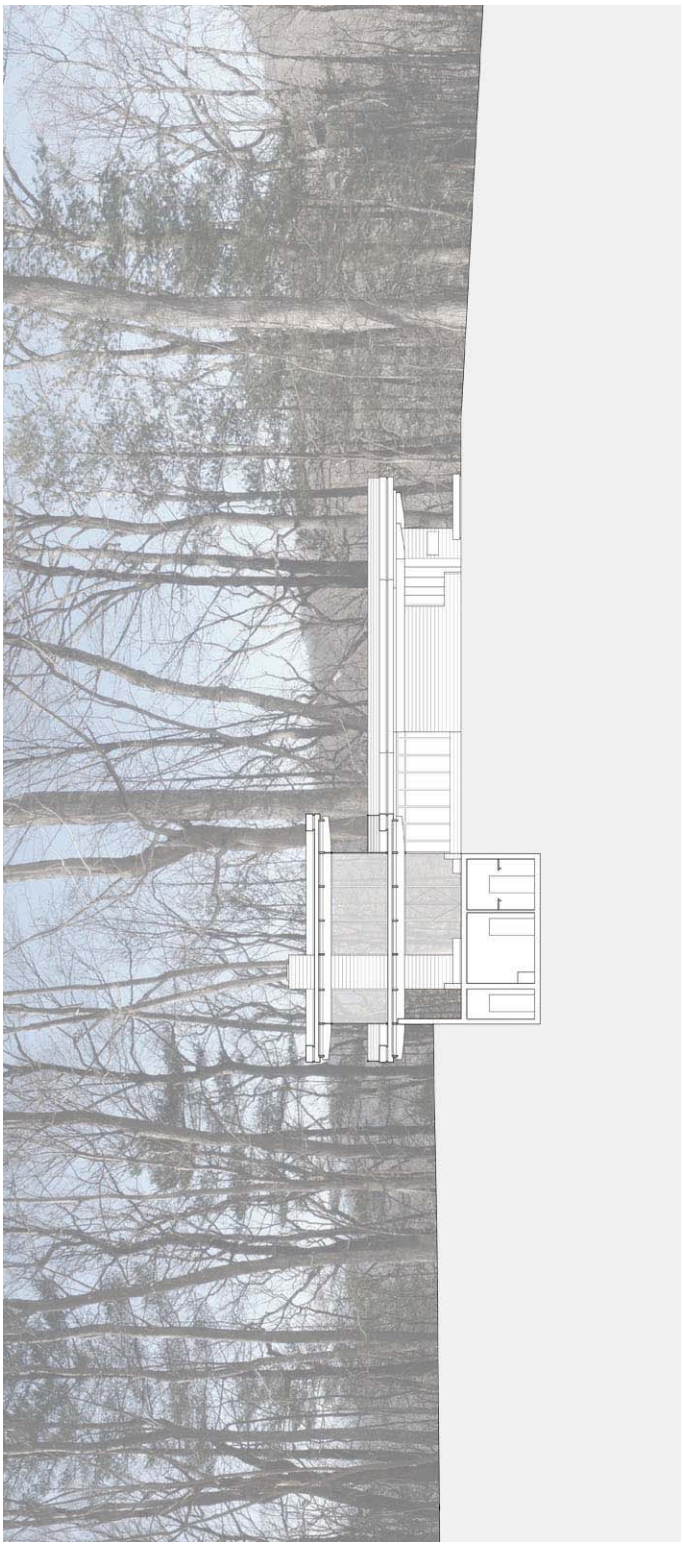

Figure D-10. Section 1.

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Figure D-11. Section 2.

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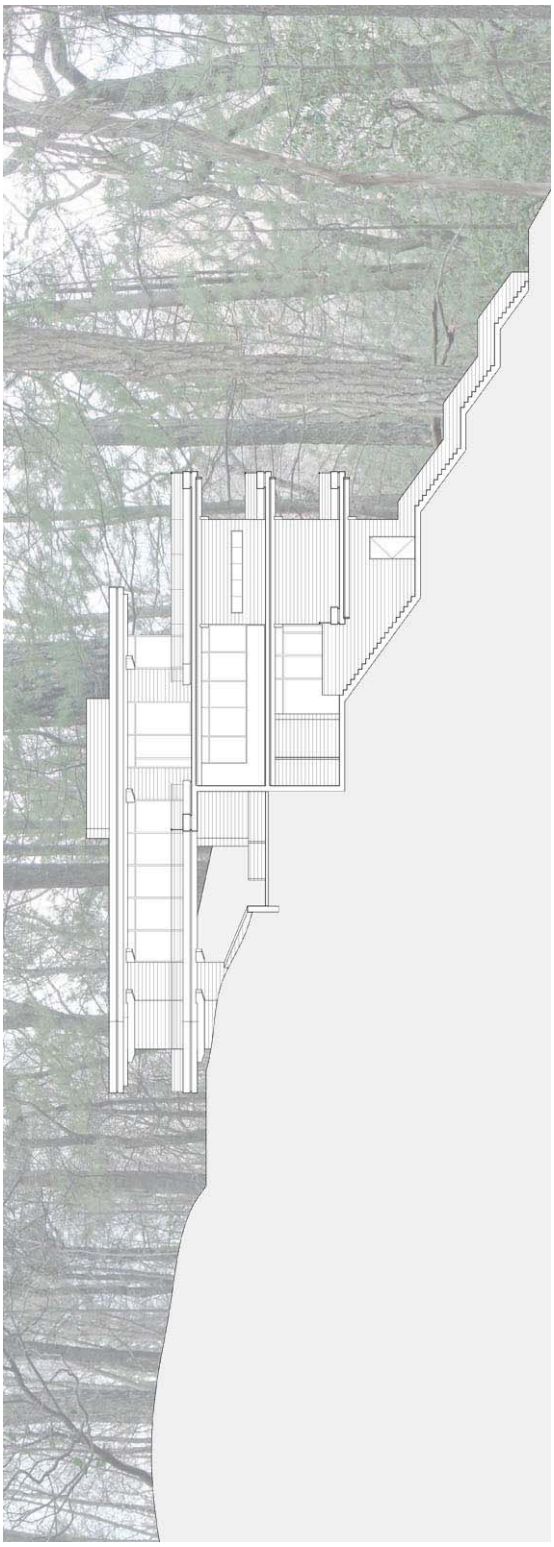

Figure D-12. Section 3.

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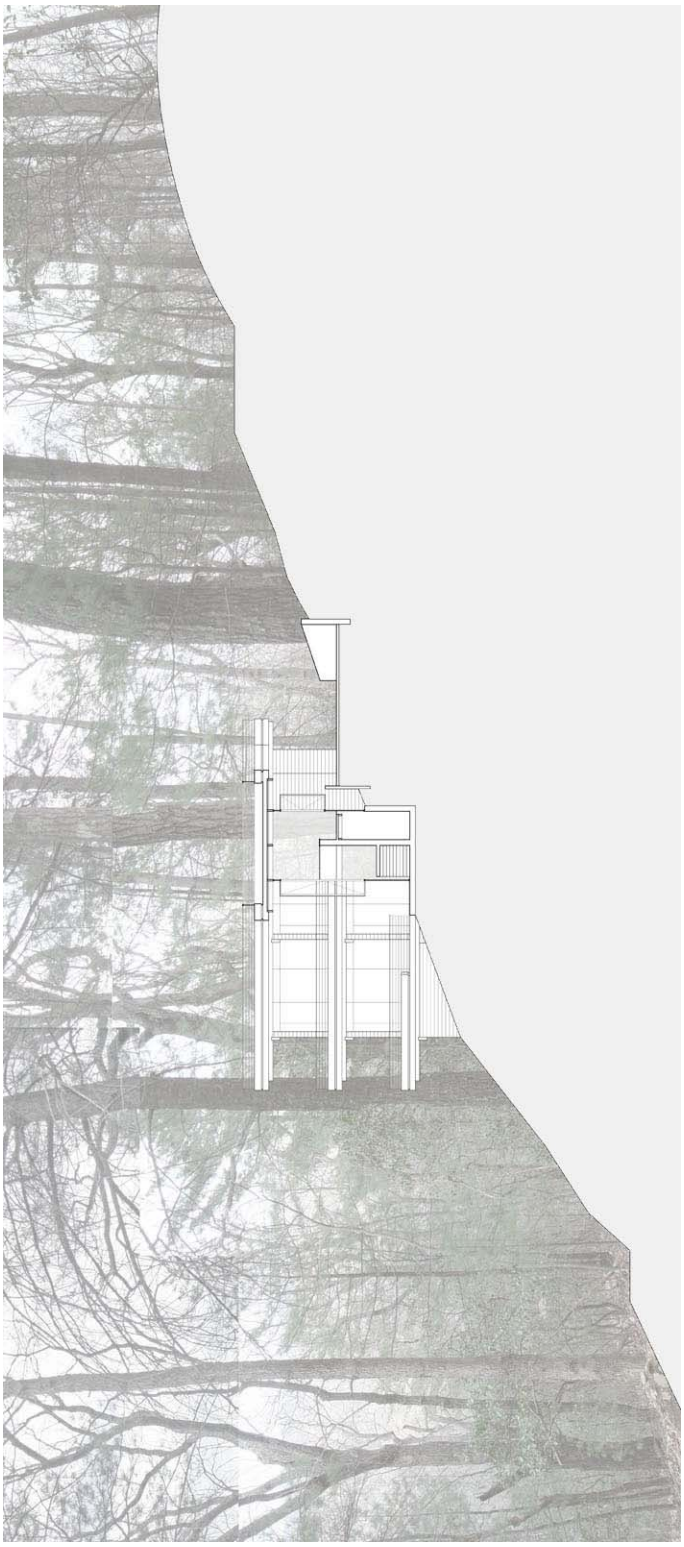

Figure D-13. Section 4.

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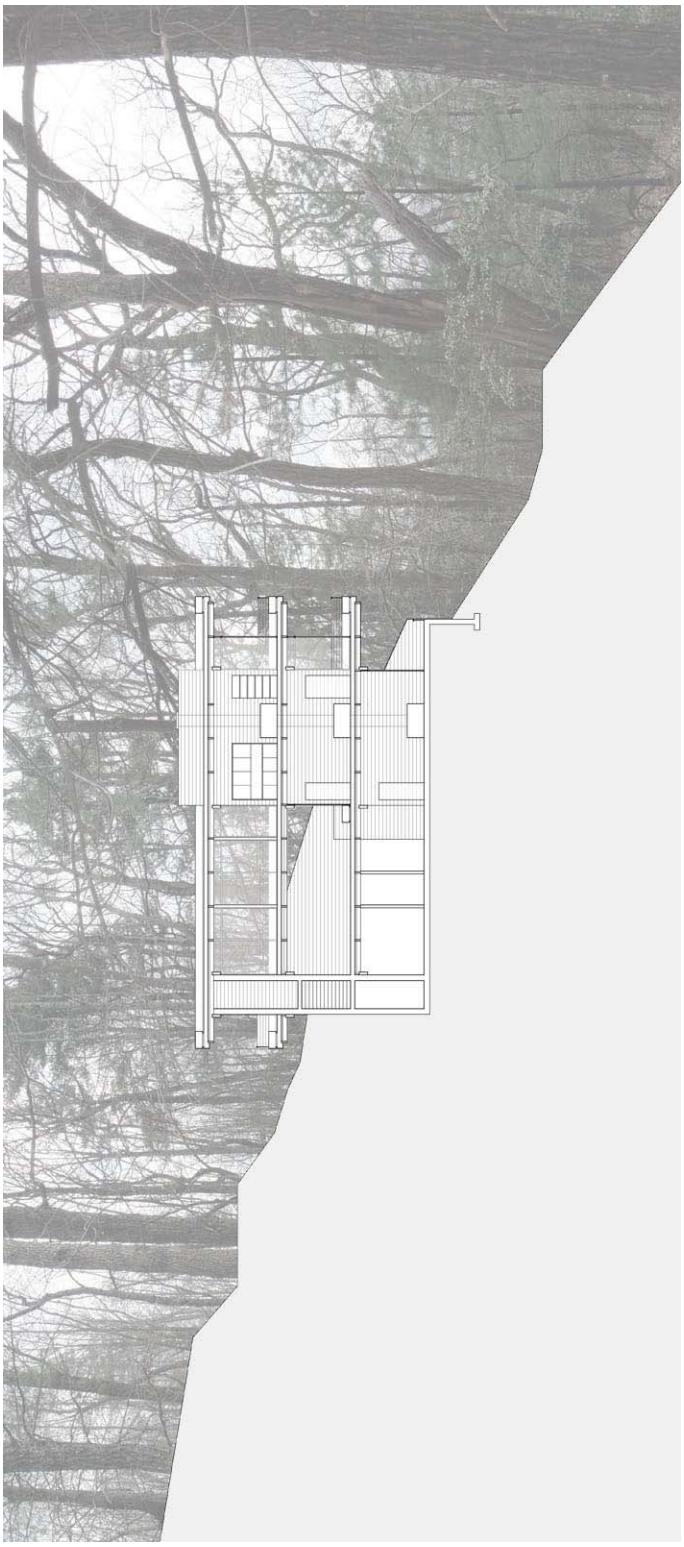

Figure D-14. Section 5.

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Figure D-15. Section Detail.

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A. Sloped waterproof roof membrane

B. 3" Reveal

UPPER LEVEL ROOF FRAMING

C. 3" x 12" Secondary glulam framing w/ mtl. support brackets

D. Insulation

E. Concrete block wall in section

F. Concrete block wall

UPPER LEVEL FLOOR FRAMING

G. 6" x 18" primary glulam framing fastened to concrete block cores

H. Cable handrail w/ mtl. purlins and wood top

J. Wood framed bench/deck edge 18" above deck

MAIN LEVEL FLOOR FRAMING

K. Thermal envelope enclosure @ intersections of glazing and framing

L. Insulated low-e glass

M. 6" concrete slab on top of 3" gravel base and 6 mil. vapor barrier

LOWER LEVEL SLAB

N. Footing 24" below frost line w/ (3) # 4 reinf. bars

Figure D-16. Annotated Section.

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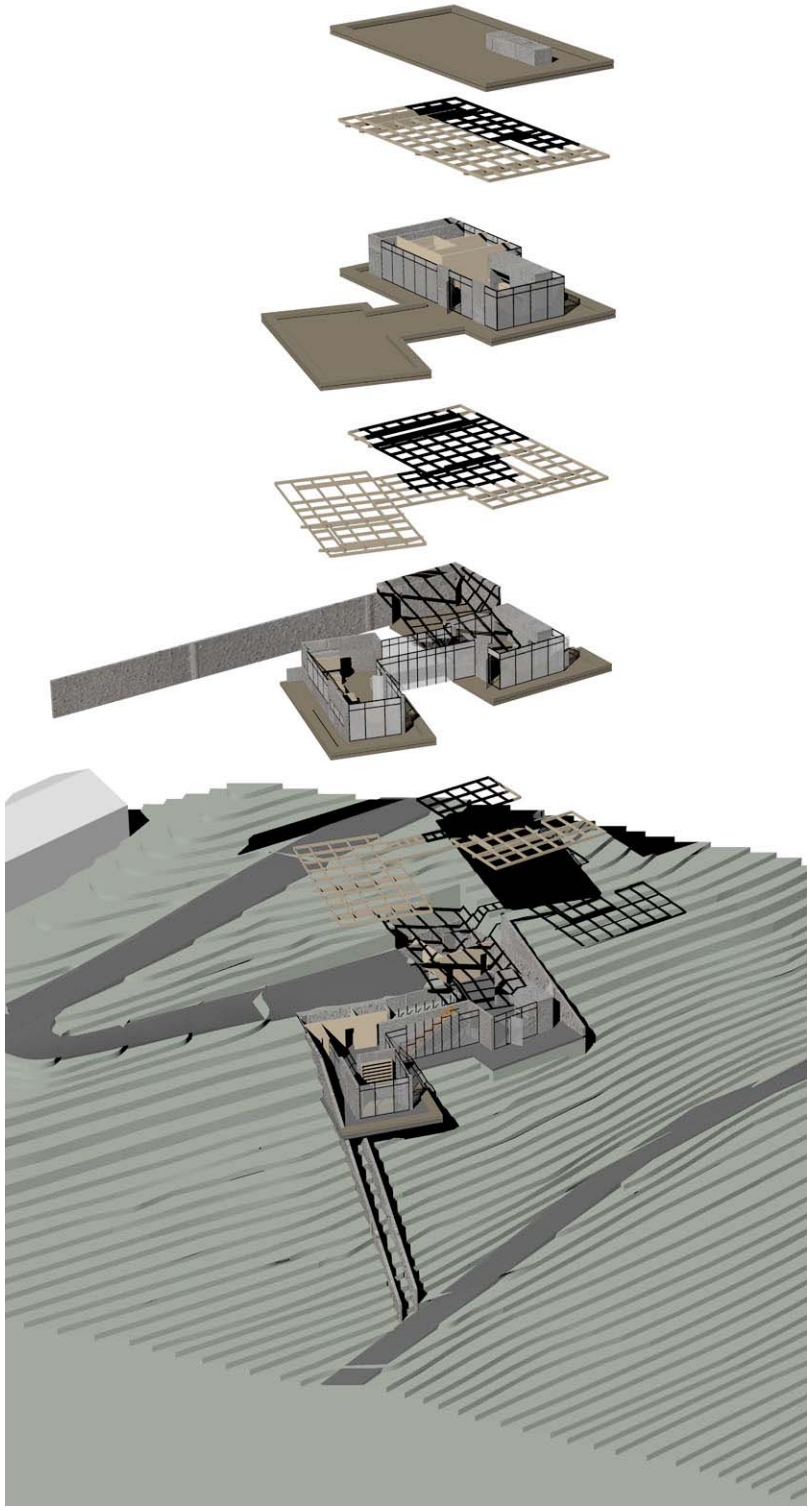

Figure D-17. Exploded Axon.

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Figure D-18. Exterior Perspective from Northeast.

Figure D-19. Perspective of Porte-cochere with Guest Rooms above.

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Figure D-20. Exterior Perspective from Southwest.

Figure D-21. Exterior Perspective of Main Level Deck Access from Living Room.

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Figure D-22. Interior Perspective of Kitchen from Living Room.

Figure D-23. Nighttime exterior perspective of Guest Lounge from Roof Deck.

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VITA

James Robert Maveety was born in Greensboro, North Carolina on October 5, 1981. He was raised in Arden, North Carolina and went to elementary school at Glen Arden and middle school at Valley Springs. He graduated from T.C. Roberson High School in 2000. In 2004, he graduated from Clemson University in South Carolina with a Bachelor of Art in Architecture with a minor in fine arts. From 2004 to 2006 James began his architectural internship at Stagaard and Chao Architects, a small detail-oriented residential firm in Pinehurst, North Carolina. And in 2008 he finished the Master of Architecture program at the University of Tennessee in Knoxville.

James is currently pursuing professional architectural internship and licensure.

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