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Mount Tom Self-Transformation Retreat: Designing Experiential Architecture to Provoke Stimulatory, Expressive and Sensory Self-Exploration

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MOUNT TOM SELF-TRANSFORMATION RETREAT:
DESIGNING EXPERIENTIAL ARCHITECTURE TO PROVOKE STIMULATORY, EXPRESSIVE AND SENSORY SELF-EXPLORATION

A Thesis Presented
By

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DEDICATION

To Denny and Debbie Young for the endless years of
encouragement and support.
&
To Jessica Brady for your willingness to go above and beyond,
regardless of the time or place.

ABSTRACT

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MAY 2014

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The environment evolved five human senses; through these receptors the majority of us experience life. Or do we? The a vast majority of our daily landscape resides enclosed, shut off from the exterior; separating people from the elements, organizing and distributing the multitude of functions that affect how we live and feel. The mental state of society is poor, the "daily dis-ease" of we wrestle with; stress, emotions, fatigue, exhaustion, disconnection suck the life out of the moments we live to barely even see. These interactions and experiences we encounter in, on, under and around the architectural forms we travel between are often so boring and ordinary we don't even label them as experience. I challenge architecture can be more. The tangibles (senses) can be invigorated and spaces can be driven and designed by the senses, by the body and by the mind. The creation of unique experiences involves not only the measureable (light, smell, touch, taste & sound etc.) but also immeasurable effects on the body (memory, unity, serenity, etc.) The core of this project aims to cultivate an architecture that provides an array of nurturing and invigorating experiential and exploratory moments harmoniously placed throughout the natural landscape.

Through this reintroduction to experience, the individuals attending the retreat will be engulfed in experiencing the moment and living each breath of sensation. For meditation is the existence in contemplation, relaxation and mental hygiene that provides the platform, the vessel for self-exploration and internal growth. Here the architecture becomes the marbles in the landscape, nestled into the site located in Mountain Park in Holyoke, Ma.

"Come experience life, and energize your body and mind"

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CHAPTER I

PROPOSAL

1.1 Architecture and Experience

A great architect, Le Corbusier, put a great perspective on how people experience the environment around us, "man looks at the creation of architecture with his eyes, which are 5 feet 6 inches from the ground" (Pallasmaa pg. 27). It is from here we think, we feel, and we live. By exposing oneself to environments devised to invigorate the body and stimulate the mind, one learns the ability to find beauty, compassion and peace in any place and any time.

Humans sculpt the earth, modify its raw materials and construct the built environment. Though-out life, people constantly neglect to pause, look, listen and extract any of the wonderful nuances, phenomenon and experiences that pass by every breath. Life is so rich; full of sensation, aroma, light, sound, compassion, and connection, the body has carefully calibrated very unique and specialized adaptations contrived to capture and perceive the details of the world around us. This thesis project investigates the significance of experience, the senses, light, nature, texture and material and their influences on the built environment, and the people who inhabit it. Pallasmaa describes one view of how the individual experiences architecture, and how it affects them:

> *Every touching experience of architecture is multisensory; qualities of space, matter and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton and muscle. Architecture strengthens the existential experience, one's sense of being in the world, and this is essentially a strengthened experience of self. Instead of mere vision, or the five classical senses, architecture involves several realms of sensory experience, which interact and fuse into each other. ((Jay pg. 6) from Pallasmaa 41(82))*

It is through these experiences that we learn, interact, think, and plan out our daily lives, the experiences we have become part who we are individually and socially. It is through this understanding of the space around us, our environments, the moments we spend throughout each day: thinking, reading, dreaming, working, eating, etc. that gives us a sense of the world; Who we are, and where we fit in. the built environment is the most common place to find people, the architecture new and old that litters the earth in thousands of different varieties. Pallasmaa spent time analyzing the interaction between people and their environments, and how they affected one another. "The perception and experience of architectural form has been most frequently analyzed through the gestalt laws of visual perception. Pallasama 27)" it is through this culturally dominate sense that we remember and associate with. It is less common to be evoked by a sense of smell or the feel of something familiar, although we may be able to assimilate with these examples it is still often associated with visual confirmation, that we smell what we think we smell or we are touching what we think we are. "Our sense of where we are is continually being created and re-created in our brain, depending on current conditions and on our memories of what went on there." (Sternberg 15) The way we experience the world is through our senses, by taking in the moment and processing that information. If we can produce an architecture that promotes positive, enjoyable, unique, memorable and creative experiences that will have positive effects on the occupant, we can successfully change an ever moving object: people, with a static one, Architecture.

> *The timeless task of architecture is to create embodied and lived existential metaphors that concretize and structure our being in the world. Architecture reflects, materializes, and eternalizes ideas and images of ideal life.'... 'Architecture enables us to perceive and understand the dialects of permanence and change, to settle ourselves in the world, and to place ourselves in the continuum of culture and time' (Pallasmaa 71)*

Architecture allows humans to domesticate a portion of limitless space and enables us to inhabit it. These built environments deserve a level of vibrancy as rich as the natural materials of the earth. Movement and light choreographed with the movement of the sun and the stars; across wood and stone, water and earth, we feel the energy of climate around us, taste the air and smile at the tingle of a familiar aroma, the calming rustle of the leaves in the trees play the bass line to the songbirds solo, this is how we live. These sensations define our earthly experiences and fulfill our existence, become part of us and influence who we are, how we feel and what we think. Architecture could expand, capture, enhance, or amplify the multitude of experiences available to us in the natural world. *Anthropologist Ashley Montagu writes:*

> *"we in the western world are beginning to discover our neglected senses. This growing awareness represents something of an overdue insurgency against the painful deprivation of sensory experience we have suffered in our technological world" (Pallasmaa 37)*

Architecture needs to be re-sensualized, injected with natural materiality and choreographed light; driven to provoke thought in the user, inspire memorable experience and challenge their bodies perception and intuition of how a building should look, work and feel. Humans are part of the environment; we classify, organize, label and define our rank amongst other being as well as each other. The human body resides at the center of this experiential world; surrounded by an integrated network of systems that we too are made up of; we experience our environment with our whole body all at once, constantly interacting with our surroundings and redefining our existence. Pallasmaa elaborates that "The percept of the body and the image of the world turn into one single continuous existential experience; there is no body separate from its domicile in space, and there is no

space unrelated to the unconscious image of the perceiving self." (Pallasmaa 40) We view life from a continuous slide show of information running constantly even when we are sleeping. This lifelong movie of time and space, can be calmed, collected and organized to better sustain a healthy and fulfilling lifestyle, architecture can be the catalyst to change the individuals perspective on who they are and how they exist in the realms of mind, body and soul.

Minor adjustments to design thinking, shifts in the paradigm of architecture, could benefit the environment, social structure and phenomological experience and how we create and use it. Within the industry, the implication of design decisions and the effects it has on the occupants is paramount. 'Architecture represents and structure action and power, societal and cultural order, interaction and separation, identity and memory, it is engaged with the fundamental existential questions.' (Pallasmaa 72) This connection Pallasmaa draws with architecture the senses and our behavior in the environment becomes an integrated existentialist self-identity. He argues that at any given time the environment defines the individuals identity within the space, in that moment in time, in that place, the experience and sensuality of the space becomes the ingredients of our very existence. (Pallasmaa 72)

In her book *Behavioral Architecture*, Clovis Heimsmath notes that "owners will ask that architects design what is economically sound, socially useful, aesthetically pleasing or some combination thereof. Regulatory agencies will control, though a series of prohibitions or incentives, the physical health and safety of the building. Architects will design within accepted norms of the profession and the aspirations of the community as a whole as they perceive them." (Heimsath 26) The experiences created within the built environment are

designed by the architect, there is no governing agency for joy and comfort, no one to say soft chairs are better than hard, or wood is more sustainable than concrete the architect must devise the experience, plan for feeling and thought and admiration. The results are instead regular, predictable, and cheap; making costly decisions that implores money takes precedent, and the experience…. often there is none.

In order to change the way we think about built space and its effect on its inhabitants, the change must happen at the top, with designers and developers who create the places we live in and around. Pallasmaa writes, "One's sense of reality is strengthened and articulated by this constant interaction (people and the environment). Architecture is essentially an extension of nature into the man-made realm, providing the ground for perception and the horizon of experiencing and understanding the world." "Architecture also gives a conceptual and material structure to societal institutions, as well as to the conditions of daily life" (Pallasmaa 41) During design, taking time to understand the detailed interactions between space and individual, the thoughts those individuals have about those spaces and what they perceive as solutions to better make their daily interaction better. The bottom line of design should be to facilitate function while creating experience.

We need to remind ourselves as designers why we design in the first place. Shashi Caan argues that a designer's purpose is "to improve the human condition and provide ourselves with a measure of physiological and psychological comfort." (caan 9) in her book *Rethinking Design and Interiors.* She describes the industry as having a lack of personal touch, a disconnection from the human experience, and a built from the outside in perspective of the field of architecture. She poses many questions about the innate needs of

a human being, the history of our first interiors, "the cave," and how we began to decorate them. She elaborates to describe this design for well-being; developing interior spaces to interact with the psyche, the senses and emotion.

> *"Even as the profession continues to develop its even-higher standards for the environment footprint of interiors _ through its demand for non-toxic, healthy material- it has yet to dig deep into the research on behavior and feeling, comfort and experience." (Caan 6)*

Humans spend so much time indoors, yet when we create a structure the most important component, where designers spend the most money is on the outside. Holding more importance for the passerby than the occupant who lives, works or plays within. How do people interact with their environments? What is important to the individual in the building and what necessities do that have, better yet what desires do they have? A window, fresh air, clean environments, fewer chemicals, better light, less noise, all of these things can drastically impact how someone feels and performs. Aesthetics are important, but what other changes can we make to buildings in order to affect the people that reside within them. How can we enrich the experience or choreograph a sequence in someone's day? Color, texture, sound, light, taste, smell and many other sensory receptors allow us to experience the world in an individual way. Why not design buildings for that experience, one that can make you feel?

I strive to discern how the built environment can evoke positive effects on the inhabitant's physical, psychological and behavioral needs, while providing sensory and experiential spaces aimed to stimulate the mind, activate the body and touch the soul. Through natural influences of form, materiality, texture, biometrics, color, light, temperature, sound and even taste in order to offer relief and rehabilitate the senses from

their daily stupor. This project strives to transform the individual and their perception of the world with connection, compassion and love for life, as it exists in any one moment.

1.2 Light and the Seasons

An important component to how humans perceive the world is light. In the best cases sunlight, the building block for life on this planet (along with water), it provides warmth, grows food, and exposes the body to color, texture, terrain and the animals we live amongst. In order to understand how we interpret the environment, first there must be an understanding of our environment, its light and the seasons that change it all. Building a project in the New England region of the United States, allows the opportunity to experience all four distinct seasons "In great architectural spaces, there is a constant, deep breathing of shadow and light; shadow inhales and illumination exhales light." (Pallasmaa 47)

Famous architect Le Corbusier describes light as a unifying identifier of the built environment, "architecture is the masterly, correct and magnificent play of masses brought together in light." (Pallasmaa 27) Without light, humans could only touch and feel their way around buildings. They would concentrate design on the interior and all the places you touch with your body. This idea of designing for other senses, creating joy and laughter with touch and sound, provokes the designer to think in a different way. By understanding the environment and how our body perceives it with all of the sense, we can begin to highlight the richest moments, ones of positivity, compassion and wonderment (just to name a few).

Each day of the year is different; there is a cyclical pattern, a rhythm of the world

that allows seasonal changes to be enjoyed, because we've experienced it before. The relative predictability of the seasons, position of the sun and even the climate has made it possible to cultivate the earth in order to sustain our society for thousands of years. This analysis of the environment will provide individuals with the tools to understand how our world works, and how the human race fits in to the millions of systems that we are surrounded by. The goal is to fit in, become part of the ecosystem, part of the environment, and act as such. The human race easily elevates its-self above all else, but we can find a way to create symbiotic relationships with our environment, provide for others, give back and flourish not only as a species but as individuals as well. As humans monitor the seasons, the climate, light, vegetation, animals and all else that goes along with it, the changing of seasons changes something within us a feeling, an outlook, a preparation, a habit. Like all other beings on this earth we have found a way to live and survive in extreme climates, by understanding the energy from the sun and the patterns of the world. The people of earth have gained the knowledge to prepare built environments for the comfort and enjoyment of the individual and collective, brought to you daily by the light of the sun.

Without light humans cannot see. Without the energy from the sun humans would perish. This celestial relationship, an annual dance, gives the world the rhythm humans need to thrive. Humans experience the energy from the sun both as light and heat, but when we encounter this energy it takes a wide variety of shapes, qualities and intensities. This project attempts to collect, filter and organize light in the built environment in order to activate space, illuminate experience and warm the body and soul. The build environment is our specialized tool, a sculpture of earthen materials devised to shelter, but it can be more. With each of the changing seasons, the light experience changes, mapping

and controlling these changes in climate produces opportunity to create more naturally comfortable and interesting spaces. The dichotomy of light and dark plays a substantial role in how people navigate the earth, how they think about it and their actions within it. Too much light can leave the individual feeling exposed, blinded and overwhelmed, the alternative darkness, may leave one, stranded, cold and alone. Pallasmaa describes the gradation of light and how it affects the individual. "An efficient method of mental torture is the use of a constantly high level of illumination that leaves no space for mental withdrawal or privacy; even the dark interiority of self is exposed and violated." (Pallasmaa 49) By understanding how people perceive light and how it affects them, designers have the ability to utilize that information to their advantage by designing spaces for the occupant, the task and the environment. Understanding the changes inside and outside of the four walls humans live in, will allow architecture to discover new formulations of space designed for the light of the seasons.

1.3 Built Environment and Occupant

Humans have developed, copied, modified, invented, exploited and organized just about everything the earth has to offer. We have learned from our experiences through our senses how the world works in cycles, loops, and a give-and-take relationship of the beings on this earth. This symbiosis of our body with the environment is a constant defining role of our existence and our perception of it. Edward T. Hall describes the interaction between organisms and their environments by highlighting a thread of dependency on redundant behaviors; 'man himself is also programmed by culture in a massively redundant way. If he weren't, man could not talk or interact at all; it would take to long.' (Hall 102) To approach

a common daily situation like driving a car as an entirely new experience without prior knowledge of how to operate the car or the rules of the road would render our society helpless. Learning speak each morning without the recollection of the past days words, a memory bank of experience to build upon, we would live the same first day over and over. It is the development of the memory, of learning, of cognition that allows us to begin to understand the environments in which we are a part. With the rigor of consistency and understanding in structure, hierarchy, organization, movement, language, and culture; our relationship to and perception of this space we design can be driven to awaken the body to its existence in the moment.

Hall continues to elaborate on the human condition, and the orientation of people in place, "Mans feeling about being properly oriented in space runs deep. Such knowledge is ultimately linked to survival and sanity. To be disoriented in space is to be psychotic." (Hall 105) He illustrates that when we extend ourselves into a place of unfamiliarity, chaos, and disorientation, the mental connection with reality and the "norm" of society is broken and we can no longer determine where our place is in space. There are many things that people need to survive: food, water, clothing and shelter; some would even argue energy, health, and sanitation amongst others. If the basic needs are not met and we cannot find time to rest our mind and body, the quality of life deteriorates and the individual will have a difficult time fighting for survival. The build environment aims to meet these basic needs, and provide a healthy, nurturing and recognizable environment for people to live, work and grow.

Today the build environment is often sterile, monotonous, oppressive, obsolete and even frightening. The dark, cold alleyways between large multi-story buildings or insipid

offices of cubicles and drop ceilings condemn the human spirit and digress society into endless lackluster doldrums from which crime, pain and suffering emerge. We continue to inhabit and design emotionless and expressionless architecture that breaks down our minds and dulls our connection with our self, each other and the natural environment we are a part of. The culprit for most buildings lack of experience, life and character often is defined by economic restraints and little emphasis of the human quality of life in the space. Designers and owners commiserate to squeeze every square foot of space out of every dollar, neglecting to assure the conditions for the people working, living or otherwise occupying the structure and provide a positive and healthy environment where individuals can feel connection, belonging and purpose.

In order to consider the individual and comprehend the task at hand, designers must understand how places make people feel, what attributes of a place are beneficial and why people are comfortable, mentally and physically. Sternberg notes "Implicit in an understanding of the mind-body connection is an assumption that physical places that set the mind at ease can contribute to well-being, and those that trouble the emotions might foster illness. " (Sternberg 10) By developing a language of positive, comfortable and healthy spaces, designers can begin to supplement the built environment with places designed for the people, what they see, touch, taste and smell, as well as how they think and feel could be the most powerful set of design skills to date.

With today's technology we have the ability to clearly map, dissect, analyze and monitor all parts of the brain; "we can see how different parts of the brain work together, how the centers that produce and control our emotions interact with those parts that create thought and memory. With the modern techniques of biochemistry, cell biology, and

molecular biology we can piece together how the elements of the world around us, which we perceive through our senses, can trigger different areas of the brain in order to generate feelings of awe or fear or peace and comfort." (Sternberg 14) This detailed scientific information would be essential in the movement for designing cognitive spaces for people to not only thrive physically and mentally, but also enjoy. If we can live in an environment supportive and evoking of well-being, it's easy to see how far that would go in making the world a better place to live.

Majority of people in the United States own or rent a home; throughout the year we travel from place to place, building to building carrying out our function in society. The Environmental Protection Agency says that on average Americans spend 90% of their days indoors, making it difficult to receive the mental, physical and emotional benefits from connecting with nature. Corwin Bennett argues for a better life living outdoors in his book *Spaces for People: Human Factors in Design*, he describes "We do most of our living indoors. If we are poisoned by air contamination or deafened by noise it's most likely to happen indoors." – (Corwin Bennett 56)

Reconnecting people with the environment, giving them the opportunity, direction and focus to concentrate on their discovering their place in the universe, and allowing their bodies to harvest sensation from the moment. It's possible to break through the four walls people have built around themselves, experience the world the way it was supposed to be experienced, toes in the grass and hands in the dirt. Increasing ones connection to the environment outside is great step in getting people to reconnect to nature, the ecosystem and the living things surrounding them. Yet, it can be experienced further, by injecting the interior, the built environment with natural materials, natural sunlight, and organizing

spaces to align with the feeling of the natural environment; the development of architectonic form could prove to provide a method of bringing the outdoors in, while still providing a healthy clean, functional and connected space.

1.4 Yoga and Meditation

This thinking informs the thesis program: a community resource that promotes and fosters positivity, physical and mental well-being extracting nature to promote the experience of the individual. The benefits of nature and sensory, experiential architecture can provide resources for those individuals that struggle with balance and meaning in their lives. A place to explore, manage, share and discover more about themselves and the world they are a part of would be a powerful opportunity. This is a place where one learns to quiet the mind, relieve stress, empower compassion all while giving visitors an opportunity to perceive with new eyes the ever-changing environment.

CHAPTER 2

THEORY

2.1 Humans and Nature

Nature, a term used to describe the material environment that surrounds human kind. This universe that surrounds this planet, full of all of its natural things: mountains, trees, animals, rock and air makes up the very fabric of earth that human beings are woven into. Human beings own, protect, interact, harvest, pollute and change the very ecosystem that we are made from. A place so rich with life, texture, sound and material that it captivates us all. It enlivens us, purges mental stress, exposes you to rich vitamin D from the sun, clean air and activates our senses, awareness and brain activity. It is a thing we are connected too, a thing we take for granted. Nature and humans have existed side by side for thousands of years and we are just now coming to understand the impact we have on the planet. By reconnecting people with their environment, take a minute to look and listen, exercise the body and the mind in order to gain new perspective on being-well.

In the past, humankind's very survival depended on understanding and feeling our connection with nature. We relied on plants for our medicine, used the stars to navigate and ate only what we needed to survive. With today's technological advances, we have the ability to produce, pack, transport and distribute goods around the world. Making has become the job of machines, the human task of hunting, gathering, growing, collecting, and hand manufacturing all of the goods we needed to survive has long since passed in many cultures and certainly has here in the United States. By severing our direct connection to the environment by living "in" nature, we have abandoned this bond with the ecosystem that we work so hard to separate ourselves from: the heat, the cold, the rain, and the snow

etc. Each environment poses different challenges for the occupant and each season within that climate varies one month to the next.

These unique site conditions at require the designer to extract information from the site and local environment in order to integrate construction and performance. Some of the early modifications to our environments developed into the building conventions we have today. We change the space around us first to satisfy our basic needs, now we modify space for an innumerable amount of functions with a world of shapes and materials. All of the spaces we create are a response to the natural environment in that place. The people play a part here too, a differentiation of cultures and religions that organize how people use and organize their selves in the environment in which they live. For thousands of years people have built a new environment to occupy, further separating the interaction between the natural environments and our new found synthetic one.

Humans build sophisticated buildings: mechanized, energized and purified interiors that often differ greatly from what we find outside. Architecture has built an escape from nature, a bubble from which we can barely see out. This project attempts to assimilate the interior with the natural environment by evoking positive thoughts, feelings and emotions, by stimulating the brain and activating the senses. The visitors will combine social interaction, personal growth, community function and environmental connection to better care for them-selves and the people around them. The built environment does not have to sever ties to the natural environment, the opportunity to reconnect people with the moments in nature that are unique to that moment in that place, wherever that may be is inspiring. This thesis will facilitate a retreat for individuals to care for themselves, care for one another and care for the environment they live in. By extrapolating strains of

knowledge from psychology, neuroscience, sociology, biology, ecology, and anthropology, the summation is palpable, a space that performs functions we never before thought possible. This architecture in nature would play an exciting role in changing people's perspective of space and improving health and well-being for not only the body but also the mind.

2.2 Evolution of Built Environment

Attempting to define the origin of the interior and the built environment, we must examine the anthropological history of the human race for clues to how we devised the methods of living we have today. Design, as author and architect Shashi Caan saw it, has evolved from only finding appropriate solutions to problems by connecting with our deep innate nature to create, through imagination, and means of human betterment. There is nothing that we encounter that is devoid of design; applicable even to the natural world, although the line there is more interesting seeing as though the design is by devised by mutation, evolution and natural selection.(Caan 13) As we gain an understanding of the environment around us, we can begin to make conscious modifications in order to benefit ourselves and increase our chances of survival.

According to Caan, the presence of design dates back to cave dwellings, a realization of a need for shelter in the nomadic foraging age of human evolution. This first interior evolved for safety and security, allowing protection from harm and freedom, from anxiety and doubt. Many other functions came from shelter, the settlement and belonging that came with returning to a constant location allowed people to gather and collect goods, hunt and store food and materials throughout the year allowing humans to flourish. Even

further the development process gave rise to tools, art, agriculture, and eventually machines, electronics and the global network we have today. The reduction of design to the primitive example of the cave allows the recognition of the essential needs of design allows us to more clearly identify the importance of design and how to proceed in the future. (Caan 11) Edward T. Hall describes his four divisions of space among humans: the first space is intimate space, second is the personal, third is the social and the fourth is the public. (Hall 114) These divisions of people's perception of their interactions with others, governs how we move about space, interact with other individuals and as groups. These uses and facilitating for them is the basis for our evolution of space: as time progressed we discovered more efficient ways of arranging ourselves and our spaces in order to function better as an individual and a collective.

Shelter has evolved in our culture beyond the building. As the design of the shelter grew, through trial and error, we have discovered that today we can barely survive without the aid of shelter and clothing. These two buffer zones or transition zones between the body and the environment have been designed and perfected to accomplish the primary goal and so much more. Shelter usually remains stationary and our clothing we have devised as a traveling way to shield ourselves for the trials of nature. Shashi Caan described "in order to realize environments that meet the full spectrum of our needs, the design profession must first develop a scientific understanding of the human mind and environmental aesthetics" (caan 32) Her in-depth understanding of people, who they are and what they need to survive, gave her the ability to create architecture passionate for the inhibitor, By simultaneously designing for the body and the mind. She elaborated to say:

> *"Design must find balance between the issues that technology and modern society have created while honoring primal desires, between the external world and the inner*

self, and between function and beauty. Good design is the result of a process that emerges from inside us and gives shape to what is around us" (Caan 37)

Caans insight into the boundaries of design and how it has shaped the built environment are opposite of what we might first think. Designing from the inside out, revolving around the occupant and not the passerby , sheds new light on the object of the built environment. The origin of design tells us its purist purpose, the core value of the built environment, and although simple at first there was beauty in the pure functionality of creating space. By reviewing the relationship between people and space it creates the foundation for designers to move forward with creating a new built environment needed in order to create a more connected, natural, healthy and sustainable environment for which people will live, work, sleep, laugh and play.

Space, its existence and our relationship to it, has been pondered for centuries. Plato described geometry as being the science of space; Aristotle described space as the sum of all places, a dynamic field with directions and qualities. Lucretius and Kan evaluated that there are bodies and there is emptiness in which bodies have their place, where they move. (Norberg-Schultz 37) Each theorist elaborated beyond their predecessors to expand further how we understood our cognition of the perceptual space surrounding us and how we relate ourselves to it.

The perception of space, according to Norberg-Schultz, is the sum of his motivations and past experiences, a person responds in a particular way to a situation. The same road experienced by a person in a car would be different that someone walking or on a bike, as well as someone in a different car. Regardless which mode of travel is used or the individual perceiving space, the physical space in question is "constant" around those that perceive it. Although we call this space "constant" we know that the natural world is not

still; the spaces we inhabit are constantly changing, in light, temperature, pressure, sounds, etc. we perceive first with our bodies through our senses and our mind further analyzes this information comparing the current environment with past experiences, memories, emotions and it is able to fill in the gaps of what we don't understand, to predict the cause, effect, and potential future of any given situation in any environment. The subconscious formulations and comparisons we conduct on a daily basis, create and influence the thoughts, biases, feelings, choices and perceptions that we encounter on a daily basis and sometimes multiple at one time. How we perceive the spaces we inhabit is a bridge between the human and his or her environment; our connection to space is more than physical, it resides deeper on a mental and spiritual level.

Hall's levels of a human's space starting with the intimate is broken into two categories: intimate distance – close phase and far phase. The close phase regards intimate contact, wrestling, comforting and protecting, both individuals have reduced distance receptors, as well as a decrease in voluntary vocalizations. The far phase reaches a distance of 6-18 inches. Voice levels are still low with people being at this distance, heat and odor of the other individual can be detected however vision is somewhat obscured as we eventually go "cross-eyed" as the subject moves closer. Many people feel uncomfortable with people this close in a public setting, often leading to altercations, intimate contact spheres are not to be experienced in public space. (Hall 117-118)

Hediger, as Hall describes, devised personal distance to designate distances consistently separation the members of non-contact species. Here too Hall divides the personal distance bubble into two parts, the close phase and far phase. This expands the close phase of personal space from 18-30 inches. (Hall 119) This distance is partially

comprised of the expanse of the extremities and their range of grasping and interacting with their immediate environment. There is no longer visual distortion present and vocalization can occur normally. This level also allows us to differentiate the people who we allow within the inner circle of our personal space like children, loved-ones, spouses or partners. For an outsider to enter this space would be alarming, the far phase of personal space expands the bubble even further between 30-48 inches. This is what we refer to as keeping people at an "arms-length;" visual, auditory and physical cues can be transferred easily without the encroachment on one another. (Hall 120) these personal distances effect how we arrange our spaces and the volume of space each activity requires also depends on quantity of individuals that need to occupy the space with not only their body but also their personal space.

Hall describes social space as the boundary line between personal distance and the close phase of social distance marks that outline the "Limit of domination". This limit is breached when someone poses a threat to survival by entering another's personal space. The social space again is divided into close phase and far phase. The close phase inhabiting the 4-7 foot range, impersonal business occurs at this distance, in fact most of the interaction in the social space occurs in this range. (Hall 121) The far phase of the social space expands further, occurring within 7-12 foot range. At this distance voice levels are noticeably louder and the ability to focus on minute details in the physical appearance of other individuals diminished. In this space we tend to use as an insulator from society, communication from individuals outside this screening system can be dismissed if the receiver chooses to ignore the communicator. (Hall 123)

Public distance at close phase is 12-25 feet from the individual. At this distance the

voice gets very loud but not yet at full volume, fine details of the physical details are no longer visible. Some individual to group speaking may occur with minimal sound enhancement at this stage. Greater still is the far phase, extending our perception greater than 25 feet. Everything must be exemplified in order to communicate at this distance, gestures and body position become more useful than other auditory and visual cues. At these great distances little interaction occurs with individuals unless there is extreme urgency or emergency, you at times see people speaking to large groups at this distance however amplification of the voice is necessary. (Hall 125)

With an understanding of how people perceive space on a social level and how humans are comfortable interacting with each other we will be able to plan adequately for the development of the personal experience of the individual within architecture. By defining spaces for different levels of interaction there will be the potential for individual experiences as well as group experiences. Defining layers of comfort and specific spaces for an individual vs. a group will allow the person to spend time reflecting internally while also participating communally.

The first shelter eventually became portable and buildable in many different shapes styles and arrangements depending on cultural, social and climate driven design. Caan describes the work of Sir Banister Fletcher in his book *A History of Architecture* (1986)

> "The distinctive drawn between a mere building and a work of architecture is now orthodox. But in rejecting early forms of shelter, whether building, hut, or cave this view overlooks the fact that the design originated before the advent of building or art in architecture. Art and utility were one. The cave was painted before it was "rebuilt" and filled with the tools and objects that supported living"(24)

By introducing art to the cave, humans began to modify and changing the place where they resided. Whether their motive be to mark territory, convey messages, or just for adornment, the cave dwelling was a large step in the development of shelter as we know it today. When discussing the origins of dwelling, and its implications to today's design, Caan was particularly interested in the conversation of art and aesthetics, especially during early cave dwelling. Caan describes "a need for physical control and sensory delight to exist simultaneously; one is necessary for the expression of the other. The need for individualization, expression, experience and art in design is essential to a successful space; one that evokes thought, feeling and emotion. As the built environment develops with space, art and function we can examine the fundamental issues that it address and extract the initial purpose of design." (CAAN 34) This relationship between senses and the successful built environment is intriguing. By incorporating personal expression, sensation and experience the individual can mold the dwelling into something more, something personal, and connected.

Many primitive establishments were organized around the fire. The fire became the center of the built environment, then radiated outward. These early home typologies attempted to solve the dark, cold, wet and draughty cave and provide protection from the elements out in the flat lands where agriculture and hunting was more practical. The division of space within the dwelling, began in the cave, with evidence of the first separations of spaces with rooms being for sleeping, cooking and storage. This precedent of space was transplanted from the bedrock establishment to the new typologies of buildings. In order to understand how humans began to design, Caan thought "…Design springs from the experience of space. Continuing to view designed environments we inhabit in the terms

of style and form alone, almost devoid of human occupation (as depicted in so much contemporary photography) narrows the understanding of design." (25) By using the cave as a precedent, early humans began to design for function and separating space from the environment to call their own.

Later civilizations built on this power to change the built environment and push the paradigm of creating spaces beyond four walls to create an architecture that invigorates all senses and evokes the experience and interaction with the space, materials and people within the environment. This kind of rich interactivity would not only stimulate senses and arouse awareness but could also positively affect the mental, physical and emotional health of the individuals who experience varying spaces of light, heat, smell, sound, material, proximity, occupancy and comfort. Choosing combinations of these elements (among others) to create an interior or exterior environment indicative of the use for that space.

All communities are different and all designs have innumerable factors that influence them, but if we can concentrate on how at a human scale we can experience our designs, we can begin to see how the end user is going to inhabit the space, and what it is going to feel like to be a stranger in a new place. We need to fuel our desires for design by getting a comprehensive understanding not only the physical systems and networks within the site but the social and community influences as well.

What is the building's role in all of this? Can the building affect the people as well as the environment that it resides in? I think's architecture has the ability to connect the people with the environment while also evoking comfort, pleasure and happiness; whether it is by color, sound, space, or texture. Once we have defined what a place looks and feels like how to we fill it with people and their behaviors? I think it's impossible to plan for

everything, so then the question becomes what is most important, what has the greatest effect on a person, positive or negative. What are the thresholds for things we cannot live without, and what combination provides the best environment for comfort, healing and support for when we need it most and when we don't even know it's there.

By returning to the core of design devoid of economical and fiscal restraints, we must design for the people and design to improve the built environment so that it can affect our experience, mood, psyche, health, awareness, or any other number of influential factors that affect our overall well-being in a given day. Pallasmaa thought "The authenticity of architectural experience is grounded in the tectonic language of building and the comprehensibility of the act of construction to the senses. We behold, touch, listen, and measure the world with our entire bodily existence, and the experimental world becomes organized and articulated around the center of the body." (Pallasmaa 64) If the places we inhabit, reside, work, play and shop are all positively experiential, then the morale and health of the population rises. Designing more than the sterile, mundane and predictable environments that we often encounter in the built environment will invigorate senses and expand the experience of life.

2.3 Senses

In order to understand humans, we must define the receptor systems and how the information is received and then how it is modified by culture. Hall devises two categories of human sensory apparatus: firstly, the distance receptors – those concerned with examining objects at a distance (the eyes, the ears and the nose), secondly the immediate receptors – those used to examine the world up close (touch, skin, membranes and muscles). (Hall 41) In order to understand how each of these receptors effects the individual we must examine the origin and intricacies of each.

We begin experiencing the world from the womb. 'The womb is an optimal, interactive environment for human development. Activity never ceases and the fetus is never isolated. Touch, the first sense, is the cornerstone of human experience and communication, beginning in the womb' (Chamberlin) As early as eight weeks after gestation our sensitivity to touch manifests in a set of protective movements. In the following succession of weeks, sensitivity spreads quickly to the genital area, then our palms, and then the soles of our feet' 'these areas in adults are the ones that have the greatest number and variety of sensory receptors in adults.' (Chamberlin) Fetal development through to week ten involves movement, stretching, coordination of limbs; opening and swallowing are all present. Evoked movements such as coughs or laughs are stimulating at around 15 weeks after gestation. Before we can see, we experience the world through our immediate receptors, our sense of touch.

2.3.1. Touch

All senses, including vision, can be regarded as extensions of the sense of touch- as specialists of the skin. They define the interface between the skin and the environment- between opaque interiority of the body and the exteriority of the world. (Pallasmaa 42)

The sense of touch has been with us since our creation, we store experiential contact of our body's interactions with the environment. These receptors acquire definitions of materiality, temperature, scale, texture, moisture, movement, etc. and compile mental libraries of these interactions, it's how we learn, grown and understand our world. 18th-century Irish philosopher George Berkeley related touch with vision and assumed that visual apprehension of materiality, distance, and spatial depth would not be possible at all without the cooperation of haptic memory. (Pallasmaa 42) Without a memory of references to these climactic and environmental properties, we would not be able to predict how different spaces might feel and what environmental qualities the space might possess.

Pallasmaa offers an example of experience with the sense of touch "during over-powering emotional experiences, we tend to close off the distance sense of vision; we close the eyes when dreaming, listening to music or caressing a loved one. Deep shadows and darkness are essential, because they dim the sharpness of vision, make depth and distance ambiguous, and invite unconscious peripheral vision and tactile fantasy." (Pallasmaa 46) by limiting other senses one is able to process the concentrated sense more easily instead of processing multiple receptors at once. The mind is able to modulate the sensory receptors in order to achieve a heightened state of awareness in a specific area.

The skin reads texture, weight, density, and temperature of matter. (Pallasmaa 56) The surfaces of objects most often come into contact with the hand; this is our finite sensory receptor to evaluate our environment. Throughout the course of the day however, many different parts of our bodies come into contact with many different surfaces, textures, materials, and orientation and positions. Humans find comfort in the familiarity of things, the feel of an object, a memory and muscle reflex that we compare our current experience with objects to past experience with similar objects (or sometimes ones not so similar). Like the memory smell evokes, touch also can recall feelings and emotions of past experience.

Another function of the haptic sense is the foot's measure of gravity. Through the foot we also trace density and moisture levels in the ground, and extract information of texture and materiality of the surfaces below us. (Pallasmaa 59) An experience we often neglect is the pleasure of walking about our environment barefoot, surveying and experiencing the details of the environment through our natural receptors. Walking on a sandy beach, through a grassy lawn, across warm rocks basking in the sun, this information we receive through our feet has been muted for most of our daily routine by our many specialized versions of footwear. Although footwear and clothing does enable human's exploration of harsher environments and specialized activities, it undoubtedly lessens the total body experience of day-to-day sensation as we were meant to experience the environment.

2.3.2. Sound

The next sensory organ to develop is that of hearing sound. Pallasmaa describes this sensory innovation of the human body, and how it affects our perception of the environment; “Hearing structures and articulates the experience and understanding of space. We are not normally aware of the significance of hearing in spatial experience, although sound often provides the temporal continuum in which visual impressions are embedded” (Pallasmaa 49) By extending our senses beyond our immediate reach, we are able to better survive danger, find food, and survey our environment.

The development of our sense of sound is intertwined with that of touch while in the womb, the amniotic fluid provides a liquid medium for sound to travel through, slightly different that the air we hear sound through. “Many studies confirm that voices reach the womb, rather than being overwhelmed by the background noise created by the mother and the placenta. An intonation pattern of pitch, stress, and rhythm as well as music, reaches the fetus without significant distortion.” (chamberlain – web) evidence of behavioral responses in fetuses at sixteen weeks after gestation was recorded in a study in Belfast, meaning that the baby can begin to hear eight weeks before its ear is structurally complete at twenty four weeks after gestation. (chamberlain – web) These early sensory developments allow additional communication between individuals that goes beyond the touch, giving our society and environment another level of complexity and beauty.

Like touch, our sense of sound allows us to incorporate ourselves into the environment and provides an omni-directional compass that alerts the body to a further sense of space and surroundings. Sound allows our body to receive feedback from our environment from great distances, depending on the object and filters between the source

and the individual. The ear is very efficient in distances up to 20 feet, at about 100 feet, one way vocal communication is possible, beyond that distance auditory cues with which man works begin to break down rapidly. (Hall 42) This sense beyond touch allows our body to experience a much larger environment than that in our immediate range of touch, together with sight, sound is able to locate and confirm the locations of objects or sounds at much greater distance and precision than we could ever achieve with touch.

It is easy to imagine an experience where a soothing sound overcame all other senses and filled your mind with pleasure and delight. Pallasmaa offers his experience with sound, "anyone who has become entranced by the sound of dripping water in the darkness of a ruin can attest to the extraordinary capacity of the ear to carve a volume into the void of darkness. The space traced by the ear in the darkness becomes a cavity sculpted directly in the interior of the mind." (Pallasmaa 50) The importance of sound, rings loud and clear, as we begin to add more complexity to the human sensory organs, it is clear that each has a purpose and together in conjunction with one another they make sense of the world we live in.

Pallasmaa goes on to say "Every building or space has its characteristic sound of intimacy or monumentality, invitation or rejection, hospitality or hostility. A space is understood and appreciated through its echo as much as through its visual shape, but acoustic percept usually remains as an unconscious background experience." (Pallasmaa 50) This constant background experience creates a feedback loop with our body and its immediate environment, this "echo" positioning and subconscious spatial mapping is our gauge on the size, texture, objects and avenues are in any given space. 'The most essential auditory experience created by architecture is tranquility' describes Pallasmaa ' ultimately,

architecture is the art of petrified silence…a building becomes a museum of waiting, patient silence. ' (Pallasmaa 51) The imagery that Pallasmaa paints is not one of a cold, desolate architecture drained of all color, life and emotion, but a space full of life and energy, one that is warm and comforting, still yet experienced, frozen in the moment. The practice of connecting with a space can be amplified by the reduction of background noise, or mental suppression of ambient sound and by simply closing your eyes. By utilizing concentration, awareness and control of our body, thoughts and movements in and environment, and suppressing visually dominant sensory input, we can begin to reach levels of further appreciation for our immediate environment and its acoustic qualities.

Today we have modified and manipulated sound to takes on a variety of meaning in our culture, sirens and horns are abrupt alarming sounds that our memory recalls actions of caution, dispersion or a calling of attention, the ringing of church bells throughout a town symbolize community, connection and congregation, the applause at the end of a performance joins us with the collective.

2.3.3. Smell

The nose develops its sense of smell between 11 and 15 weeks after gestation. The multitude of chemical compounds that pass through the placenta to join the amniotic fluid, providing the fetus with tastes and odors. In one experiment, babies registered changes in fetal breathing and heart rate when the mothers drank coffee, caffeinated or decaffeinated. (Chamberlain)

Our sense of smell, one of the oldest and most basic methods of communication, is made up of analogous sensory cells in our nasal cavity. (Hall 46) The sense of smell can be so acute that it only needs eight molecules of the substance to trigger an impulse of smell, one of more than 10,000 different odors humans have identified. (Pallasmaa 54) Odors (particulate) in the air bond to specific sites on the olfactory receptors, carrying information to the olfactory bulb of the brain located above the nasal cavity and below the frontal lobe. This sense becomes a compass for orientation and relationship to objects in space; also providing an attunement to the direction of the wind in most mammals by way of a wet nose. (Barbara and Perliss 140) This acute sense often gets neglected in the built environment today, the natural environment is cleaned of all odors and aromas for clean sterile homes that may have the occasional cut flower or candle burning candle. By invigorating the brain with a sense of smell, designers can institute a recollection of memories, provoke interest, or inspire action.

In humans, females have the most acute sense of smell around time of ovulation, greater than the sense of smell in males. Also humans have been able to detect individuals that are blood-related kin (mothers/fathers and children) from olfaction, but not wives or partners. (Wiki – Olfaction) There have been clear links of smell to the emotional state of

other organisms, as well being a powerful agent in reproduction, sexual attraction and pheromones. (Hall 46) Our sense of smell is, of course, not limited to other humans; olfaction such as: coffee, spices, citrus fruits, clean laundry and flowers amongst others, can provide a richer sense of life… "a zest to daily living!" (Hall 50)

Olfaction would seem to be mostly extraneous to the formulation of spaces, and yet a careful reading of cognitive, perceptive, cultural, social, planning and anthropological phenomena would seem to indicate that odors are not only profoundly inherent components of places, but at times are essential to defining them. (Barbara and Perliss 13) Pallasmaa also finds that the sense of smell is "the most persistent memory of and space" (Pallasma 54) The mind may forget the images and retinal cues associated with the memory of a place or past experience, but we certainly can remember a distinct smell, the salt water air of the ocean or fresh lilac blossoms in the spring. When an aroma strikes us, its snaps us back to a place that we associate with that smell, it evokes us to feeling. A mental connection we have to our olfactory senses is our intimate interface between the smells and emotions of the places we are now, and the feelings and memories of places we have been. This placement in time and space gives us perspective on life and provides the trigger for further exploration of ones-self. Odor is a powerful vehicle for memory and as such penetrates into our deepest recollections evoking the emotion that a given scent had originally stimulated, bringing back to the surface pleasures or pains that invariably stir our feelings anew (Barbara and Perliss 14) Harnessing the energy potential of the olfactory senses we can activate and enrich the experience of the smeller and their environment by designing for our sense of smell.

The relationship between space and odor is influenced by a complex of odors; those of materials creating the space, of furnishings within it, and the activities occurring in the space over the course of time. (Barbara and Perliss 15) one identifying olfactory space is the garden. A well-arranged garden, according to Barbara and Perliss, is ' the definition of grand bouquet, composed of a particular combination of plant, tree and flower species, varying with the seasons and the arrangement of scent sources.' (Barbara and Perliss 56) Gardens provide healing for people all over the world, a connection to nature, stimulatory colors, aromas, sounds and even animals. Another olfactory experience that has burned its way into our lives is fire. Once primitive man grasped the importance of harnessing the power of the flame, for heat, cooking, light and a multitude of other uses. The distinct smell of smoke or a wood fire surely strikes up an emotion, memory or feeling in everyone. The sense of smell acts without forewarning; the individual has no chance to protect him/herself. (Barbara and Perliss 122) Olfaction does not have to pass the screening process to immediately drum up past emotions and experiences. Constructing the space, relationships, emotions, activities, aromas and much more about the event we associate the familiar smell to. Although we might not always be able to name the smell, we may be able to place where we recognize it from or at least assimilate with how it makes us feel. Olfactory knowledge can be applied to invigorate users of the built environment, leading them to a destination, creating a pause or changing the atmosphere, by incorporating aromatic materiality, flowers, trees and plants, fire, food and many other olfactory rich experiences.

2.3.4. Taste

During development in the womb a fetus begins to experience taste at 14 weeks after gestation. At this time the fetus shows a range of tastes are presented sweet, bitter, lactic, pyruvic and citric acids, amino acids, proteins and salts. (Chamberlain web)

The sense of taste allows us to determine further detail about our environment and the consumption of it. Pallasmaa describes "There is a subtle transference between tactile and taste experiences. Vision becomes transferred to taste as well; certain colors and delicate details evoke oral sensations'… 'our sensory experience of the world originates in the interior sensation of the mouth and the world tends to return to its origins" (Pallasmaa 59) As children we grab with our hands test with our mouth, seems like a simple system of exploration. In adulthood, humans use memory of past experience, visual cues, smells and touch to examine and decipher and object and whether or not the unidentified object is edible. If it doesn't match any prior sensory input stored in our memory, odds are we won't eat the foreign object, for fear of illness or death.

This sense can be taught to enjoy the many delicacies the world has to offer, by experimenting with a range of foods and drinks, we are able to experience further the cornucopia of nutrient rich natural substances the earth has to offer. By creating unique natural foods as well as some of the household favorites, there is the ability to further indulge the conscious in a memorable eating experience. A great sense of accomplishment is granted if the food is personally caught, or grown. By tending to and caring for our food, we are able to cultivate the desired results. Social events over food have become the norm in today's society, bringing together people and nourishing not only their bodies but their soul, is a great way to further elaborate on the sensory experiences the world has to offer.

2.3.5. Sight

The final sensory development of the human body is sight. Beyond the sensations of touch, taste, sound and smell, sight allows a detailed cataloging of objects, forms, animals, foods and people. This expansion in the visual realm utilizes light and reflection to give humans the ultimate understanding of their environment. Hall describes "The eye, an organ of color, distance and separation, 'the last and most specialized sense'." (Hall 42) With the evolution of sight, the world becomes navigable at a much faster pace, we are able to identify threats from a distance, as well as spot food and avoid weather and other dangers by identifying threats before they become threatening.

The development of sight, proves difficult to evaluate during gestation, however at time of birth, vision is perfectly focused from 8-12 inches (the distance of a mothers face when the infant is feeding) Newborns have impressive visual resources including acuity and contrast sensitivity, refraction and accommodation, spatial vision, binocular vision, distance and depth perception, color vision and sensitivity to flicker and motion patterns (Sternberg 82) Opening our eyes to the world for the first time, imagine the experience, light, color, texture, faces, objects, people and the build environment we create begins to influence how we perceive, think and feel.

When you look at an object, the light it reflects falls on the cells in the retina, which contain chemicals called pigments. Some of the cells called rods respond only to light and dark, other the cones respond to different wavelengths of light. The electrical impulses from the rods and cones travel to the optic nerve where the two eyes information combines and the optical lobe in the brain manufactures what you see. (Sternberg 27) Before you recognize an object, your eyes see bits and pieces of it – contrasting edges and lines. It is

the visual cortex that puts these pieces together into a whole. If there is not enough information for the brain to make a continuous line, the brain connects the bits anyway, and you see a shape. Almost simultaneously another part of the brain tries to match this picture to images stored in your memory, whatever is closest match, is what you see." (Sternberg 28) The unaided eye collects an extraordinary amount of information for distances up to 300 feet and has reasonable efficiency for human interaction at distances up to a mile, 5,280 feet. (Hall 43)

Professor Irving Biederman at the University of Southern California in Los Angeles has found that when people view scenes that are visually preferred – a beautiful vista, a sunset, a grove of trees – the nerve cells along an opiate rich pathway from the visual cortex of the brain to the parahippocampal place area (the region where retinal images are constructed into a scene) – become active. (Sternberg 33) the activation of these pathways triggers a morphine like high created by the brain, this effect is further compounded as you add color, depth, movement into the scene more and more waves of nerve cells become active farther along this opiate rich neuro-pathway in the brain. (Sternberg 33) with lighting fast response times the brain is able to identify, assess and react to the things we see. We have the comfort in modern society to not have many life threating obstacles to constantly look for in daily life, however designers can contribute to the opportunity for the integration of sight to actively play a role in the beautification of an environment. Our society revolves around the importance of this sense, by designing art, sculpture and landscape that makes one pause and observe its beauty ever changing with the sun light, we can be successful at designing environments people want to be a part of.

Pallassama discusses the pathology of everyday architecture we experience today, identifying that through an analysis of epistemology of the senses, and a critique of the ocular basis of our culture, that architecture falls most susceptible to the hegemony vision has obtained control of the body above all of its other senses. In the noisiest of places, which Pallassama points out are often very technologically advanced spaces, hospitals and airports, we find that people are wrought with estrangement and detachment. Although these spaces are designed to please the eye, the overwhelming complexity of the environment that consciously and subconsciously stimulate any multitude of senses, memories and emotions all at once. Designers disregard for the other sensory receptors that sight, simultaneously extract experiential knowledge from the space, results in experiences of detachment, isolation and exteriority. (Pallassama 19) Our body, full of receptors, processes and subdues the information as long as our ocular receptors have no danger in view we are content, or at least seemingly. Pallassama fears if the world continues to value design that is engrossed with a purely visual emphasis that it will leave the body and other senses as well as our memories, imagination and dreams, homeless. (Pallasama 19) By designing environments for all the senses we can avoid Pallasmaa's fears of sight being the sole decider of how we create and construct our environments, now and in the future.

Maurice Merleau-Ponty a theorist concentrating on perception and vision, talks about a relationship between the individual and the environment that comingle, interpenetrate and define, "our body is both an object among objects and that which sees and touches them." (Maurice Merleau-Ponty 67) This view of placement and relationship describes how we see ourselves and the point of view from which we view this. He goes on

further to say *"my perception is therefore not a sum of visual, tactile and audible givens; I perceive in a total way with my whole being. I grasp a unique structure of the thing, a unique way a being, which speaks to all my sense at once" – (Maurice Merleau-Ponty 48)* Describing consciousness and an egocentric point of view, we begin to place ourselves at the center and describe what is happening around us. The gift of sight is able to project our placement only from the point of view of the eye. We do not have the capability to view ourselves from the third person perspective. Creating a world of shadows and obstacles layers and distances farther and closer to the individual's point of reference. Pallasmaa understood this organizational relationship between people and spaces as he describes the visual environment as "not white and black but an ever-changing shade of grey, all the colors mixed together through simultaneous stimulation and interaction, the senses are the membrane from which environmental information makes its way into thought, sensation and emotion. (Pallasmaa 21) The sensory organs help define who we are, how we feel and how we interact with our environment and each other.

The current industrial mass production of visual imagery tends to alienate vision from emotional involvement and identification, and to turn imagery into a mesmerizing flow without focus or participation. Our society full of televisions, smart phones, tablets, computers, heads up displays and navigation systems, our society is characterized by a cancerous growth of vision, measuring everything by its ability to show or be shown and transmuting communication into a visual journey (Pallasmaa 24) This technological world digitizes our environment, we experience the world from the artificial comfort of our man made couch with an 80 inch monstrosity television, missing out on all of the sensation void from the environment which these images were captured. A photograph may be worth a

thousand words but it surely cannot reproduce the sound, touch, taste, and feeling of the constantly changing natural world. We are influenced by this a disconnection of our other senses, it cripples our experience, leaving the viewer lackluster and devoid of actual whole body experience. Pallasama describes this effect on the industry of architecture: "The cancerous spread of superficial architectural imagery today, devoid of tectonic logic and a sense of materiality and empathy, is clearly a part of this process" (Pallasmaa 24) this plaguing of the systems through over stimulation must be monitored in designing experience, too much of the wrong thing can short circuit the whole sensory system. Balancing time, senses and stimulation will be the key to success in designing the details of an experiential environment.

Man was not always reliant so heavily on the visual sensory receptors. Through our records of history and anthropological discoveries of our evolution, we easily hypothesize that hearing was a very important and likely the primordially dominant sense in our not too distant past. The evolution of man and space has changed how we learn, think and even exist and humans. The sense of sound was a keen tool listening for danger and sensing prey, it also plays a large role in orientation and balance. These tools were essential for hunter-gatherers that developed communications like language, which further solidified the supremacy of hearing and hearing space. For thousands of years the majority of humans lived in a verbal society, where the teachings of culture and secrets of the land was passed down generation to generation, we see evidence of this culture still active in the world today. This sound-dominated society is vibrant with thought and expression, the inflection and body language of the story teller gives us information beyond the words that he or she speaks, this information is lost in the evolution of culture. A new dominant sense

was on the verge, with the evolution of a written language. A pattern of learning emerged with the written document, forcing human evolution to further develop the sense of sight.

As man began to document, hypothesize and draw the happenings of the world, we developed a non-verbal form of communication that could transfer complex ideas and thought to others. The shift toward the dominance of vision began with the first written languages of Egypt & Mesopotamia in 3200BCE. (Wiki – History of Writing) The dominance of vision began to flourish; as we extracted knowledge from the world around us, we were able to transfer that knowledge of things like agriculture, tool making, building, art, performance, fiction and history alike, which blossomed education. As we began ingesting these visual documents, reading and drawing our very vibrant integrated lifestyle with the sounds and smells and feel of our environment dissipated, we grew detached from the verbal lesson and direct communication and began to live in a fabricated world of documents, images, sound bites and sketches, none of which is experience. (Pallasmaa 37) In his book *"Orality & Literacy,"* Walter J Ong highlights the evolution of sensory perception dominance, "though words are grounded in oral speech, writing tyrannically locks them into a visual field forever. A literate person cannot fully recover a sense of what the word is to purely oral people." (31)

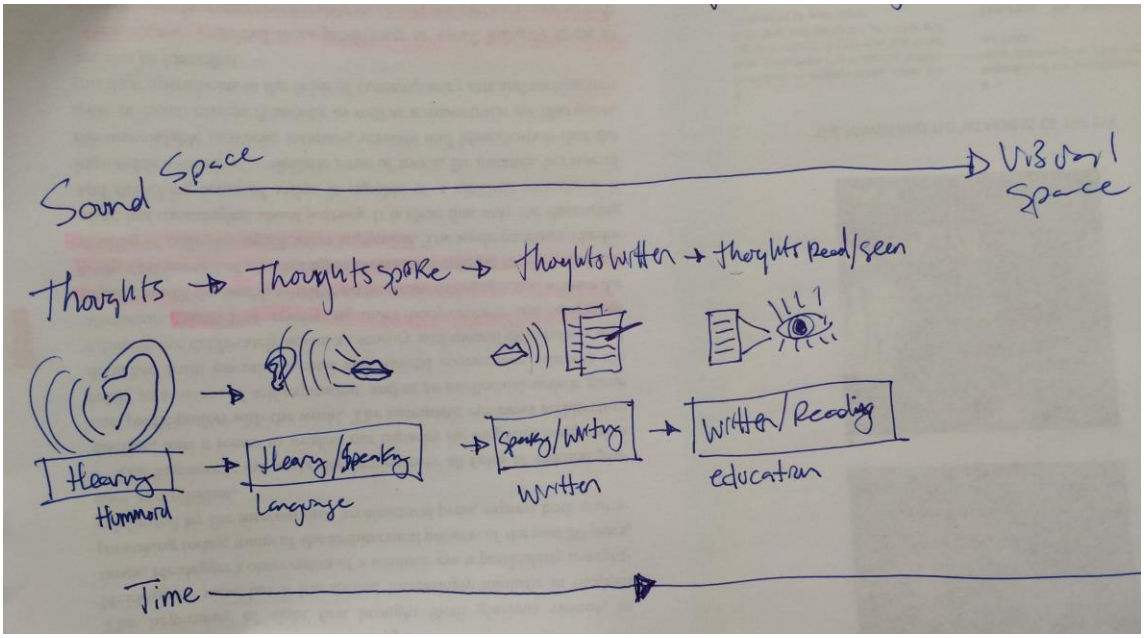


Figure 1 – The evolution of sensory perception

Shashi Caan agrees, stating "We assemble a comprehensive knowledge of the human body, mind and soul; "combining sensory, cognitive and bodily needs while also embracing ever more sophisticated and elusive technological and industrial trial advancements that threaten to further distance us from our basic humanity." (Caan 14) In the world stripped of personality, interpersonal relations, connection and compassion, the imagery and sounds we receive play a vital part in understanding our environment. However overstimulation, constant connection and unwanted experiences that overwhelm all people, provides the catalyst for this discussion of developing architecture that allows people to rediscovering the primal uses of these senses and feel what it's like to enjoy their simple complexities.

Beyond sensory perception of our five recognized senses there are other receptors that produce neither sensation, nor perceptions, but that nevertheless alters the state of the subject. These include photosensitive skin cells, receptors for humidity in the respiratory tract and pheromone receptors. (Barbara & Perliss 86) These other

environmental factors contribute information to our body and how it interacts and perceives each moment. Hall concurs, in his evaluation of the skin as an organ and its ability to perceive, heat, cold, movement in the air as well as light. (Hall 54) The skins adeptness at emitting and detecting radiant (infra-red) heat is extremely high, and one would assume that this capacity, since it is so highly developed, was important to survival in the past and still is important today (Hall 55) By better understanding what influences how humans think and feel in any given moment, we as designers can hope to build upon that knowledge in order to create something beyond usual expectations of space and experience.

2.4 Materiality & Texture

Designing the built environment comes with innumerable selections; materials, textures, and colors for walls, floors and ceilings. Juhani Pallasmaa describes the importance of materiality within the built environment, "Natural materials – stone and wood – express their age and history, as well as the story of their origins and their history of human use. All matter exists in the continuum of time neither created nor destroyed…the patina of wear adds the enriching experience of time to the materials of construction." (Pallasama 31) He preaches the importance of the natural environment and heritage of historical design. By reinvigorating the built environment with the natural elements, the designer increase opportunity for connection to the outdoors from within and hopefully evokes a memory of past experience or creates a new memory in the present.

Humans re-engineer the natural materials of the earth into some amazing products; some of them are less refined than others. Nature has an amazing range of tactile experiences and the opportunity to select the least refined most natural materials is in the hands of the designer. Construction by today's standard is comprised of components that are highly manufactured, regulated and tested for performance. These materials are quite different than the raw substances that were extracted from the earth to create them. Ambiguous concoctions of synthetics, chemicals, toxins and resins fill our environment with unnatural surfaces and materials with perfect regularity, polluting processing and an unknown origin. Manufacturing and transporting these materials across countries and sometimes across continents strains the environment with fuel, emissions and waste, by harvesting materials as locally as possible not only is there lesser impact globally but it also supports local economy.

Texture is an exceptional thing to experience by touch. The body creates a remembrance of textures that we encounter, associates them with experiences, colors, tastes, emotions and memories. This cognitive experiential association allows us to appreciate and recognize the things we touch, and associate ourselves with them. Touch is the most intimate of people's sensation experience and the most personal. The relationship of our body to our environment and the physical interaction between the two is the interface where texture is discovered. By varying texture and material throughout an experiential landscape on a deeper physical and cognitive level

2.5 Ergonomics & Biometrics

The human body comes in all shapes and sizes. Through this tool we discover space with all of the bodies sensory receptors. The body is our vehicle for experience, it is in this interface which we define ourselves as well as where our environment defines us. Humans inhabitation with space, natural or manufactured, must interact with the body in order for us to gain understanding of what is and isn't present around us. As we grow our body changes, we develop new skills and hone new senses. These tools create the framework for our existence, our experience, our memories and our thoughts. Understanding how the body acts within its environment, the places it touches, the impact it makes and the trails it leaves behind are all very important for understanding how to design space for humans to explore, inhabit and interact. The majority of objects in our world full of 'things' were designed to interact with the human body. Each object was created for a purpose and every tool, space and building has been touched by a designer. From the pencil to the space shuttle, humans have sculpted the world around them in order to accommodate the needs,

wants, and desires of one thing, the body. We build everything we interact with, with an interface comfortable for interaction with our bodies. By understanding the body we can create better spaces, with better materials and brighter futures.

Pallasama describes this interaction between design and the body, “construction in traditional cultures is guided by the body in the same way a bird shapes its nest by movements of its body” (pallasmaa 41) The body is the measuring stick, we have seen through history examples of biometrics, our chairs are as tall as the heel to the knee, we use hands to measure horses, and feet to say how tall a building is. As designers attempt to complete the perfect arrangement of materials and spaces to best suit the user, tailor-made and perfectly sized, comfortable, economical, socially acceptable, sustainable, non-toxic, and natural if at all possible. These spaces are designed for people, the more we understand about how we interact with space, as well as what is comfortable and convenient for our movement and use, the better we can provide functional user friendly space.

2.6 Psychometric & Psychology of Space

Understanding how humans perceive space, create space and organize it helps the comprehension of how humans think about space. Each person has a different mental process, a capacity for processing thoughts, emotion and experience differently. Designing for human mental reception can be difficult, especially in a world of regulations, politics and discrimination, the notion of a unique universal design seems unattainable, Shashi Caan explains the complexities of human's existence in the environment,

> *"merely to exist is not human nature. Yet how the environments we create shape who we become is not fully comprehended in design. We need deeper research in order to understand our aspirations for improvement. Only then can we design for enhanced states of the human condition, states that happen at the delicate intersection of the psychological, sociological and physiological" (Caan 37)*

Caan's experience with developing the intersection between the comprehension of these design attributes and the realizations they produce a great jumping off point for incorporating all levels of spatial and conscious interaction between people and environment. Edward T. Hall unravels the relationships of people, their senses and their proxemics to space further, describing in detail the way people interact and feel in their environment. Proxemics is a term that he coined to describe the interrelated observations and theories of man's use of space as a specialized elaboration of culture. His discussion begins describing animal behavior and how different species arrange themselves in close proximity to one another socially as well as territorially. By discovering the evolution of these social, cultural and physical organizations designers can implement changes in the built environment to accommodate a different kind of existing within the environment.

The most archaic of arrangement in the natural world is territoriality; H. Hediger, a

famous German animal psychologist describes convincingly that territoriality insures the propagation of a species by regulating density. It provides the framework in which things are done-places to learn, places to eat, places to play and safe places to hide. (Hall 8) This list of outcomes, echo's a list of basic survival needs: food, water, and shelter. Abraham Maslow, a well-known psychologist on focusing on the motivation of man & developmental psychology, developed a hierarchy of human needs ranging from the fundamental levels at the bottom of the pyramid to the need for self-actualization at the top. (Wiki - Maslow's_Hierarchy_of_Needs) Self-actualization, is described by many psychologists as the motive to realize one's full potential; expressing one's creativity, quest for spiritual enlightenment, pursuit of knowledge and desire to give to society." (Wiki – Self Actualization) Coupled with mindfulness and the realization of one's self, individuals can better relate and contribute to the other modes of social and psychological differentiations between one's self and others. The first step is to understand one's self, then environment they inhabit, creating a unified, holistic, non-judgmental approach to life.

Our understanding of basic animal instincts are as follows –an instinct can be described as one or a series of fixed-action patterns without variation and the actions are carried out in response to a clearly defined stimulus. These instinctual animal actions were outlined in the book "Instinct" (1961). "To be considered instinctual, a behavior must: a) be automatic, b) be irresistible, c) occur at some point in development, d) be triggered by some event in the environment, e) occur in every member of the species, f) be un-modifiable, and g) govern behavior for which the organism needs no training (although the organism may profit from experience and to that degree the behavior is modifiable). (Wiki-Instinct) Like no other beings on this planet, humans have the ability to plan, mentally

evaluate, and predict alternative futures, giving us the ability to consciously make decisions and overcome our natural instinctual urges and make rational decisions that prove more beneficial toward our search for self-actualization. Humans evolved: thought, decision making, prediction, problem solving, logic and reason. Our ability to plan, to design spatial territory for the individuals and the groups within our societal structure, has given shape to all scales of design in the modern world. The social organization of spaces differs between different cultures and locations across the globe. No matter the style or objective of our arrangement of spaces, through our sensory experience of our local environment, these primal animal instincts subconsciously are realized or ignored depending on conditions the individual faces.

Other factors that contribute to the ways we carve out space in our built environments are by the definition personal and social space. Hall describes in the animal world there are contact and non-contact species. Contact species huddle together and require physical contact with each other; walrus, hippopotamus, pigs, bats, hedgehogs, parakeets and others. Non-contact species completely avoid touching horses, dogs, cats, hawks, gulls and humans are non-contact species. As non-contact species we define limits to our personal space, "personal space is the term applied by Hediger to the normal spacing that non-contact animals maintain between themselves and their fellows. This distance acts as an invisible bubble that surrounds the organism. Outside the bubble tow organisms are not intimately involved with each other as when the personal space bubbles overlap.(Hall 14) Observations conclude that dominant individuals personal space bubble is larger than subordinate ones creating levels of hierarchy of space in social organization. This development of spatial arrangement organizes a system that is more flexible and less

primitive than the prior dispersion by spacing method. (Hall 14) Developing a hierarchy of spaces and uses also allowed people to create a social network of spaces in order to stay in touch with each other, contribute to society and develop relationships of belonging.

The determining factors of social space are not defined by a physical disconnection from the group such has - losing sight, sound or smell of the group, but is rather a psychological distance, one at which the animal apparently begins to feel anxious when he or she exceeds the limits of this social bubble. (Hall 15) With the physical, mental and social circles colliding together in one instant, the individual begins to understand the "big picture" of their place in the environment, moment, space and time.

The world of technology is aiding in the visual connection of individuals to the group across great distances, but the other sensory perceptions of the interactions with that person or persons is diminished or vacant altogether. Humans strive for contact, for experience, respect and belonging; Maslow's pyramid of human needs outlines the development of our complex hierarchy of needs on an individual and social level. In order to successfully organize space that provides the vessel for the experience, discovery and growth of human beings, striving to attain a deeper connection to their environment, community, and self, designers must understand what is at the top of the list of needs.

Experience, individual and social, is what builds our character, our existence and sense of being. If we can modify the fabrics of society, the framework for design and the paradigm for building by developing architecture with the power to inspire the user and evoke a positive experience, memory and sense of well-being.

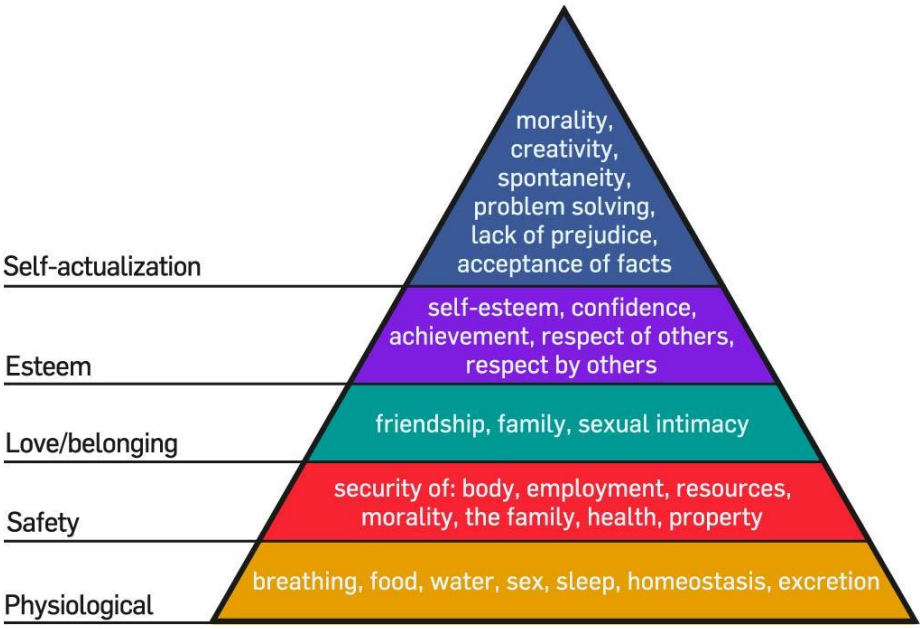


Figure 2 – Maslow's hierarchy of needs

In order to provide design solutions to meet human needs we must first define the experiences and qualities that constitute essential parameters. Cann frames the interior as what "we recognize as not only a zone physical interaction but also one of psychological and emotional effects." (Caan 38) It is evident that there is a fundamental connection between humans, their mind and nature. The intentional creation of space devised for people and objects in an environment, often defaults to the tangible aspects of space: ergonomics, temperature, light, sound, etc.: the challenge becomes evolving design to satisfy yearnings for the intangibles of life: dignity, trust, peace of mind, harmony and much more. The opportunity of creating environments that can offer what is seemingly beyond the reach of the physical built environment proves to be a mountain yet to be climbed.

CHAPTER 3

MINDFULNESS AND WELL-BEING

3.1 Meditation

Be present, exist in the moment, and pay attention. Mediation is, "our capacity to pay attention, moment to moment, on-purpose and is an immediately accessible ally." (Santorelli 31) Sanki Santorelli describes the tool of mindfulness and meditation and its availability to the practitioner in any situation, at any place, at any moment has the opportunity to attune the mind to discover experiencing the true self. He goes on to further explain the practice and its effect on the practitioner, "meditation practice requires a discipline, sustained effort. Yet at heart, mindfulness meditation is about care, is about willingness to come up close to our discomfort and pain without judgment, striving, manipulation, or pretense. This gentle, open, nonjudgmental approach is itself both relentless and merciful, asking of us more than we might ever have expected. To practice in such a way, awareness of the breath is effective, ever available means of cultivating presence." (Santorelli 36) With the manipulation of this threshold between the body and the mind, the inner and the outer, mindfulness practitioners have forged a relationship with the environment, its energy and the breath, all essential in paying attention in the present moment, be free and exist just as they are.

Meditation is a practice in which an individual trains the mind or induces a mode of consciousness, either to realize some benefit or as an end in itself. In the practice of mediation one is intended to experience: relaxation, calming of the mind, physical and mental stillness, unity and connection, all while building an internal energy or life force to develop compassion, love, patience, generosity and forgiveness. (Wiki-Meditation) By

applying oneself to effortless concentration, reducing thought so a single thing and exist in nothingness and experience one's self.

By looking inward and existing within the environment and the moment the practitioners are able to analyze personal stressors and cultivate positive responses to them. One of the biggest tools in the practice is the breath, used by meditation and yoga as a baseline activity that is the only essential cognitive activity needed to survive in any instant.

Turning to the breath, making contact with the ever-present rhythm of our existence, the heart beat and the swing of the breath allows individuals to always have a resource for relaxation, calm, resonance and recollection. Santorelli believes "in our modern world…in order to observe one's self, all that is required is a person to look "within." (Santorelli 34) This skill becomes a highly specialized, extensively practiced and never mastered, relationship with the body, mind and space continues to be the root of our existence and consciousness. The connection with the wholeness and completeness of one's self, allows the practitioner to remain always constant, always breathing and always truly existing in one moment.

Achieving an understanding of these skills of self-regulation and applying them to the ways we think about space, the environment and how people interact with them in a mindful way, gives designers the opportunity to create detailed sensual spaces for the realization of self. Hall discusses a person's relation to space and the need for a filtration or aggregation of stimulation and experience, "Space perception is not only a matter of what can be perceived but what can be screened out. "(Hall 45) by designing for the individual, and their existence within their environment the creation of space can frame the moment, highlight experience and capture transformation.

3.2 Yoga

The union of self and existence, the culmination of mind body and spirit, allowing the practitioner to connect on more than one level of consciousness with the environment that surrounds them. “Vishnu describes the struggles of many in our society today overrun by stimuli and slave to culture and our mind. To achieve real peace, one must learn to control the body and mind with proper self-discipline; willingness to live in harmony with the inextricable laws of nature. “(Vishnu x) the practice of yoga is an extension of meditation, including the body into the practice of the mind. A mental focus on body position and the interaction of the body and environment changes ones perception of space and the discipline required to quiet the mind and remain attentive in the moment. A variety of positions yoga positions were developed to exert different area of the physical body, while also assume different mental perspectives on ones perception of self. Different than going to the gym for exercise, this controlled body movement activates muscle groups by stretching and balancing the body while concentrating the mind. This coinciding workout of body and mind has been known to make remarkable changes in the lives of individuals partaking in the practice. Discovering all of the sensual physical input, and discovering a mindful way of life yoga practitioners apply these lessons to all aspects of life, becoming caring, compassionate, forgiving and understanding individuals that have a greater connection to the environment and themselves than they ever had before.

With the implementation of this yoga, practiced by all shapes, ages and levels of experience, the built environment is able to foster the experience of the practitioner. By revealing the moment and giving the opportunity for the practitioner to evaluate, ingest

and realize their existence in the world. Intertwined with mindfulness and meditation this exploration of the person and its relationship with the world. The practice of yoga balances, harmonizes, purifies, and strengthens the Body, Mind and Soul of the practitioner. It shows you the way to perfect health, perfect mind control and to be at perfect peace with one's self (the world, nature and god). (Vishnu x) During life, a yogi (a person who practices yoga) lives by a series of principles and practices in order to maintain this harmonious balance with the body, and mind within the environment.

3.3 Prana (Life Force Energy)

According to Eastern notions of body mechanics, Prana is described as the energy that charges the air is received by the olfactory bulb. Refined breathing techniques of the yogic practice harbor the intent of harnessing this circulating energy with the breath. The breath involves the intake of air in one nostril and exhaling through the other so as to effect different parts of the nervous system. Inhaling relays olfactory information, as odors pass through the nasal receptors exiting them as they and continue into the lungs. We also monitor our exhalation as it transmits internal olfactory information to the nasal receptors, creating a biofeedback loop in order to monitor health. (Barbara & Perliss 24) The realization of energy and life force, and the process of our existence, humans can only begin to understand the rawest meaning of existence and being in the moment, and how to design space for this experience.

CHAPTER 4

HISTORY

4.1 Region and Location

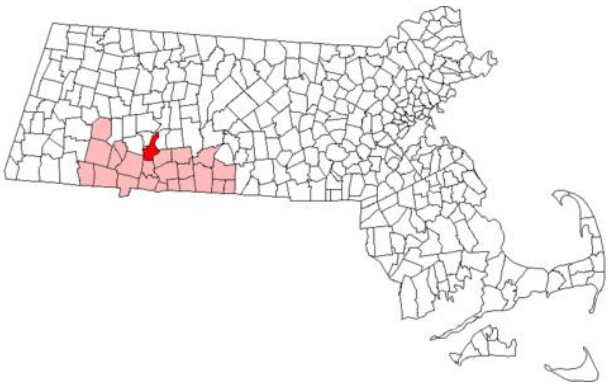


Figure 3 - Holyoke, Hampden County, Massachusetts

Holyoke, Massachusetts, settled in 1745, is located in the western portion of the state with an estimated population of 40,100 residents. (Census 2010) Holyoke (red in figure), a division of Hampden County (pink figure), encompasses 22.8 square miles between the western bank of the Connecticut River and east of the Mount Tom mountain range. Holyoke was named after Elizur Holyoke the son-in-law of settler William Pynchon in the late 1650's. The first settlers to survey the land here found ample opportunities for agriculture and trading on the rich soil on the banks of the Connecticut River. (Wiki Holyoke). The footprints were set for the foundation of a successful town full of commerce, industry and agriculture. Leading to Holyoke becoming one of the first planned industrial communities in the United States, featuring hierarchical rectilinear street grids (a novelty at the time in New England). (Wiki Holyoke)

Regionally, Western Massachusetts boasts unique topography from the Berkshire Mountains to the Connecticut River valley through to the Quabbin Reservoir, which supplies drinking water all the way to Boston, MA. Known for its fertile soils adjacent to the river and beautiful mountain vistas; these unique landscapes provide ample

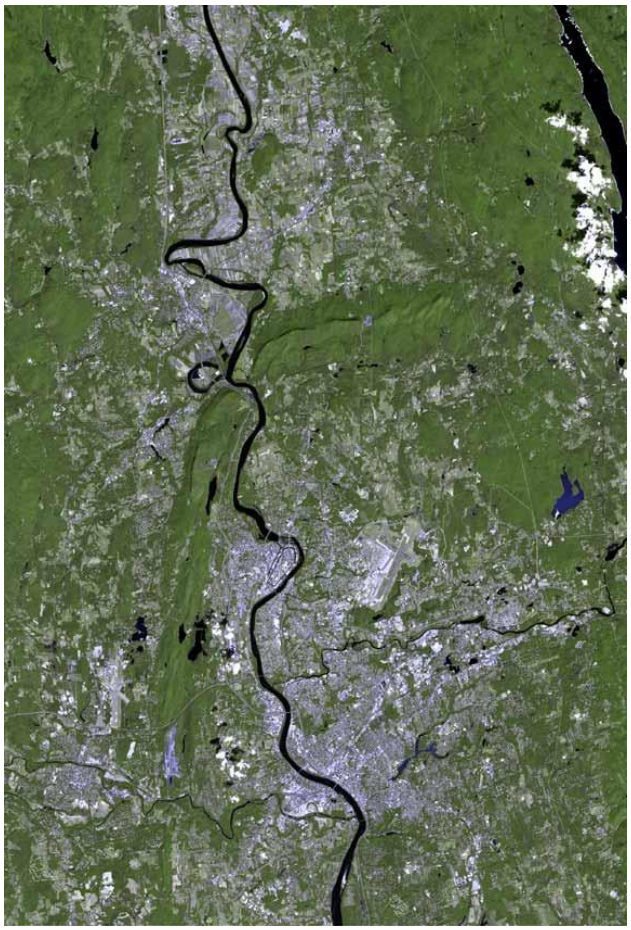


Figure 4 - Arial Photograph of the Pioneer Valley

opportunities for outdoor recreation, as well as many magnificently, unique New England towns, universities and colleges, arts and performances, shopping and great food of course. Home to points of interest like the Dr. Seuss and Eric Carl Museums, the University of Massachusetts Amherst the states flagship campus & famed Amherst & Smith Colleges. The basketball and volleyball hall of fames, the "Big E" (6th largest fair in the country) at the eastern States Exposition, Six Flags Amusement park and any multitude of mountain tops, hiking trails, parks, lakes, rivers and streams with the occasional waterfall as well. With a vibrant fabric of arts and culture the western half of Massachusetts has a multitude of destinations. At the center of it all is the Pioneer Valley, Franklin, Hampshire and Hampden counties combine to create picturesque views along the Connecticut River Valley.

The Pioneer Valley, in addition to its education, arts, architecture and culture, is well known for embracing a religiously diverse population of healthy, active and often organic life style residents. It is also well known for its acceptance of the large population of Lesbian Gay Bisexual and Transgendered (LGBT) in the cities of Northampton, Springfield and beyond. (Wiki Pioneer Valley) The people and places here make it a vibrant,

compassionate community of all walks of life. The valley boasts a variety of lifestyles and a growing interest in the connections between mind, body and spirit, yoga and meditation as well as a fostered cultural importance of natural foods, health and healing treatments prevalent throughout the area. With a prominent matriculation of mindfulness and reflection, experience and compassion, it's easy to see why this location would allow this project and program to flourish. Introducing a retreat for experiential attunement of one's body and mind by engulfing the senses in a fostering natural and compassionate environment, allows the individual to positively change themselves mentally and physically.

4.2 Holyoke History

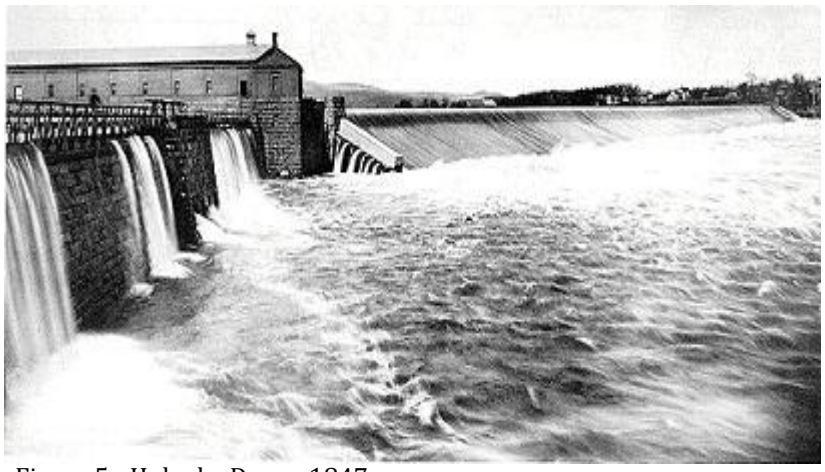


Figure 5 - Holyoke Damn. 1847

The town of Holyoke was incorporated years later in 1850 following the completion of one of the areas more defining features, the Connecticut River Dam and the Holyoke Canal System; built in 1849 with the most advanced technology of its day, attracting visitors from all over the world. (Holyoke History)

With the new dam providing water-power for mills and industry; paper mills, steam pumps, blank books, silk goods, hydrants, bicycles and trollies were manufactured in Holyoke and shipped all over the world. (Holyoke History) The industry that really thrived in this new city was the production of paper and paper products, which lead to Holyoke's world renounced reputation as the "Paper City." At its peak, there were over 25 paper mills in operation in the city; and from the 1850's through the mid-20th century, Holyoke was the world's largest paper manufacturer. Headlining the paper race was American Pad & Paper Company, which was one of the world's largest suppliers of paper and office supplies through 2007. (Holyoke Wiki) All made possible by Holyoke being able to regulate and produce their own electricity with the completion of the Connecticut River Dam, keeping the mills working through regional black outs and severe storms.

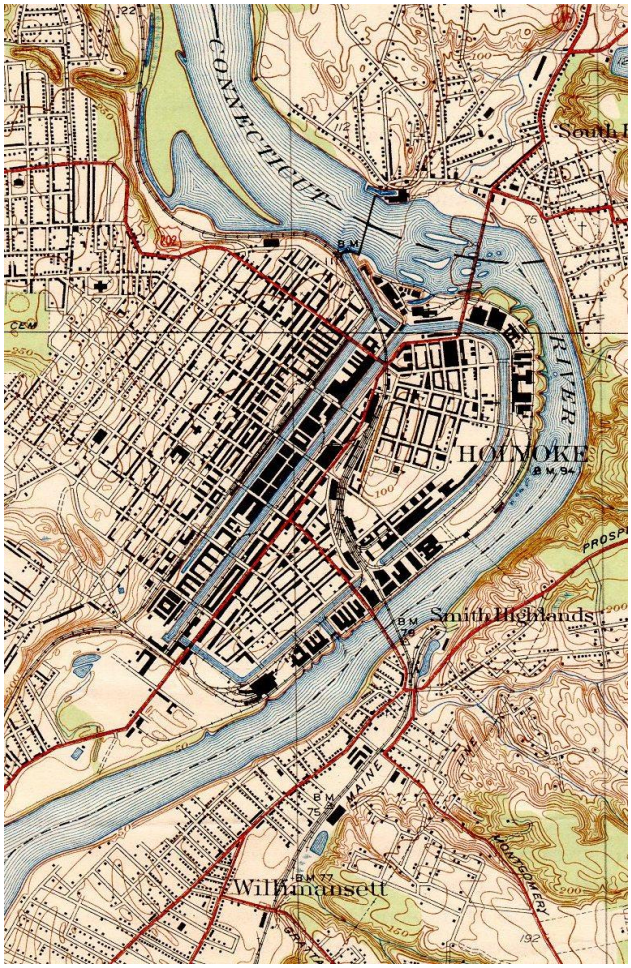


Figure 6 - "Holyoke Canal System Map." 1938

The people of Holyoke were historically working-class immigrants and the wealthy business owners who employed them. The first immigrant wave in the 1840's comprised of mostly those of Irish decent, giving the city an identity that it still celebrates today. In the 1860's waves of Germans, textile workers from the Rhineland and Saxony trained in hand weaving and making woolens. In the 1870-80's, the mills and thriving businesses recruited French-Canadians, who sent home to Canada good word from developments in the U.S. plus more money than they had ever seen. (Holyoke History) The 1880's-90's brought settlers from Italy, individuals working primarily in confectionary or fruit stores. Later, Poles and Jews made their way to Holyoke to forage new lives for themselves. (Wiki Holyoke) The next significant immigration movement came in the 1950's bringing Puerto Rican and other Latino groups, who today form the largest demographic group in the city 47.4%. The city makeup today also consists of 47% white, 3.4% African American, 1 % Asian, making the Hispanic culture a prevalent presence in town. (Census 2010) Another major event in town today is the Puerto Rican Day Parade, the third weekend of July as an annual Hispanic Festival, which has been growing in popularity attracting patrons from all over the northeast. (Holyoke wiki)

Holyoke was a booming town up through the early 20th century, becoming a vibrant urban fabric of arts, culture and education. With a melting pot of immigrants and an established economic and social structure, it made a name for itself and became a destination for more than just employment opportunities. Holyoke was the birthplace of volleyball, invented at the local YMCA in 1895 by William G. Morgan and the volleyball hall of fame still resides in Heritage Park hosting annual inductions. (Holyoke Wiki) The Holyoke Street Railway Trolley was also an icon of the town shuttling people around town and to the famed amusement park, Mountain Park that was opened in 1897. On the weekends, people took the rail car northwest of the city to the Mount Tom Range where open space, rich forests and wildlife flourished above the busy industrial town below. This now underutilized location was chosen to be the site for this project.

Holyoke's boom of industry created some difficulties that echoed throughout the social and economic spectrums as the city grew. Large numbers of immigrants resulted in crowding and the "boom and bust" cycle of manufacturing attracted thousands of workers then left them jobless. (History Holyoke) This once thriving city began to age and industry declined through the 20th century; new construction was at a low and crime rates increased to double the national average in almost every category. After the 1920's the town began to see a population slowly decline 5-6% each year. Into the 1990's, Holyoke saw a decline of almost 10% of the population as people moved away to greener pastures outside the city limits. (Census 2010) Despite the troubles of the city as a whole, some businesses stayed and survived on the resources that Holyoke had to offer: a cheap labor force, and water for power and processing. The people of Holyoke began to band together to overcome economic adversity, creating social service and aid groups began to preach self-help and

empowerment. These remaining pieces of Holyoke's identity continue to power through the adversity and change that the city still endures. Many Public-private partnerships have been forged in Holyoke, providing a level of cooperation and support to both economic and social sectors of the city. (Wiki Holyoke)

With Holyoke back on the rise, and some of the social and economic issues in check (or much improved), the city has seen promising revitalization over the past few years. I believe there is the need for more amenities and opportunities to connect the city of Holyoke with its surrounding landscapes. Many river front parks and downtown urban renewal projects have begun to infiltrate the urban grid of Holyoke's downtown. I feel it is necessary to revitalize its connection to Mount Tom and the mountain range that defines its northern and western most boarders. Mount Tom State Park straddles the mountain range connecting Holyoke to neighboring Easthampton, Northampton and Southampton. At the foot of Mount Tom, below the state park, on the outskirts of town lay the Whiting Street Reservoir, two golf courses, the abandoned Mount Tom Ski Area and the under-developed Mountain Park amusement park site. Severed from downtown by Interstate 91 and local Route 5, these destinations are difficult to access and often overlooked. Some local hikers and activists find their way to the walking path around the man-made drinking water supply, Whiting Street Reservoir. The former Mountain Park site adjacent to the reservoir boasts 8-foot tall chain link fences and a large pillared aluminum gated entrance, inaccessible to the public, this once destination Trolley/Amusement Park once hosted thousands of weekly visitors through the majority of the 20th century.

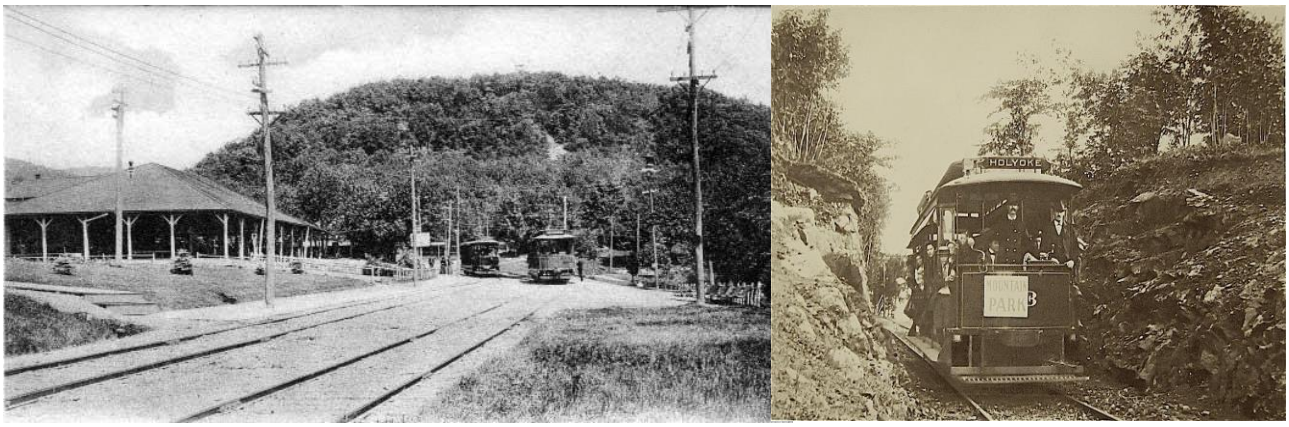


Figure 7 – Holyoke Street Railway Company

4.3 Mountain Park History

Mountain Park, a 300-acre sanctuary carved into the wilderness of the Mount Tom Range just north of downtown Holyoke, was first purchased by William Loomis of the Holyoke Street Railway Company in 1897. His vision was to extend his trolley line from downtown up into the mountains to give people access to nature, fresh air and open space. This parcel of land provided a retreat from the hustle and bustle of town to a nature filled pleasure resort for the people of Holyoke and beyond. That first year Loomis built the Summit House on top of Mount Tom, picnic areas, reflecting pools, a 2,500-seat casino and a small zoo. In 1900, the summit house burnt down; it was rebuilt in the years following, bigger and better than its predecessor. Ten years later, in 1911, a new ballroom, restaurant and dance hall was built for the growing park; and four years later it was ready for more, new rides, and arcade and the iconic carousel were added. The carousel still survives today; it was relocated in 1989 to the Heritage State Park in Holyoke. (Wiki Mountain Park) This park became cultural experience with all classes of people piling on for the short trolley

ride northwest to escape to the mountains and relax and enjoy the company of the community.

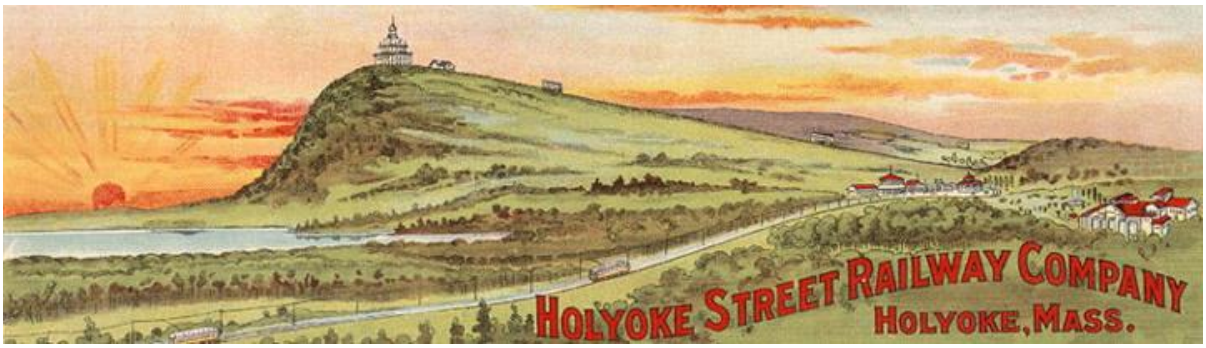


Figure 8 – Holyoke Street Railway Company Advertisement

The park was sold to its second owner, Pellissier, in 1929, who made thousands of dollars of improvements a year before the Great Depression. New additions like swings, bumper cars, whip, penny arcade, shooting gallery, fun house, roller-skating and more were completed before that October. In 1930, the summit house burned down again and was rebuilt as a smaller metal building to deter future fires. With the evolution of the automobile, the trolley cars ceased to run their routes and were eventually destroyed. (Wiki Mountain Park)

The park was sold again in 1952 to the Collins family; a reputable owner who managed another park in the state. They added a "Kiddieland" and renovated other portions of the park, renaming the rollercoaster in 1955 to the "Mountain Flyer." With its new ownership and fresh look, the park was flourishing in the 1960's, becoming one of the most popular entertainment destinations in western Massachusetts. The theatre performances by the "Valley Players," a theatre group that had been performing at the mountain park casino since the 1940's, eventually folded in 1962 due to heavy

performance scheduling and financial difficulties. In 1964, the casino followed suit and closed later that year. With the park in flux, the Collins leased the park to food service company ARASERV in 1971, who chipped in the much-needed revenue to boost the parks service and amenities adding a chair lift to transport visitors to the petting zoo. In June of that year, a natural gas explosion leveled the Tap Room and Stardust Ballroom building while Holyoke High School prom was taking place inside. Two park employees perished in the resulting fire. After the fire, the remaining casino building was demolished and the Collins family restored their management of the park but it was never the same. (Wiki Mountain Park)

Figure 9 - Mountain Park Aerial Photograph from the East

Mountain Park began its decline in the 1980's, as Massachusetts entered a recession. The state decided to lift the Blue Laws, preventing businesses from opening on Sundays, in order to boost the economy. Although the park was still popular, it began to be replaced by shopping malls on Sundays, previously the parks busiest day, became the slowest. Even though the park had very few accidents the liability insurance to run a major amusement park became more costly than the income the park was bringing in. In 1988, the park was up for sale to the tune of $4 million dollars, but there didn't seem to be any interest in

spending money to revive the once majestic park. As the park wilted, it was sold off piece by piece; the carousel was relocated to Heritage Park in 1989 by the town of Holyoke in efforts to preserve one piece of the historic destination, it still resides there today. Over the next two years, the rest of the parts and rides in the park were dismantled and sold to whoever would buy and many pieces operated elsewhere in the following years. Any remaining structures and rides left were bulldozed and disposed of in 2003. This memorable park served its community for over 100 years and built a reputation that still lingers in the hearts and souls of the people of Holyoke and beyond. (Wiki Mountain Park)

After the leveling of the amusement park, Collins sold off 240 acres as a nature preserve but decided to hold onto the remaining 60 acres. A senior citizen housing complex was proposed for the property in 2005, but it wasn't the right fit. One year later the current owner Eric Suher, purchased the final 60 acres from Collins for $1.4 million in 2006. With new ownership in place again, it would seem that the park had a chance for rebirth. For two years the property sat idle; in 2008 Suher regarded the property converting it to an outdoor concert venue. He announced to the public during an interview in 2009 that the park would reopen in August of that year, hosting the first paid event in over 22 years. Over the next few years Suher has hosted several concerts for artists like the Counting Crows, MGMT and The Disco Biscuits. (Wiki Mountain Park) The venue was activated for only a few nights a year, otherwise it still remained fenced in and closed off to the public. This once lively community-gathering place has been cut off from the people of Holyoke. The beautiful 60 acres of pristine mountain landscape overlooking the Whiting Reservoir and the town of Holyoke and the Connecticut River could be reinvigorated with

activity, learning, enjoyment and experience. This project strives to make this rich landscape once again accessible to the people of Holyoke and beyond.

4.4 Existing Site Conditions

Figure 10 – Mountain Park site panoramic

Exploring the history of Mountain Park and how it became to be what it is today, gives us insight as to how important this piece of beautiful and serene landscape affected the people of western Massachusetts especially the border towns of Northampton, Easthampton, Southampton, and Springfield. Today the site has existing infrastructure: potable water, natural gas, electricity, and major access roads. The entrance to the park today breaks off of local Route 5 (Northampton St.) and travels up the ¾ mile Mountain Park Road winding through the wooded landscape. Relics of the trolley line are visible in the woods, and a series of concrete piers parallel to the road highlight former methods of transportation to this place that have since been forgotten in the wake of the automobile. Farther down this winding road, maple and oak trees reach over the maintained boundaries of the forest, swaying ever so slightly in the gentle wind. As we reach the final bend we see Cedar Knob Hill on our right, signifying the culmination of our journey to the

park. The last obstacle in the journey to the site is an overpass bridge across Interstate 91. As you ascend the final stretch of road across the interstate you are met with a vast open space of the park with a beautiful backdrop of the mountain. The current gate and fences that impede this reveal would be removed and the boundary of the park would be less abrupt, while still harnessing that important sense of arrival to this revitalized destination. With further analysis of the topography, solar exposure, vegetation, hydrology and circulation we will be able to identify the building and design opportunities that this vast and beautiful site has to offer.

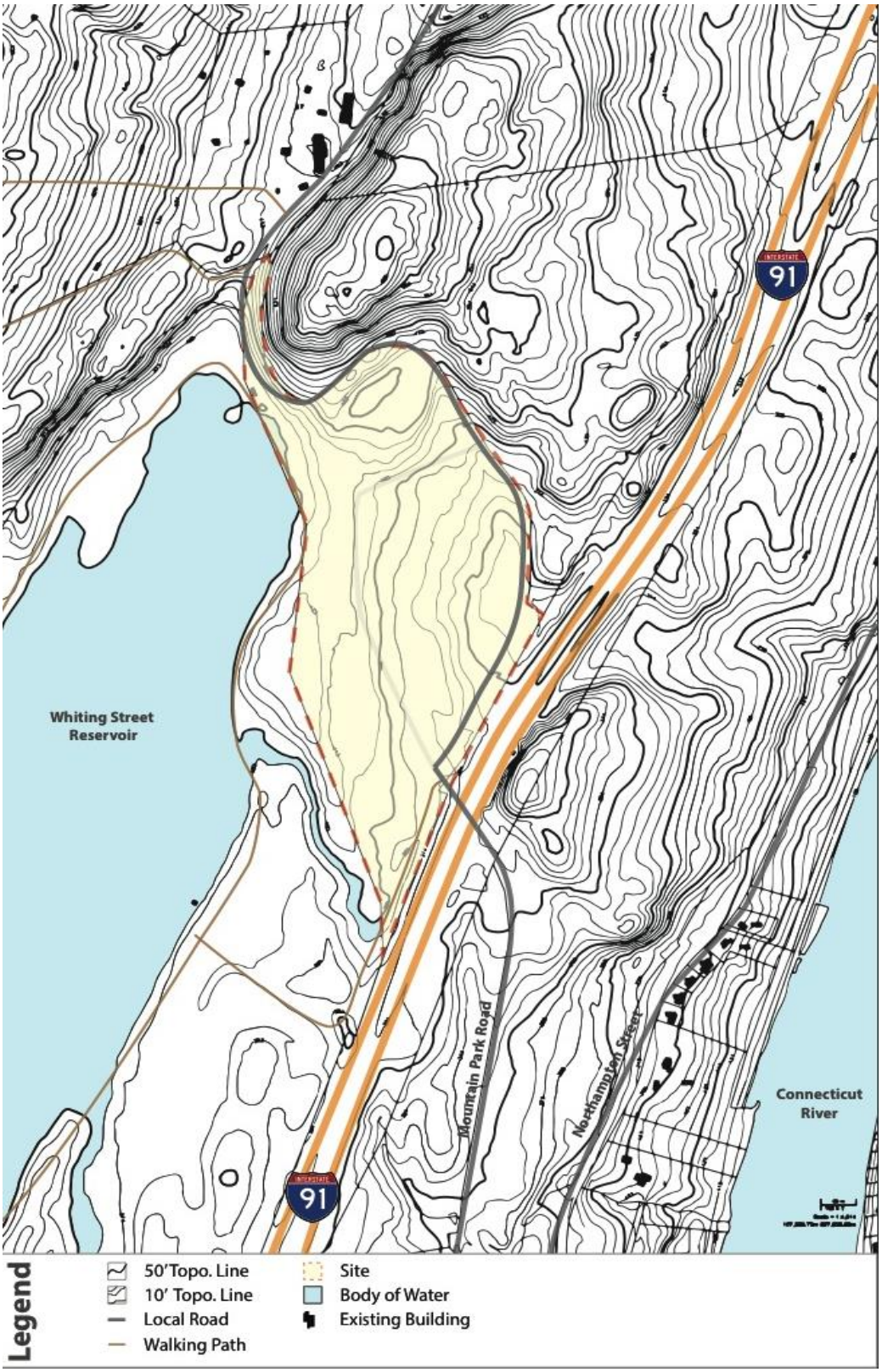
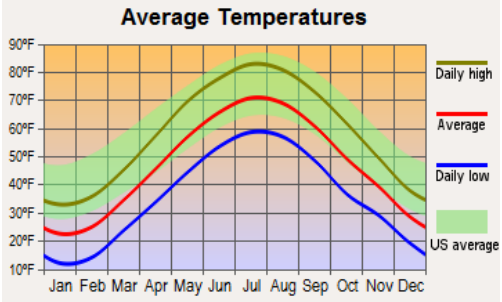
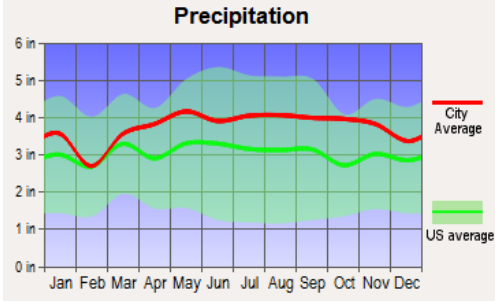


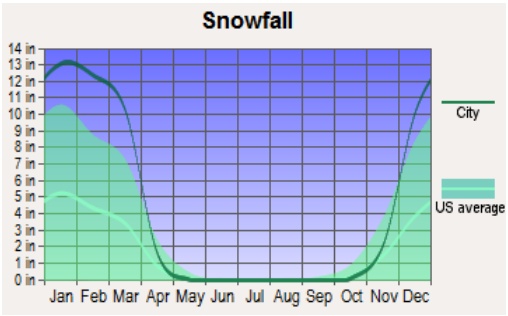
Figure 11 – Site Topography

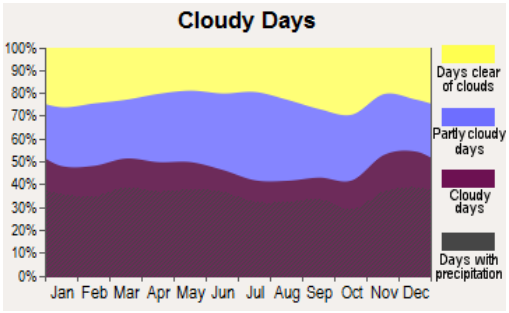
4.4.1 Climate

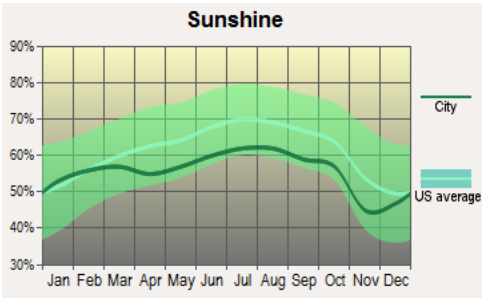
Located in the heart of New England, Holyoke, Massachusetts experiences the full four seasons. Average temperatures range from the low 20's-30's through the winter months to the mid-upper 70's in the summer. In addition to the seasonal changes in temperature we see slightly greater than average precipitation compared to the rest of the country with an average of 111 precipitation days accumulating 43.2 inches of rainfall each year with an additional 36.1 inches of snowfall as well (assuming slightly more for the site of mountain park due to its higher elevation than downtown). Holyoke averages 190 sunny days each year slightly less than the national average. With the humidity and wind speeds falling right in the middle of the national averages, it would seem those portions of the climate are less impactful to the overall feeling of the site throughout the year. The Wind rose information was compiled by a University of Massachusetts research team taking readings from the top of Mount Tom above the site of Mountain Park showing that winds prevail primarily from the west. This wind information will vary from the actual site conditions due to the topography of the mountain range that surrounds the site to the west, north and east. We can see that throughout the year there is a measurable change in climate as Holyoke succumbs to the seasons both hot and cold. Snow and rain are a contributing factor to the site, which effects how we view the topography and hydrology of the site and surrounding areas. (City Data- Holyoke, MA)

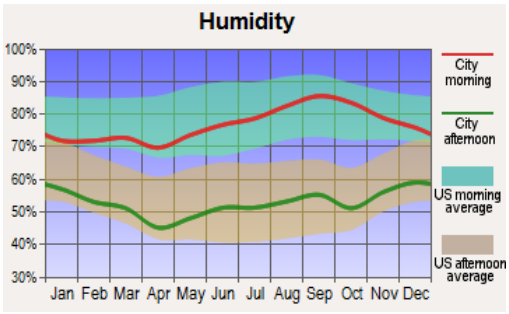


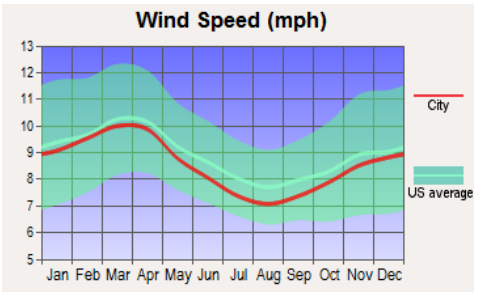












(City Data- Holyoke, MA)

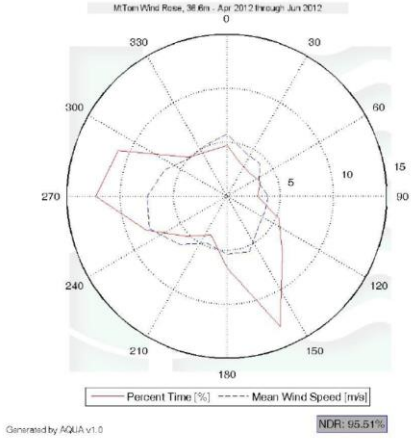


Figure 7 – Mt. Tom Wind Rose, 36.6 m, April 1 – June 30, 2012

http://www.umass.edu/windenergy/downloads/pdfs/MtTom_2012_QuarterlyReport_Q2.pdf

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Figure 12 – Site Climate

4.4.2. Topography

The 60 acres here at Mountain Park resides on the south side of the Mount Tom Range and changes substantially in elevation across the site. The nearby Connecticut River resides at a fluctuating 108' above sea level (FASL), as the elevations climb toward the site, from east to west, they cross over local Route 5 (Northampton St) at approximately 160' FASL, Interstate 91 at 340' FASL which becomes the lowest point in the south east corner of our site. The entrance to the park is preceded by the interstate overpass bridge located at 360' FASL; 250' above the river. The park climbs gently to the reservoir to the west, where the water level rests at approximately 395' FASL. As we move farther still we climb to the upper most portion of the site at 460' FASL. This location gives a grandiose view of the river valley to the southeast, the towns of Holyoke, South Hadley and Chicopee. To the west, we see an incredible view of the Whiting Reservoir and Mount Tom beyond. The site as a whole descends 120' from the top to the north down to the small wetlands in the southeast corner abutting the Mount Tom Ski Road that boarders the site to the east. This major elevation change gives the site some great opportunities for expansive views, acoustic isolation or broadcasting, hydrology and exercise. (Mass GIS)

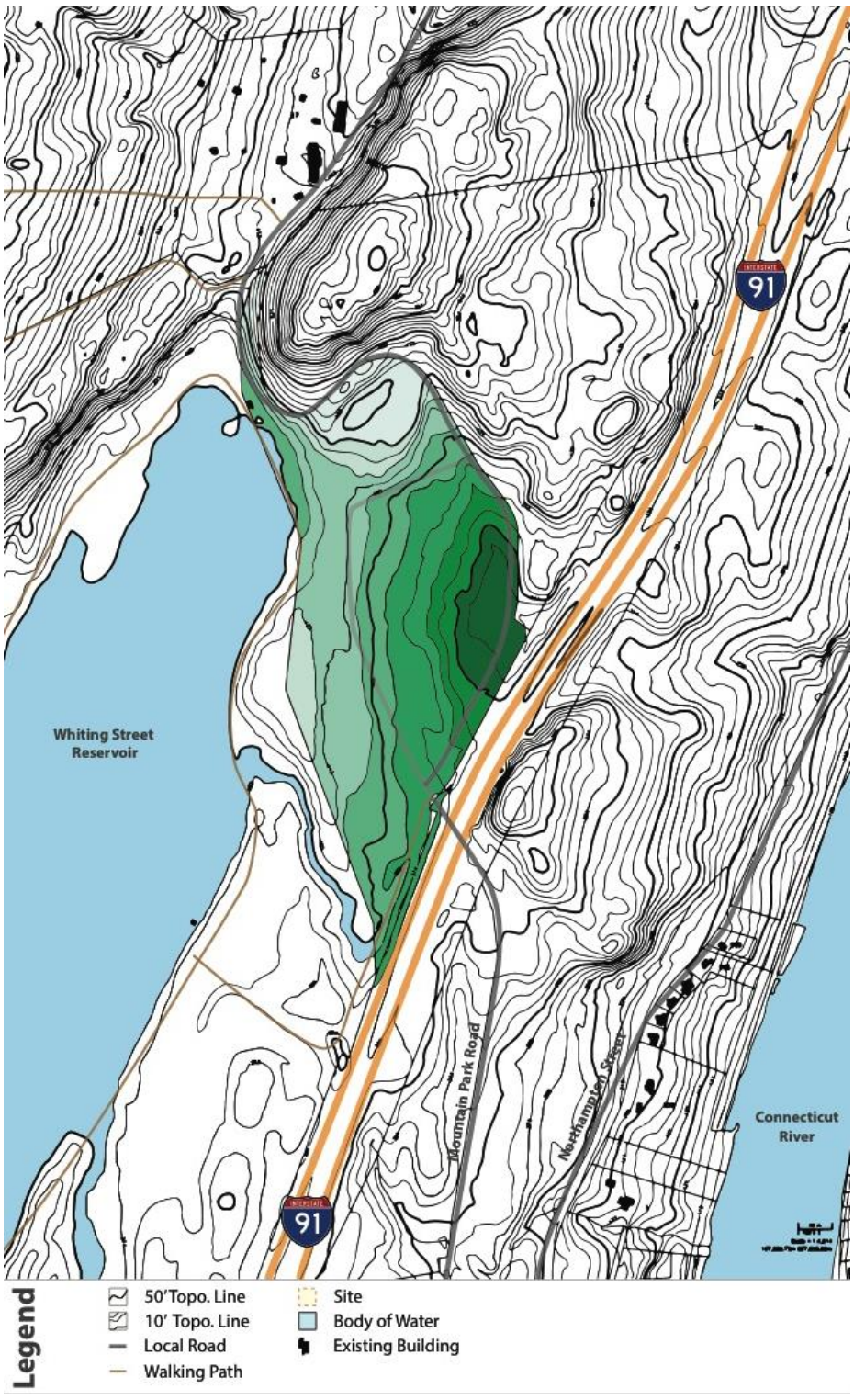


Figure 13 – Site topography

4.4.3. Hydrology

The major water features surrounding the site: the Whiting Street Reservoir and the Connecticut River, are two large bodies of water that collect the runoff from the entire mountain range above, funneling water down to the river and eventually the Long Island Sound. The reservoir catches a good portion of the mountain run-off, providing drinking water for the town below. A small earthen dam holds back the water on the southeastern edge and an access road/walking path surrounds the reservoir that is frequented by many hikers and runners from the area. Beyond the dam, the reservoir has a small creek of overflow water that fills up the forest floor as a wetland; this location is outside the boundary of the site and does not have any design implications for this project. The reservoir to the west of the site captures very little of the rainwater that falls on the site; the northwest corner does have some watershed back toward the reservoir, as well as a small creek that runs down along the Mt Tom Ski Road on the northern boundary into the reservoir from waters beyond the site to the north. On the site, we see the rainwaters filter down across its funnel like topography to the southeastern corner where the boundary ski area access road captures the rainwater into a marshy wetland. This wetland, and its 100' buffer, will provide the site with a protected area for flora and fauna to flourish, as well as an educational opportunity to observe and experience the natural beauty of the site and its natural occupants.

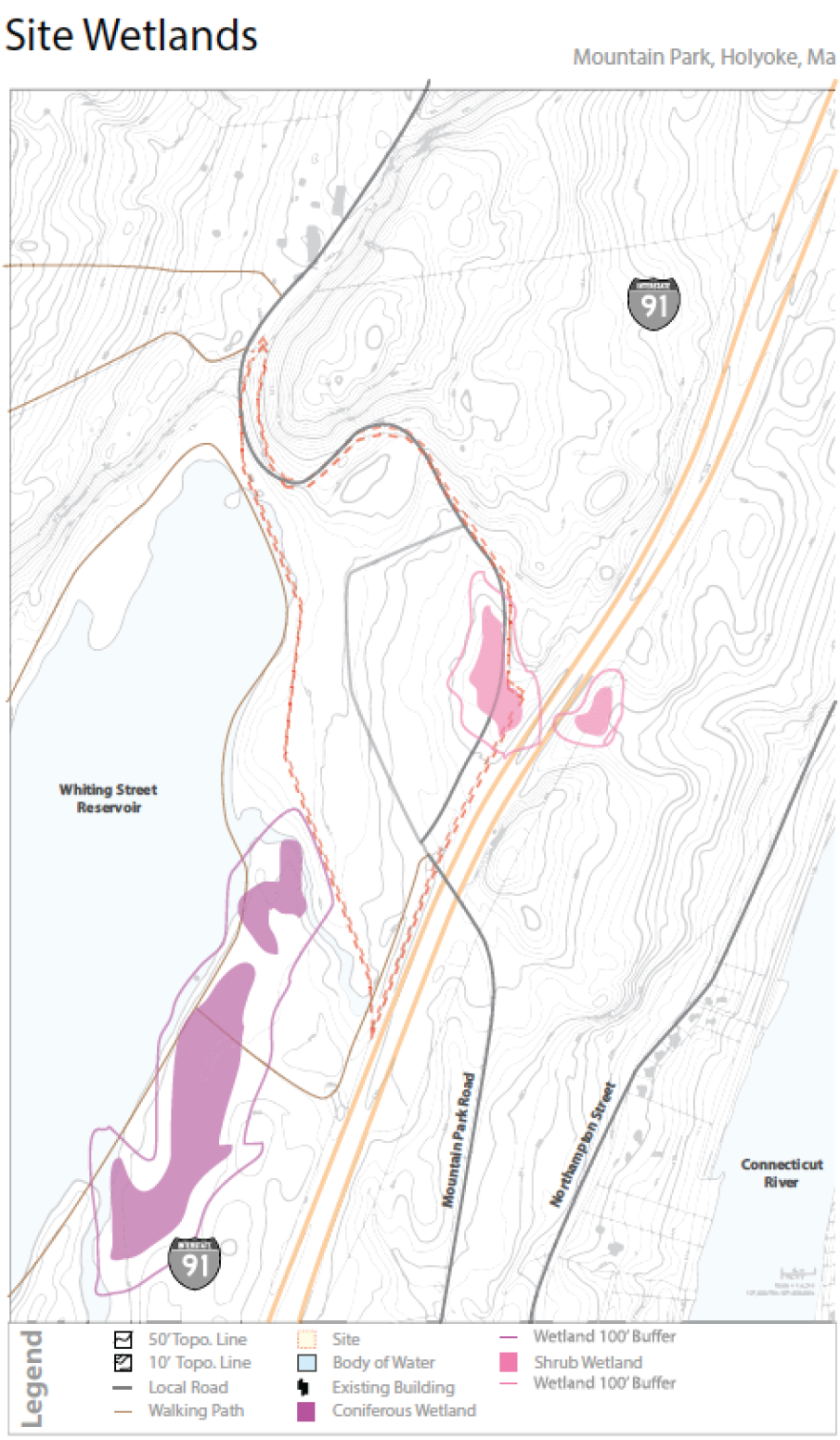


Figure 14 – Site wetlands

4.4.4. Solar Mapping

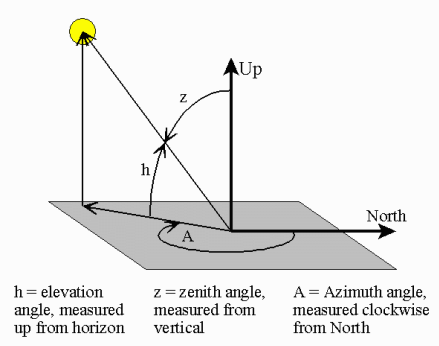


Figure 15 – Solar position definitions diagram

Being located on the southern side of the mountain range, the site has great solar exposure across its predominantly open landscape. The solar exposure of the site is extremely important in order to exploit passive solar design to collect heat in the winter and keep out unwanted sunlight in the summer. In western Massachusetts the maximum and minimum solar angles to the site occur on the Summer and Winter Solstices. The Summer Solstice takes place annually on June 21st, which is the longest day of the year rising at 5:15AM and setting at 8:30PM; accumulating 15 hours and 6 minutes of sunlight. This sunlight hits the earth at an angle of 71 degrees; this is called the solar elevation and is measured from the horizon. (Sun Seeker App) The location where the sun rises and sets also plays a part in maximizing the desired solar exposures of the site. This location is called the solar Azimuth. The angle measured in degrees from the north in a clockwise direction, during the Summer Solstice the sunrise at an azimuth angle of about 60 degrees and sets at an angle of 300 degrees. This condition is much different than the Winter Solstice, occurring on December 21st. The early morning sun shows its face at 7:15AM and sets quite early at 4:21PM; accumulating 9 hours and 5 minutes of daylight. During the winter, the sun reaches a maximum solar elevation of 29 degrees and rises in the morning at a solar azimuth angle of 120 degrees and sun set hits the horizon at an azimuth angle of 240 degrees. (Sun Seeker App)(See Figures Below) Identifying the solar patterns across the site allow us to exploit passive solar techniques to minimize energy costs both in winter

and summer. Also this analysis gives us the opportunity to collect the sun's rays with photovoltaic panels to convert the suns light into electricity used to power the new structures on the site. With this solar mapping we can also identify the conditions of designated spaces throughout the year, highlighting a specific area at a certain time of day or time of the year that will become illuminated with light.

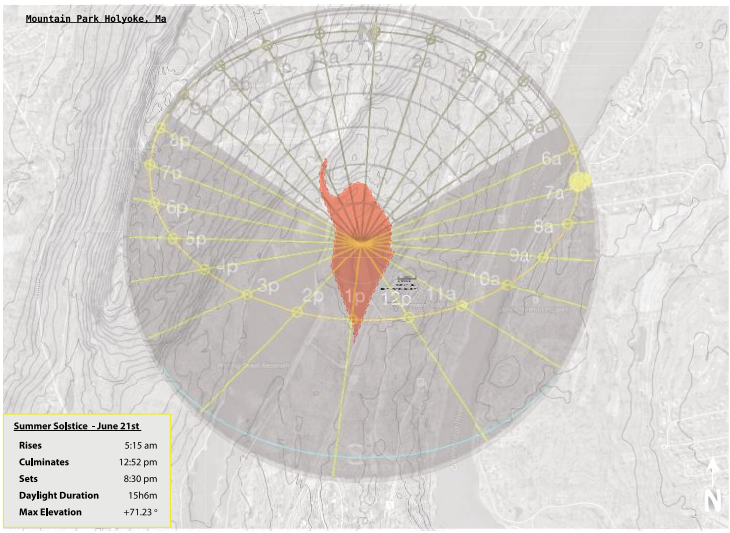


Figure 16 – Summer solstice site exposure

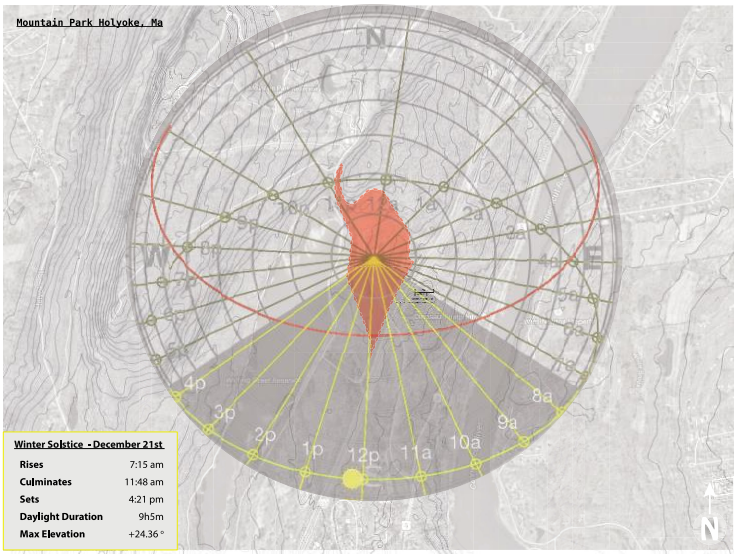


Figure 17 – Winter solstice site exposure

With the orientations of the sun we can now apply the information to the site directly, identifying which existing objections or conditions of the site will allow us to attain the solar qualities desired for a space. Because the site is defined by its unique topography, being part of a mountain range, we must identify the surrounding trees and landforms that will cast shadows onto the site in areas that we might have otherwise assumed perfect solar exposure. This specifically effects the summer months of the year where the sun rises and sets behind the mountain, making the early morning and late evening light less available because the mountain and surrounding

forests are impeding the sunlight from reaching the site. In order to determine which portions of the sunlight will be interrupted by these site features, site sections cut through the mountain will tell us what times the mountain shadow will restrict our solar exposure to.

To analyze this further, sections were cut through the site and surrounding areas on an east/west and north/south axis. These sections more clearly illustrate the point in the afternoon when the sunlight becomes indirect due to the shadow of the mountain. This site attribute makes the usually harsh late afternoon western light no longer direct and blinding but ambient and quite pleasant; allowing the western facades of the building to be inhabited more comfortably in the late hours of sunlight. Of course this effect changes with the seasons, as we can see in the east/west solar section below. During the summer the light shifts at approximately 5:30pm, allowing for afternoon activity to be unimpeded by harsh direct afternoon sunlight. In the winter the sun dips behind the mountain, closer to 4:00pm, causing the shift in light to happen much earlier than it does in the summer, but it only alters the last hour and 15 minutes of the day, where the summer's evening light is altered for the better part of 3 hours. The photograph of the site above was taken in February from the top of the site looking west/southwest over the Whiting Reservoir and toward Mount Tom. We can see the sun here in late afternoon headed down toward mountain range. After the sun recedes behind the

Figure 18 – Site photograph in February

mountain, the light quality changes and transforms the site to more comfortable and enjoyable space.

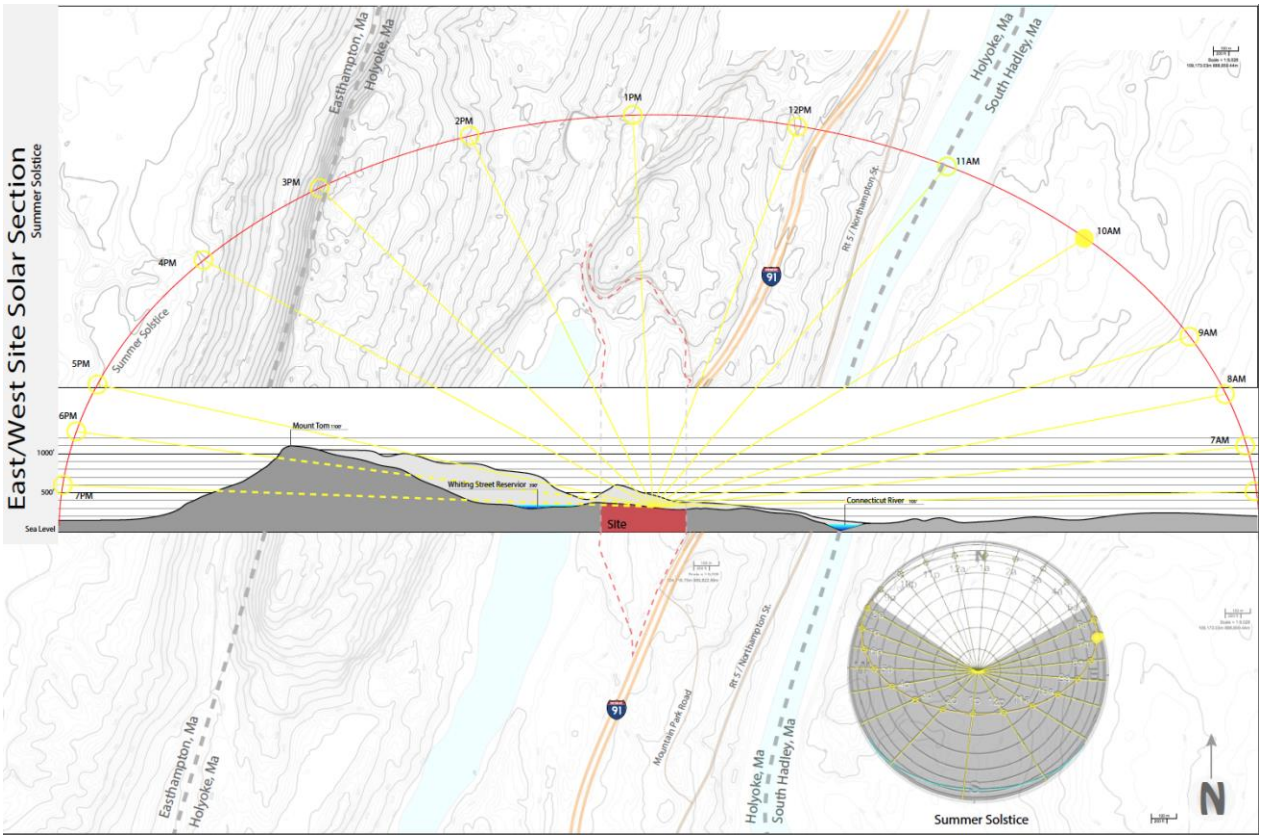


Figure 19 – Site solar section east/west axis summer solstice

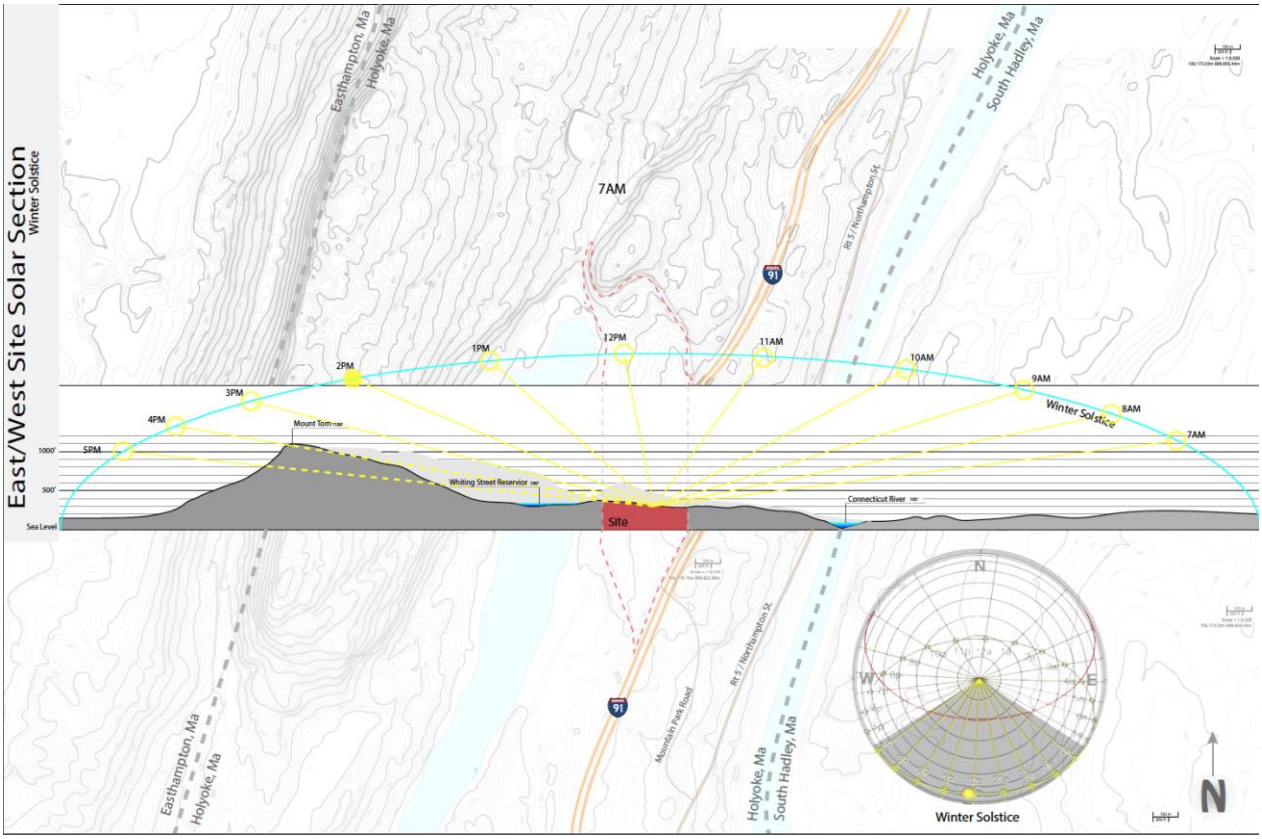


Figure 20 - Site solar section east/west axis winter solstice

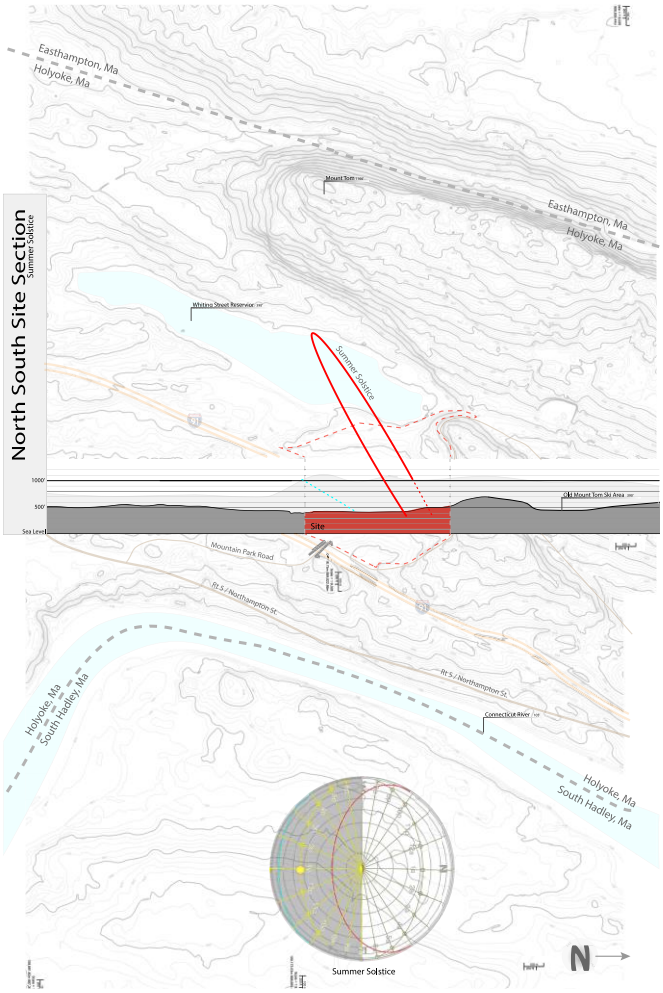


Figure 21– Site solar section north/west axis summer solstice

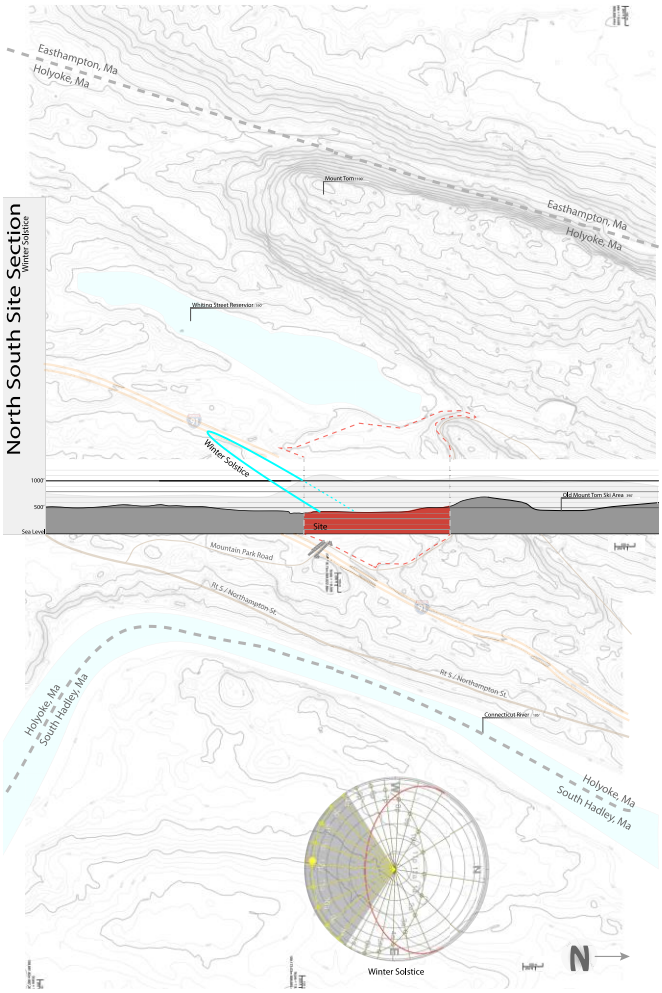


Figure 22 – Site solar section north/west axis winter solstice

4.4.5 Vegetation

The vast expanses of grass that now cover the site are a blank canvas that need to be re-planted, revitalized to their once diverse and lively un-caged natural habitat. The edge conditions of the site vary; the site is surrounded primarily by mature trees and wooded areas. The majority of the surrounding forest is deciduous; comprised mostly of maple, oak and elm. A minor coniferous component to the forest adds pine and spruce trees to the mix, giving some hillsides an annual tinge of green. To the west of the site along the reservoir the coniferous population increases with a large pine stand dividing the thin strip of wooded land between the water's edge and the site boundary. This Pine stand does impede on the view to the reservoir from the top of the site, however it does provide some screening from afternoon reflection of the sun off of the water. I think for further development of the site the view to the water would be more important for the majority of the day instead of the hour or so the reflection would pose a problem, especially because the mountain blocks much of the evening light throughout the year. The southeast boundary of the site where the wetlands and Mt Tom Ski Road are met with a thin strip of deciduous forest could be improved. The trees that separate the site from Interstate 91 are primarily deciduous and during the winter months don't provide much of a sound buffer from the noise of the highway below. This is a location that would benefit from some coniferous reinforcement to further dampen the mild wintertime noise pollution from passing cars. These edge conditions give some implications to how the edges of the site are affected by their surroundings.

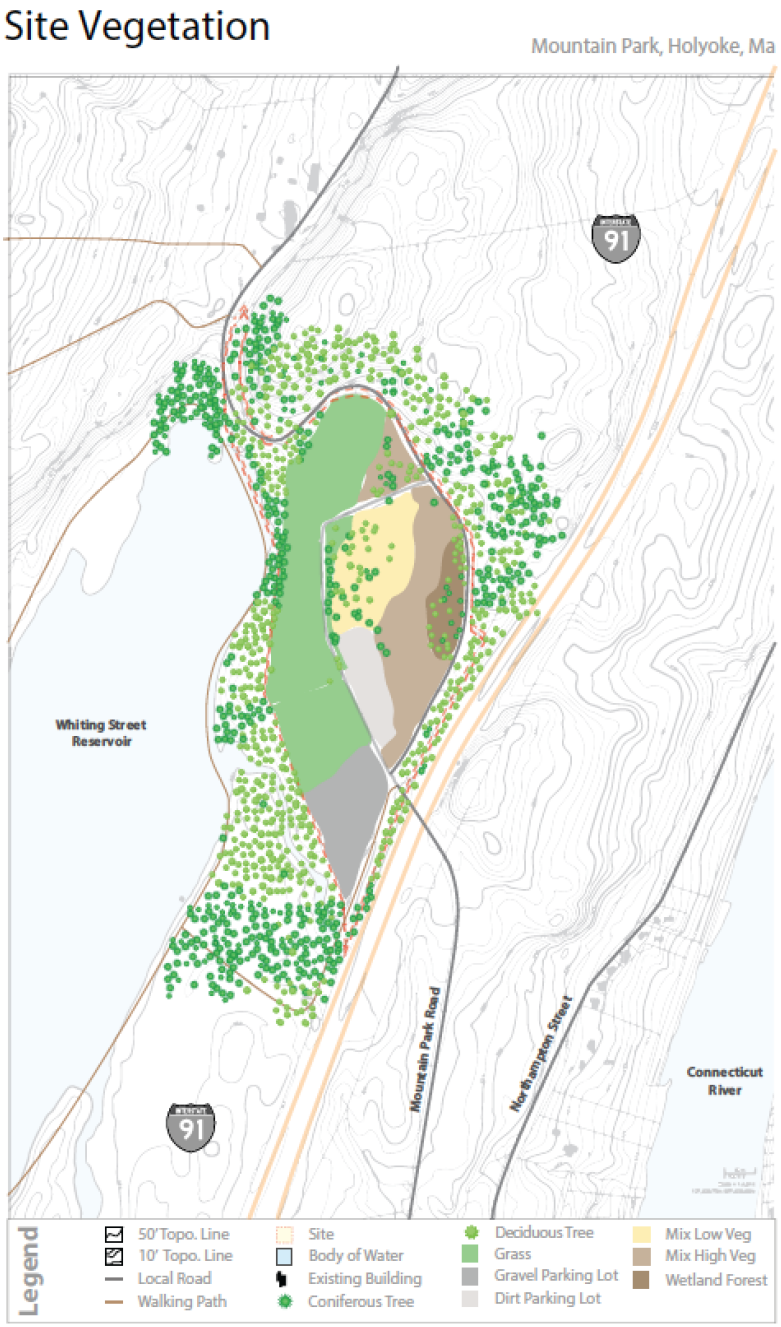


Figure 23 – Site vegetation

The 60-acre site has many different conditions within its boundaries that define its unique character. Much of the original forest charm of the mid 90's has been replanted with green grass for the owners concert lawn; as well as a portion of the site has been filled with gravel for parking. Beyond these rectifiable modifications to the site, there is still a large meadow below a grove trees, transitioning downhill into a flourishing lowland meadow and then into the wetland before hitting its boundary, Mount Tom Ski Road. The site and adjacent areas have been mapped for the current vegetation variations, the light green swath describes the maintained grass and lawn area, the grey (light and dark) describe the gravel parking areas, the three gradations of vegetation mapped on the site from the yellow mixed low meadow to the dark brown

wetlands. We can begin to see where the current opportunities are on the site for building due to the existing vegetation and drainage of the site along the eastern portion heading toward the wetlands it would be less invasive to be exploring options for replanting the grassy lawn and using that clean slate for rebuilding an identity for the western half of the site.

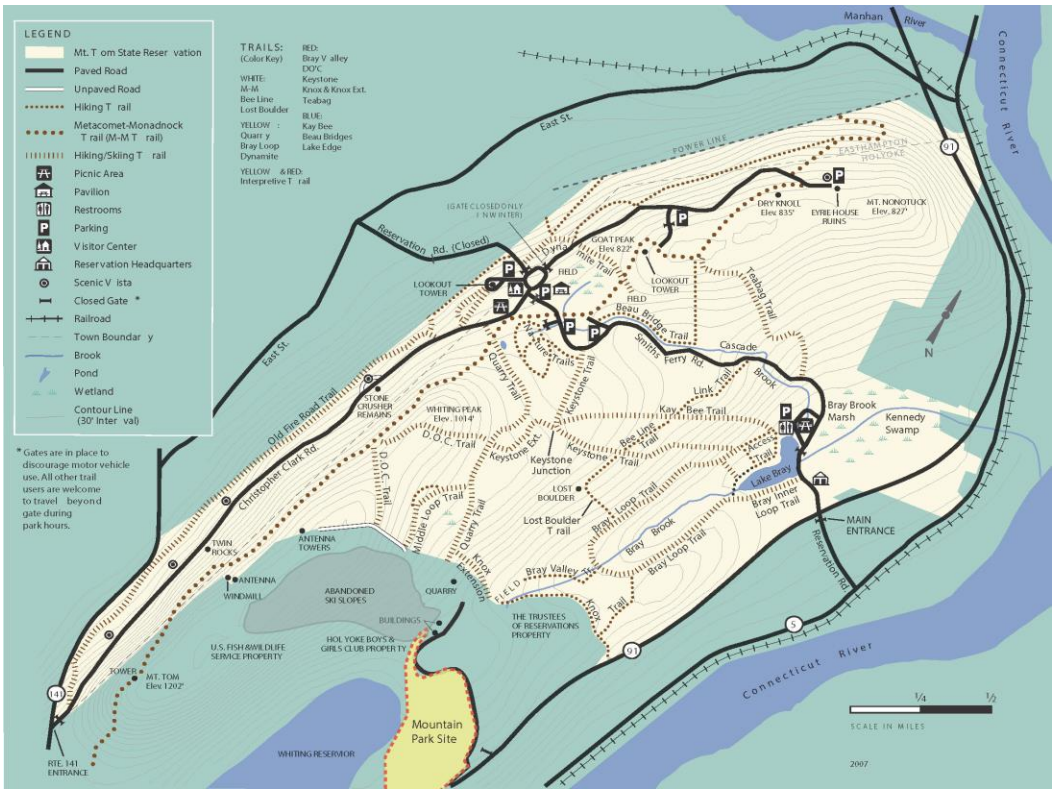


Figure 24- Mount Tom State Reservation Trail Map

4.4.6. Trails and Connections

The site has connections to a vast array of trail systems, bike paths, bus routes and other connections between people and places. The majority of the Mount Tom Range is the protected Mount Tom State Reservation. The reservation encompasses a large portion of northern Holyoke and straddles the mountain bordering the neighboring town of Easthampton. These local hiking pathways through the park also connect to the regional Metacomet-Monadnock trail. This 114 mile long trail begins in Southwick, Massachusetts and traverses the Metacomet Ridge (including Mount Tom range) through most of western and central Massachusetts before terminating on the top of Mount Monadnock in southern New Hampshire. (Wiki – Metacomet-Monadnock Trail) In addition to the large state park and Whiting Reservoir pedestrian trails, Route 5 (Northampton St) is frequented by the Pioneer Valley Transportation Association (PVTA) local bus route as well as a large number of local recreational road bike riders can be seen exploiting this river side road. The PVTA B-48 Bus transports passengers from downtown Northampton to downtown Holyoke via Route 5 (Northampton St), passing by the entrance road (Mountain Park Road) to the site, giving alternative transportation options to people who may be looking to take public transportation to the site. (Pioneer Valley) For long distance travelers the closest major airport is Bradley International Airport in Harford, CT less than 30 miles away. In addition, there are a multitude of smaller local airports: Northampton Airport just eight miles from the site and Westfield-Barnes Airport 10 miles from Mountain Park. Traveling by passenger train will get you as far as Springfield, 7 miles from the site, or Amherst 14 Miles from the site, and these Amtrak stations connect to a vast national system of rail transport. There is a rail line that runs by the site parallel to the interstate and river, the Pan-Am Rail

Line the caries freight from New York to Maine all year round, but no passengers are permitted on the freight trains. With an ever-expanding network of trials, pathways and modes of transportation the site has some rich opportunities to connect into the greater network of regional connections between people and places.

4.5 Opportunities

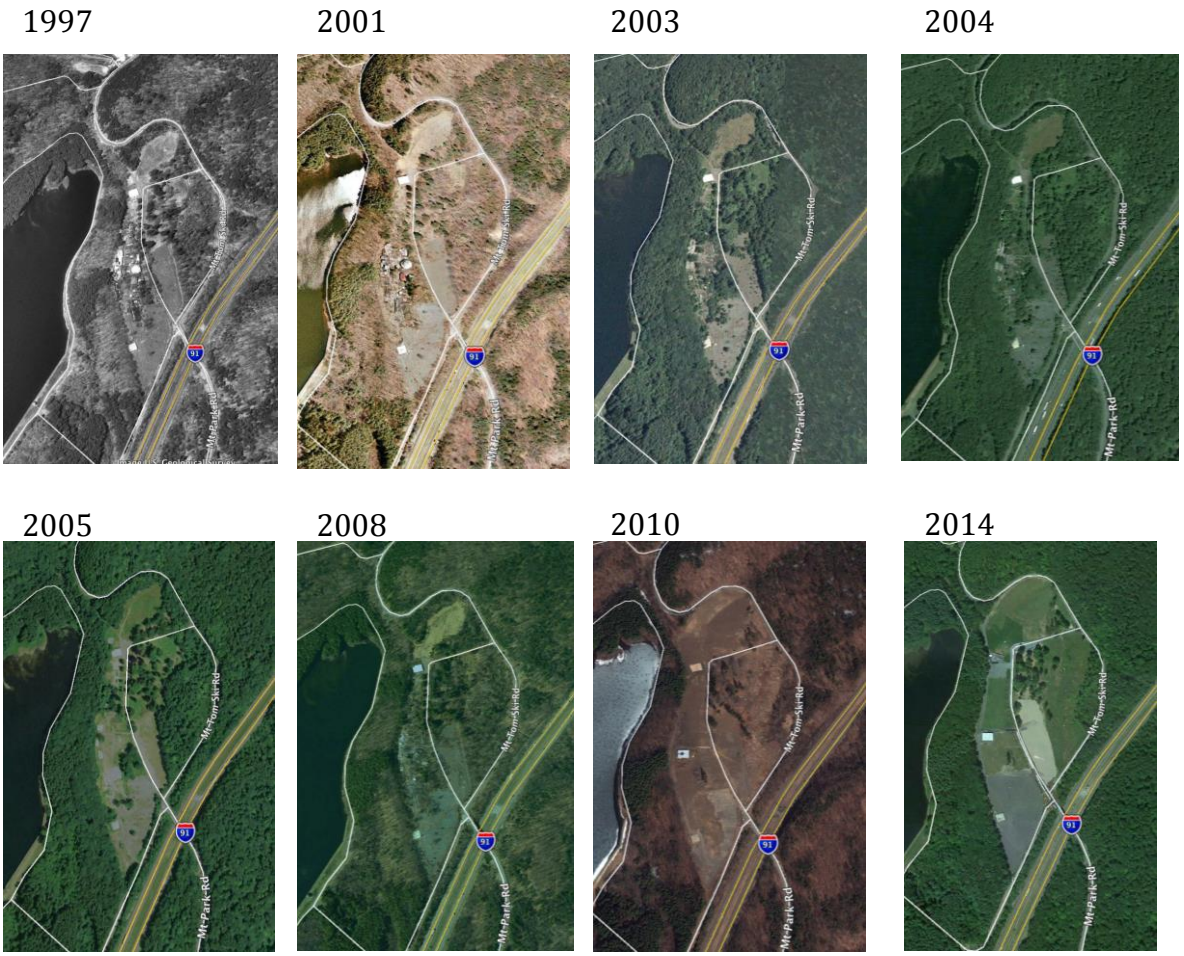


Figure 25 – Site aerial time lapse photos

After a detailed site analysis, there are some excellent opportunities for further development and revitalization of the Mountain Park. Nestled into the heart of New England this site boasts a natural environment, separated from the hustle and bustle of town and residential areas while still allowing many opportunities for connection to the established local and regional circulation. The rich history of the site, forecasts a spirit of recreation, serenity, and a connection to the natural environment as well as the social

community of the Pioneer Valley. With glorious mountain views and plenty of sunshine, this site has the ability to transform its visitors and reconnect them with not only nature and their fellow man, but also themselves. With a manageable proximity to many of New England's major cities, Mountain Park could forage a destination that connects to individuals from all over the northeast starting with Massachusetts and expanding beyond. Mountain Park is located just 90 miles west of Boston, 150 miles from New York City and 85 miles to Albany, New York. The population within 100 miles of Holyoke is a staggering 6,167,000 according to the circular area profiling system based on the 2010 census information, compiled by the Missouri Census Data Center (Circular Area Profiles). If we grow that area to 200 miles from Holyoke we are accessing a population of almost 27 million people. Although the property would only be able to host a small percentage of this population, it does put into perspective how easily one could make this wonderful place a destination for rest, regeneration, relaxation and exploration.

CHAPTER 5

CONCEPT

5.1 Proposal

This project proposes to construct a Self-Transformation Retreat on the 60-acre site of Mountain Park in Holyoke, Massachusetts. Constructing a destination retreat where individuals can reconnect with their "core-selves" (stripped of inhibition and elaboration), their environment and their fellow man/woman. Through relaxation, mindfulness, yoga, and meditation, we are able conduct an exploration of our internal and external self, and our relationship to the world around us. This destination retreat would give any individual the tools to separate ones-self from the stresses, clear blockages, cleanse the body and free our mind from our busy, fast-paced, over-stimulated lives.

By introducing architectural experience, the participants in the Self-Transformation Retreat will discover thoughtful moments of texture, color, light, material, and space designed to evoke thought, sensation, emotion, comfort, joy, connection and the list goes on. By living in the moment, experiencing the here and now we become grounded, more connected to the people and things around us. There is so much beauty in the world, right here beneath our feet, reconnect with the natural environment across the expansive landscape of gardens, forests, meadows and fields. Whether you prefer activity or serenity, community or solidarity, or just want to be a part of something exciting while revitalizing body, mind and spirit to healthy and happy existence.

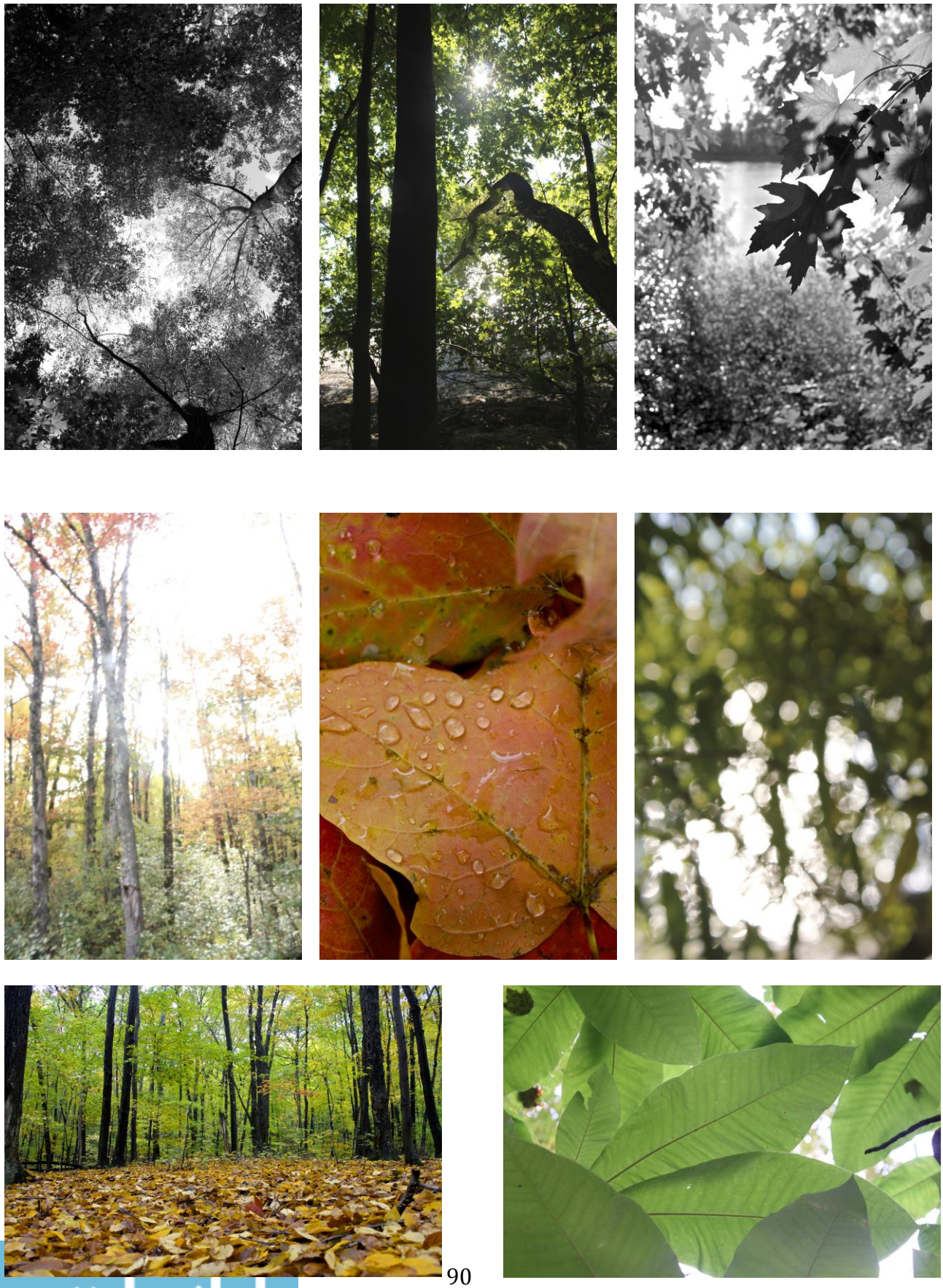
This retreat is place of acceptance, compassion, connection and purpose, break outside of the routine and spend time devoting yourself to the healing of one's body and mind, in an excitingly rich experiential architecture and landscape. Through a series of

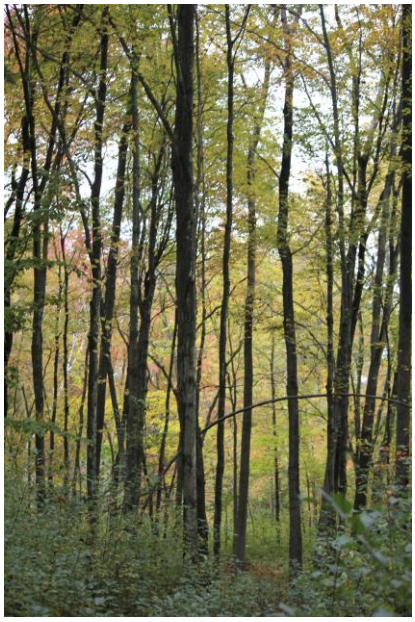
unique and experiential filters between people, the natural environment and built space, the Self-Transformation Retreat uses architecture to promote: the practice of mindfulness, the injection of sensation and the evocation of experience.

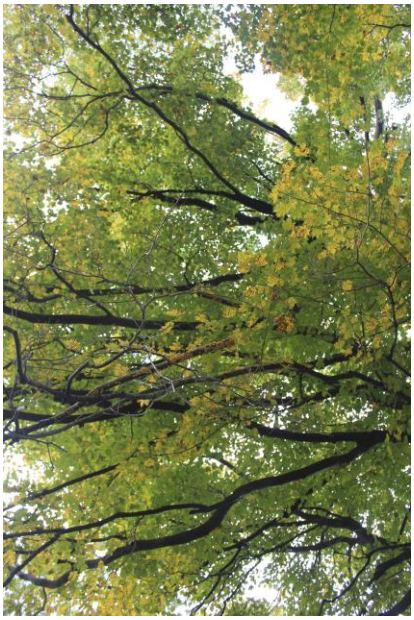
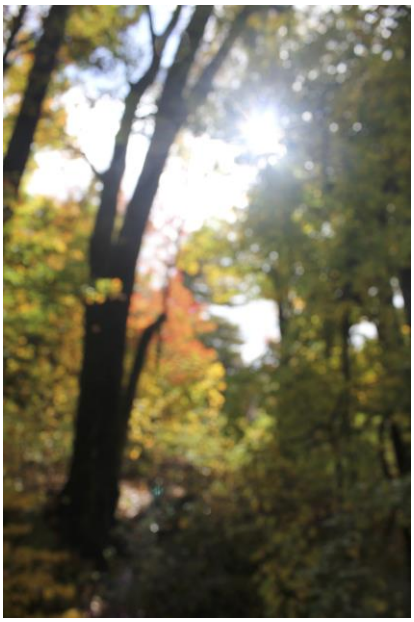
5.2 Exploration

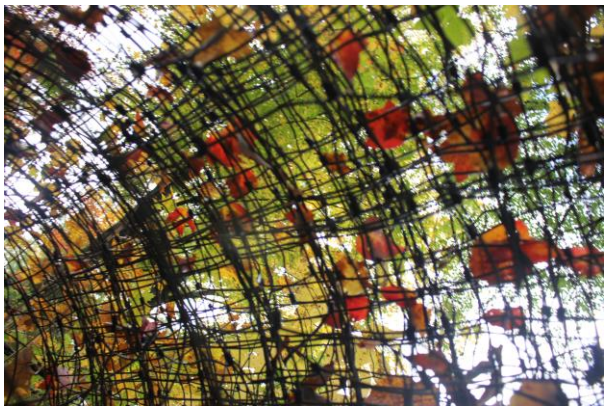
In order to understand how to experience the moment, the first step was to extract natural phenomenon and unique occurrences from site and surrounding areas. Extracting experience from nature by photographing, sketching and video recording how light, texture, vegetation, climate and wildlife create beautiful and interesting moments of experience. From these inspiring and interesting natural moments, I hoped to define a variety of physical manifestations from which to attribute design directives. Traversing the site and surrounding mountain landscape throughout the different seasons, I was able to capture magnificent light filtrations, reflections and shadows that activated the natural environment throughout the day. Recording videos allowed me to add the additional audio component to these images; capturing the trickling of water in a creek, the songs of the birds or the rustling of the leaves in the wind. The only way to experience a place with all of ones senses is to be immersed in the environment ones-self, taking in first hand all the details of a space with each of ones sensory receptors. Here were some of the more interesting initial exploration captures of nature and its beauty:

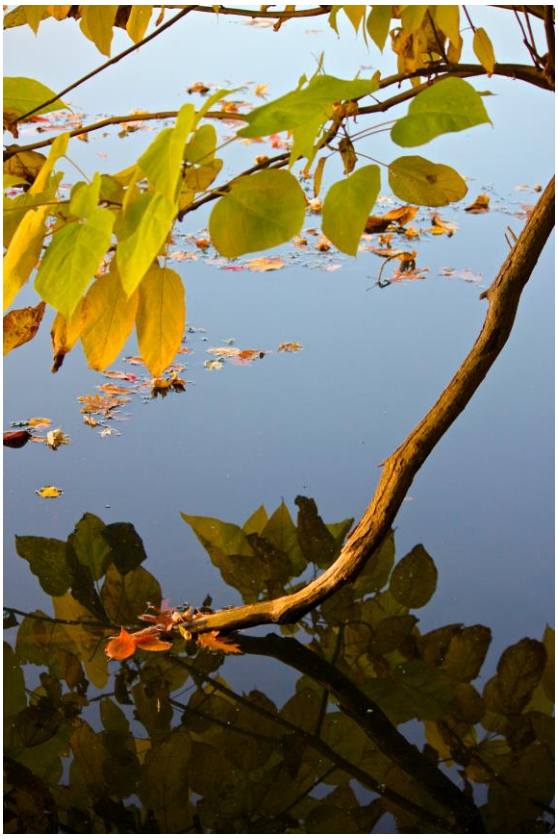
Figure 26 - Exploration photograph series









After an extraction of these moments, I began to identify the sensory receptors that these moments activated as well as some of the positive or experiential feelings and emotions that each of them might evoke. By evaluating each of the senses and emotions at each moment, the viewer is able to fully experience the moment and the environment that surrounds them. This environment provides the information for us to perceive, of course there is a cognitive processing that interprets this information by comparing memories, prior experience and other deductive reasoning skills all within an instant for us to decide what the space/place feels like physically and how it makes us feel emotionally. Evoking emotion, especially positive and advantageous emotions can come from a variety of sensory stimulation.

The wheel below describes what tangible sensory inputs we might encounter in our environment, starting with the five senses: touch, sight, smell, taste, and sound. The majority of people understand how these sensory receptors affect their life, but there are two other factors of our environment that can affect our body and mind in different ways; these two additional categories are climate and nourishment. Climate affects the individual further than the sense of touch can perceive. We experience temperature and wind and precipitation with touch, smell, site and even taste sometimes but there are other factors of a moment in the environment that are also perceptible if not on a conscious then on a subconscious level. Variations in ultraviolet light, pressure and humidity affect our physical and mental self just as much as the more perceivable changes in climate. Nourishment of the body and mind, although often behavior based, this category talks about proper intake of nutrients and adequate amounts of sleep and rest in order to function normally with an unimpaired active body and mind. These two additional

categories help describe the internal and external environment and their effects on how our body receives, processes and interprets the information about where we are and what is happening in any given moment of time. The right column in the graphic describes some of the desired positive-emotions and sensations that could be productive or desired from an experience and their potential corresponding sensory receptors.

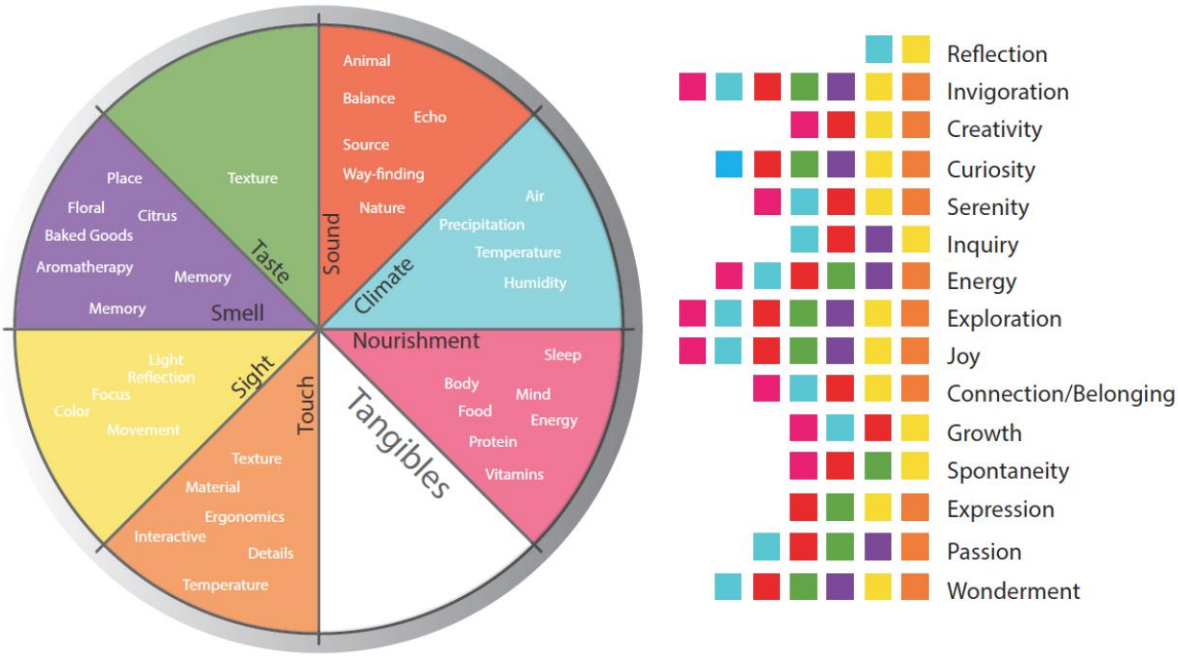


Figure 27 - Sensory experience diagram

Discovering a greater understanding of the natural environment and how we perceive the world around us, is the first step to being able to design spaces for others to experience. Interactions with the sensory organs are almost simultaneous; working

together to perceive our world, and at times too much stimulation of sensory organs can result in a sensory overload. The brain requires a certain portion of time in order to process all the information it is receiving. When there is an overwhelming amount of information, the brain not only is unable to process much of the information but unable to grasp the experience. In order to design spaces for the senses and for people to experience, we must evaluate what years of the evolution of the built environment has taught us about space. The senses are a miraculous specialized evolutionary feature that can literally change everything about how we think, act and feel at any given time. Soothing music or a rushing creek causes different effects, thoughts and emotions than a jarring emergency siren or alarm. Collecting details about the environments we enjoy and spaces we create to enjoy the moment whether it be a favorite restaurant, a concert hall or a movie theater, each of those spaces were designed to create a platform for the intake of sensory experience. With these tools in mind, the next logical step is to evaluate what spaces have already been designed for the collection of self and practicing of mindfulness; evaluating the quality of previously design spaces allows us to better understand the thoughts and feelings certain spaces make us feel.

5.3 Inspiration

Yoga, Meditation and Retreat Centers are not a new phenomenon. The history of these practices date back hundreds of years, people escaping to the countryside, planting lush gardens and exploring all the different landscapes the world has to offer. Some of these places concentrate on their natural environment and the experience outside of the built environment, others fabricate environments with a multitude of materials and technologies to create any experience different from that which they view on a daily regimen. Even novels, movies, art and music has the ability to transport us to a different place; mentally, physically and emotionally we can become so involved and integrated with the environment, and from my experience this is when we feel most alive, immersed in life.

The following spaces were identified as spaces with a rich variety of architectural and environmental experiences. These spaces were further investigated and explored as precedents.

Program Precedents:

1. Spirit Rock Meditation Center, Woodacre, CA – JSW/D Architects
2. Kripalu Center – Stockbridge, MA
3. Omega Institute, Rhinebeck, NY
4. Esalen Institute, Big Sur, CA
5. Rehabilitation Centre Groot Kilmmendaal, Armhem, Netherlands – Koen Van Velsen Architects

Architectural Precedents:

i. Dae Yang Gallery/House, Stephen Holl
ii. Bruder Claus Chapel, Peter Zumthor
iii. Ken Min Architects – Lake Hills Suncheon Golf Resort
iv. Jean Prouve – Evian Pump Room

spirit rock meditation ctr
precedent

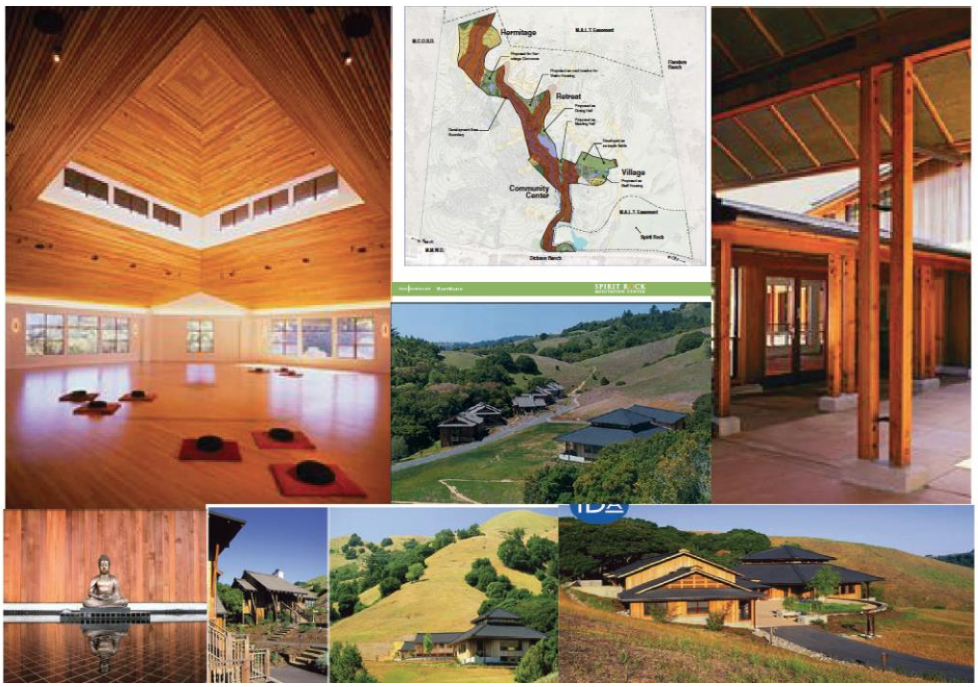


Figure 28 – Spirit Rock Meditation Center

Spirit Rock Meditaiton Center, Woodacre California

JSWD Architects – Berkley,CA

This 400 acre mountain reserve retreat nestled up in the rolling hills north of the San Fransico Bay Area has recently expanded to add a plethora of new spaces. This location offers classes, weekend and extended stay retreats to come an explore their practicing of mindful awareness known as Insight Meditation or "Vipassana." These methods focus on quieting the mind and give individuals skills to impliment theses and other teachings into their daily lives. The programs offered at Spirit Rock are organized as community specific programs to promote diveristy, as well as attempting to make their teachings and retreats available via scholarship for individuals who otherwise cannot

afford them. The expansive rural campus follows a creek from the hermit village down to the main gate, giving this beautiful place continuity and life. The spectacular meditaion hall, natural materials and attention to detail makes this retreat a destination with endless possibilites and oppertunities. (Spirit Rock)

Kripalu center precedent

Figure 29 – Kripalu Center

Kripalu Center for Health & Yoga
Annex (Retreat Housing) – Charles Rose Architects, Somerville, Ma

This Western Massachusetts Yoga retreat destination is located in Stockbridge, MA, in the Berkshire Mountains. The center is a non-profit organization for "exploring the yoga of life," a health and yoga retreat. Occupying a 160,000 square foot facility (formerly a Jesuit Novitite built in 1957) is the self-proclaimed largest residential facility for holistic health and education in North America and has been teaching skills for optimal living through whole body education for more than 30 years. Employing 626 people with accommodations for 650 visitors, it makes quite a splash on the map. The center has also been recognized for developing its own form of Hatha Yoga using: inner focus, yoga poses, breath-work and relaxation, called Kripalu Yoga. Practitioners will learn to "follow the flow" of pranna (life force energy), compassionate self-acceptance, observing the activity of the mind without judgment, and implementing them into daily life. (Kripalu) (Wiki - Kripalu)

omega institute
precedent

Figure 30– Omega Institute

Omega Institute for Holistic Studies, Rhinebeck, NY

Omega, founded in 1977, has a mission to "provide hope and healing for individuals and society through innovative educational experiences that awaken the best in the human spirit". (OMEGA: Institute for Holistic Studies) This 190-acre campus includes an 80-acre lake for a multitude of activities (canoeing, kayaking, tennis, basketball and hiking trails), as well as a hill top sanctuary and a new Center for Sustainable Living (OCSL) with living building certification. The center welcomes families as well as kids and teens to come experience all the workshops, professional trainings, retreats, conferences and a teen camp. All of the programs are organized around six categories: body, mind and spirit,

health and healing, creativity and play, relationships and family, leadership and community and sustainable living. (OMEGA: Institute for Holistic Studies) (Wiki Omega Institute)

esalen institute
precedent

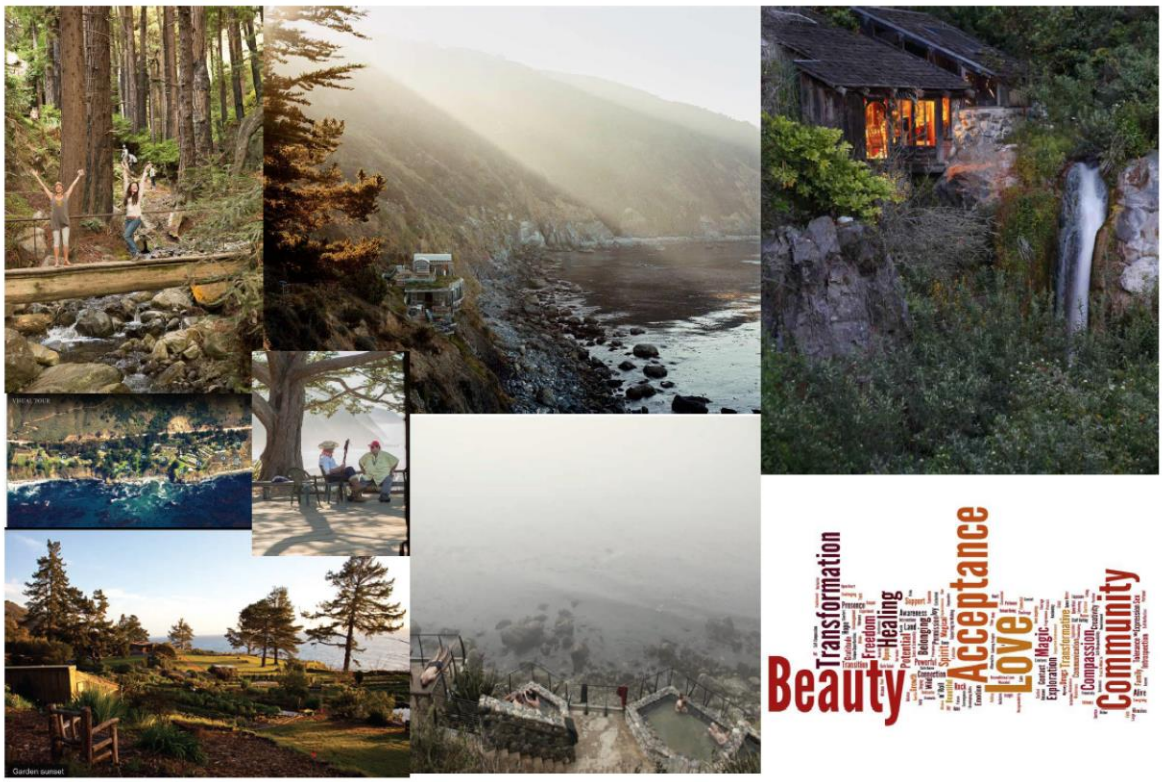


Figure 31 – Esalen Institute

Esalen Institute, Big Sur, CA

This outstanding 120-acre campus resides between lush green redwood forests of mountains and the outstanding cliffs of the pacific coastline in northern California. The non-profit provides humanistic alternative education with directives such as: personal growth, meditation, message, Gestalt, yoga, psychology, ecology, spirituality, dance and organic food production. Founded in 1962, one of this destination's hot spots is are the unique natural hot springs situated on the cliffs above the ocean. The locals, first used the hot springs in 1870, to treat arthritis; today they are enjoyed to soothe many ailments of the body and mind. The institute exists to "promote the harmonious development of the whole person, a learning organization dedicated to continual exploration of the human

potential and resists religious, scientific and other dogmas."(Wiki- Esalen Institute) The institute harvests its own crops, has an art barn for explorative and expressive therapies, as well as a recent focus on issues of permaculture and ecological sustainability. (Esalen: Our Story) With decades of visitors exploring the existential back to nature retreat that allows individuals to bask in the mountains and ocean all at once, Esalen has developed many programs and workshops for all ages to reconnect with others and ourselves.

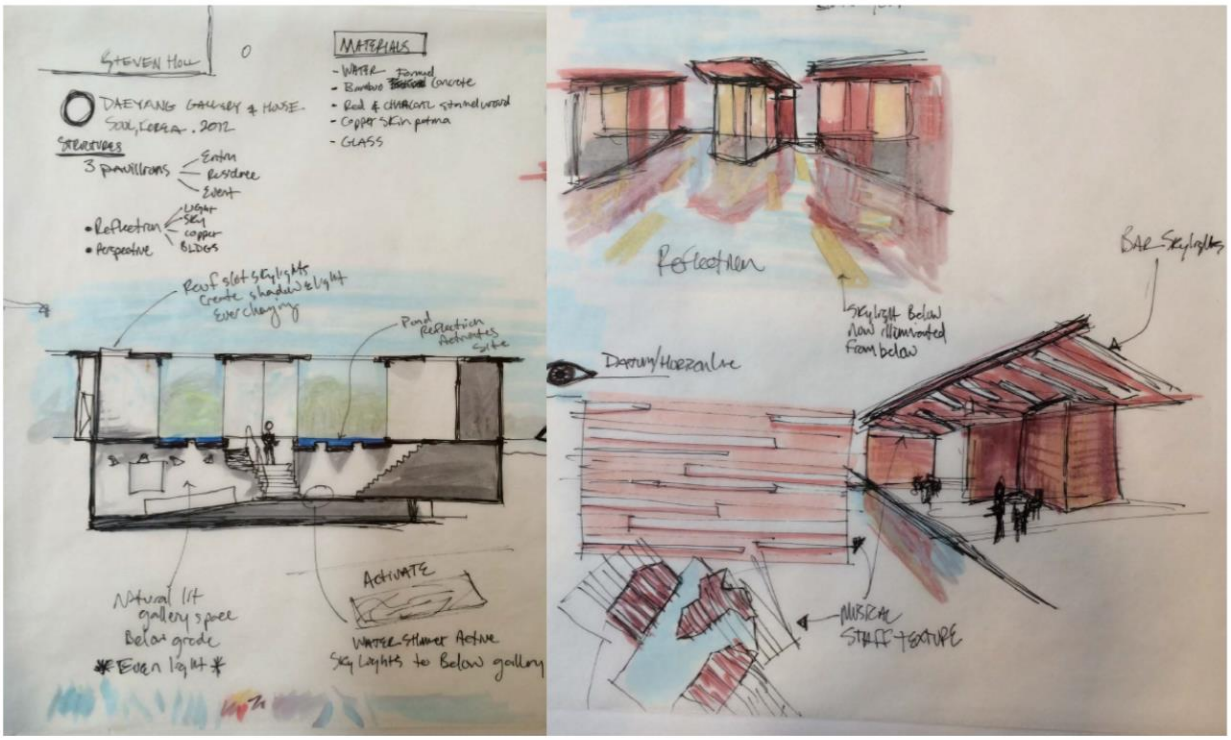


Figure 32 – Daeyang Gallery House

Dae Yang Gallery/House, Seoul, Korea 2008
Steven Holl – Architect

This 10,000sq. ft., combination residential home/art gallery exhibits Holls brilliantly contextual and textural connection between residence, exhibit and event spaces. The house plan was derived from sheet music sketch from 1967. There is a large reflecting pool covering the basement roof that separates not only the individual structures above, it also gives a datum line for spatial reference for the visitors in any section of the structure. The interplay of bamboo formed concrete walls, copper paneling, reflection pools and strategic landscaping makes this exhibit of a home feel like you're in a surreal landscape with

reflections of the buildings, sky and vegetation integrated throughout the site. From below in the gallery or performance spaces skylights that are submersed below, the pool cast wonderfully active shadows of rippling shimmering sunshine to the spaces below. This unique use of water activates the senses and gives the visitor a profound experience that changes every day of the year. (Deayang Gallery and House)

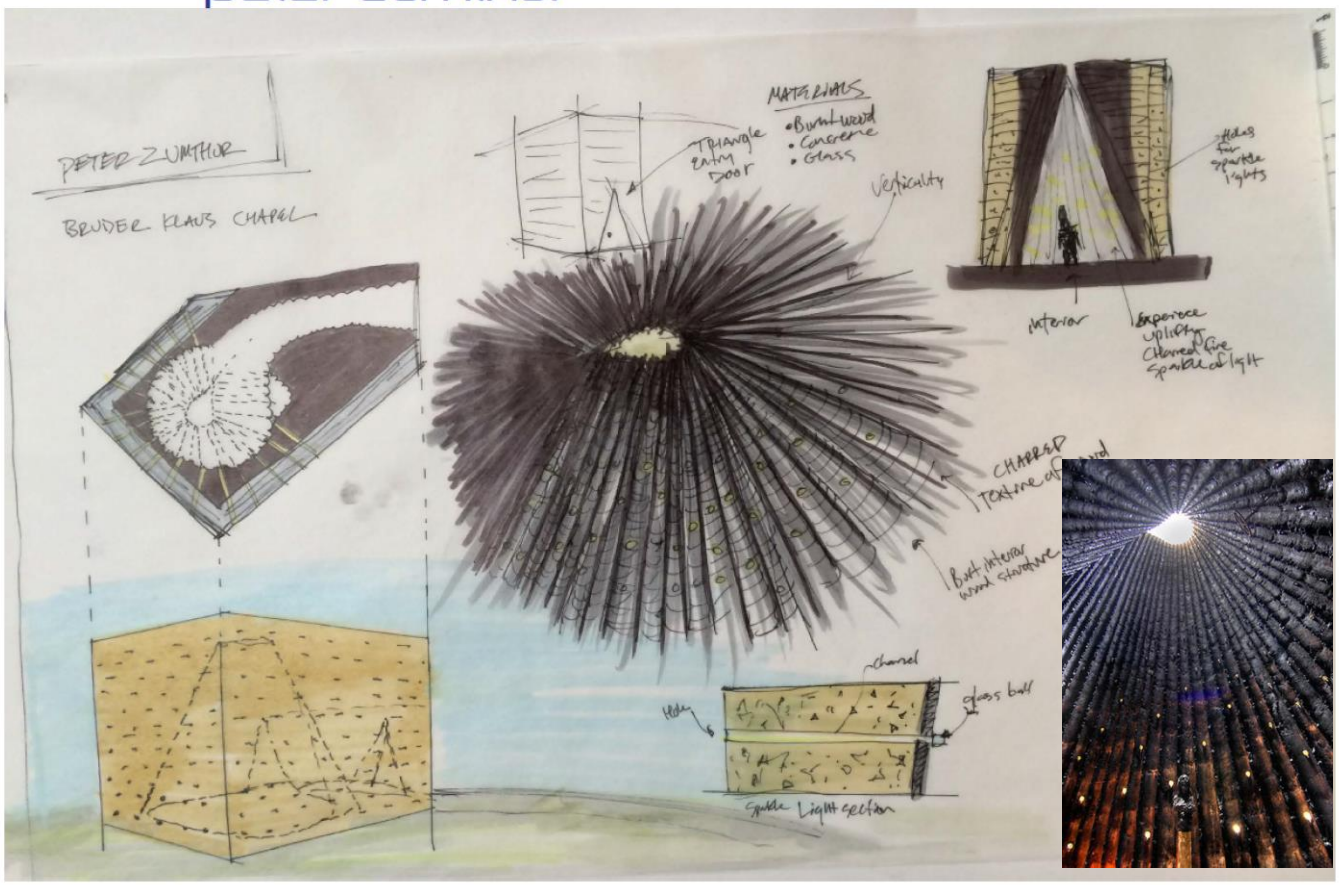


Figure 33 – Bruder Klaus Chapel

v. Bruder Klaus Chapel, Peter Zumthor

Bruder Klaus Kapelle (Brother Klaus Chapel), Mechernich-Wachendorf, Germany

This one of a kind chapel built of the earth, was carefully crafted by Peter Zumthor, a world renowned Swiss Architect that has completed other exquisite works like the Thermal Val (Baths) in Vals, Switzerland, Swiss Pavilion @ Expo 2000, Germany etc. This chapel was crafted with wood and concrete, however in a rather peculiar method. By bundling up 120 locally harvested large tree trunks like a cone shape that would create the interior void like no other place on earth. By building around the outside of the tree trunks with a wooden frame, then filling the middle with concrete, then burning out the wooden center; Zumthor was able to create a raw, intimate interior of charred concrete and a

poured lead floor. The tear-drop shaped oculus left behind as a puncture into the sky gives the space direction, meaning and purpose. The space leaves the visitor somber and reflective, as this cherished piece of religious architecture captivates the hearts of many. Zumthor describes the design with adjectives like "composure, self-evidence, durability, presence, integrity, warmth and sensuality… a building that's being itself, a building being a building, that does not represent anything." The building plays eloquently with light, imbedding chrome light tubes with hand blown glass marbles to allow light to penetrate the concrete shell and into the center void. This attention to detail and material and enriching experience is created in such a natural, simple and spiritual space (Wiki- Peter Zumthor) (Wiki- Bruder Claus)

Figure 34 – Lake Hills Suncheon Golf Resort

Lake Hills Suncheon Golf Resort, Jeollanam-do, South Korea
Ken Min Architects

This exotic clubhouse resides in the southwest corner of South Korea, overlooked by the scenic Mt. Oseongsan. The site was situated in a large historic Buddhist culture dating back to the 1100's, so making a culturally reflective design decision the architect Ken Min decided to exemplify the traditional Korean wooden building. This inspiration gave rise to the uniquely tectonic wood structure, utilizing long spans and creating a similar spatial and architectural aesthetics to assimilate new wood technologies with the existing local charm. This lovely wood structure invigorates the interior with a warm natural materiality without extensive interior finishes, making this unique interior ideal for a multitude of programmatic pieces. The building exemplifies the glulam, which was manufactured in the

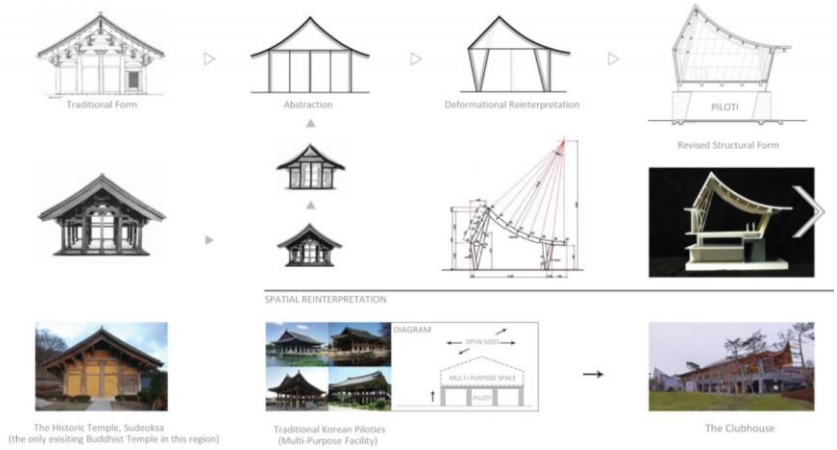


Figure 35– Lake Hills Suncheon Golf Resort design evolution

United States and processed and prefabricated in Japan before it was imported along with the metal joint system (BVD Hangar that was developed in Germany) The elegant form and expression of natural materials as well as innovations in technology gives this project life and character. (Lake Hills)

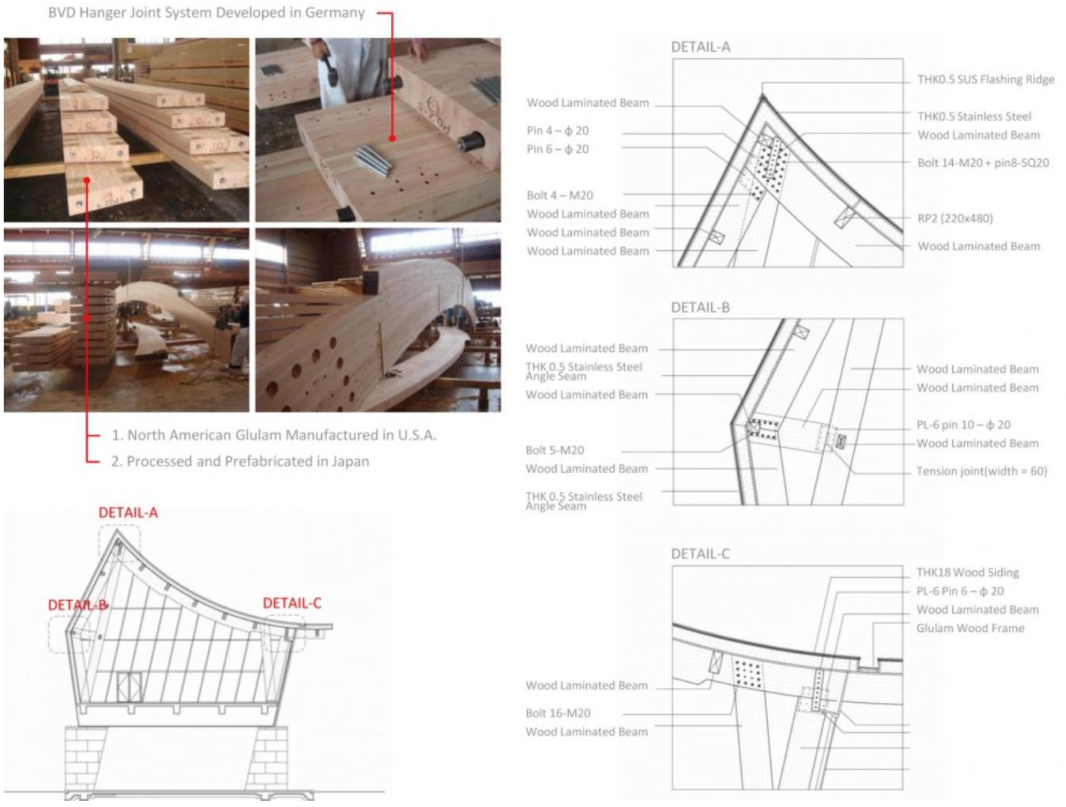


Figure 36– Lake Hills Suncheon Golf Resort construction

Figure 37 – Cachat Spring Pump Room

Cachat Spring Pump Room, Evian, France
Jean Prouve – Architect

Prouve a well-known architect in Paris, France through the 40's, 50's and 60's, made a living of clean lines and industrial beauty, working primarily in steel and concrete, this detail oriented designer worked on many projects as small as the chair, to large scale structures. His attention to detail helped him design one of the first curtain walls at Maison du Peuple in Clinchy, France, incorporating ingenious insulation and ventilation systems. He thought of himself as a constructor, he was describes by Le Corbusier as "The architect-engineer" creating elegant industrial prowess, to streamline a spatial design and aesthetic for the inhabitants.(Prouve) (Ivory Press)

5.4 Programming

The analysis of current, established retreats and other inspirational architecture formed the springboard for the development of unique program for the Self-Transformation Retreat. Building a retreat where people would come and stay overnight, for short and long term stays requires a certain number of services, amenities and accommodations that a daytime only facility would not have. Housing is of course the first thing that comes to mind, a place where patrons will go to rest, recollect themselves, store their things and sleep. There are many different models for housing and the "storing" of people; I prefer a happy medium between individualized spaces and communal clustering that provides a sense place and community while also giving privacy and serenity to the individual. The experience here is to be tactile, natural and connected, to other people as well as the environment around you. With patrons staying there, there is a good argument for having a place for a portion of the staff to stay as well. We see models of this in many retreats because this type of program is not something you leave at the door, it's a skillset that will last you a lifetime and will follow you wherever you go. Mindfulness is a lifestyle, and the destination must also be treated as such; providing all the essential functions of daily life and so much more.

If people are spending nights, there needs to be a full service kitchen and dining area; complete with refrigerator, freezer, services/deliveries, dry storage, office, and of course the kitchen itself including: food prep, cooking, serving, staging and dishwashing. There of course could be a produce garden on the site, providing essential natural and

organic produce for seasonal meals and events. Having a garden on site can also be very therapeutic for individuals physically wanting to dig deep within themselves and truly connect with the environment. A large dining hall would be able to accommodate all guests, and by including an adjacent patio/lawn to dine outdoors when the weather is nice would be the perfect touch. After accommodating food and shelter, we can concentrate on describing our primary functions and their associated spaces.

Yoga and Meditation are great ways to practice mindfulness, giving the retreat places to not only investigate your inner self but also your connection with the people around you. Both of these activities can be performed indoors or outdoors however the space requirements can be quite different depending on the number of participants in any given session. By creating different sizes of each space, it lends itself more easily to a gradation of size of each group; a small meditation pad for one could be nestled in the woods, while a large platform in the grass could be used for yoga or meditation groups as well as the individual. These spaces being flexible in size allows their functions to overlap but some desirable spatial qualities may differ depending on the activity. These large primary spaces will likely be the focal point of the project carrying out most of the most important functions of the retreat on a daily basis.

In addition to the primary spaces, the circulation and "support" spaces would need to accompany the "main attractions" in order for all activities, programs and functions to work seamlessly. The inclusion of arrival spaces, administrative offices, bathrooms, storage, mechanical and of course parking are just a few of the support spaces needed to supply the major building functions with the things they need to run smoothly. Auxiliary spaces, although somewhat secondary in design, still require the same attention to detail

and designation of spatial qualities that the large “important” spaces do. In terms of the project as a whole, the auxiliary spaces become the cohesiveness that connects all the spaces together seamlessly and cohesively.

Program	Location	square size	sq. ft.	Capacity (ppl)	Public	Privacy	Light Intensity	Light Source	Temp.	Material A	Material B	Water Type	Tree/Nature	Views
Lobby		22.4	500	40 ppl	10	0	8	Above	Comfort 5	wood	glass	Sheet	7	10
Reception		17.3	300	30 ppl	10	0	7	Above	Comfort 5	wood	glass	trickle	6	6
Offices		22.4	500	15 ppl	4	6	5	Window/ Above	Slightly cool 4	concrete	glass	pool	5	5
Admin Bathroom		14.1	200	8 ppl	0	10	3	Window	Warm 7	concrete		tank	1	2
Meditation (Individual) (20 @80 sqft)		40.0	1600	1 ppl	0	10	3	Above/ Window	Adjustable 5	wood	stone	pool	8	2~10
Meditation Hall		42.4	1800	80 ppl	9	1	8	Above/ Window	Comfort 5	wood	glass	pool	2	8
Meditation Bathroom		15.8	250	10 ppl	2	8	3	Window	Warm 7	wood	stone	tank	3	2
Yoga Classroom 1		24.5	600	20 ppl	7	3	6	High window	Warm 7	wood	concrete	running	5	6
Yoga Classroom2		24.5	600	20 ppl	7	3	6	High window	Warm 7	wood	stone	pool	5	6
Yoga Classroom 3 (Bikram)		28.3	800	30 ppl	7	3	6	High window	Hot 9	concrete	wood	hot pool	4	4
Yoga Group		42.4	1800	80 ppl	9	1	8	Above/ Window	Warm 7	wood	glass	pool	7	4
Locker Room		24.5	600	40 ppl	2	8	5	Above	Warm 7	concrete	stone	tank	3	2
Yoga Bathrooms		15.8	250	10 ppl	2	8	3	Window	Warm 7	Stone	wood	tank	1	2
Housing Single (40 @ 100)		63.2	4000	40 ppl	0	10	4	window	comfort 5	wood	concrete	trickle	6	6
Housing Couples (4 @ 150)		24.5	600	8 ppl	0	10	3	Above/ Window	Comfort 5	wood	stone	running	8	8
Housing Long Term (6 @ 200)		34.6	1200	6 ppl	0	10	4	Window	Comfort 5	wood	stone	pool	6	5
Dining Hall		31.6	1000	60 ppl	10	0	6	Above/ Window	Comfort 5	Wood	Glass	sheet	6	8
Kitchen		22.4	500	10 ppl	0	10	8	Above	Cool 3	Steel	Concrete	tank	2	2
Tea/Snack Stand		12.2	150	10 ppl	10	0	8	~	Cool 3	Wood	stone	pool	7	5
Dining Bathroom		15.8	250	10 ppl	2	8	3	Windows	Warm 7	stone	wood	tank	1	2
Guest Installation Gallery		22.4	500	50 ppl	10	0	5	Windows	Comfort 5	steel	Glass	pool	2	4
Parking			~	100 ppl	10	0	9	~	~ ~	stone	concrete	lake	10	10

Figure 38 - Design Development Program

In order to think more in-depth about the unique quality of each space, the spaces use and the spaces occupants. By defining the details of the desired sensory qualities like: size, capacity, public/private, light intensity, light source/direction, temperature, material, view, acoustics, fragrance/aromas and the list goes on, one is able to start to formulate a general composition of the desired attributes to any given space. This information will help

direct our organization of the program, by attempting to couple like conditions as much as possible in order to be economical with not only our space but also time and materials.

After many preliminary program studies and arrangements, the program

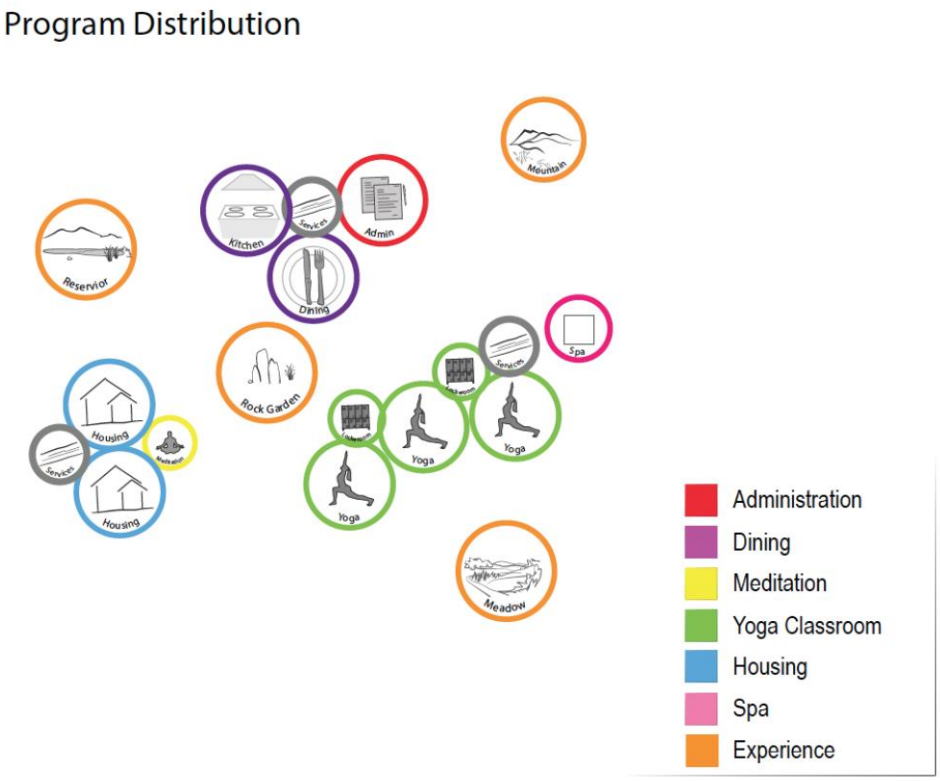


Figure 39 – Program Distribution

distribution below illustrates the categories of program and their relationships to one another.

The primary spaces came first, housing, yoga and dining. The organization of these spaces separately allows for the support spaces that are associated with each to then be added between the major spaces. The dining cluster, needing to encompass deliveries, kitchen, storage and a great deal of behind the scenes staff work; was very similar in the function and arrangement of the administrative cluster. By having one public space that serves the patrons and a cluster of private/staff support spaces "behind" them, their

similarities in organization allowed for the dining cluster to have a predominantly private section with two major public spaces, the dining and reception/lobby space. The next cluster surrounds the central function of the resort, the teaching and practicing of yoga and meditation, relaxation and rejuvenation of the body and mind. This cluster incorporates the large flexible yoga spaces and their required support spaces: locker/changing rooms, bathrooms and storage, as well as a programmatic piece designed to develop a deeper level of relaxation and rejuvenation, the spa. This spa would incorporate massage rooms, a lounge for other beauty and health treatments, an outdoor patio for summer sun-catching and outdoor semi enclosed hot tubs for soothing the muscles and mind after a day full of activity.

This clusters focus in on the practicing of yoga and mindfulness, it achieves this by crafting spaces that carefully exercising the body and the mind. With a devised division of the built programmatic spaces, we must further understand the clusters relationship to one another as well as the surrounding environment/landscape they are a part of.

Before siting these clusters on the vast 60-acre site, I further evaluated the spatial relationships between them and choreograph the circulation and potential daily schedules of when, where and how patrons and staff will traverse the site from space to space. The introduction of the landscape at this juncture as a space or cluster of outdoor spaces becomes important to the continuity of the project and integration of yet another level of experience. Deciding when and if people go outside between spaces can create not only an extremely different experience but also at times be detrimental to the flow and rhythm of the day. By devising a typical daily schedule of a couple of potential daily programs, I was further able to understand how individuals would interact with the site and spaces. After

investigating some of the current retreat programs and their schedules, I was able to come up with two unique examples of different experiential program schedules. First a "Yoga" schedule arranged around a day of yoga and balance, selecting opportune times to practice, individually as well as with a group. The second was an "Exploration" schedule, for the more active and adventurous visitors that expect to spend time hiking the mountain, meandering the grounds and exploring the reservoir, unlocking all corners of the retreat. Further thoughts were given to other scheduled programs for example a Silence retreat, for those seeking a serene escape from excessive stimulation and fast paced lifestyles, or a Relaxation retreat, with the right mix of spa treatments, gentle yoga and time soaking in the sun. The variety of programs would offer the patrons a variety of experiences and activities to suit all levels of skill and involvement. There also need to be some unifying elements that bring people together across the schedules for social times like meals and large meeting groups for meditation, yoga or other community building activities. It's not uncommon for people to gather for a live music dance on the lawn or work together planting in the garden, the resort attempts to create not only a rich individual experience but invigorate that personal journey with the journey of one's peers foraging connections and relationships that last a lifetime.

The yoga program is particular about the time of day one practices yoga. Since it is recommended to practice on an empty stomach (or at least not immediately after eating) majority of these scheduled yoga times take place before meals. A morning wake up class of "Sun Salutations" (a morning progression of poses designed to slowly stretch and invigorate the body in the early morning), gets the day started before breakfast . Meal times become a standard across all programs bringing all patrons together for meals create

a sense of community throughout the retreat. Breakfast, lunch and dinner become a framework for building each of these unique programs around, giving a great importance to the dining space, which also will double as a flexible congregation space when a collection of all visitors is desired.

After breakfast the yoga program invites individuals to explore the grounds, meditate, and investigate on an individual's schedule while their meal digests. Exploring one of the many garden and landscape destinations around the site can captivate the mind for hours before returning to the yoga classrooms for a pre-lunch practice. The late morning yoga class might be more invigorating or intense depending on one's experience and comfort level, with a multitude of teachers and experienced staff there will be a style

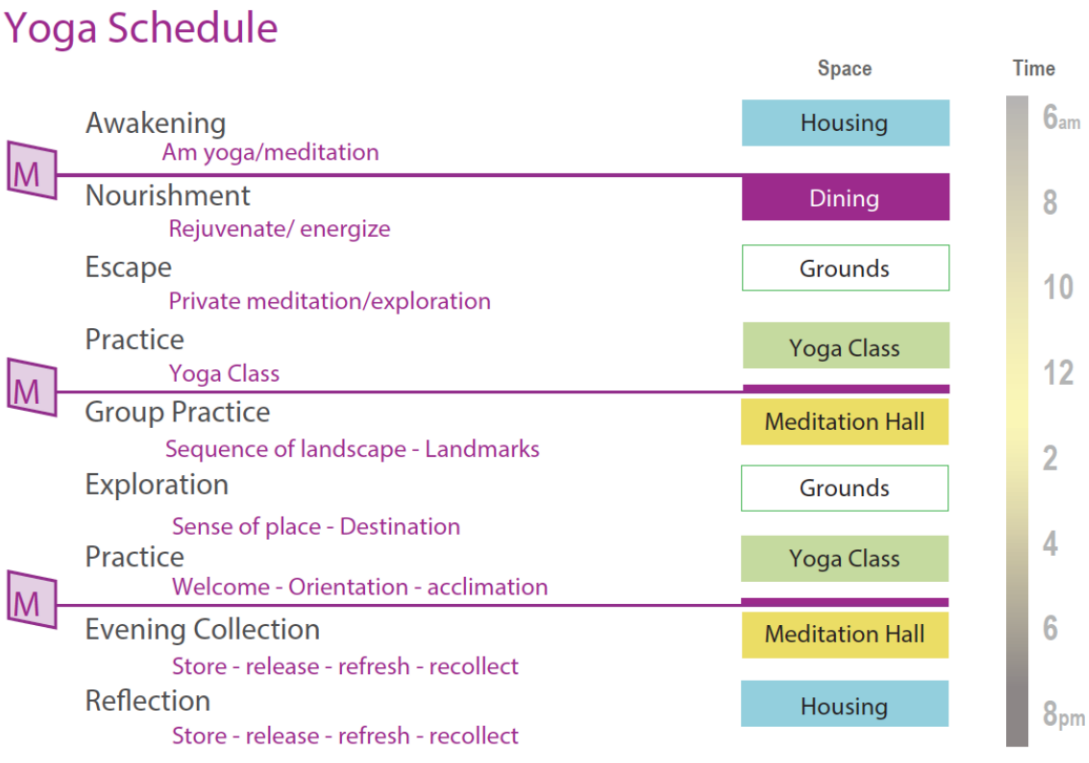


Figure 40 – Yoga Program Schedule

and practice for everyone to enjoy.

After lunch, the yoga group is invited to engage in some group meditation, indoors or outdoors of course. These segments are a great way to reflect on the day so far as well as calm the mind during digestion in order to prepare for the rest of the day. After group meditation, another self-guided practice, exploration or relaxation this would be a time to refresh the body after refreshing the mind, maybe with a visit to the spa, or a short trek down to the reservoir for further practice or exploration. As the afternoon winds down again, the group collects for a pre-meal practice before dinner and after class is done and the belly is full, the retreat as a whole collects itself for a guided evening meditation. Upon completion of the day, the groups disperse back to their housing clusters to recollect, reflect and rest before starting again the next day. Describing a daily schedule allowed me to identify continuities in the choreography of individuals about the site. With a time and location schedule for the yoga program, I was able to map how space and time related for these programmatic pieces I have devised. Below is the yoga program's Space Time Diagram discussing these relationships between time, people and space:

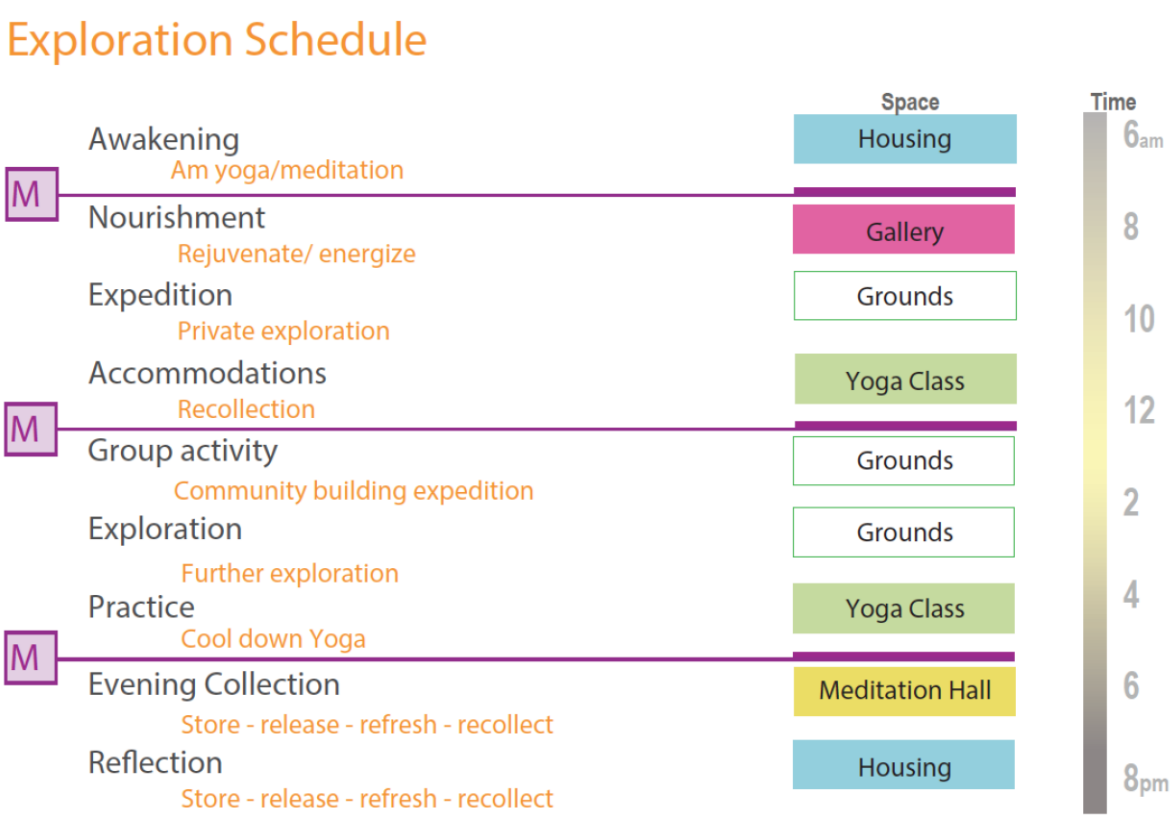


Figure 41 - Exploration Program Schedule

The exploration schedule was devised to exploit the plethora of exclusive experiences the site is adjacent to, such as the Whiting Reservoir, Mount Tom State Reservation, as well as the other surrounding landscapes. This schedule mixes some scheduled yoga with some longer excursions, really expanding the timeframe for personal exploration, reading, sketching, and experiencing the raw environment for the betterment of the mind and body. The standard meal times throughout the day become constants reconnecting the different programs. The longest excursion time window is the afternoon between meals, accumulating 4-5 hours of the day. This afternoon slot can be utilized to make the trek to the top of Mount Tom and experience the trap rock cliffs that oversee the exquisite Pioneer Valley below. With so much to explore and experience across the site and

surrounding Mount Tom Range, you can spend weeks never going the same way twice. The end of the day finishes with a return to the retreat building for yoga class just before dinner to stretch and revitalize the body after an active day, before sitting down for dinner and recollecting one's thoughts over evening meditation. The last leg of the journey sends visitors back to the housing area to refresh the mind and body in preparation for the next day's adventures.

Figure 42 – Mount Tom Summit

With the creation of these program schedules we can begin to understand how people will be connecting from space to space, as well as when. In order to better describe how time and space is related the diagrams below begin to talk about how each space is visited thought-out the course of a day. The diagram starts in the center at 6 AM and works its

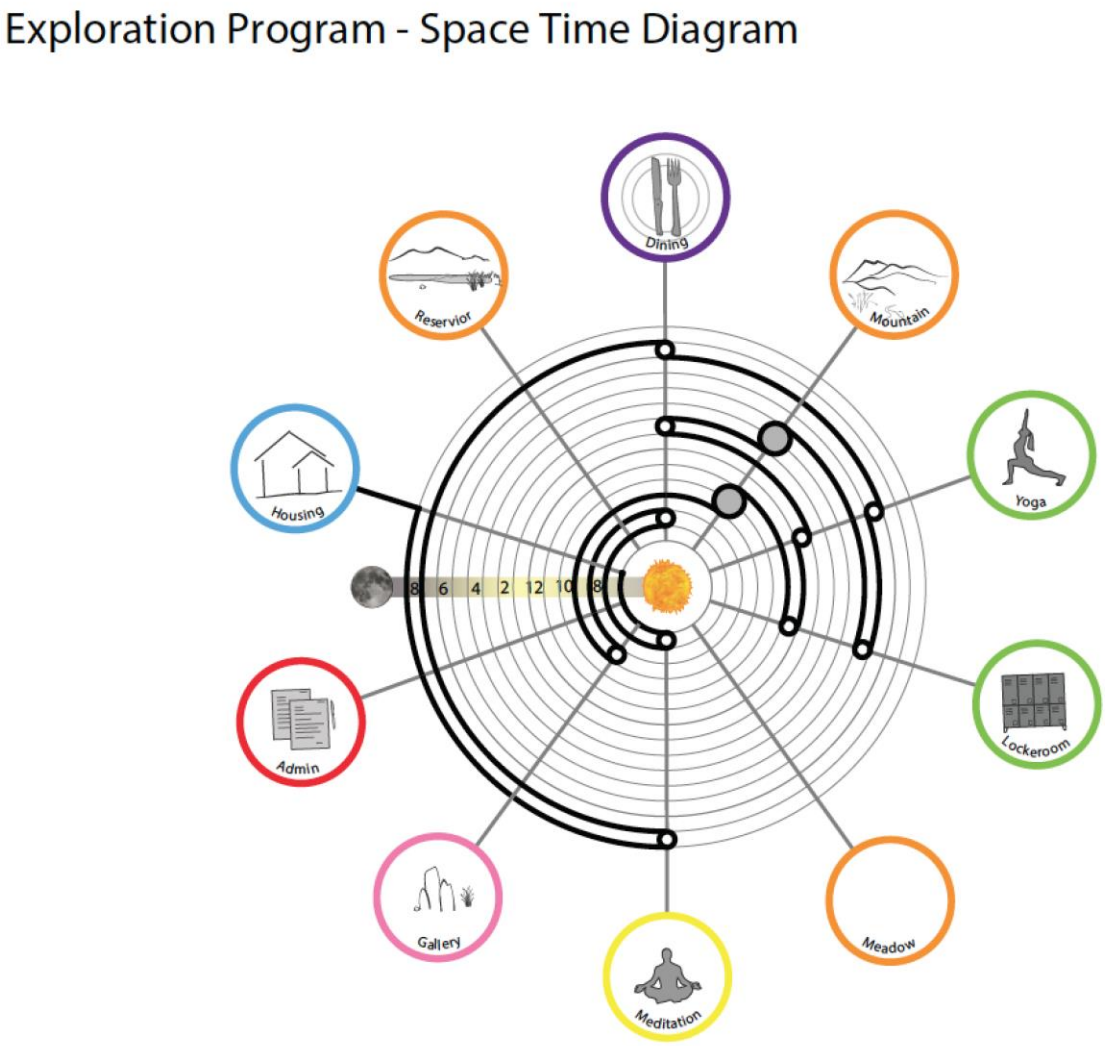


Figure 43 – Space Time Diagram – Exploration Program

way outward each ring measuring an hour of the day. The dark black line indicates the participant and the spaces they visit according to the program and schedule set forth for that day. The diagrams highlight the progression from waking up in the morning in the

housing cluster and experiencing a multitude of spaces throughout the day, stopping in the dining hall for three meals and eventually back to the housing to complete the experience.

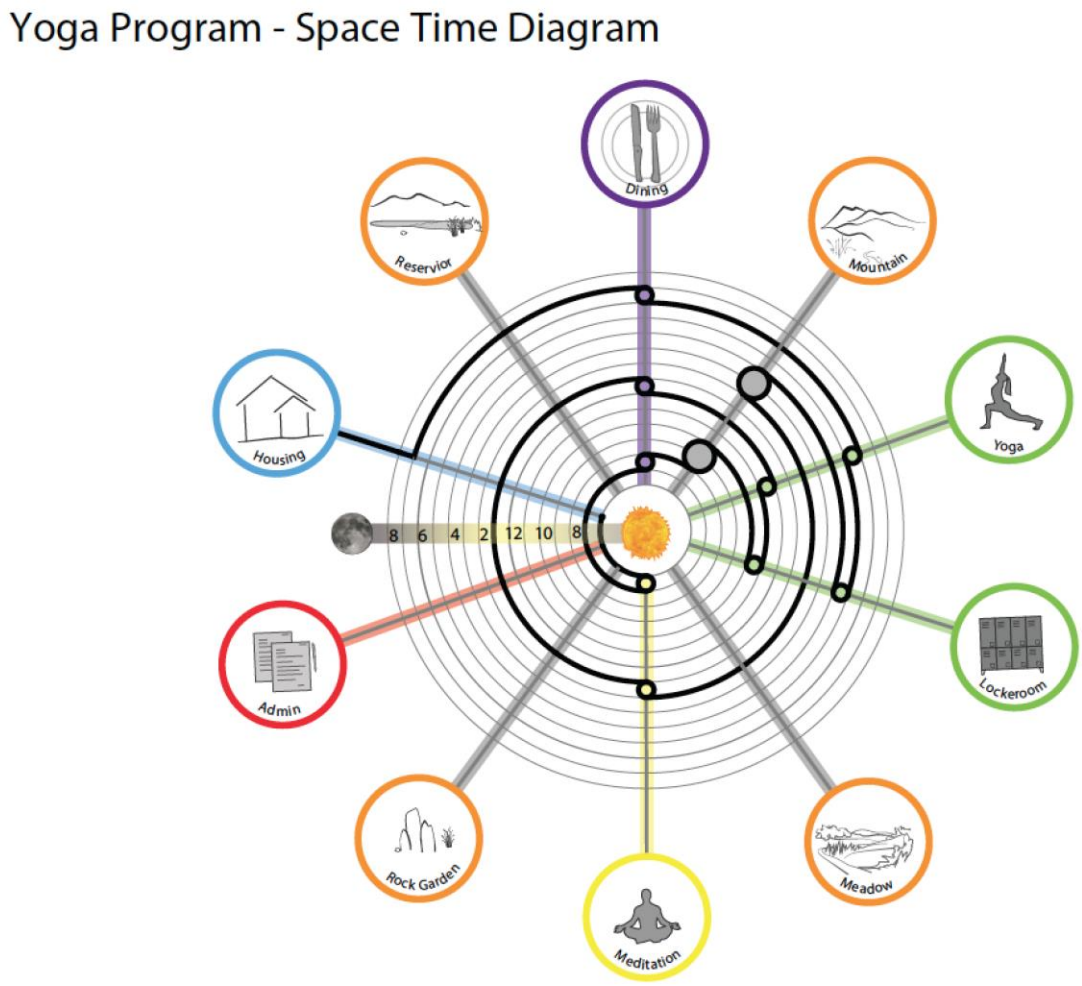


Figure 44 – Space Time Diagram – Yoga Program

Understanding the connections between places and the times of day they are activated gives us a great snapshot of how people will be connecting those spaces. In order to determine the location of each of these spatial clusters, this is only one piece of information we need to consider. The next piece we will extract from our initial program experience spread sheet, the light intensity. Plotting and mapping the solar exposures of

the site corresponding with the times of the day and year, as well as the schedules we have created will give us a great staring part for orienting major activities and spaces. In order to test these orientations, I created a solar machine that maps the angle of the sun throughout the year. The machine has a platform frame with interchangeable topography bases of the side to test different scales and locations. There is an arching wire armature that extends from east to west mimicking the path of the sun above the site. With an adjustable angle and an LED light mounted on the rail, we are able to physically simulate the solar path of

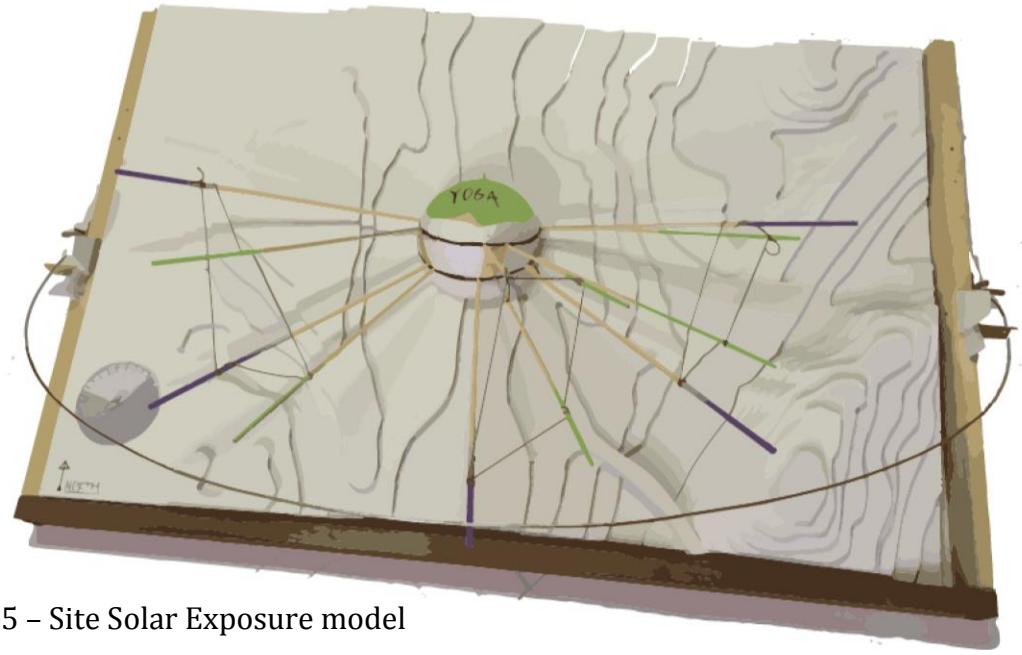


Figure 45 – Site Solar Exposure model

the sun throughout the year and test our findings for accurate temperature, solar exposure and light quality. Now that we have the spaces described and the machine to test them we need to figure out where the sun is going to be at the time a space is activated in order to achieve the greatest lighting effect. To map this information, I developed a 4" Styrofoam half of a sphere that we would be able to pinpoint the angle and direction of the sun

physically for both the summer and winter solstices, monitoring their change. The skewers were placed into the Styrofoam core in order to mark the solar angles according to the time a specific space was activated. All maps have purple skewers to indicate the 3 meal times throughout the day. The colored skewers identify the solar location during the activated times for the specific space in study. First, I mapped the three primary spaces housing, dining and yoga; identifying ideal sun exposure for the deliberate times of day. This information allowed me to identify where the sun was going to be when the spaces were in use, in turn allowing me to make design decisions according to the desired effect in that space at that time. For instance, the yoga spaces were mapped based on the yoga schedule,

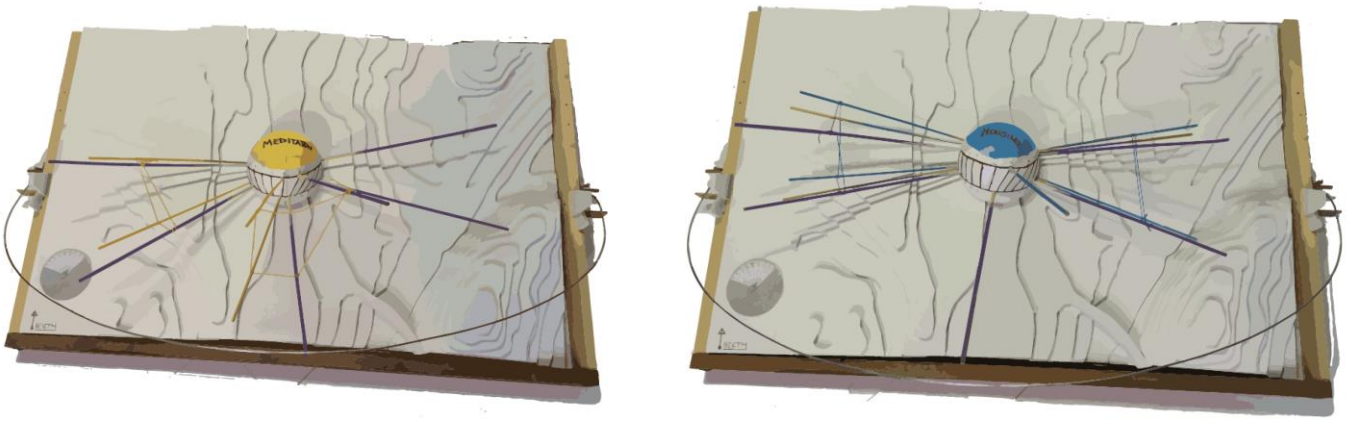


Figure 46 – Site Solar Exposure models continued

with yoga occurring before each meal, we were able to identify that from 7-8, 11-12 and 5-6 the sun would activate the yoga spaces. In order to record where the suns location was going to be and the range of different solar exposures across the course of the year, we were able to test orientation, form, scale and even fenestration to see how it responds to

the lighting conditions during class times. This was an invaluable tool for orienting my program clusters as well as fine-tuning design decisions

5.5 Concept

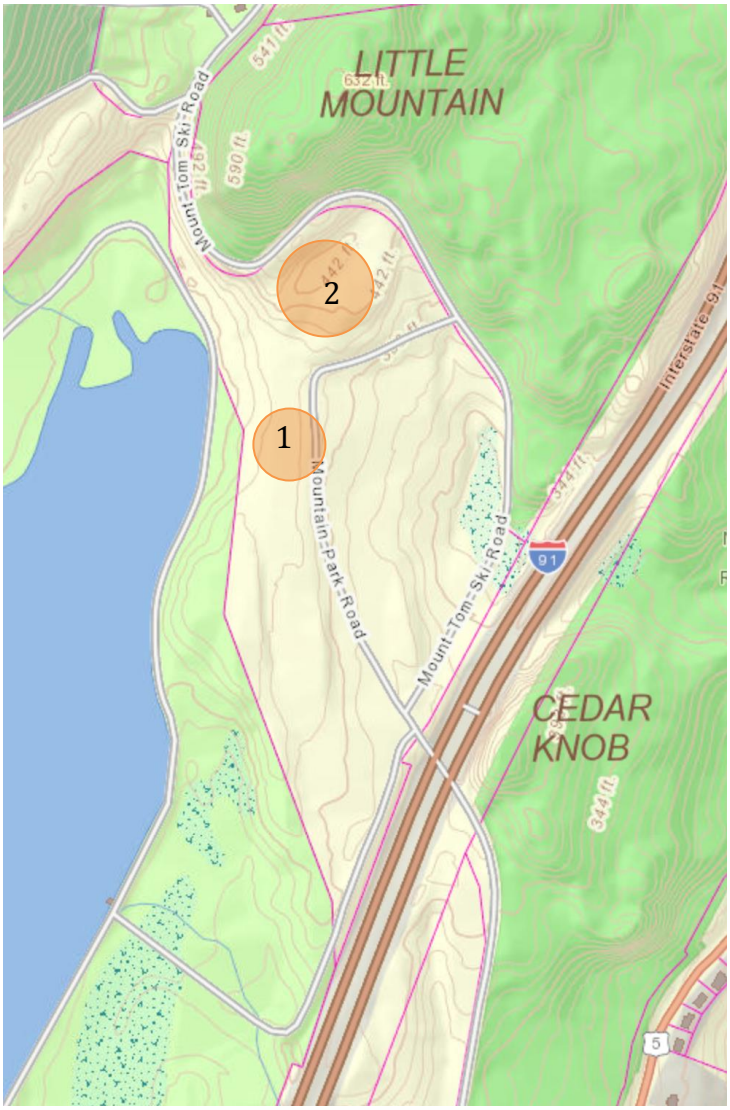


Figure 47 – Building siting diagram

5.5.1 Siting

After exploring a multitude of arrangements of program around the site, taking into consideration all the impacting factors: access, climate, solar exposure, trees & vegetation, topography and along with other site constraints, it was evident that the vast site was ripe with opportunity. The two places on the site that had the best combinations of these conditions became the chosen locations for this intervention. Each of the potential locations is very different, but their proximity to one another posed a unifying connection between these two exceptional portions of the site.

The locations are both quite a distance from the entry bridge over the interstate. One straddling the crest land across the western to middle of the site between the pine tree stand abutting the reservoir and the beautiful woodland meadow that enriches the center

section of the site. This location is on a lovely stretch of grass where the old pavilion used to be located; it has beautiful morning and afternoon sunlight looking down over the meadow and into the marshlands, with the towns of South Hadley and Granby across the river in the distance. When traveling up the site for the first time, this location is the first attention grabber with wild flowers below large mature trees flowing down the hillside. It's not 'til you travel further that you even notice your proximity to the reservoir, which makes this location even more of a delight.

The second location, takes you further up the hill to the top of the site. From here you can witness the vast site, its views of the reservoir and the town below give you an

Figure 48 - Site Photo from yoga studios- View to the Southeast, overlooking the Connecticut River, Holyoke, South Hadley and beyond.

uplifting presence, a sense of arrival. Gazing out over the landscape, watching the sun

travel east to west, with perfect exposure, this upper location of the site would give our spaces ample light and views, capitalizing on the sites opportunities.

Figure 49 - Site Panoramic from the top looking east – south – west.

Figure 50 - View to the west overlooking Whiting Street Reservoir.

While simultaneously evaluating the site conditions, devising a plan for the solar activation, and admiring the view, I also needed to brainstorm how to combine clusters of programmatic spaces in a way that made sense. Separating the program into different buildings like we saw in some of our precedents, Spirit Rock Meditation center, Omega Institute & Esalen Institute, is lovely for half the year: late spring to early fall, but in New England winter can rear her head as early as September and late into

April. Walking from place to place in the summer, the distance would allow visitors to expand across the landscape, experience more moments, and further interact with the natural landscape between the built environments. However, when one is traversing the grounds through the blistering winds and frigid temperatures through the other half of the year, even if there isn't snow, is not recommended in yoga attire.

In order to establish a built environment protected from the cold and warmed by the sun, it became apparent that it was most advantageous for the main retreat building to include all programmatic elements, except for housing. This would allow visitors and staff to flow freely between spaces at all times of the year, while also enjoying their connection to multiple parts of the landscape through a series of filters. In this arrangement, the retreat would occupy the top of the hill; becoming the pinnacle destination that provides a unique perspective on space, time and light. This upper location can be seen from all portions of the site, as well as interstate 91 & beyond; broadcasting its presence across the valley.

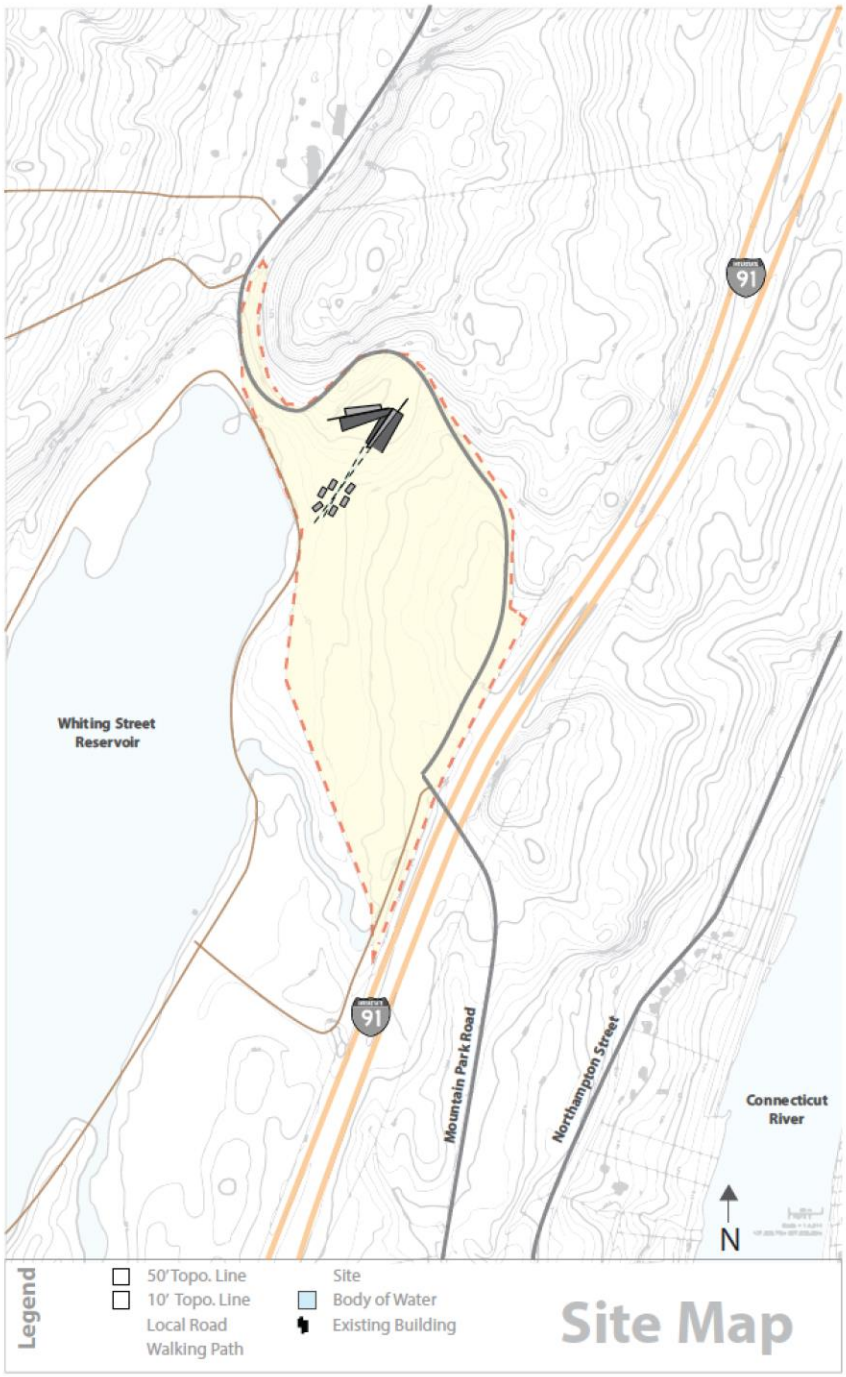


Figure 51 – Building Siting Map

By separating the housing component from the remaining retreat program, we were able to exemplify the outdoor experience of visitors as they traverse the site, becoming further immersed in the landscape. The housing will be located on the lower portion of the site, with excellent morning light and vibrant mature landscapes on either side. The tranquil wildflower meadows under majestic old growth trees creating a welcoming space full of dappled light and wildlife. Opposite the meadow, the housing gains access to the reservoir giving people the chance to wake up early for a morning swim or let the embers burn low in a late night fire down by the waterside. This personal housing sanctuary will allow the individuals to choose seclusion or connection when within the housing clusters, with close proximity and shared exterior

spaces as well as personal, very private, miniature yoga/mediations spaces attached to the rooms. We are able to achieve a separation of the public and private self, while also creating a less formal sense of community and interaction between visitors. This dichotomy of location, as well as an internal dichotomy of those spaces, will provide a wider range of experience for the visitors, while also being convenient and comfortable.

Incorporating so many different programmatic elements can be challenging, however, it can also create rich, lively and activated architecture. By collecting all the programmatic spaces (besides the housing) to one location, it enables ease of travel between functions, economizing of building materials and energy, as well as promoting continuity and unity between all participants in the resort atmosphere. Creating a balance of separation, of public and private spaces within the program, it allows visitors to distinguish public and private experience at the resort. Creating an escape away from the very public and active retreat building, full of connection and interaction, from the quite personal housing unit that would provide many gradations of privacy, depending on the individuals desires.

While creating the dichotomy within the built environment, the third piece to the puzzle includes a multitude of outdoor moments; locations in the landscape, hidden amongst the vegetation and trees, that act as peaceful meditation and yoga nodes of different scales. These locations would be sized for experience and occupants: individual, pair, small group and large group gathering spaces for any multitude of activities throughout the site. By devising different garden themes: fragrant garden, shade garden, wild flower garden, wetland garden, meditation gardens, sculpture gardens and specific gardens for the seasonal changes, the landscape becomes a maze of experiences designed

to capture ones attention and focus. Highlight blooming trees and vegetation, snowy coniferous trails, and fall foliage creek beds and bird filled marshlands, the experiences invigorate the mind, work the body and feed the soul. Like the sun in the sky and the climate surrounding us, different points of the year bring change, and there is the blank canvas of space at mountain park to paint the ground with color, sound, texture and light, activating the landscape and the people within it.

5.5.2 Parti

The retreat building will include the major programmatic pieces, the dining & meeting room, the yoga classrooms and their adjacent support spaces. These primary spaces will be arranged to achieve solar activation at times during the day specified by the devised schedules and programs for the visitors. The solar machine discussed earlier was a key tool in arranging the spaces, optimizing the dining area for solar exposure during the 3 daily mealtimes; this goal requires eastern, southern and western exposure. The yoga spaces were scheduled to take place before the mealtimes, activating the spaces in those same three directions. In order to maximize daily solar exposure at these times, the eastern, southern and western portions of those spaces needed to have apertures to allow light to flood in warming the space in the winter, and ambient light to activate the spaces in the summer when the hot sun would create and increase in cooling load. Since the requirements for these spaces are so similar, stacking them seemed like a good solution. But including elevators, fire protected and enclosed stairwells and moving people up and down through the building that didn't have any other spatial constraints with such a large site, would change the flow and feel of the building by always moving up and down from place to place throughout the day.

This original concept sketch here shows the primary spaces as being light framed, bright, and open concept, with a contrasting heavier/ enclosed support core that would provide all the necessary amenities to the primary spaces. Orienting the primary open spaces to the south gives them not only great solar opportunities but also view and presence over the site increasing their experiential value. The bar concept in this sketch shows the relationship between this primary and secondary support -spaces that further describe the dichotomy of spaces within the building. The orientation shown here is two similar bar shaped buildings that orient both of the open, primary spaces directly to the south. This orientation gives excellent solar exposure but restricts the view from the rear building and forces users outside when traveling between them.

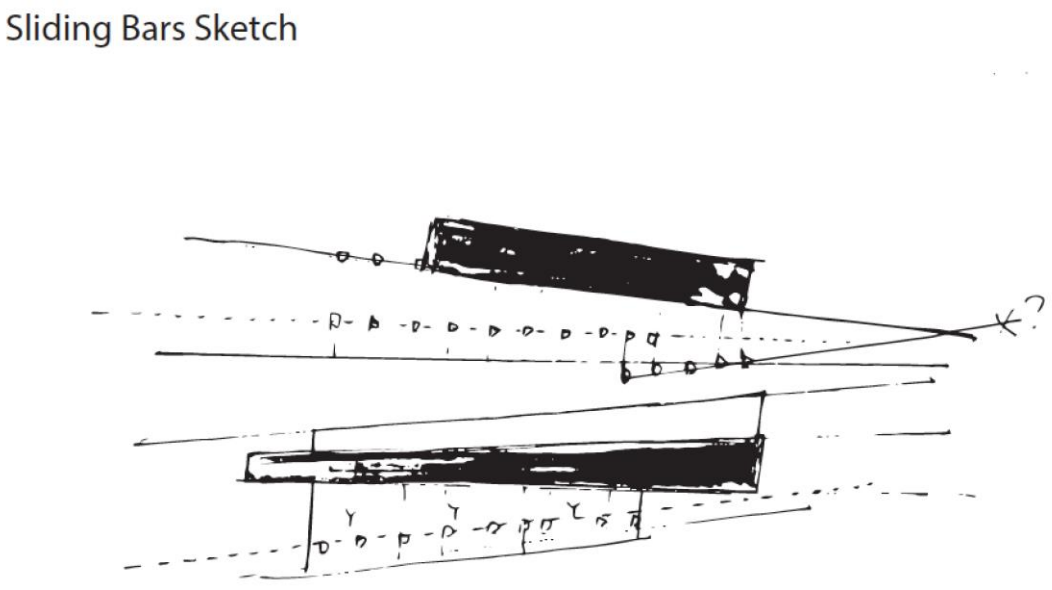


Figure 52 – Sliding Bars Concept Sketch

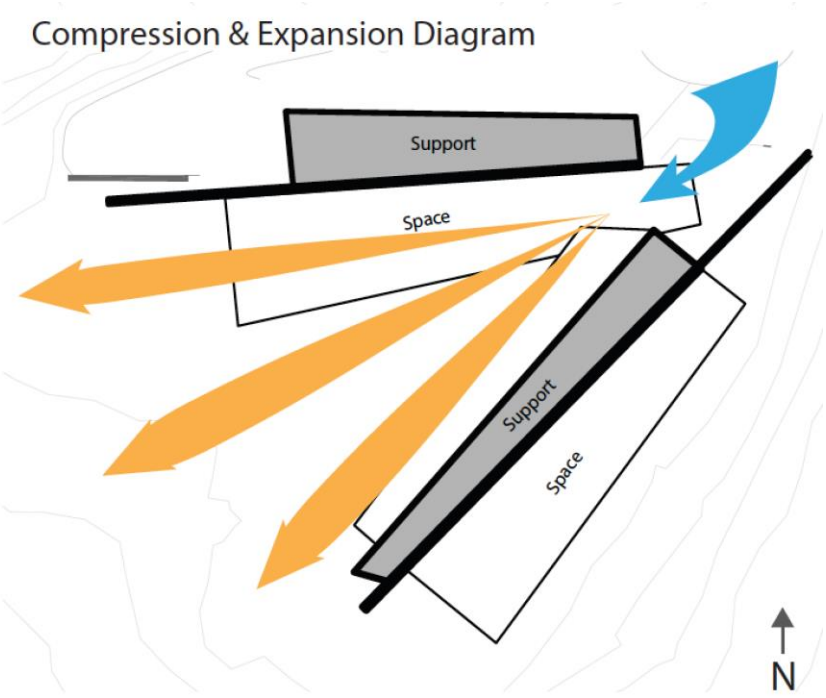


Figure 53 – Compression and Expansion Diagram

In order to accommodate a connection between two buildings, optimize views and increase outdoor space, the bottom building was rotated and connected. This point of connection becomes the entrance, the beginning of the experience and the initiation leading to all other experiences throughout the building and site. From this location all things converge and diverge, creating a very public space arranged around plush seating areas, an outstanding fireplace and a unique structural system that exemplifies, material, texture, color and space. As one enters into the building, they are squeezed between two heavy support cores and then released into the expansive open space radiating toward the reservoir, center courtyard and farther into the landscape.

5.5.3. Program

The lower building, now rotated to the east, will become our yoga classrooms and health and wellness spa. With the improved solar exposure, receiving excellent morning and mid-day sun prepare occupants for a vibrant day of exploration and discovery. It was designed for the energizing yoga classrooms and awakening wellness treatments to be invigorated by light, illuminating the experience as you transform your mind, body and soul. When the sun activates the yoga and spa spaces, they start a chain reaction of choreographed light, illuminating the journey through every invigorating space.

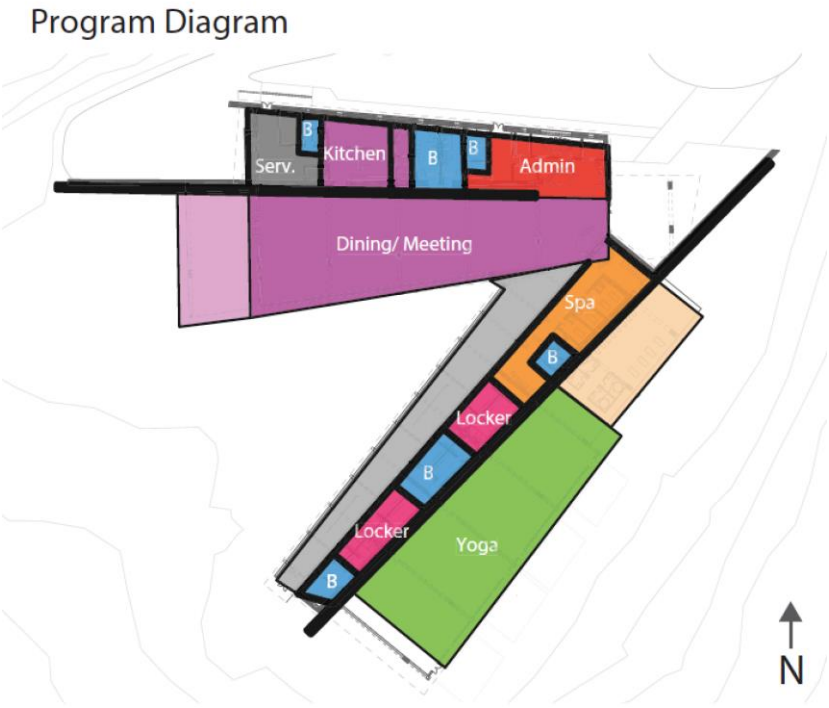


Figure 54 - Program Diagram

As the first portion of the day begins by a slow awakening practice of gentle yoga poses, stretching and expanding the body, readying it for nutritional consumption. The yoga classrooms face southeast, toward the river and town below, giving expansive views of the valley. They are accessed through a support core that conceals the changing, locker and bathrooms arranged throughout to allow users to prepare before and recollect after a practice in the yoga rooms. This center core also includes the indoor spa spaces that

provide the necessary amenities adjacent to its outdoor sun patio and hot tub garden. By collecting the support spaces into one linear core, the core is able to support the primary spaces programmatically as well as structurally.

Perched up on the hilltop, the rear building encloses the dining & meeting space. Sheltered by a large pitched roof, the open spaces flow one into the next, starting at the entry and moving west toward the reservoir. The rear building extends from the entrance, expanding into a large multipurpose dining and meeting room. The structure frames an eloquent view of the landscape before releasing you back into the landscape. The dining & meeting space expands south through a vast curtain of glass. This expanse of glass supports a unique visual connection to the exterior, exposing visitors to the experience nature without having to bare the elements. The sun eventually coaxes visitors forth into a meditation garden courtyard, ripe with manicured gardens of water, rock, trees, shrubs, grasses and flowers alike. The dining space explodes west toward the beautiful reservoir below, stopping first at a fireplace filled patio with breathtaking views of the sun setting over the mountain. The southern exposure becomes adept for capturing solar gain in the winter, and with a carefully calculated roof also provides shelter from the summer heat. Screening and filtering of this abundance of sunlight will be important in order to modulate interior temperatures with large expanses of glass; these details begin giving the building an identity beyond its program and shape. The dense support component of the building encompasses bathrooms for the guests in addition to the kitchen, storage, refrigeration and delivery access to carry out daily services. Adjacent to the entry & meeting space, the core includes the administration suite full of offices, conference rooms, a reception desk as well as bathrooms and a kitchenette for the staff. Both the kitchen and administration segments

give access to the north where a produce garden harvests ripe organic vegetables for guests participate in the care and cultivation, eventually making their way into the kitchen, a perfect activity for visitors desiring a therapeutic afternoon tending and gardening the fresh food they eat.

5.5.4 Structure

The buildings core spaces become an anchor onto which the primary spaces attach. Embracing a concept of dichotomy, lightness vs. density describes not only spatial and solar aggregation, but also the structural, compositional and materiality as well. These other architectural tools give the spaces a further definition of spatial quality, color, texture, light and more. A special connection to material arose early in the planning of this design, with a plan to keep the participants as closely connected to natural world as possible. The building will be able to highlight the natural beauty of the site and allow its experience to infiltrate the body and mind. By harvesting natural materials from the earth, honing and tooling them to

Figure 55 - Comparative strength loss of wood versus steel

create a new elegant design while still staying true to historic building heritage: wood and stone. By exploiting the strengths of each of these materials, we are able to extend their use to new heights (and lengths).

With the industries expanding plethora of engineered wood products, the usage of wood for large span structural system has become much more attainable (and affordable) than the short span traditional construction or large intricate webbed trusses of the past. Glulam beams have grown to spans reaching over 220' (70m; like the ones at the Bangor Castle Leisure Center in the UK. Elsewhere around the world, designers are using wood to span across Olympic pools, stadiums, and rivers; stretching wood as a building material to its new limit. (Timber Building) The incorporation of a glulam structure will not only give the retreats primary spaces the warm, natural ambiance of wood but also allow for minimal interference with the flexible spaces below. Wood also out performs exposed steel in fire testing, preventing the usage of unsightly fire proofing materials or coatings that are needed to cover steel structures today. By making a conscious design decisions to use as many natural and sustainable building materials as possible, we not only aesthetically enjoy these fruits of nature but also contribute to providing a healthier environment for the generations to come.

An early concept sketch describes the support core as a natural stone wall with a large span glulam truss that will support the main roof, stretching over the primary spaces adjacent to it. The glulam truss takes on a v shape in order to minimize its footprint, add rigidity, promote rainwater collection, solar energy collection, as well as maximize passive solar potential. This multifunctional form is only part of the machine of systems that all must synchronize in order for the building to be successful. This sketch depicts a section

cut through the yoga and locker room spaces, exposing the core as an anchoring building block from which to extend the primary spaces. The glulam structure spanning the yoga classrooms delivers half its structural load onto the stone core, as does the corridor on the other side. In this configuration, the building core serves as a filter, compressing the visitors into a changing, locker room, bathroom area and then releasing them into the expansive practice space overlooking the landscape. It continues to modulate them further

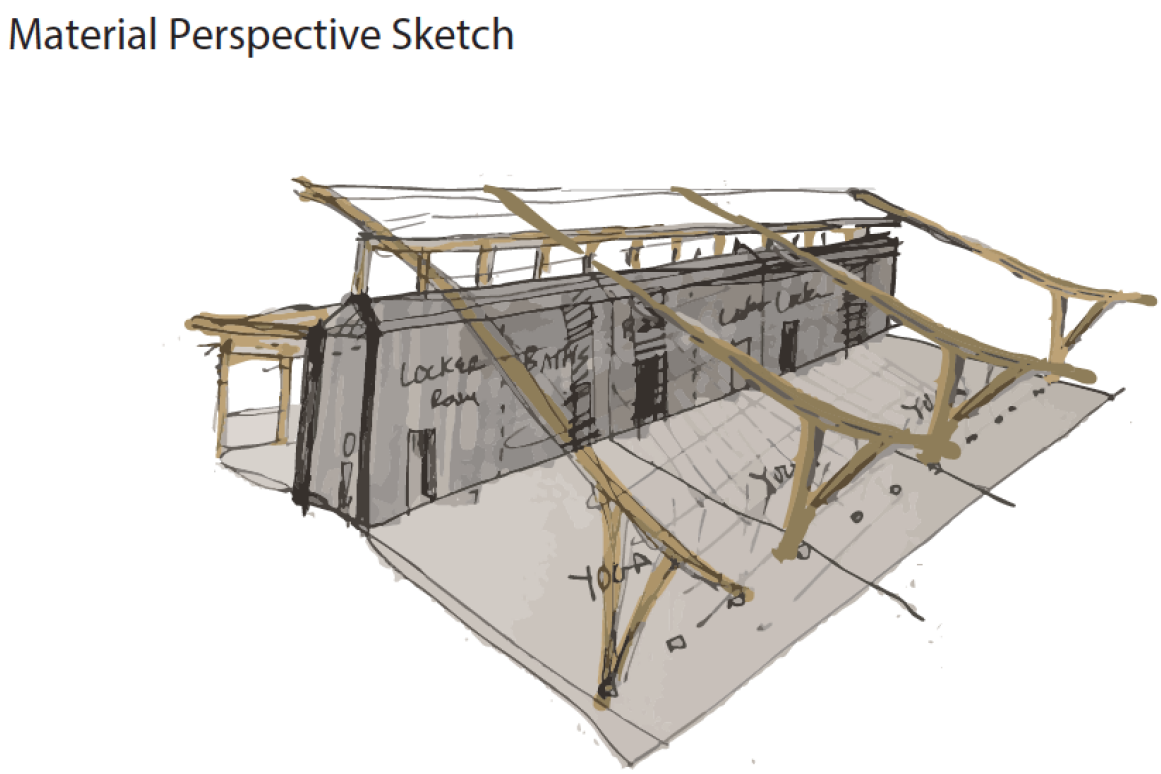


Figure 56 – Material Perspective Structural Sketch

by passing through another filter the glazing wall to the outside elements. By differentiating the materials, light, density and form, each level of participation and interaction creates a distinct experience passing from one space to the other. This expansion and contraction, blending of public and private space, and expression of

materiality and form defines experience as one travels through each sequence of the building.

Differentiating sequences of filtration, the support core and external envelope modulate the flow of people, light, texture, climate and energy. By creating a gradient of spaces, the building creates unique moments that become recognizable and orienting for guests. The materiality and form of the building helps achieve flexible but unique spaces for visitors to explore and appreciate. The flow and differentiation of spaces can be seen in this diagram. The passing from core to primary space is one experience that is quite different from the interaction between the primary spaces and their exterior counter parts. The yoga classrooms expand into the landscape for outdoor yoga classes and other groups, the spa expands to its patio and garden as well as the dining area expanding out toward the courtyard garden and western patio. These gradations of space define the details that differentiate the experiences within them. Below, the filters diagram highlights some of the connections between primary and support spaces, as well as primary and expansion spaces.

Although the concept remains the same for both portions of the building, their realizations differ slightly in the placement of the core space. The lower yoga building's experience begins in a corridor adjacent to the mediation garden, allowing users to pass through the core space into the yoga classrooms. By developing a central core, the users are compressed into an intimate and ambiently lit stone core of support space before being released into the yoga classrooms full of expansive views and invigorating light. In the spa area, the core becomes a place of deep private relaxation contrary to the adjacent open-air patio and hot tub garden that promote a more social atmosphere than the quaint interior

spaces. The structure opens up to clearstory windows above the core, allowing for northern (or northwestern) light as well as providing needed ventilation for the classrooms below in the summer. The form, textures, materials and filters each add a level of articulation giving life and feeling to the spaces they define.

The dining buildings relationship from core to primary space is slightly less activated by the visitors and provides the necessary separation for the many staff and instructors from the public side of the resort activities. The primary lobby, dining and meeting spaces occupy the southern portions, with similar glulam structure spanning overhead reaching to the top of the support core to the north. This natural stone core contains the services, kitchen, offices, and conference rooms for the staff, giving them access to the amenities they require in order to keep the retreat running smoothly. Guests rarely penetrate this wall of separation between these two gradations of spaces; the only exception is to use the rest rooms that service the main dining and meeting area.

Figure 57 – Concept Model

By creating a different dichotomy of spaces in this section of the building, we are able to further expand the experiences of the visitor while also creating an aesthetic and design continuity that ties the building together as a whole. The dining and meeting spaces expand into the landscape through the mediation of another intricate glazing system designed to modulate light and capture views of the

courtyard and reservoir beyond. This second layer of filtering draws the visitors out into the landscape to further explore what this unique retreat has to offer.

This photograph of an early model shows the primary spaces spanned by a glulam structure and anchored by the heavy natural stone core. These open spaces are flexible, dynamic, and full of possibility, the core adjacent to it are densely packed giving great contrast to the adjacent primary space. The structural diagram highlights the differentiation between wooden glulam assemblies and the heavy stone cores. The glulam bays span extends up to 60 feet, giving the needed space for large gatherings and group activities. With the clearstory windows above the core and glazing walls surrounding it, the primary spaces become quite activated by seasonal changes in light and vegetation surrounding the building.

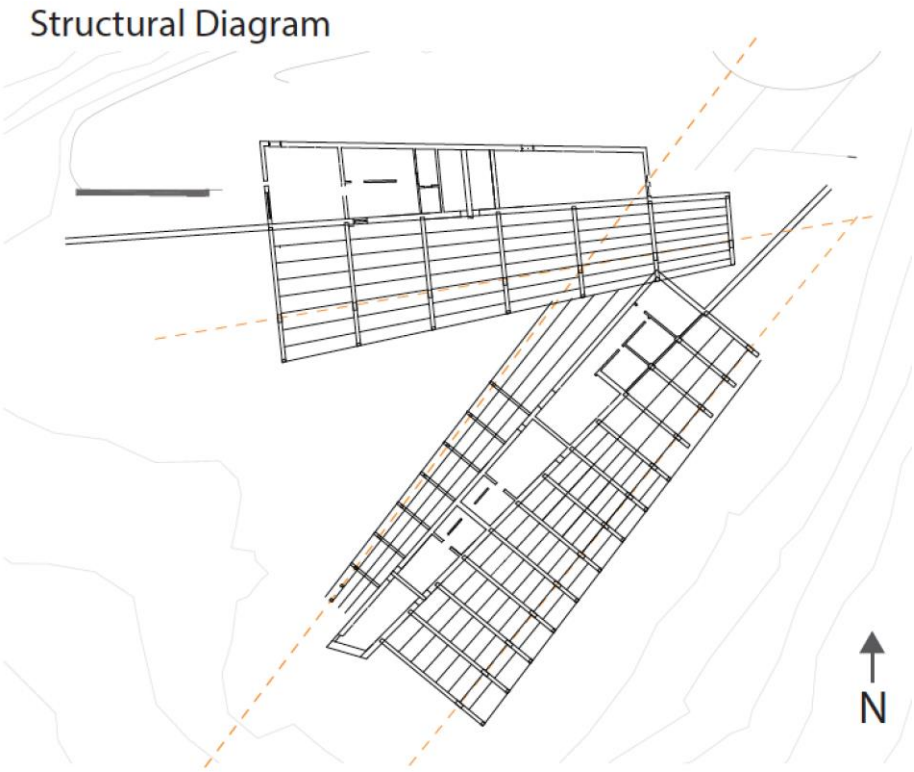


Figure 58 – Structural Diagram

5.5.5. Landscape & Vegetation

The landscape surrounding the building creates another level of experience for visitors, both indoors and out. A variety of specialty gardens, pathways, patios and lawns provide activities for the individual and the group. The landscape is designed to integrate local species of plants, flowers and trees in order to prevent invasive outsiders from infiltrating the natural beauty of the area. By incorporating locally harvested stone not only as a building material for the cores, but also for the patios, landscape pathways and bridges throughout the site, we can begin to extend the context of the built environment into the natural environment that currently fills the site. Meandering pathways connecting different locations give visitors the opportunity to diverge from the direct path to a destination and take the road less traveled into an unexplored section of the site or even the mountain and state park beyond. Like a bench in the park, the sites pathways will highlight small flat deliberate locations for individual and group meditation and yoga sessions within the landscape. These locations showcase excellent moments across the site, a small creek waterfall, the rustling grasses of the wetlands, or the cool shade canopy of a group of trees surrounded by wildflowers and wildlife. By incorporating some planned pathways with places to sit and soak up the nuances of the moment, we can help visitors focus on an instant by prompting them to stop and listen.

The different garden spaces that are adjacent to the buildings often become an extension of the interior and its function. The yoga classrooms break out into the landscape onto low cut grassy lawns divided by a few small trees, chest high shrubs and flowers to cut down winds. These lawns are full of sunlight and overlook wildflower meadows and the valley beyond. The western end of the dining space opens to a patio wit fireplaces to keep

warm outside in the spring and fall, when the wood isn't burning, a fragrant garden just down the hill blows fresh aromas up into the building. To the north, the vegetable garden provides food, aroma and color to the landscape through the summer producing as many fresh fruits and vegetables as the visitors can eat. In addition, a few rainwater gardens make the process of rainwater management an art. Full of rocks, grasses and flood tolerant plantings, these locations thrive on the rain diverted by the large roof structures. The spa rainwater garden collects water from the yoga classroom roof, creating a great small upper pond visible from the spa reception area accessible from the hot tub and spa patio. The water is then diverted down the hill, under a few pathways and into the wetlands below. Another small rainwater garden accumulates water at the end of the dining space from the dining roof, also full of solar panels to collect the southern sun. This small rainwater garden collects and diverts water down the hill where it converges with the collected water from the central Zen water garden in the courtyard before continuing into the reservoir, bringing the ambient sound of water to the dining patio and housing cluster beyond.

The landscape becomes a very important aspect to this building, by giving visitors glimpses of the environment and allowing them to connect to the rain, the flowers, the sunlight and the climate regardless of the time of year and always from the comfort of the indoors. With ample opportunities to break out of the retreat buildings controlled environment and venture into the moment filled site, the visitors are in control of their desires and experiences, the landscape only becomes one tool from which to aid the realization of "self" and further the individuals path to transformation.

Early Japanese designers of gardens understood the relationship between the kinesthetic experience of space and the visual experience. With a shortage of real estate

and high density living, the Japanese became master craftsman of the small garden space. The intensive usages of pathways with direct kinetic relationship or choreography of the viewer to the space, creating a number of muscular sensations built into the experience of walking through the garden. (Hall 51)

CHAPTER 6

DESIGN

6.1 Site Circulation

Figure 59 – Self Transformation Retreat Main Entrance

Architecture by definition, according to Clovis Heimsath, "is built for people. Architecture is the enclosure in which people live their lives... buildings are static. The tragedy of architecture is seeing people as static too. If a physical space will dimensionally accommodate a person, we feel that somehow that person has been provided for properly." (Heimsath 1) This project breaks that mold, extending the senses to their limits and creating unforgettable experience for the individual and the group. By creating a retreat full of activity and discovery, the project strives to, as Cecil Balmond puts it, "Let space entertain us!" By describing the minute details as well as the master plan, invigorate the environment and create something lacking 'sameness'. (Balmond 32)

When entering the site, the mile long Mountain Park Road, winds up toward Mount Tom, crossing over Interstate 91 before arriving at the lush 60-acre site. Full of natural beauty, mature forests, vibrant meadows and expansive lawns this site greets the visitor with a welcome sign sculpture to signify arrival. Up ahead in the distance, at the tallest point of the site, we can see the makings of the retreat building perched above to capture sunlight and the best views of the area. With a hint toward a destination, the sign points travelers right onto the old Mount Tom Ski Road that straddles the eastern side of the site. Driving between the natural wetlands and mature forests you begin to climb, ascending 100 vertical feet to reach the entrance to the resort. Along the way, visitors pass a lower parking lot where their cars will reside for the remainder of their stay, complimentary parked by the valet. As the retreat comes into focus, large expanses of wood, stone and glass line the vibrant landscape that surrounds the retreat. A drop-off parking circle brings visitors to the apex of the building underneath, a welcoming roof held up by large exposed glulam structure and flanked by walls of locally harvested Goshen Stone greeted by the staff upon arrival, and welcomed into a landscape of transformation. The valet separates you from your things, insured that everything will be arranged for your stay, parking the car and unpacking of personal belongings in the housing cluster.

Upon surveying the entrance, to the left overlooking a meditation garden visitors are able to gaze across the valley into town below, and to the right they observe staff and patrons tending to the expansive vegetable garden and the mountain beyond. As they make their way toward the doors, visitors are squeezed together by the large core walls of stone, the roof slopes down bringing the scale of space to a more comfortable level. As the large doors open, visitors are exposed to the expansive colonnade of wood structure spanning

the lobby, meeting and dining spaces, eventually opening up to the view of the whiting reservoir below. The warm aroma of the fireplace burning in the lounge entices the olfactory and beckons for patrons to indulge in the cozy leather sofas, hemp beanbag chairs and bamboo floor mats. Across the lounge, with a multitude of gathering and seating areas full of fresh cut flowers and live plants, visitors see out to the zen water garden that occupies the central court yard of the retreat. As the receptionist to the right attempts to gain the attention of the guest, they are forced to snap back to reality for just a moment to check-in and receive the full tour. At the reception desk, tucked into the massive wall of unique stone boasting a wide color range from orange to blue to grey, the receptionist lays out configuration of the retreat, the grounds and discusses the itinerary for the personalized stay here at the Self-Transformation Retreat.

The tour continues with a warm cup of tea and a sit down consultation by one of our enchanting staff. It is typical to do short intake and outtake interviews to evaluate the experiences, relived and gained while here at the retreat. By discussing your reason for visiting, familiarity with mindfulness, well-being, mediation and yoga practices, the staff is able to direct guest to a number of activities that would be best suitable for their abilities and comfort levels. With the paperwork out of the way and the tea and biscuits gone, the next step is the tour.

Traversing the lobby and lounge, guests are lead south toward the yoga building. Before entering the ambiently lit corridor, the user is presented with the health and wellness spa. A brief visit to the lobby, showcases a large curtain wall window that gazes out over the rainwater collection garden and koi pond that is accessible for meditation and the view looking out over the valley once more. This stop insures the guest is aware of the

amenities that are recommended to be taken advantage of: massage, beauty treatments, stress relief classes, energy healing, relaxation lounge, as well as the sunbathing patio and outdoor hot tub garden.

The tour continues down the hall, led by the Goshen stone wall to one of the four major yoga classrooms. As guest cross the stone wall threshold into the yoga core, they discover a well-lit changing, locker and bathroom before being released into the expansive yoga rooms highlighting the best view of the valley the site has to offer, that can also be enjoyed by the outdoor yoga lawns just beyond the glass curtain wall outside the yoga space. Returning back through the core and into the corridor, the staff leads the guests out the end of the building and shows an overview of the grounds and housing clusters below. From this vantage point, most of the site can be seen; wildflower meadows, wildlife wetlands, meandering garden paths, rainwater creek beds, fragrant gardens, yoga and meditation pads and a flurry of other attractions.

Concluding the overview of the lower site, the tour leads back to the right across the trickling rainwater creek that diverts rainwater from the building roof down to the reservoir below, and into the Zen water garden courtyard that is sandwiched between each section of the building. The garden exhibits manicured evergreens, flowing grasses, small patches of lawn, sand, rock and ground cover that weave together a patchwork of landscape full of moments for mediation and yoga. A few choice trees, cherry, birch, forest pansy to mention a few and punches of color throughout the season, blooming in the spring and shedding foliage in the fall. The pathways are indirect through this pondering place, forcing visitors to stop and experience the near before diverting attention on the far.

As the tour continues, the dining patio is to the west of the building, overlooking the expansive reservoir below. The seating area is occupied by a series of fire pits and an adjacent smaller rainwater garden that feeds rainwater down the hill into the reservoir though a shade garden planted under a thick tree canopy on the edge of the forest at the edge of the property. Returning to the indoors through the dining room is where the master chef prepares meals to order from the freshest local meats and produce for the guests. Vegetarian and vegan options are available for those guests who require alternative menu options, hopefully full of produce from the retreats private garden. The dining becomes a flexible space in order to accommodate large meetings and gatherings for special events and evening collection, a farewell to the day during a period of reflection and connection between the environment, ones-self and the people on the journey around you. The tour concludes back at the reception and lobby space, where visitors receive their room assignments, asks any questions they may have and then are released to the experience transformation.

6.2 Program

The Mount Tom Self-Transformation Retreat's breakdown of programmatic spaces is as follows:

Retreat Building

1. Entry/Lobby
    a. Covered Entry
    b. Lobby
    c. Lounge

2. Reception/Admin
    a. Reception
    b. Waiting
    c. Executive Offices
    d. Conference Room
    e. Offices
    f. Copy/Printing
    g. Kitchen
    h. Bathrooms

3. Yoga
    a. 4 Yoga Classrooms
    b. Locker/Changing Rooms
    c. Outdoor Classrooms
    d. Bathrooms

4. Dining/Meeting Hall
    a. Dining/Meeting Room
    b. Outdoor Dining Patio
    c. Kitchen
    d. Preparation Area
    e. Kitchen Dry Storage
    f. Refrigerator/Freezer
    g. Office
    h. Bathroom

5. Health Spa
    a. Reception
    b. Office
    c. Massage Rooms
    d. Lounge
    e. Patio
    f. Outdoor Hot tubs
    g. Bathrooms

6. Landscape
    a. Zen Water Garden
    b. Fragrant Meditation Garden
    c. Shade Garden
    d. Produce Garden
    e. Wildflower Meadow
    f. Sculpture Garden
7. Services
    a. Deliveries/Services
    b. Services Office
    c. Mechanical
    d. Loading Dock
    e. Bathroom

8. Parking
    a. Retreat
    b. Staff

Housing

1. Staff Housing Cluster
    a. Studio, 1 & 2 Bedroom
    b. Bathroom
    c. Kitchen
    d. Meditation/Yoga Loft
    e.
2. Retreat Housing Cluster
    a. Private Individual Meditation Space in housing
    b. 4-6 Bedrooms
    c. Shared Bathroom
    d. Community Meditation Garden

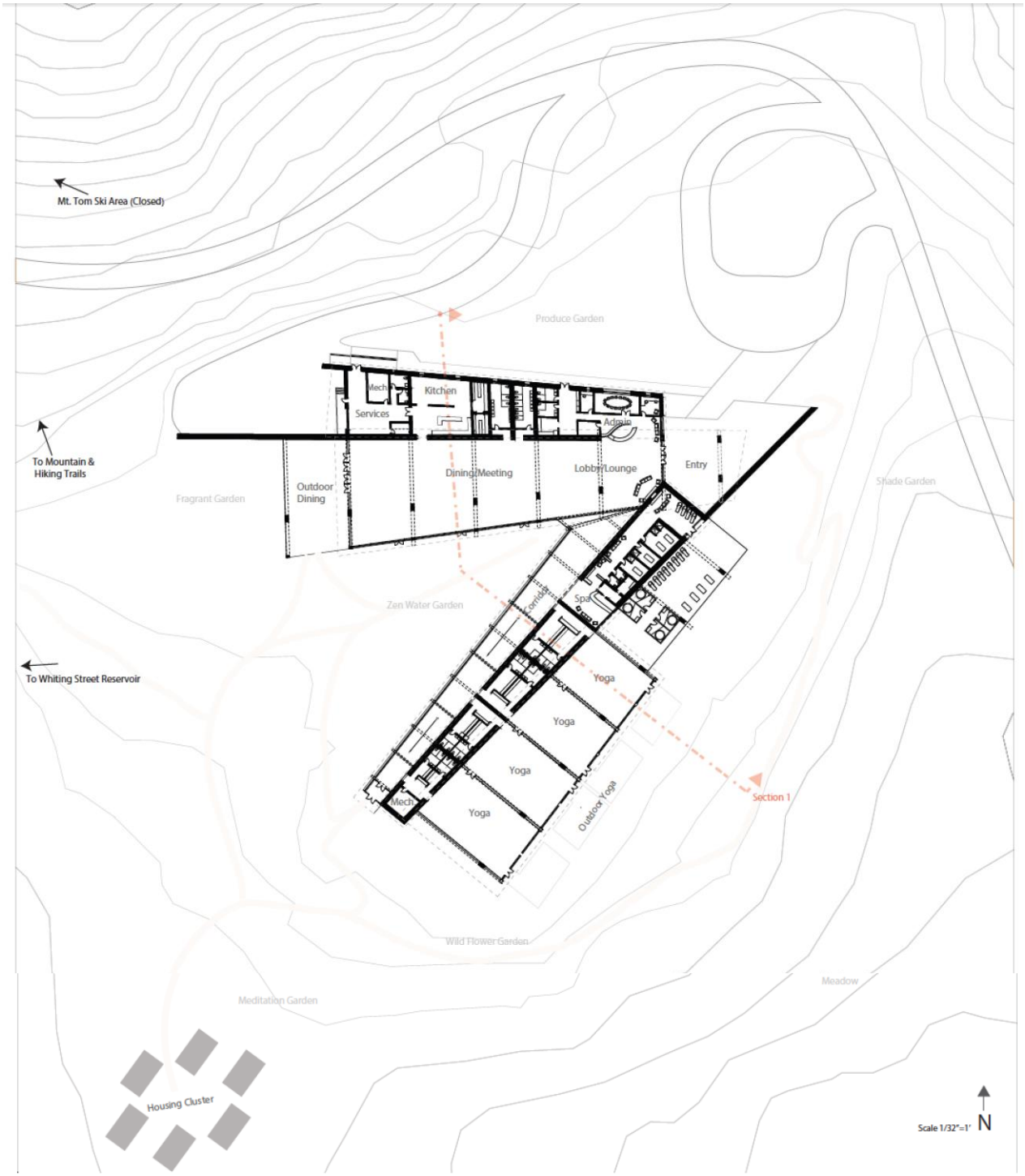


Figure 60 - Self-Transformation Retreat Floor Plan

6.3 Plan

The floor plan below describes the final realization of this project and all its pieces in accordance to all the details outlined above.

6.4 Elevations and Sections

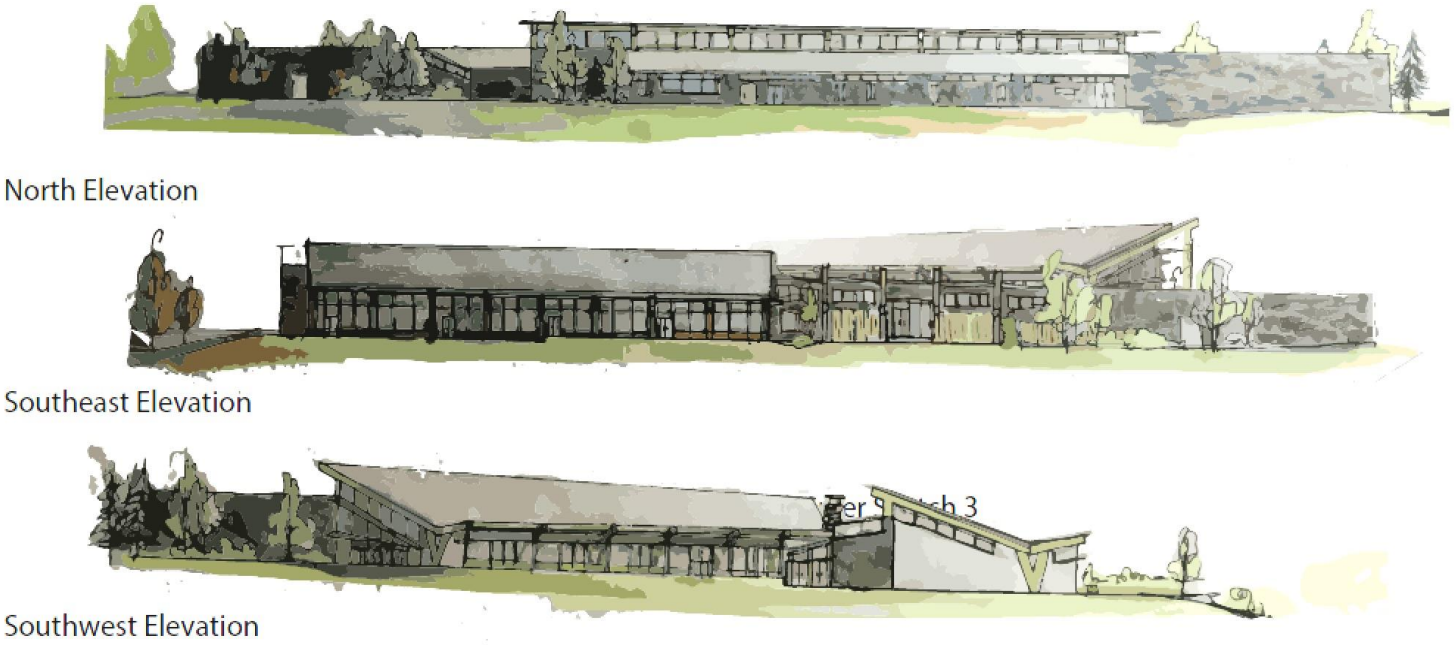


Figure 61 – Self-Transformation Retreat Elevation Sketches

Figure 62 - Materials

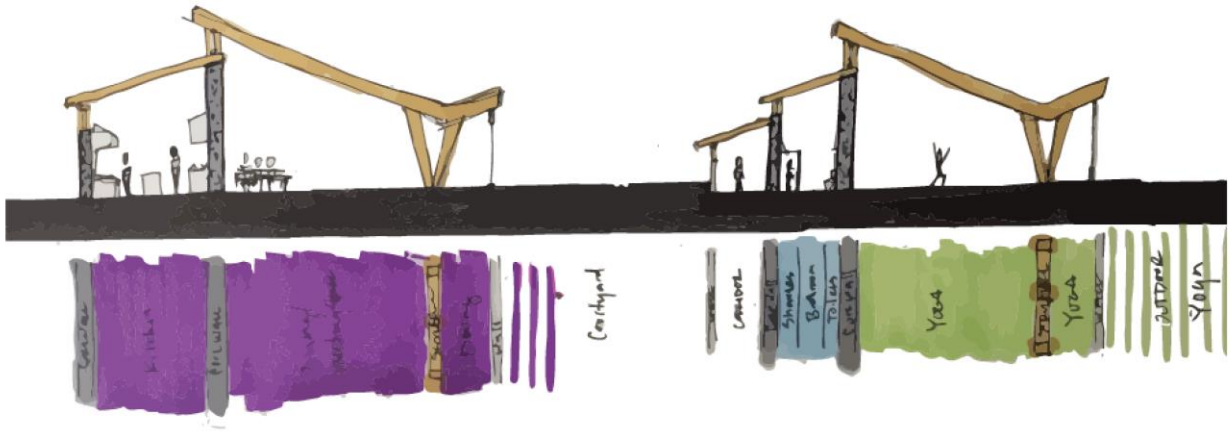


Figure 63 – Programed Structural Section Sketch

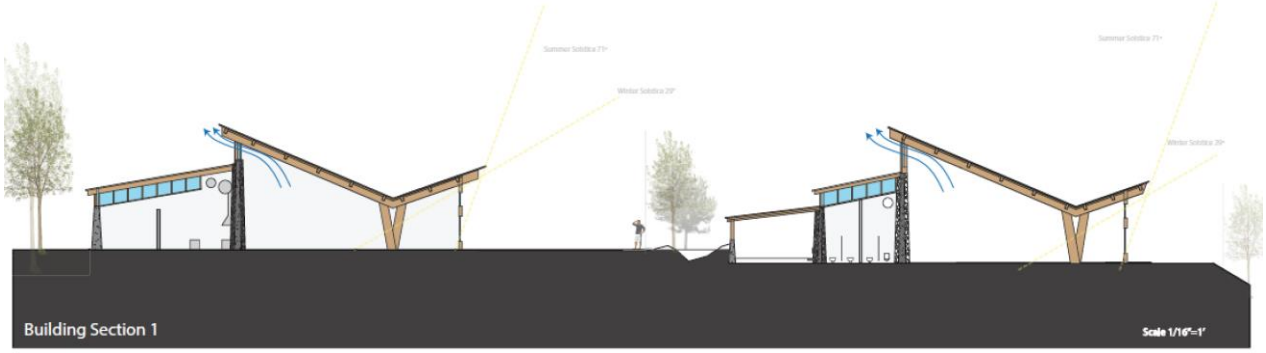


Figure 64 - Self-Transformation Retreat Section

This structural program diagram sketches the section of the building and their proposed programmatic uses. The building to the left is the dining building cut through the kitchen and the right is the corridor, the bathroom/locker room core and the yoga classrooms. Beyond each of the primary spaces, the landscape becomes a breakout space for users to break free from the shelter of the building and inhabit the landscape adjacent to the interior space. This gradation of spaces, heavy and enclosed to light, and open to the outdoors makes for a great transitional experience for the users and staff as well.

The finished building section cuts through each of the two buildings on the north and south axis. The core walls are heavy and made of natural stone; they cradle the support spaces with two distinct thresholds, creating a recognizable boundary to define differentiations of spaces. By capturing northern light through clearstory windows, and sharing it between adjacent spaces, the core is able to collect and distribute ambient natural light to all its spaces. The cores have timber roofs spanning across the heavy core walls. Rather than overbuild the structure with a steel, wood or concrete roof, the choice to continue to use as many natural and sustainable materials as possible made wood the best choice to span the core roofs. Above the timber support structure, the roof would be finished with a standing seam metal roof in order to facilitate seamless and swift water collection as well as snow and ice management. The Glulam structure spanning the primary dining area, converges in a v shaped column that intersects the floor. This interruption provides a dichotomy of space within the primary spaces. That smaller section of space between the column and glazing wall would become the perfect area for dining tables and even small meeting groups. Full of natural light and with the view to the courtyard garden and reservoir beyond, this space will be very active throughout the day.

The primary dining space on the left has a generous roof overhang to the south to modulate the solar gains, the summer sun rises to 71 degrees and the winter sun scrapes near the horizon at 29 degrees. These two values are expressed in faint yellow lines displaying where the sunlight would penetrate into the space. The summer sun is held out entirely, while spring and fall receive moderate gains, the winter sun is captured by the large southern glazing allowing sunlight to penetrate more than halfway into the room, increasing solar energy gains and reducing heating costs.

The section shows the similar form of the buildings as we move to the yoga section on the right. The space furthest to the left is the corridor that runs parallel to the core allowing access from the housing area to the rest of the retreat building. There are small spaces to pause along this corridor, to meet a friend or practice some meditation and gaze out over the rainwater swale into the courtyard garden beyond. This corridor becomes the major artery for the resort, allowing people to filter in and out of classrooms, the spa and the lobby/lounge area by the entry. This segment of the building also uses the core wall of the yoga building to support its roof system. The timber roof and wall give this corridor a bright and warm feel with the unique texture of the adjacent natural stone wall. The core walls are similar to that of the dining building, thick, heavy stone walls that support a timber roof with northern clear story windows that allow for ample ambient light to bounce down inside them. Inside the core consists of changing rooms and bathrooms that compress the user before releasing them in to the expansive yoga spaces beyond. Crossing the last core wall, the warm glulam structure and wooden ceiling harvest the bright natural sunlight and distribute it throughout the space. Northern clearstory windows also used for ventilation during the hot summer months also shower in ambient northern light and the occasional afternoon summer sun. An identical glulam v column reaches down and anchors the glulam structure to the floor. With a similar southern- wood glazing wall and roof overhang to modulate solar exposure, this building is equipped to best manage the sun for spatial activation and heat gain in all seasons of the year.

The large V-shape the glulam roof creates provides ample opportunities for solar collection and rainwater management. The two diagrams below explain how the building was designed to take advantage of these resources and how each of them helps augment

not only the energy consumption but evokes interest in the experience within the surrounding environment.

6.5 Hydrology and Rainwater Management

The rainwater/hydrology diagram explains the sites management of displaced rainwater by the building. The roofs pitch to divert rainwater and snow melt to specific locations creating a unique and intriguing experiential moment that adds yet another level of experience at these sites. The two major roof systems over the primary spaces collect water and shed it all to one end. The yoga roof ejects water into a koi pond that is located adjacent to the hot tub patio and can be seen clearly from inside the spa lobby. This rainwater garden then sheds its water down the hill to the marshlands. The dining/meeting room roof carries water out beyond the dining patio and into the fragrant garden landscape. This collection of rainwater will make its way down the hill westward and into the reservoir. The dining building core sheds water to the north where it is collected and stored in drums in order to provide a sustainable water source for the produce garden. The remainder of the rainwater is diverted from the spa roof, yoga core and yoga corridor into the Zen water garden in the courtyard of the building. This courtyard begins at the narrowest point with a small pool for water collection, a rocky swale abuts the yoga corridor as run off from the yoga core and corridor roof add to the

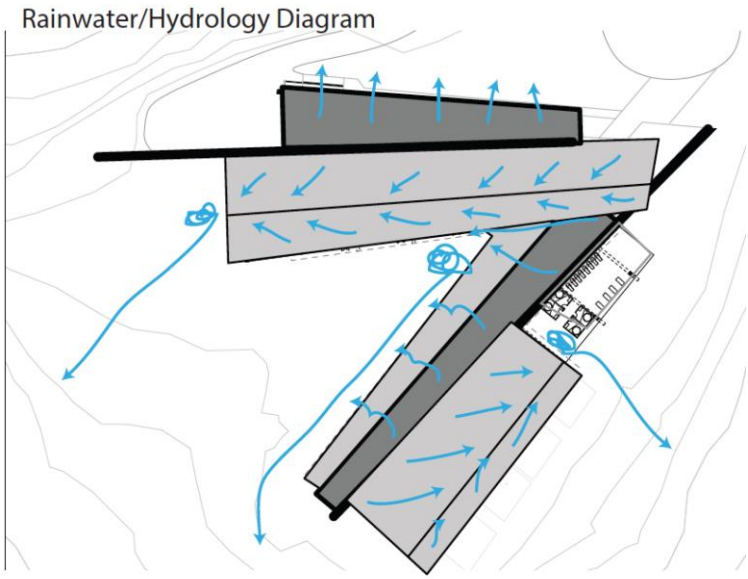


Figure 65 – Rainwater/Hydrology Diagram

flow as the water travels southwest toward the reservoir. By collecting and diverting rainwater to activate interior and exterior spaces, the building creates moments of flow and moments of pause; injecting the landscape with movement, aroma and sound.

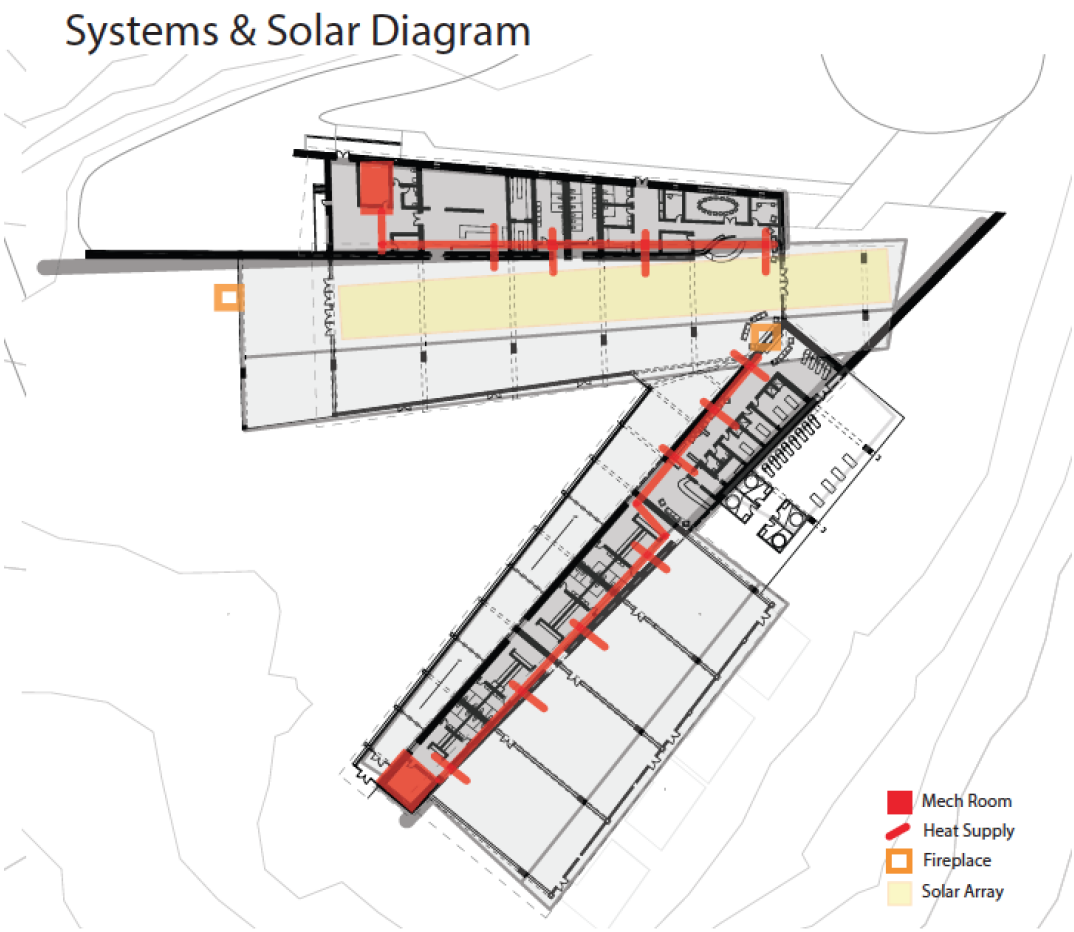


Figure 66 – Self-Transformation Retreat Systems/Solar Diagram

6.6 Mechanical/Energy Production

Although the building has incorporated passive solar techniques to capture the sun's rays in the winter and shade from the heat in the summer, the building will need additional mechanical systems to keep the large spaces comfortable and active year-round. The mechanical system was devised to first take advantage of the passive and renewable resources on site. The large south facing roof of the dining building is pitched at near perfect angle for solar collection throughout the year, this roof will house an expansive solar array that will provide electricity to all the functions of the site. With a form that is conducive to proper solar collection and shading as well as operable ventilation, the air will only need to partially be heated and cooled by the mechanical systems. By designing a mechanical space for each side of the building, we insure a greater efficiency and faster delivery of the tempered air to the spaces. These mechanical spaces reside at the end of each core, running large circular ducts overhead supplying the air to the yoga spaces, yoga core and the spa. Locating the mechanical space beyond the buildings major spaces helps isolate the noise pollution and improves acoustics, keeping yoga practice in the adjacent rooms quiet and pleasant. The spa spaces are located at the opposite end of the building, insuring the mechanical systems will not interfere with the relaxation and serenity of the spa activities.

The same organization is true for the dining building with mechanical spaces located at the end of the building in the services area. This mechanical space will have adequate separation from the primary spaces as well as an exterior wall in order to

properly ventilate the mechanical space. The mechanical space will provide the same round insulated ducts through the roof of the core to the adjacent primary spaces. With the two ends of the mechanical supplies from both building sections converging on the central lobby space and with addition of the large fireplace, the air quality, humidity and temperature will be well adjusted throughout the entire structure. The large fireplace in the lobby will provide that additional heat and ambiance in the lobby during the winter and swing seasons, there will also be a series of fireplaces or fire pits on the dining patio to give guest the option of outdoor dining on nights when it still might not be warm enough. By Improving the users experience with comfort and cleanliness of fresh air, the ambiance of a fire, and the warmth and comfort of a sustainable building, it will undoubtedly have a major impact on the quality of experience for all those who participate in the retreat.

CONCLUSION

The Self Transformation Retreat, combining natural materials, vibrant sunlight, nutrition, exercise, compassion and relaxation in a unique experiential architectural environment, exhibits world-class accommodations for the mind, body and soul. The retreat is a light activated, choreographed dance of space and time, and precisely placed atop a lush, sculpted landscape that adjoins the Mount Tom Range and the Whiting Street Reservoir. This place is about nature, light, experience, individualism and benevolence to ones-self, one-another and the environment in which they reside. Understanding of the relationships between people and space, and how they perceive it, I was able to craft a tactile, natural, comfortable and experiential moments for visitors self-discovery. With a deep-rooted connection to nature, the resort invites guests spending time extracting lessons through experiential exploration of the grounds and beyond. This detailed building unveils locally harvested Goshen stone walls and intricate engineered wood -glulam structure to maximize sustainability and create a bright, open and inviting environment indoors and out. The perfect combination of well-being, architecture and experience makes this retreat an unforgettable journey through self-transformation.

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