CONNECTIONS THROUGH NATURAL PERCEPTIONS

By

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A thesis submitted in partial fulfillment of the
Requirements for the degree

Of

Master of Architecture

MONTANA STATE UNIVERSITY
Bozeman, Montana

November 2009

APPROVAL

of a thesis submitted by

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This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citation, bibliographic style, and consistency, and is ready for submission to the Division of Graduate Education.

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Stephanie Ann Schroeder

November 2009

"It is one thing to recognize that man searches for meaning, but another to say that reality is so obliging as to be, in itself meaningful."

-Michael Benedikt
"For an Architecture of Reality"

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ABSTRACT

I believe that through sensory connection to our natural surroundings we will reinvigorate a deeper connection with ourselves and to the environment. Architecture could become the medium to create that connection as well as the physical manifestation of our understanding of existence and of time, which facilitates this connection. This thesis seeks an understanding of self and place through our sensory connection to nature. In our modern world, we are presented with a growing amount of synthetic and manufactured surroundings that are designed to be perceived through sight, while sound, smell, taste and touch are considered secondary senses, and experiential quality is not inherent. Our society is moving farther away from a connection to nature and a connection to the earth. I believe that through sensory connection to our natural surroundings we will reinvigorate a deeper connection with ourselves and to the environment. This thesis is exploring how nature is the medium for a deeper connection and understanding of ourselves, who we are, and how we interact with the environment through sensory perception. Natural materials and practices are being replaced with synthetics, which lack the cyclical nature and life of natural materials. Machine-made products lack the ability to connect on a humanistic level due to their perpetual state of youth. "We are increasingly detaching ourselves from 'organic and functional periodicity' which is dictated by nature, and replacing it by 'mechanical periodicity' which is dictated by the schedule, the calendar, and the clock."[3] These fabricated objects intensify the isolated state of man from the natural world through their constant neglect of the senses and disregard for the energies intrinsic in natural materials.

It is my belief that to be able to live meaningful and impassioned lives, we must become more aware of fabricated surroundings, and return to natural environment from which we came. By refocusing on natural processes and materials in the built environment, man can reawaken the relationship we have with nature. I believe that through understanding our surrounding's impact, we can connect with not only ourselves, but the environment.

THEORY

SYNTHESIS OF THE SENSES

Our senses are the medium through which we interact with the world. To understand or connect with our surroundings, we must collect fundamental information from each sense. It is through these synthesized perceptions that we comprehend what are surroundings are, and how we psychologically connect to our environment.

From the time of birth, till the time we pass away, we constantly rely on this information to enlighten our brain. As an infant, smell, sound, and touch are the senses that most inform us of the environment, while later in life sight and sound play key roles to our interaction with the world. Each sense holds an imperative role, not only in our survival, but in defining how we interact with the world around us. “The role of the senses [is] organizing experience and ‘constituting’ the physical world.”

Each person’s senses work in different proportions collecting information. Someone who is born deaf depends solely on sight, smell, taste, and touch to interact with the world. A person who has impaired vision uses sound, smell, taste, and touch to carry out day to day functions. “Rather than being absolutely separate, each of these qualities has an affective meaning which establishes a correspondence between it and the qualities associated with the other senses.” The individual pieces of information that each sense collects unite with other senses’ information for a complete understanding of the space in totality. “An object is a system of properties which present themselves to our various senses and which are united by an act of intellectual synthesis.” It is through the synthesis we understand the object as a whole. The objects are then perceived on a deeper level, displaying their characteristics and essences.

Once we begin to see that a space embodies characteristics and essences, we form a connection to

our environment. “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 of being, which speaks to all my senses at once….” Take for example moving to a new house. Initially the space feels foreign and bare, but after a few days of observing the objects in the space, it becomes familiar and warm. It becomes a place.

Through understanding our environment, we begin to comprehend that we are existing in that place, at that time. This comprehension leads to deeper understandings and connections with ourselves. As Maurice Merleau-Ponty stated, “today we shall see that the rediscovery of the world of perception allows us to find greater meaning and interest in these extreme or aberrant forms of life and consciousness. So much so that the whole spectacle that is the world and human life itself takes on new meaning as a result.”

It is through our sensory perceptions’ synthesis that a correlation to ourselves and environment is possible. Through the individual work of the eyes, ears, nose, mouth, and skin that we understand and interact with the world. Sensory perceptions and intellectual synthesis open the door for deeper connections and understandings to ourselves, and to the environment.

To further describe the role our individual senses play with our connection to the surroundings, I will describe a personal memory for each sense. Senses collect information differently for each individual, and for this reason I can only accurately describe how I perceive the senses through my own sensory experiences.

"The way spaces feel, the sound and smell of these places, has equal weight to the way things look."

- Steven Holl
"Questions of Perception"

SENSE MEMORIES

SIGHT

Sight is the sense that allows us to see and identify with the plasticity of the existing environment around us. It perceives color from objects, as well as the intensities of light that lay upon it, giving a three dimensional physicality to the world. Our peripheral vision is just as essential to our visual perception as the focused image. The observations gathered in our periphery merge with the observations of our focus to create a scene in totality. “Peripheral vision integrates us with space, while focused vision pushes us out of the space, making us mere spectators.”[9]

In today’s society of fast paced lifestyles with erratic visual images constantly flashing before our eyes, our other senses seem to be disregarded as a means of sensory perception. Almost every element of modern life is produced to be perceived with our eyes. Michel de Certeau describes this ocularcentrism encompassing all aspects of life, “from television to newspapers, from advertising to all sorts of mercantile epiphanies, 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.”[10]

Our sense of smell, taste, sound, and touch are used in limited circumstances, and our experience of the environment is one of partial perception. "The inhumanity of contemporary architecture and cities can be understood as the consequence of the negligence of the body and the senses, and an imbalance in our sensory system. The growing experiences of alienation, detachment and solitude in the technological world today, for instance, may be related with a certain pathology of the senses."[11]

Circadian rhythms also has a great experiential charisma. The assorted intensities and frequencies natural light present from minute to minute and day to day behave in the same organic cycles of all natural life. The medium strength luminosity of dusk and dawn embody mysticism that modern life neglects and robs us of everyday. Bright light of early afternoon has an awakening influence upon the body, giving an extra burst of energy to carry through the day. Artificial lighting in our buildings today deprives occupants of this needed and desired connection with the surrounding environment. "Homogenous bright light paralyzes the imagination in the same way that homogenization of space weakens the experience of being, and wipes away the sense of place."[12] Returning to natural, primitive surroundings and practices could intensify the connection between ourselves and our environment, allowing the intended relationship to strengthen.


PEPITA
SAMPLE

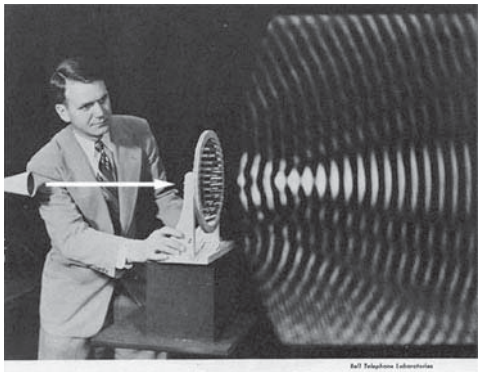
SIGHT MEMORY

From a very young age, my parents found it extremely important to introduce other countries and cultures to my sister and me. Early vacations led us to Mexico and Central America. The impact those travels had on me is astounding. From the first moment we stepped off the plane, I was enchanted with other cultures and lifestyles. The colors, smells, tastes, sounds, and textures were all unrecognizable and amazing. The strongest memory I still have from those trips is walking through an open air market in Mexico City. There were thousands of people bustling around with a new energy I had never experienced before. The roar of their footsteps upon the cobblestone was only muted by the bartering at every cart. Their brightly woven fabrics flashed by leaving an inexperienced rainbow in my periphery. Fruits, vegetables, and animals I had never seen before were stacked a foot deep on the vendors' carts. Iguanas, passion fruit, and tomatillos gave excitement American grocery stores lacked. Winding our way through the maze of carts, my eyes glance upon a hind quarter of a pig hanging from a rusty hook in a canvas display. Flies swarmed around the exposed meat, but no one thought twice about it, and there was a line to purchase items from the vendor. Next door to the meat cart was a display selling silver jewelry. Dozens of cases contained shining rings, bracelets, and necklaces in any size or style imaginable. The amount of every aspect of the market is what captivated me. Thousands of people, hundreds of carts, and the amount of produce and goods on the carts were on a scale I had never known.

Two summers ago I attended an architectural studio in Rome. Our studio space was on the corner of Campo de Fiori, which was a large open air market. The market was beautiful and exciting, but I found myself drawn to something else. There was a narrow passage way between the Campo and another neighborhood. In the passage way, there was a step up from the bordering neighborhood into the Campo. This step was a large rectangular piece of marble. The marble had been worn down from centuries of use. The edge of the marble had been worn down in the middle to a smooth, sagging curve. Knowing the dense composition and durability of marble, the amount of footsteps on the marble in that location had to be enormous. The step took me back in time. I imagined centuries past and the people who passed through that threshold. I found comfort in that step. It had a quality grandparents possess. Every time I glanced at the marble, it spread its arms and hugged me. The hug spoke of an affiliation with humankind and reassured me that even in Rome, I had 'family'.

SOUND

Sound assists in giving shape to the visual world we perceive. Sound extends above the capacity of sight in grasping the spatial world around us. Reverberations of sounds from a space give a mental apprehension of the dimensions of that place. "We stroke the boundaries of the space with our ears."[13] Hearing sounds of our environment provides awareness of other occupants of our city, and generates a sense of humanity. Sound is perhaps the second most involved sense in modern time, due largely to that fact that so many actions executed everyday generate sound of some magnitude.



"There is the magic of music. The sonata begins with the first descending melodic line of the viola, the piano sets in, and there it is already, the instantaneous presence of a distinct emotion; the atmosphere of sounds that envelopes and touches me, that puts me in a special mood."

-Peter Zumthor
"Thinking Architecture"

SOUND MEMORY

I was born and raised in Laramie, Wyoming, which is a town surrounded by the prairie, with mountains in the distance. Without close geographic protection from the elements, the small town was frequently bombarded with the fury of Mother Nature. At any point of the year, at any time of day, a storm could arise leaving its fruits, and disappear as fast as it came. The orientation of the town concealed the views of the encircling prairie, and any pre-warning of the storm by sight wasn't possible. The only forewarning began just minutes before the storm arrived with its howling winds. The wind would pick up from its usual activity into furious gusts which voiced for recognition. The wind forced its way through window seals and filled the house with an eerie whine. This happening always left me anxious and cognizant of the power of the landscape.

Storms forming over the prairie have vast space to spread themselves out and strengthen. They develop into enormous forces altering the typical environment. The sky exchanges its blue for the storm's grey, and the silence switches to racket. Any moveable item slams back and forth ringing the warning bell for all to hear. At times rain or snow would accompany the storm, and add to the chaos.

Seeking shelter during these outbursts could range from five minutes to days. Just before I left Laramie, during mid spring, a snow storm came leaving over four feet of snow. My family and I were stuck in our house for two days before snow removal reached our neighborhood.

Having lived through the extreme weather, I have always understood the capacity it can reach. The whipping wind hits your ears with a constant reminder of the vast expanse of the prairie, and of the distance that lies between you and protection of mountains. Thunder would echo for miles and miles radiating the expanse that lies behind. The simple sounds of the storm form the mental image of the storm, and the ears inform the rest of the senses of what lies ahead.

SMELL

Smell is one of the strongest and longest lasting senses humans have. Decades after experiencing an object of space, one can still recall the smell associated with that particular memory. The olfactory sense gives a life and remembrance to entities that might otherwise be forgotten. This precise sense has the facility to resurrect distinct recollections or representations of our past happenings. If we recall a place we visited as a child, the smells associated with that recollection not only return vividly to our minds, but causes other sensory memories of the same experience to return. The reflection of the dusty smell of an old house immediately puts an image of a dimly lit room, with thick stale air into my mind. The unity of the senses is only heightened by one another, and smell helps us sustain memories and other past experiences that could possibly vanish from our memory.

SMELL MEMORY

As a child I developed a weird phobia of antiques. The origin of the dislike is unknown, but it definitely was a real fear. The thought of spirits being connected to items, which they used to own, was the premise of the fear. I believed that ghosts and spirits were real, and thought that owning or being near something they used to own could draw negative attention from them. My mother owned a chest that had been passed down in the family for generations. I couldn't stand being near it, even knowing that family members had owned it. My assumption was that the deceased would permanently haunt living persons who came in contact with their former property. I envisioned an elderly female ghost slapping my hand away from the furniture and swaying her index finger side to side. I wanted absolutely nothing to do with attracting spirits of any sort, so I stayed away. My mother would sometimes go into antique stores, and a couple of times I actually attempted to go in. Once in the door, overwhelming fear would come over me, and my legs would start to shake. I never made it in very far and would turn around and go to the car. At times I was fooled. Sometimes antiques were hard to spot. They could appear new, or lightly used, but not have typical, older style. Although they could visually fool me, they could never trick my nose.

There is a certain tobacco-like, aging chemical musk to them. I could smell the dirt that accumulated on the handles from years of use. The smell would fill the air thick with heavy stench that moved through the air like a low lit room with smoke in it. Even if the antique wasn't in an antique store, it still contained the same recognizable smell. The stench never left the item, no matter what was done to it. It would always expel its age through the air, becoming more potent with time. The yellowed newspaper from long forgotten times would continue to fade and turn deeper shades expelling the odor of wet paper and ink. The oils in the wood would seep out of the deeper layers and create a rich wood smell. Eventually with time and effort the fear dissolved, but not completely. My olfactory memory will never forget the unmistakable smell of antiques that was built up so strong from a young age. Still I prefer not to touch or smell them, but can be in spaces that contain them. At times I even see an antique that I like.

TASTE

Our sense of taste is extremely sensitive to our environment. Smooth textures of stone are translated texturally and understood by taste memories of other smooth surfaces. A painting may depict a table with a feast of a meal; our eyes perceive these images which instantly makes us orally react by salivating. A person watching a television program involving cooking or food is more likely to eat during or immediately after viewing it because of the oral reaction from visual stimuli. "Our sensory experience of the world originates in the interior sensation of the mouth, and the world tends to return to it oral origins."[14] The constant contact between the tongue and the mouth has a direct relation to our perception of our body existing within the world.

The taste and smell senses work closely in unison when perceiving information. To actually taste an object we must smell it as well. Strong scents leave a taste in the mouth, and strong flavors leave a smell in the nose. Without smell, taste is nearly impossible. Just think of a time when you have had a cold that left you congested. Anything you ate had a bland, boring taste to it; a taste that would be almost unrecognizable if your eyes weren't informing you of what you were eating. For this reason, in my taste memory I am recalling a taste that also has a scent associated with it. The taste in this memory greatly outweighs that of the smell memory. Although both taste and smell will be discussed, I place the emphasis on the taste memory.

TASTE MEMORY

As a child I always loved swimming. On vacations my family would lounge around the pool and hang out all day, and I would be in the pool swimming for four hours at a time. Later on when I was in the third grade, I decided to join a diving team. I started diving that year, randomly competing in novice competitions held by diving club associations, and stuck through until my senior year in high school. By the point I reached high school I was forced to swim some events during meets, so switched practices between diving and swimming. Needless to say, much of my up-bringing was spent at the pool.

Anyone who has been in a pool is aware of the smell and taste that chlorinated water has. How much chlorine is added to the pool proportionately affects the potency of the smell and taste people experience. For me, since I was at the pool everyday of my life for several years, the taste of the chlorine greatly outweighs the smell. I am not sure if it is due to the amount of time I was around pools or not, but I still have a sensitive taste detection of chlorine, whether it be in drinking water or in pool water.

During my high school swim team days, our practices were from 5:30-7:30 a.m. and then from 3:30 to 5:30 p.m. With that amount of time spent at the pool, the chlorine smell and taste had made its way onto every part of my body and everything I owned. While practicing, water would seep its way into my mouth somehow, and leave the chlorine taste. Whether it is during a break between sets when I was trying to regain my breath, or entering the water during a dive, pool water would always end up leaving the taste of chlorine in my mouth.

After swimming and diving for some time, I began to notice that even the food I ate had hints of chlorine, left over from practice. Food began to lose its appeal for taste (since everything had a hint of chlorine) and eating simply turned into a task that had to be done. Reflecting upon those times of swimming, I can still taste the chlorine in my mouth and smell its disinfecting properties.

This last summer I went to the local pool to swim some laps for exercise, and immediately upon entering the doors, the smell and taste in the air took me straight back to my high school pool. That taste memory repaints the entire layout of the pool area and locker room from my high school, and I was transported back to those days of dedication and exhaustion.

TOUCH

We encounter literally thousands of textures every day, from the smooth cotton sheets we wake up in, to smooth door handles worn from years of use. Our hands learn to navigate the world from a young age through sensing objects from their feel. Touch is a sense which creates an immediate effect. The thick weight of a heavy sweatshirt promptly generates an emotion of comfort and content. Objects' textures also bring our awareness to the population around us. Marble worn down by years of use texturally associates our environment to people and time. "A pebble polished by waves is pleasurable to the hand, not only because of this soothing shape, but because it expresses the slow process of its formation; a perfect pebble on the palm materializes duration, it is time turned into shape."[15]

TOUCH MEMORY

Growing up in Laramie, Wyoming, I was not really exposed to any modern or non-stereotypical architecture. Early in my life I realized that I had an interest in building and architecture and took several architectural drafting classes that intensified my interest. Still, I was removed from and unaware of what great architecture really was.

The University of Wyoming, located in Laramie, had a strong art department which was interested in building an art museum. The university held a national competition for the building design, and quickly began construction of the new project. I knew neither who had designed the building, nor what the building would look like. I surmised that the building would be square volumes, varying in size and arrangement, like most other structures in my town.

As construction proceeded, I found myself becoming more and more intrigued. One of the first elements completed was a long, curving concrete wall. I expected the designer would put some sort of finish on the concrete at some point, but it remained unfinished. The manner in which the wall curved into the landscape, and its unapologetic prominence intrigued me because I had never seen anything like it before. Within a couple years time the museum was complete and I visited it often with school, or my father, who is also an artist.

The building had me entranced. The main gallery space mimicked a large teepee in a modern interpretation, and I inexplicably loved the building, especially the concrete wall. Several times when I was exiting the museum I walked over to the concrete wall and brushed my hand across it. It was a polished stone, and lacked typical textural qualities of concrete. I would walk along its length with my hand running down it, feeling the smooth quality of the surface balanced by the weight of the concrete's mass. The wall was cold, informing me of its thickness and strength. From that first moment of contact I loved concrete and realized its multiple applications.

Later on, I visited the museum during a Christmas break, while attending the architecture program at Montana State University. The museum still had the emotional appeal it did to me as a child, which I wasn't expecting. The concrete wall, although a little weathered, was still as beautiful as it had been when I was a child. It remained prominent and unusually smooth. I rubbed my hand across its surface another time and remembered exactly what I had felt the first time of contact, and knew I wanted to create similar concrete work in my lifetime.

The architect of the building was Antoine Predock, and during Predock's lecture at Montana State University he spoke of this museum, and that concrete wall. At that moment I remembered the texture and prominence of the wall, and reaffirmed why I was in school for architecture.

THE BODY IN RELATION TO THE SENSES

The sensory information perceived from experiencing a space is synthesized and mutated into a single collected encounter. Visual objects, smells, sounds, tastes, and textures unify to an emotional and physical understanding of the surrounding environment. According to Yi-Fu Tuan, intimate spaces "are elusive and personal. They may be etched in the deep recesses of memory and yield intense satisfaction with each recall, but they are not recorded like snapshots in the family album, nor perceived as general symbols…."[16] The physical manifestation of this comprehension transmits through the body, and the body becomes the vessel in which we identify the environment with the present. "Sensory experiences become integrated through the body, or rather, in the very constitution of the body and the human mode of being."[17] The emotional reaction to the space is felt throughout our mass, and generates a physical reaction to what we encounter. Spaces of sadness may affect a visitor in a manner which produces a physical response of closing ones posture, or even crying. Spaces greatly influence our inner self and the manner we conduct our lives on a daily basis.

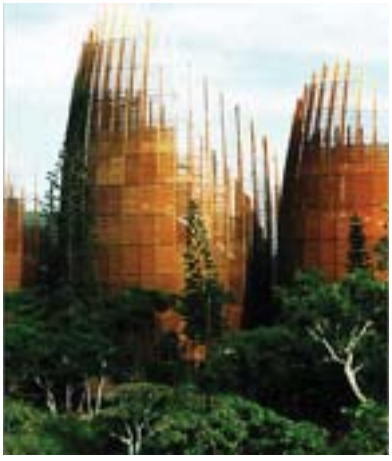
THE BODY IN RELATION TO SENSES MEMORY

Some years ago I went to Washington D.C. to visit a friend going to school there. It was a new and refreshing experience to see the architecture and culture of the East Coast. We visited many museums and buildings, exploring the city to take in everything it had to offer. One of the last days we made our way to the Holocaust Memorial Museum. I had studied architecture for two years, and was excited to enter the space since I had heard about the building before. I was aware that buildings were art, but few spoke to people as a piece of poetry could. I personally had never experienced that from a space at that time. After walking across DuPont Circle and Foggy Bottom to Penn Quarter, I was interested to see the exhibits and building. I knew of the history of the Holocaust, Germany, and World War II having a grandfather who moved to the United States from Germany during this time. Not only had I heard of personal stories from my grandfather, but I had an interest in history, and had read several books and seen several movies about the era. Just from the few stories I was aware of with the Holocaust, I had an understanding of the horrific and demonic time Europe went through, especially peoples of other heritage than German. Immediately entering the building, I understood the architect had made a piece of art. The art was directly representative of the events of the Holocaust, in a functioning weight. I remember it was an intensely sunny day that we went to the museum, and the instant we entered the large Hall of Witness, the sun was filtered to a grey quality. I could tell it was sunny, but the warmth and life bearing qualities were removed. It had a meaningless existence and was exaggerated by the large, heavy, dark steel beams arrayed above to support the glass roof.

Immediately I felt this weight, an inescapable weight. It was slightly uncomfortable and completely designed for function and productivity, not leisure. A sense of captivity came over me as the steel bared its dense quality repeatedly in the space. Brick walls lined the sides of the rectangular shape and mimicked a European construction, but were riddled with steel bracing.

I was beginning to feel similar emotions as people displaced, held captive, and altered by the Holocaust, in a very superficial way. After all of the books, stories and pictures of this time, I had never had these emotions before. It truly was the space which James Ingo Freed had designed that gave life to part of what the events were actually like. After traveling through all of the exhibits and displays in the lower level, I was astounded at the information I had gained during my visit. Even after the history I had studied, I was barely aware of some of the events of the Holocaust. As I stated in the olfactory section of this thesis, I have always had a fear of antiques. One of the strongest memories I have of my visit is the medical exhibit in the basement of the building. The air was freezing cold and highly uncomfortable to walk through with too many people in the space to have a reflective experience. In the exhibit they displayed medical equipment and records Hitler's SS organization used to define, classify, and eliminate people of other heritage. The actual hair samples they collected from gypsy groups were displayed with a physical scale of hair color they used to classify the people they researched. Plaster face molds made by the SS depicting other races' facial features and iris coloring scales were shown as well. At this point, I reached a level

of nausea. I was no longer cold, uncomfortable, agitated, or cramped. I was sick. After leaving and having time to reflect on the experience of the museum, I was overwhelmed with the space that James Ingo Freed had designed and the relationship the building had with the exhibits within. At that point I felt proud of Freed for his space and accomplishments, but also to be studying the same line of work, and the possibility I could do that for others someday.



"From these ingenious views the step is very easy to a farther opinion, that it does not much matter what things are in themselves, but only what they are to us; and that the real truth of them is their appearance to, or effect upon, us."

-John Ruskin

HUMAN EXPERIENCE

HUMAN EXPERIENCE

Human experience is the result of our intellectual synthesis of our perceptions of the environment. To be connected with our surroundings, we must really 'know' what they are. To 'know' our surroundings is defined as our awareness of what elements comprise that environment, what those elements themselves are (where they come from, what are their characteristics), how the elements in the place communicate with not only one another, but also with the visitor. In turn, the ability to 'know' is the ability to see and recognize what comprises our environment, and what fundamental essence, or spirit it contains.

The environment is a book and each object carries its own chapter. Every object has its own qualities, cycles, and lifetime. Through the "intellectual synthesis"[18] of our sensory perceptions of the surroundings, we understand the objects of a place on a holistic level. "The unity of the object does not lie behind its qualities, but is reaffirmed by each one of them: each of its qualities is the whole."[19] When objects are viewed in totality we begin to see their character and spirit, which makes human connection and interaction possible. Suddenly we see similarities between the entities and ourselves. We find ourselves encountering likenesses that resemble human characteristics, and a connection begins to form with the place. As stated by Michael Benedikt, "the aluminum poles are cold, the cat warm, the plate clean. Really? Yes. These human facts reverberate with meanings that run deep into our personal yet common histories."[20] The place opens itself up for us to embrace and shows us its true essence. Viewing the environment in this way, we see the vulnerability and strength objects carry.

A type of rock may appear strong and unbreakable, but careful observation reveals that it is composed of layers that are bound together. Simply dropping the rock would shatter it into pieces, displaying its genuine characteristics. Understanding nature on this level makes us appreciate its distinctive qualities and spirit. A connection grows from learning the life of our environment on this intensity. "Architecture is our primary instrument in relating us with space and time, and giving these dimensions a human measure."[21] The awareness of our environment leads to the awareness of ourselves. We relate ourselves with the place and communication of existence takes place between the surroundings and our bodies. "To gain an existential foothold man has to be able to orientate himself; he has to know where he is. But he also has to identify himself with the environment, that is, he has to know how he is in a certain place."[22]

In the precedent studies section of this thesis, works by Andy Goldsworthy manifest this idea in physical form. It is through his perceptions and experiences of landscapes that his works come to life. One art piece revealed the high content of iron in the rocks of the riverbank. The materialization of this knowledge laid in a pool of still water dyed bright red from the crushed river rock. The manners in which his discoveries of the landscape come to form are on an elevated intensity than typical human perception. This is why his works are considered so powerful and beautiful.

"The object and its environment: a consonance of nature and artificially created work that is different from the pure beauty of nature- and different from the pure beauty of an object. Architecture, the mother of all arts?"

-Peter Zumthor, "Thinking Architecture"

NATURAL SURROUNDINGS

NATURAL SURROUNDINGS

Both man and nature are comprised of the same organic material, and therefore, man feels a natural affinity towards nature. Incorporating nature in architecture presents an opportunity for deeper human connection and awareness not only with ourselves, but with 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."[23] We relate ourselves with the environment, and communication of existence takes place between the surroundings and our bodies. The kinship to nature leads to awareness of our surroundings, and ourselves.

Nature embodies and expresses the cycles of life that all natural life is subjected to. It is through our sensory perceptions' synthesis of natural surroundings that we understand the events of their lifetime. A tree's smooth texture enlightens us to the multitude of contacts that wore the bark bare, exposing the fragile layers underneath. The pungent oil scent of a tree informs us of what type it is, its age and where it came from. Recalling the worn marble step of the portal in Rome (in the vision memory section of this thesis) is a perfect example of this phenomenon.

The characteristics of nature attain an intellect of time, which speaks of their life and use. "Natural materials- stone, brick and wood- allow our vision to penetrate their surfaces and enable us to become convinced of the veracity of matter. Natural materials express their age and history, as well as the story of their origins and their history of human use."[24] The patina of use adds to the essence and spirit of the space, making visible that we all exist in the continuum of time. This sensory information creates "our appreciation of the natural origin of its substance and the manufacturing or forming processes that the latter has evidently undergone."[25] The presence and essence of nature in a place speaks to our own characteristics and existence. Michael Benedikt stated that this type of "experience, such privileged moments, can be profoundly moving; and precisely from such moments, I believe, we build our best and necessary sense of an independent yet meaningful reality."[26]

In the modern world, architecture has moved farther away from the use of natural materials and practices, replacing them with synthetic applications. The connection between man and nature directly reflects this societal switch. According to Kate Nesbitt, "modern architecture embrace[s] the machine analogy instead of the organic analogy. Although machines are often designed on the basis of natural systems, their use as a formal model prevent[s] architecture from referring directly to nature. This is problematic because despite technological advances, symbolizing man's position within the natural world remains one of architecture's roles."[27] The perpetual state

of youth that fabricated materials display lack the ability to connect man with the environment and time. The patina of use and time is not visible on synthetic materials and they are simply devoid of natural energies found in all of nature. "Human life is not intended to oppose nature and endeavor to control it, but rather to draw nature into an intimate association in order to find union with it."[28] The presence of natural surroundings will reconnect man with himself, and inevitably the environment.

Architecture of the past is often referred to as paramount examples of the natural surroundings connecting to man. "The best architecture was that which was close to nature, and that which was closest to nature could be found in the building of the ancients…."[29] All buildings of the ancients were constructed of natural materials, meaning every element of the building spoke to man through sensory perception. For example, the Mayan civilization looked toward nature for every element of their lives. They created their calendar, religion, and buildings from nature. Their massive temples of stone were oriented to commemorate the solstices, and the journey to the top represented ascension into their afterlife. This communication allowed man to have a comprehension and understanding of the world in which he inhabited, therefore, it allowed man to have a stronger connection with himself and the world in which he lived. In past times "the origin of each

architectural element was natural; the chain that linked the column to the hut to the city was parallel to the chain that lined the natu-

ral world…."[30] This parallel relationship of the past reflected man's strong interaction and connection with the environment.

Returning to natural practices will reawaken man's sense of self and understanding of the natural environment. As stated by Tadao Ando, "when water, wind, light, rain, and other elements of nature are abstracted within architecture, the architecture becomes a place where people and nature confront each other under a sustained sense of tension."[31] This tension is the result of the constant exchange of man and nature's intrinsic energies, and our comprehension that we exist within the continuum of time and are subjected to its state of perpetuity. The tension is what I consider the reawakening of man's connection to himself, and to nature. It is under this feeling that we will reawaken our spiritual connections that are dormant in modern times, through the unrefined exposure to nature and its cycles.

"Architecture, as with all art, is fundamentally confronted with questions of human existence in space and time, it expresses and relates man's being in the world. Architecture is deeply engaged in the metaphysical question of the self and the world, interiority and exteriority, time and duration, life and death."

-Juhani Pallasmaa, "The Eyes of the Skin"

REALIZATION & REFLECTION

REALIZATION AND REFLECTION

Understanding our existence in the continuum of time not only deepens our understanding of self, but deepens our kinship towards nature. The intellectual synthesis of our sensory perceptions "fuse[s] our image of self with our experience of the world."[32] Through the synthesis of our perceptions of the space, we advance to another level of observation and begin to connect with the place, and its essence. Christian Norberg-Schulz notes this differentiation stating, "whereas 'space' denotes the three-dimensional organization of elements which make place, 'character' denotes the general 'atmosphere' which is the most comprehensive property of any place."[33] It is the spirit of a place that has the ability to connect to a visitor on a superficial or meaningful level.

The visitor's body reacts and communicates with the space, absorbing the spirit of the materials and atmosphere. "For the first time, we come across the idea that rather than a mind and body, man is a mind with a body, a being who can only get to the truth of things because its body is, as it were, embedded in those things."[34] True connection and bond to a place is possible through the organic exchanges, which can make a life-long connection and impression on the visitor. The visitor is more enriched, and reflects back to this memory of connection throughout life.

The built environment and architecture are the physical manifestations of this understanding of being in the world. It reinforces our idea of self and "directs our consciousness back to the world and towards our

own sense of self and being."[35] Understanding of the essences and spirits of spaces allows us to project our own self being within that space. This projection is more than the physical place we occupy; it is the understanding of the spiritual and physical presence we have within the world at that time. "Architecture strengthens the existential experience, one's sense of being in the world, and this is essentially a strengthened experience of self."[36] This experience is driven by more than just the five senses. It is our sensory perceptions fused with our bodily projections of spatial existence that generates the experience of self, and being within time.

Great architecture innately generates this projection of self, therefore connecting to the visitor on a meaningful and experiential level. "Significant architecture makes us experience ourselves as complete embodied and spiritual beings."[37] For architecture to be regarded at this level, it must connect through all the senses. The use of nature bonds on a superior level to that of artificial materials, which do not reveal the effects of time, leaving

us disconnected and uninspired. Peter Zumthor considers this meaningful connection “the magic of the real: that to me is ‘alchemy’ of transforming real substances into human sensations, of creating that special moment when matter, the substance and form of architectural space, can truly be emotionally appropriated or assimilated.”[38] These moments will be driving forces in my project. The validity of architectural experience is formed in the tectonic expression of the space and the clarity of its construction through sensory perception. We experience “touch, listen and measure the world with our entire bodily existence, and the experiential world becomes organized and articulated around the center of the body.”[39] Great architecture connects to all the senses, and then is synthesized in a bodily experience. This bodily experience makes us aware of our existence in time, and a deeper emotional connection forms between ourselves and the space.

The following architects, artists, and projects address designs that connect to man through nature. While programs vary from design to design, their connection to the audience through the senses is strong throughout. These projects have been chosen for their inherent connection to nature through senses, while being tested through time to assess their success.

PRECEDENT STUDIES

PETER ZUMTHOR

Peter Zumthor is an architect whose design principles stem directly from phenomenology.[40] His philosophies on architectural space revolve around sensory experience within that space. Every detail and every element of his projects are thought of on a holistic basis of perception. Through this practice, intricate yet elegant details are designed in every project to create the desired connection. Zumthor's understanding of the weight[41] of a material and what combination of materials evoke a certain feeling for the audience is what sets his work apart from that of other architects. He is a master at creating spaces which delight every sense, however are simplistic in execution. Zumthor's work remains somewhat unpublished due to his ideals that architecture must be experienced. His projects cover a variety of typologies, and each has its own spirit and radiance.

SAINT BENEDICT CHAPEL

Sumvitg, Switzerland-1985-1988

Peter Zumthor

Saint Benedict Chapel is one of Zumthor's earliest commissions. The chapel is oval shaped at one end and tapers dramatically at the other, mimicking the steep topography of the landscape. The chapel is timber framed with traditional wood shingling on the exterior. The interior is a large, open space containing pews; designed in a minimalistic method, revealing the structure. Windows are placed atop the walls connecting them to the ceiling structure, and fill the space with a warm, filtered light. The material palate was derived from local, traditional building materials, but their shape and application are one of a kind. The simplicity and sophistication of this space displays Zumthor's architectural ideals, which is inexplicably absorbing. He is persistently aware of the sensory connections between materials and the visitor, which is exemplified in the timber structure. The structure is visually, texturally, acoustically, and aromatically pleasing and functional. His buildings are paradigms of modern experiential spaces, utilizing past philosophical thought with current approaches and techniques.

ANDY GOLDSWORTHY

Andy Goldsworthy is an artist whose art relies entirely upon the senses, and the environmental connection formed from observations. His art reflects the fundamental characteristics of the landscape he is working within. Whether the site is outdoors in England or an interior art installation, Goldsworthy's art enlightens the audience of environmental conditions that might otherwise go unnoticed. In reality, his art is the manifestation of the connection he has with the landscape. When traveling to a new site for an art work, Goldsworthy must instantly investigate the site and begin observation. He feels restless and uneasy until he begins to have a grasp of what elements comprise the landscape, and what those elements really are. Goldsworthy refers to this as "shaking hands with a place."[42] Projects have included gathering shale-like rocks and stacking them in an egg shape. He positions the form to inhabit a space where the tide both rises and falls. Learning to stack the rocks, from learning their strength and nature, often takes many attempts. With each attempt the pile of rocks grows proportionately to his knowledge of the stone. The more he knows of the rock, the more successful the piece. Goldsworthy's works are a fusion of his observation of the setting and inherent nature of the landscape.

BRACKEN STALKS BLACK FROM BENEATH THE GROUND-LAID AROUND A HAWTHORN TREE

Scaur Glen, Dumfriesshire-1999
Andy Goldsworthy

This project displayed Bracken stalks arranged around a tree, with a dark circle at an end. In appearance, the black circle seems to be made from applying paint or another medium to create its intensity, but is it actually the natural color of the stalk. The dark color comes from the portion of the Bracken stalk which lies in the ground, and the lighter tan color is the portion above ground. Goldsworthy pulled the stalks from the ground by hand and placed them around the tree, only using a knife to trim some pieces. While setting the stalks, Goldsworthy discussed how the Bracken stalk is considered to be a noxious weed and can even take over trees, and eventually kill them. He also spoke about the relationship the stalk alone has with the earth. The portion residing in the ground bears the effects of the earth. It takes the soil's color which appears to be a different plant than the portion of the stalk above ground. In reality they are the same plant, just under different conditions. The coloration was a result of the exchange of energy between the stalk and the earth. Only through this artistic display do we understand the relationship the Bracken stalk has with the earth.

TADAO ANDO

Tadao Ando has been an influential architect throughout his career. With buildings located in Asia, Europe, and the United States, he is a well known designer. His buildings all have a strong connection to the visitor, and he achieves this through sensory connection. "The mute walls reflect the landscape and the wind. As they reflect the air's invisible motion, the sound of the wind and the swaying of the trees seep into our hearts like shadow pictures."[43] His simplistic designs, with a "limited range of materials [which] express their naked textures,"[44] carry strong detail for the senses of the visitor to investigate. He achieves this connection by using "natural materials for points that a human being may touch"[45] in his palette. "As natural materials decay, they become repositories for memory."[46] At the beginning design phase of many projects, Ando simplifies the program of the building to elements perceived by senses. In turn, he has designed the Church of Water, Church of Light, Water Temple Hompuku-ji, Museum of Wood, and many others which display this action in its space. Tadao believes that it is "impossible to move others with mere knowledge, unaided by experience."[47] The experience is the vital element that must be present in any design.

MUSEUM OF WOOD

Mikata, Hyogo-1991-1994

Tadao Ando

The Museum of Wood is a building containing information and an overview of wood cultures around the world. It is located in a mountainous area, the Hyogo Prefecture in Japan, which is dense with native trees. The building is constructed from wood and concrete, and Ando aspired for the visitor to "experience a culture of wood through the senses."[48] He designed a large wooden framed cylindrical space which was "embedded in the environment."[49] The space surrounds a tall, round opening to the sky with a circular pond which reflects the sky. The wooden frame has vertical structural pieces, cladded on both sides with horizontal wood pieces. "A veritable forest of laminated pillars and crisscrossed beams fills the space."[50] Some visitors think of the space as a primitive-like structure, with the sky and water in the center of the cylindrical space, while others feel it is a building type from the future. Either way, the building invigorates the sensory connection to any visitor, and is a rare and peaceful space.

ANTONI GAUDI

Antoni Gaudi was an architect who used organic shapes in all of his designs. His clay projects emulate sand sculptures with stretched openings that look like they were formed by water. His designs remind his audience of the natural environment; to some, trees appear out of his twisting viaducts, while others see animals taking shape through scale like applications on roofs. The mosaic decoration pieces (trancendis) on many of his designs give them a brightly colored spirit which speaks directly of his Catalan culture. Gaudi practiced like Frank Lloyd Wright designing every element of his projects, from the exterior façade to the interior furniture. All designs appealed to each sense, and the experience from his spaces makes this obvious.

PARK GÜELL

Barcelona, Spain-1900-1914
Antoni Gaudi & Josep Maria Jujol-Architect Specializing in Construction with Catalan Mosaics

Park Güell is one of Barcelona's most prominent parks to date. The eccentric park occupies 20 hectares on Muntanya Pelada, which lies in the Gracia district in Northwest Barcelona. The landscape was originally designed to be an English Garden city with 60 homesites throughout. Only two homes were ever built (one by Gaudi), and in 1922 the city of Barcelona purchased the land to become a public park. The skillfully developed park contains two main pavilions, which showcase Gaudi's organic shaped creations, that blend into the site. Trancendis (traditional Catalan ceramic mosaics) cover many elements of the park in brilliant colored pieces. Large serpentine-like benches, covered in trancendis, coil their way around the entry creating enclaves for socializing. Gaudi used an interesting technique of having naked workmen sit in the wet clay to shape the seat to the actual size of the human body. Colorful plants surround the benches and park, leaving the eye with a kaleidoscope of detail.

To maintain the original topography of the site, Gaudi created a network of paths that intersected at a variety of locations and elevations throughout the site. This allows the visitor the freedom to explore any portion of the site, and leaves the beautiful natural landscape of Barcelona untouched. Three viaducts were also constructed around highly traveled areas; each built in a different manner. The viaducts mimic tree trunks twisting out of the ground and allow different portions of the park to speak the intrinsic language of the colorful design. Atop the main entrance area is a terrace which gives visitors views of Barcelona and the sea beyond. The free flowing site allows the visitor the freedom to select seclusion or company. People enjoy the park for its walking, people-watching, socializing, cafes, museums, and colorful decoration. The Spanish culture is one of energy, color, and life, and the people of Barcelona love the park for its vibrancy.

PARC DE LA VILLETTE

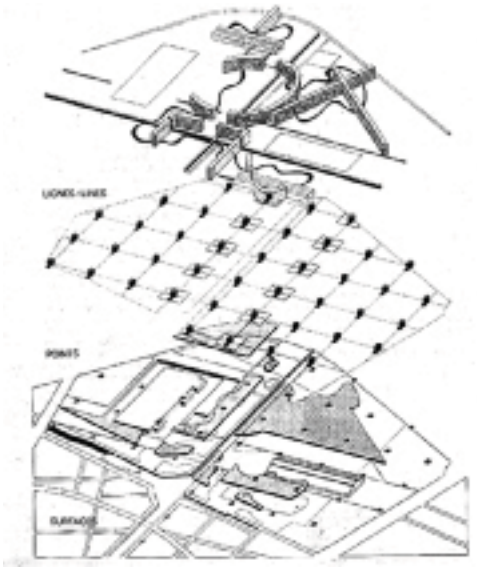
Paris, France-1987
Bernard Tschumi

Parc de la Villette, Paris's largest park, was created upon the ideas of "contemporary society and the disjunction between use, form and social values, rendering any relationship between the three to be both impossible and obsolete."[51] The park's design consists of layers of multiple elements, lying in grids which vary in scale. On a smaller scale, thirty-five red follies were placed on a square grid throughout the park. The follies had an intended lack of meaning, which relate to Tschumi's thoughts of philosophy as the fundamental nature of them. The follies are deconstructed cubes, containing different functions which dictate their abstractions. Some are used as cafes, while others allow visitors to climb them and see views of the surrounding park. Their designs are one-of-a kind, and lack historic precedent. In one layer of a much larger scale, gardens of different themes are placed throughout the site (water garden, sand garden, etc.). Another layer of program places open space. Upon Tschumi's design fundamental of disjunction, he wanted to challenge the traditional views of architecture by creating "disjunction between architectural space and the events taking place with them."[52]

Although Bernard Tschumi had an inventive and creative concept, the park as a whole is considered to be a failure. Many visitors feel the park lacks the freedom, playfulness and variety that public parks should have.[53] The follies are thought of as “absurd sculptures and disproportionately scaled structures”.[54] Many Parisians feel that the park was designed on an ideal, and has no regard to human use. Perhaps part of the problem was the location to begin with. The site was an abandoned shipyard facility in an up-in-coming area of Paris. This difficult location and requirements could have ultimately been the downfall of the project itself.

Another question to consider is if Tschumi’s deconstructive approach was actually a success? Was it his understanding of man’s relationship with nature that allowed him to design a park that was successful for its unsuccessful connection with its visitors? Some could argue that he was completely successful in his design of “contemporary society and the disjunction between use, form and social values.”

Although the follies and gardens throughout the designs are unpopular, the open spaces and social gathering spaces are still used. This project is a perfect example of a designer’s purposeful disregard to human use. The lack of concern for connection to the natural environment is the reason Parc de la Villette is considered to be one of Europe’s public space disasters.



CENTRAL PARK

New York City, New York-1859
Fredrick Law Olmstead, Calvert Vaux

Central Park is the most widely known park in the United States. The park contains over 843 acres, lying between 5th & 8th Avenues and 59th and 110th streets. The park was the first landscaped public space in the United States and the designers wanted the park to recall upon European style public spaces. From its very first concept, Olmstead wanted the park to be vast "uninterrupted space."[55] He thought the natural topography should remain as close to untouched as possible and sunk traffic routes eight feet below the surface, and created bridges to allow trails to cross trenches. More than 270,000 trees and shrubs were planted to develop spaces with natural boundaries. Olmstead's immense knowledge of agriculture and English style landscapes helped him design beautifully integrated natural spaces which ranged from small gathering spaces to large open areas. Sometime after the park was finished, a group called the Central Park Conservancy was formed to disperse positions to different appointed officials in guidance of Central Park.

The Conservancy has the ability to realize activities change throughout time, and the space used to house those changes as well. This is why throughout history the park has had many additions for new recreations, and can alter its program depending upon the people of New York City. The park offers "several natural parks and lakes, extensive walking trails, two ice skating rinks, a zoo, gardens, wildlife sanctuaries, natural woods, and an outdoor theater."[56] It literally offers something for everyone. This public space has great interaction with the senses: the sounds of birds from the wildlife sanctuary, smells of food vendors with their carts full of goods, tastes of New York style vendor food, and the sight of natural woods mixed in with ponds. The connection to the natural environment is evident in this natural space in the city. With the Central Park Conservancy, the ongoing use and admiration of this space will continue.

RICHMOND PARK

London, England-1272-1307
Architect Unknown

Richmond Park is the largest Royal Park in the London area. It is roughly 2,500 acres of land that acts as a Red and Fallow deer conservancy. The property has native English trees, shrubs, grasses, and wildlife. Previously known as the Manor of Sheen, the site was changed to Richmond Park during the rule of Henry VII, and became the cities closest and well-known deer hunting location. The land is admired for its pristine views and wildlife, and is considered the closest woodland space to London. The park has several small lakes, and at any given time has roughly 2,000 deer roaming the expanse. Although this park lies some distance from London, it is still widely used and loved by its people. The natural sounds, views, smells, etc. are a pleasant break from the hustle and bustle of the city, and explain the reason it has been, and will be, such a significant outdoor space in England.

My site is the Beall Park and Beall Park Recreation Center in Bozeman, Montana. The park lies on 2.2 acres on the North side of Bozeman, between Black and Bozeman Streets (East-West direction), and Short and Villard Streets (North-South direction).

To give the full history of my site and its relevance to the people of Bozeman, I will begin with the early history of Bozeman and Gallatin County.

SITE HISTORY

HISTORY OF BOZEMAN AND GALLATIN COUNTY

EARLY HISTORY OF GALLATIN VALLEY

The Bozeman area has been inhabited for thousands of years. For centuries Native Americans called Gallatin Valley and the Bozeman area home, traveling through the area with the different seasons. Nez Perce, Shoshone, Blackfeet, Flathead, Crow Nation, and Sioux Indians roamed the Bozeman region for its plentiful abundance of wildlife, plants, and water.

LEWIS AND CLARK TIMES

Lewis and Clark traveled through Montana on their journey West. The first notes from their journals indicate they arrived in the Gallatin Valley area in 1805, and returned back to the area in 1806 on their way back.

VIRGINIA CITY GOLD RUSH & BOZEMAN TRAIL

Gold was discovered about 60-80 miles to the West of Bozeman in the early 1860's. Due to the heavy traffic of people rushing to the area in hopes of gold, John Bozeman created the Bozeman Trail to guide pioneers over what would become to be known as the Bozeman pass. John Bozeman was a Georgian who was also looking for gold, but saw an opportunity for income in the trail's creation, which eventually became the Northern spur of the Oregon Trail. Bozeman began guiding trips on the trail to Virginia City in 1863, but was forced to stop all travel in 1868 by the Sioux and Cheyenne Indians who joined forces to stop the mass migration of people into the area. Many pioneers who had made their way to Virginia City eventually came back to the Bozeman area after failed gold attempts. The fertile land was ideal for farming and other businesses.

CATTLE

In the mid 1800's, Nelson Story decided to drive 3,000 head of cattle from Texas to the Bozeman area. He had strict orders from the U.S. Army not to move cattle due to troubles with Indian tribes, so he moved the herd at night. Story's cattle were the start of the strong cattle industry in Montana.

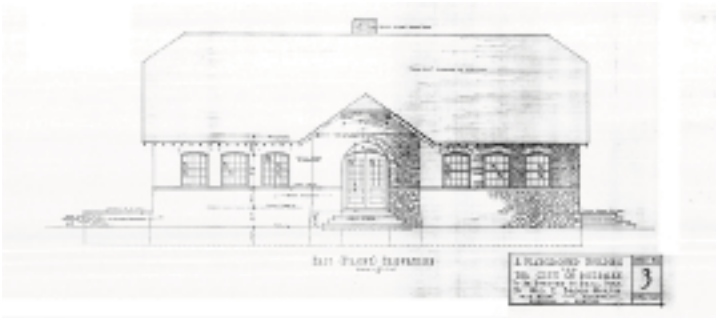
TOWNSHIP

On July 7, 1864, Daniel E. Rouse and William J. Beall finished drafting plans for the township in the area. The name “Bozeman” was chosen on August 9, 1864, and the valley was named “Gallatin” in 1867.
In 1883 the Northern Pacific Railway made its way to the Bozeman area through the Bozeman pass. The pass paralleled the original Bozeman Trail, and today the pass is occupied by Interstate 90. Nelson Story also was a prominent community member, helping begin Montana State College, known today as Montana State University, in 1893. He was also the main contributor for the historic Ellen Theater in downtown Bozeman.

BEALL PARK HISTORY

The Beall Park site was donated to the City of Bozeman in 1919 by Mrs. Rosa Beall, wife of town planner William J. Beall (pronounced “Bell”). She donated the land to the city to be used as a public recreational park. Public meetings regarding the donation of the land began on July 17, 1918. The cost of installing benches and playground equipment at that time was $5000, and in 1919 the park was opened to the public. A few years later, a woman named Mrs. Ella T. Martin gave a donation to the city to build a recreation center building on the site. Mrs. Martin was the wife of E. Broox Martin, who was a prominent Bozeman entrepreneur. Mr. Martin built some of the Main Street blocks, such as the Lovalace Building, shortly after the turn of the century and was considered one of the “fathers” of downtown Bozeman. Initial plans for the building were submitted to the city on September 11, 1922, and on December 10, 1927 the Bungalow/Craftsman style building was completed, and thought to have cost around $40,000. The architect for the building was W.R. Plew, who was a professor of Engineering at Montana State University, but was allowed to practice architecture under the “grandfather” clause. Plew was later to be thought of as one of the “fathers” of the architecture department at Montana State University. It was often pondered by the townspeople as to why Mrs. Martin chose Mr. Plew to design the building, considering that another architect, Mr. Fred F. Willson, had a monopoly on all architecture within the Bozeman region from 1910-1956. It is thought that Mrs. Martin thought Plew was a more creative designer that had an originality that Willson lacked. The builder for the recreational building project was Hubert C. Cheever.

ORIGINAL BEALL PARK RECREATION CENTER DRAWINGS




RECREATION CENTER


N BOZEMA
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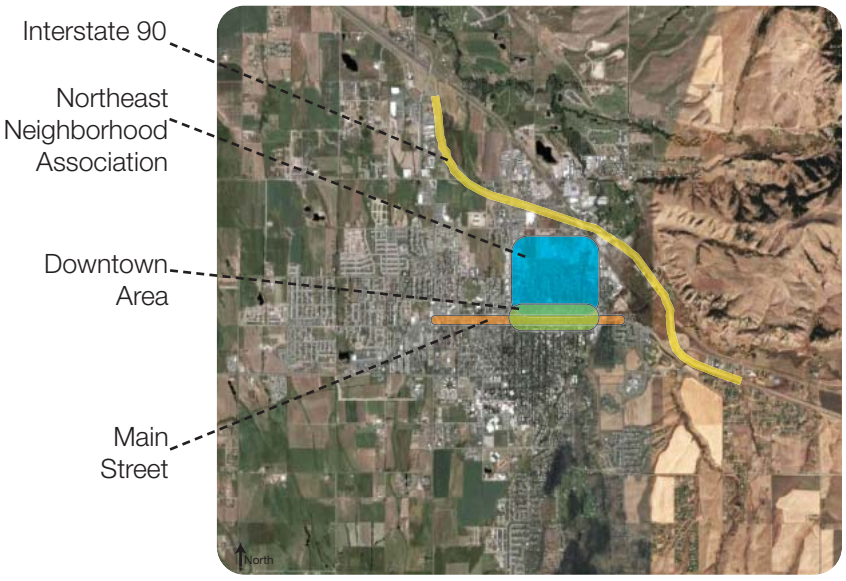
RECREATION CENTER

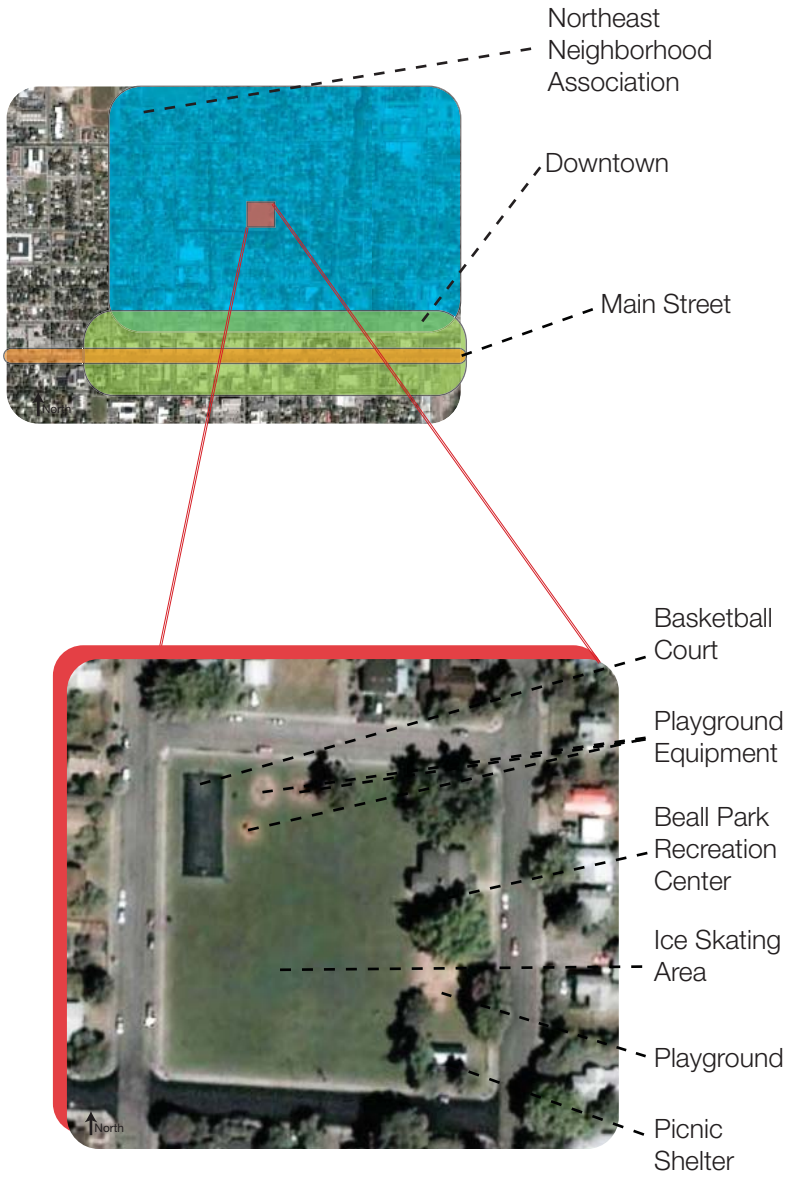
SITE

SITE
BOZEMAN, MONTANA

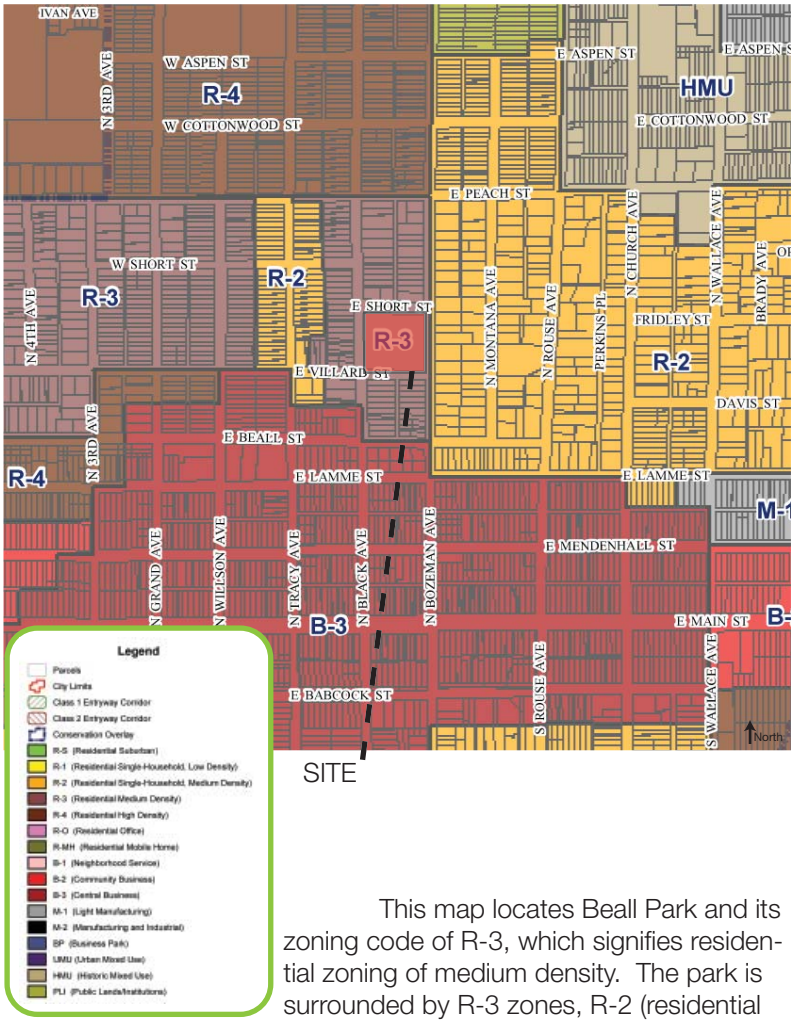


Beall Park Recreation Center is located in the Northeast portion of Bozeman (blue). Main Street is 4 blocks South of Beall Park (green), and Main Street runs through the heart of downtown (orange).

LOCATING SITE IN BOZEMAN



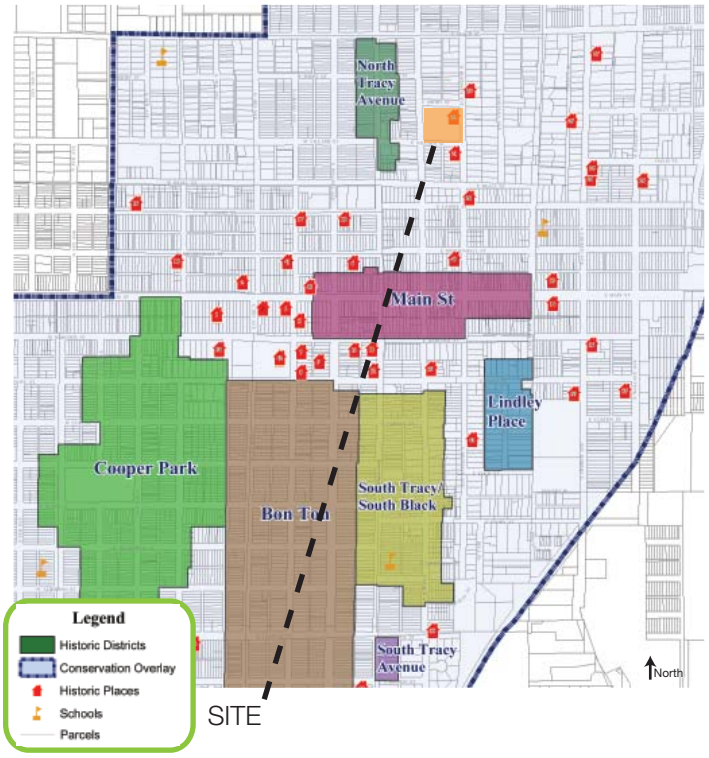
BOZEMAN ZONING MAP



SITE

This map locates Beall Park and its zoning code of R-3, which signifies residential zoning of medium density. The park is surrounded by R-3 zones, R-2 (residential single household, medium density), and B-3 (central business zone).

BOZEMAN HISTORIC PRESERVATION DISTRICTS



This map helps identify Beall Park and its proximities to other historic preservation locations throughout Bozeman. The Park is located in the Conservation Overlay, and in the heart of the historic area of Bozeman.

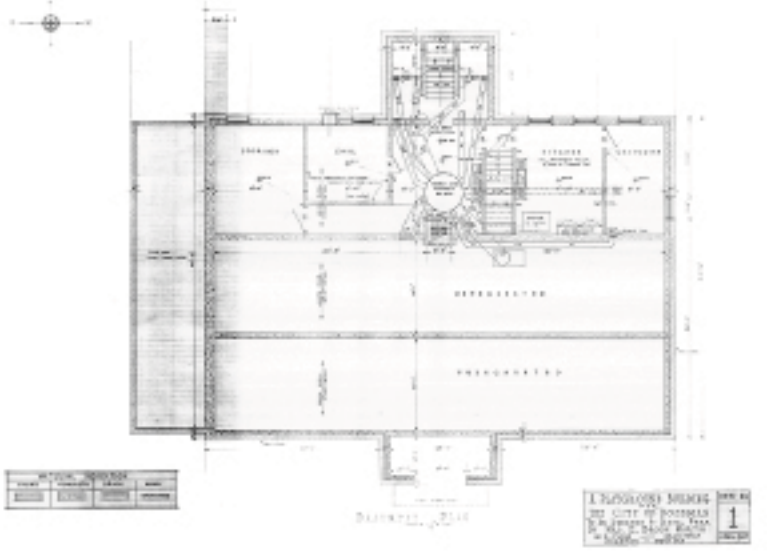
BEALL PARK RECREATION BUILDING

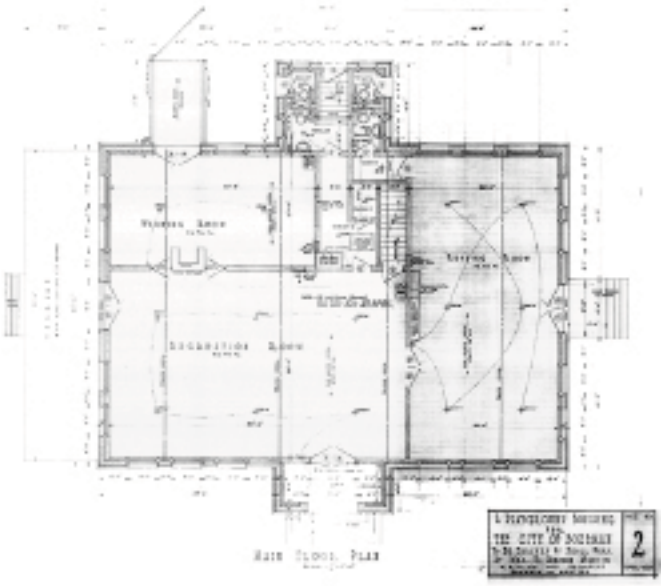
The building was a detached (now connected) single story structure with a basement. The building is rectangular in plan, which has an enclosed clipped-gable roof that projects over the entrance. The main entry to the building on the East side is arched and centrally located. The South wall has been rebuilt during a renovation, and the entry also has a bracketed-gable overhang. A concrete wheelchair ramp and deck space was added to the South entry in 1986, which rose to the elevation of the existing cobblestone façade. Through renovations, all original exterior materials have been reused leaving the entire exterior built from the original materials. The West façade has a staircase leading into the basement of the building, that used to be used as a warming hut during ice-skating season, but is no longer open to the public. The North side of the building still maintains its original wall of the 1927 construction, and has an entry with staircase leading onto the Northeast side of the park. The original windows were 8' x8' double hung with segmental stone arches. The exterior wall construction was fieldstone on top with cobblestone on bottom, and originally rested upon

a rubble foundation. A concrete layer between the cobblestone and fieldstone runs the perimeter of the building, and was connected to a proper foundation during one of many renovations. The original interior walls are constructed of 2”x6” studs, with lath and plaster, while renovated walls are typical 2”x4” construction with sheetrock. The gable roof has clipped ends and was originally covered with cedar shingles dipped in creosote. The interior has been completely renovated several times, but the exterior fieldstone (gneiss granite) and cobblestone (from the West Gallatin River) are original.

An ice-skating space has been a tradition throughout the park’s history. Every winter, the lower portions of the site are filled with water and smoothed by the city, leaving space for ice skating. The building was used as a recreational center until the mid 1950’s when the building was turned over to be used as the Bozeman Nursery School. It remained a nursery until 1983 when the City of Bozeman, Department of Recreation (who owns the building) held a competition to remodel the building for other functions. The Community Art Center won the competition, out of four entries, and was reestablished as a community recreation center. In 1987 the building was added to the National Historic Registry as having architectural significance from 1925-1949. The building remains a community recreation center to this day; still keeping the tradition of creating the ice-skating space in winter.

ORIGINAL BEALL PARK RECREATION CENTER PLANS





HISTORIC REGISTRY INFORMATION

Historic Name:	Beall Park
Location:	409. N. Bozeman
Size of Original of Park:	200'x 200'
Original Intent:	Public Recreation Space
Historic Building Name:	Beall Park Recreation Center
Location:	415 N. Bozeman
Date Building Completed:	Dec.10, 1927
Architect:	W.R. Plew
Builder:	Hubert C. Cheever
Original Intent:	Recreational Center
Date Added to Historic Registry:	1987
Historic Registry Number:	#87001807
Historic Significance:	Architecture/ Engineering
Arch/Builder/Engineer on Historic Registry:	W.R. Plew
Architectural Style:	Bungalow/Craftsman
Area of Significance:	Architecture
Period of Significance:	1925-1949
Owner:	Private
Historic Function:	Social
Historic Sub-Function:	Civic
Current Function:	Social
Current Sub-Function:	Civic

CURRENT USE OF BEALL PARK RECREATION CENTER AND BEALL PARK

Currently the building is available for rental from independent parties, including community members. The rental fee is relatively low, and the building is used often for its cost, availability and location. Almost every evening there is a function held within the center, and the people of Bozeman use the center regularly. The Recreations Department of the City of Bozeman has two offices within the building, which keeps constant energy and activity throughout the day. The center is admired by the citizens of Bozeman for several reasons. The promotions of public spaces and its strong connections with the large artistic community within the area keep the building busy with workshops, lessons, and displays. The recreation center often displays art during that art walks of downtown Bozeman, and displays local artists' work at other times throughout the year.

The building has undergone several remodels in attempt to better house the activities that take place within the building, but constant population growth, and decreasing public spaces has put a strain of the capabilities of the recreation center to maintain availability or adequate space for the community. A remodel of the building was finished in the last 5 years, and another remodel is already in plans with the city. Although the center is loved by the residents of Bozeman, it is functionally failing to adequately house the activities that take place

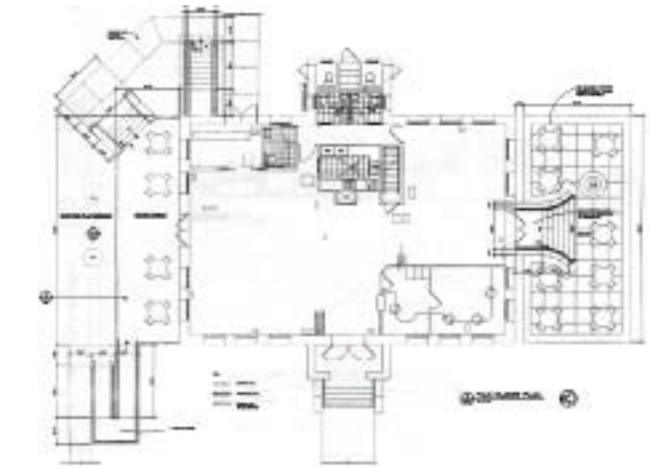
within. The maximum occupancy load for the building is 120 people, meaning a large family function or wedding reception would have to carefully monitor the number of guests invited and in the number in building during the occasion.

A positive operation within the building is the storage space for tables and chairs. The storage closet is attached to the large open space within the building, allowing easy access for any purpose. If the center is rented out for dance classes, then the tables and chairs are already stored out of the way, leaving the empty room required for dancing. If the center is rented out for a luncheon, the tables and chairs are easily accessed and assembled, meaning it could be set up or taken down within minutes.

Unfortunately, the building and the park are quite removed from one another, and integration of the building into the site is nonexistent. The recreation center building sits on the site as if arbitrarily located, and the association between site and building is absent, giving the entire park an awkward presence. The exterior park space has little vegetation and no transitional spaces between sidewalk and site. Playground equipment is sprinkled throughout the site, as in attempt to take up space, filling the void-like emotion generated from the park. Few trees are on the site, and are mainly located on the North and South exterior space of the building.

It is obvious at first glance that the park and building both have had several programs spanning over time. Each change in program removed original portions of the park and filled in the space with items all speaking different languages. Whether it is play equipment or the picnic shelter (that consists of a concrete slab with a steel roof), the exterior portion of the park is a random assortment of bits and pieces that have been added throughout time. The lack of vegetation and transitional spaces when entering the site leaves it feeling as if it were recently donated to the city for use. The deficiency of these transitional spaces, personal spaces, and large exterior spaces adjacent to the center for use, leave the park feeling detached and neglected. It was surprising to me that the park has been in the city's possession as long as it has, and a cohesive language between the building and park has never been addressed.

CURRENT BEALL PARK RECREATION CENTER PLANS & ELEVATIONS



BOZEMAN STATISTICS

Bozeman, Montana:

•Latitude 45.68 N., Longitude 111.05 W.
•4772' Elevation
•Bozeman Encompasses 12.6 square miles
•Gallatin Valley has 87,359 residents, which is a 28.8% growth gain since 2000
•Gallatin County is the fastest growing county in Montana, and #92 out of the top 100 fastest growing counties in the United States

Residents

•45.2% of the local share of adults have a Bachelor's Degree, which is the 6th most dense population of small communities in the United States
•Over 93% of residents have at least some college
•38% of residents earn incomes above $50,000
•20% of Bozeman residents have lived here over 20 years-41% being over 34 & 10% being over 64.
•Bozeman has a 83% Employment Rate
•57% of residents rent homes, while 43% own homes
•Highest rated characteristics of Bozeman were #1- recreational opportunities, #2- air quality, #3- educational opportunities
•Largest concerns about Bozeman were #1- growth rate, #2- traffic congestion, #3- drugs

Racial Makeup of the City:

- 94.73%- White
- 1.62%- Asian
- 1.59%- Hispanic or Latino
- 1.24%- Native American
- .54% "Other" race
- .33%-African American
- .07%- Pacific Islander

Most Common Industries for Bozeman Males:

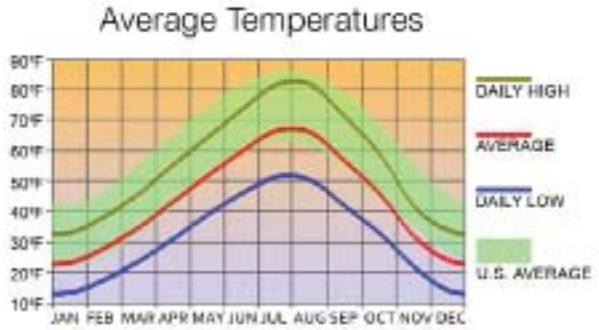
•Educational Service	16%
•Construction	15%
•Accommodation & Food Service	11%
•Professionals, Scientists & Technical Services	8%
•Public Administration	3%
•Arts, Entertainment, and Recreation	3%
•Miscellaneous Manufacturing	3%

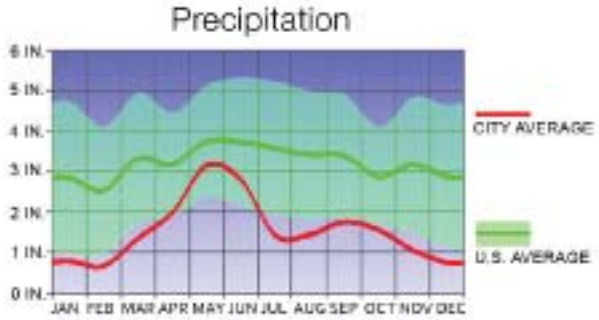
Most Common Industries for Bozeman Females:

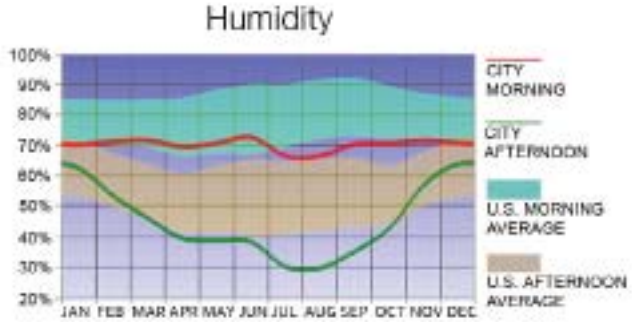
•Educational Services	19%
•Accommodation & Food Service	15%
•Health Care	9%
•Professionals, Scientists & Technical Services	8%
•Social Assistance	5%
•Arts, Entertainment, and Recreation	4%
•Public Administration	3%

POPULATIONS OF BOZEMAN

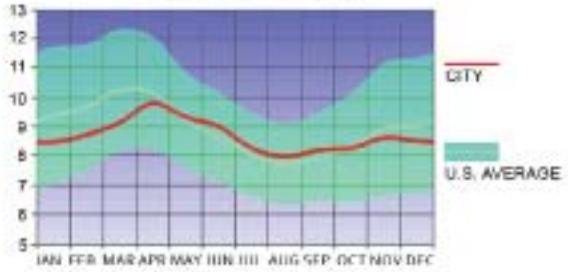
DATE	POPULATION
1900	3,500
1920	6,183
1950	11,325
2000	27,509
2007	35,064


Average Temperatures
90°F
80°F
70°F
60°F
50°F
40°F
30°F
20°F
10°F
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
DAILY HIGH
AVERAGE
DAILY LOW
U.S. AVERAGE

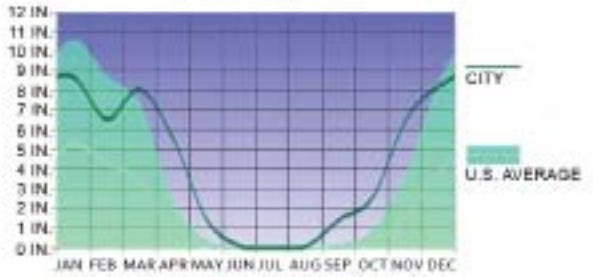

Precipitation
6 IN.
5 IN.
4 IN.
3 IN.
2 IN.
1 IN.
0 IN.
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
CITY AVERAGE
U.S. AVERAGE


Humidity
100%
90%
80%
70%
60%
50%
40%
30%
20%
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
CITY MORNING
CITY AFTERNOON
U.S. MORNING AVERAGE
U.S. AFTERNOON AVERAGE

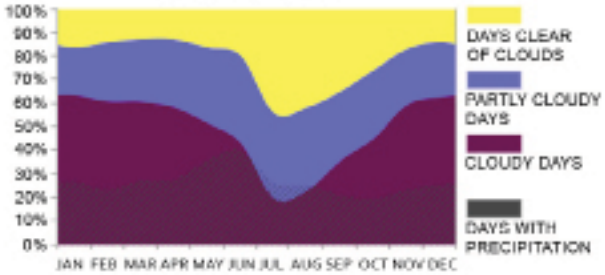
Wind Speed (mph)



Snowfall



Cloudy Days



QUALITATIVE SITE ANALYSIS

The Recreation Center of Beall Park is located on the East side of the park. The building is regularly used and exudes endurance from its typology. Due to additions and remodels of the center, the exterior visibly shows the tacked on space. The staircase and warming hut on the West side of the building are a perfect example of the thoughtless additions.

The interior has been remodeled and is used on a daily basis for a variety of activities. Activities range from dance lessons to birthday parties, so the space demands flexibility, which the space cannot always accommodate. There is a storage closet that contains tables and chairs located next to the large open space, making it easy to set-up or take down for small events. Larger events have to consider the two main spaces of the building are divided by a central circulation core, making it hard to flow from the large main space to the smaller side space. This detachment makes the spaces feel separated and unusable for today's needs.

The park also has detached program that is randomly located throughout the park. Playground equipment is scattered on the North and Southeast sections, strangely distant from one another. There is an asphalt basketball court in the Northwest corner that is irregularly shaped, and not standard court dimensions.

The Southeast corner has an uninviting picnic shelter which consists of a concrete pad and corrugated metal roof. The park's disorganized program is the result of changing activities and program throughout time. Each time a program is replaced, the prior is never fully removed, and the new is never fully integrated. This results in the numerous locations of various activities throughout the site.

Connection to the park is difficult due to its lack of nature, and misplaced program. There are only six trees North of the Recreation Center, and seven South of the building, which also adds to the bland atmosphere of a park. The park has an awkward presence with its open space, and lacks barriers or thresholds when entering the park. The only change from street, to sidewalk, to park it the resistance of the matter below.

Although the location of Beall Park and Recreation Center is ideal with its proximity to downtown and presence within the Northeast portion of Bozeman, the site seems to be losing its identity. The lack of integration and master planning have left the park in isolated sections, which become harder and harder to connect through time. The lack of vegetation adds to the isolated feeling of the park and its fleeting identity.


PARK

PROGRAM

PROGRAM-QUALITATIVE

Architecture can strengthen man's relationship with himself and the environment, which will strengthen his understanding of existence and time. I also believe that architecture's relationship to nature can strengthen man's understanding of existence and place within the world, and within time. Through natural surroundings we are able to gain a deeper comprehension of our environment and how we exist within it. Community spaces have played integral roles in forming the identity of cities through bringing people together to share information and stories, which helped develop and form the built environment. Through community places citizens have been able to gain a deeper sense of identity, and achieve a higher level of connection to our environment.

The Northeast section of Bozeman is currently experiencing an identity crisis. The Northeast side is comprised of historic Bozeman homes, older homes with vernaculars from various decades, run-down properties that have been neglected, and new homes which were built on or renovated the run-down properties. It is also in close proximity to downtown Bozeman, which is also going under an expansion. Just 4 blocks from Main Street, the expansion and renovation of downtown is creeping its way towards Beall Park. A refurbishment of the park could help the Northeast side create a modern identity and maintain its continuation in Bozeman's significance.

For the Beall Park Recreation Center I will remodel the existing building, restoring it to its historical presence. I will build another recreation center on the site, to hold the activities of the current building, with enough space to house various program requirements. The building will integrate nature, which will generate a strong emotional connection through sensory perceptions' synthesis of the building and park. The natural surroundings will connect with visitors through engagement of the senses, strengthening their understanding of the environment, and themselves. This connection will re-invigorate interest in the original Recreation Center, the new Recreations Center, and re-establish the social and civic significance it had during its earlier times.

For the Beall Park grounds I will re-program and relocate activities for assimilation with the building, and create public and private spaces through the use of vegetation, which will enrich the park in totality. Vegetation will bring a new spirit to the park through its inherent energies that man feels kinship towards, which will engage visitors through every sense. This will bring attention and a new identity to the park and the Northeast side of Bozeman, sparking interest throughout the public. This re-programming will also strengthen the connection Bozemanites have with the park, the Recreation Center, and themselves.

Bozeman as a town has undergone rapid expansion and growth in the last 20 years. From 2000-2007, Bozeman gained 7,555 new citizens. This growth rate has already begun to mute historic Bozeman's identity, and without preservation of older neighborhoods, Bozeman's traditional spirit could be lost.

The renovation of

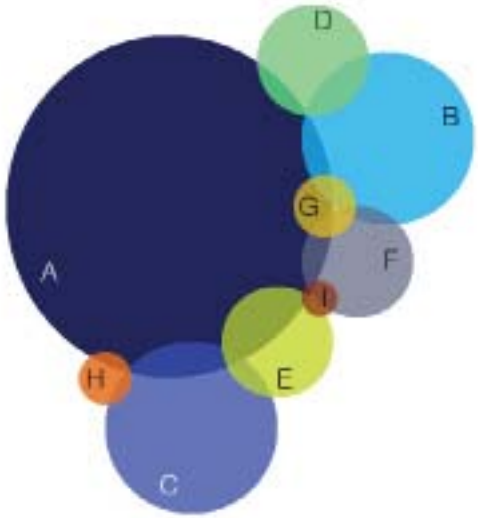
Beall Park and the Recreation Center will address the changes that the Bozeman region has undergone since its construction, while preserving the original building's significance. The natural materials used to build the initial Recreation Center will maintain on site and preserved in the addition to the building, sustaining the sensory perceptions' connection that has already formed.

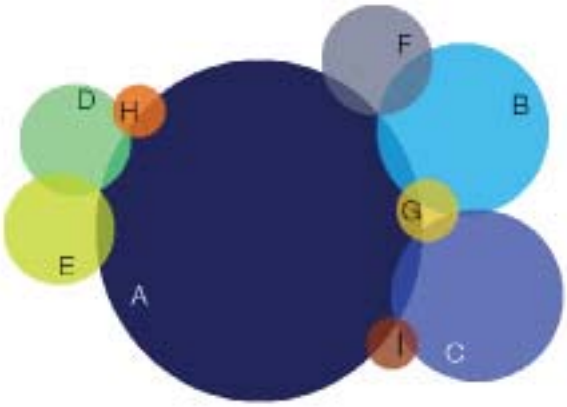
PROGRAM-QUANTITATIVE

Recreation Center Interior	
Entry/Reception Area	450 sq. ft.
Large Community Space	1200 sq. ft
Storage Closet Next to Large Space	200 sq. ft.
Reading Room/Small Community Space	1800 sq. ft.
Kitchen	300 sq. ft.
Restrooms (2) @ 100 sq. ft.	200 sq. ft.
Storage	2000 sq. ft.
Mechanical (12% of interior)	738 sq. ft.
Circulation (12% of interior)	738 sq.ft.
Interior Program Total	7626 sq. ft.
Exterior Program Total (Park)	80,902 sq. ft.
Total Program Area	88,528 sq. ft.

SPACE ADJACENCY DIAGRAMS

A-Large Community Space
B-Reading Room/Small Community Space
C-Storage Space
D-Storage Closest Next to Large Space
E-Offices
F-Restrooms
G-Kitchen
H-Warming Room
I- Entry/Reception

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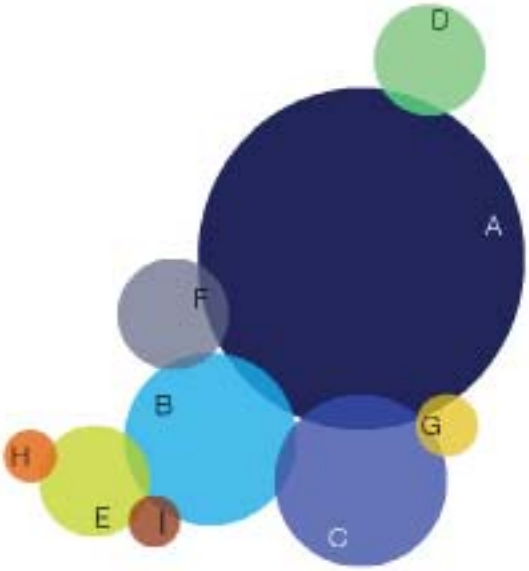
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CODE

OCCUPANCY TYPE
SECTION 303 - ASSEMBLY GROUP A
303.1 ASSEMBLY GROUP A.

Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m2) in area and is accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

Assembly occupancies shall include the following:

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:
Banquet halls
Night clubs
Restaurants
Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified else-where in Group A including, but not limited to:
Amusement arcades
Art galleries
Bowling alleys
Places of religious worship
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor swimming pools (without spectator seating)
Indoor tennis courts (without spectator seating) Lecture halls
Libraries
Museums

Waiting areas in transportation terminals Pool and billiard parlors

CONSTRUCTION TYPE
SECTION 602 - CONSTRUCTION CLASSIFICATION

602.3 TYPE III

Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior-wall assemblies of a 2-hour rating or less.

ALLOWABLE BUILDING HEIGHTS AND AREAS
SECTION 503 - GENERAL HEIGHT AND AREA LIMITATIONS

503.1 GENERAL

The height and area for buildings of different construction types shall be governed by the intended use of the building and shall not exceed the limits in Table 503 except as modified hereafter. Each part of a building included within the exterior walls or the exterior walls and fire walls where provided shall be permitted to be a separate building.

Allowable Building Type in Stories: 3
Allowable Building Type in Feet: 65
Allowable Building Type in Square Feet: 14,000

FIRE RESISTANCE AND FIRE RATED CONSTRUCTION

704.2.2 TYPE III,

IV or V construction. Projections from walls of Type III, IV or V construction shall be of any approved material.

705.4 FIRE-RESISTANCE RATING

Fire walls shall have a fire-resistance rating of not less than that required by Table 705.4.

TABLE 705.4 FIRE WALL FIRE-RESISTANCE RATINGS

GROUP	FIRE-RESISTANCE RATING (hours)
A, B, E, H-4, I, R-1, R-2, U	3 a
F-1, H-3 b, H-5, M, S-1	3
H-1, H-2	4 b
F-2, S-2, R-3, R-4	2

803.5 INTERIOR FINISH REQUIREMENTS BASED ON GROUP

Interior wall and ceiling finish shall have a flame spread index not greater than that specified in Table 803.5 for the group and location designated. Interior wall and ceiling finish materials, other than textiles, tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.2.1, shall be permitted to be used where a Class A classification in accordance with ASTM E 84 is required.

[F] 903.2.1.3 GROUP A-3

An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m 2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

Structural frame (IBC Table 601.1) IIIA	1hr
Exterior Loadbearing Walls (IBC Table 601.1) IIIA	2hr
Interior Loadbearing Walls (IBC Table 601.1)IIIA	1hr
Exterior Non-loadbearing Walls and Partitions (IBC Table 601.1) IIIA	2 hr
Interior Non-loadbearing Walls and Partitions (IBC Table 601.1) IIIA	0hr
Floor Construction (IBC Table 601.1) IIIA	1hr
Roof Construction (IBC Table 601.1) IIIA	1hr
Fire Wall and Party Walls (IBC Table 705.4) IIIA	3hr
Fire Separation Exits (IBC Table 1005.1.8.1) IIIA	2hr
Fire Separation Shafts (IBC Table 707.4) IIIA	2hr
Fire Partitions Exit Corridors (IBC Table 706.3.3) IIIA	1hr

MEANS OF EGRESS

1003.2 CEILING HEIGHT

The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm).

OCCUPANT

CONCENTRATED (CHAIRS ONLY—NOT FIXED)

(IBC Table 100.4.1.1)	7 net
Standing space (IBC Table 1004.1.1)	5 net
Unconcentrated (tables and chairs)(IBC Table 1004.1.1)	15 net

1004.8 OUTDOOR AREAS

Yards, patios, courts and similar out-door areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chap-ter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

SECTION 1005 - EGRESS WIDTH

1005.1 MINIMUM REQUIRED EGRESS WIDTH

The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by the factors in Table 1005.1 and not less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

Exception: Means of egress complying with Section 1025.

Stairways: .2 in. per Occupant. Other Egress Components: .15 in. per occupant.

1005.2 DOOR ENCROACHMENT

Doors opening into the path of egress travel shall not reduce the required width to less than one-half during the course of the swing. When fully open, the door shall not project more than 7 inches (178 mm) into the required width.

Exception: The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

1008.1 DOORS

Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1017.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Means of egress doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials.

1008.1.1 SIZE OF DOORS

The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 32 inches (813 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. Means of egress doors in a Group I-2 oc-

cupancy used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). The height of doors shall not be less than 80 inches (2032 mm).
Exceptions:
1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in Group R-2 and R-3 occupancies.
2. Door openings to resident sleeping units in Group I-3 occupancies shall have a clear width of not less than 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m2) in area shall not be limited by the minimum width.
4. Width of door leafs in revolving doors that comply with Section 1008.1.3.1 shall not be limited.
5. Door openings within a dwelling unit or sleeping unit shall not be less than 78 inches (1981 mm) in height.
6. Exterior door openings in dwelling units and sleeping units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
7. In other than Group R-1 occupancies, the mini-mum widths shall not apply to interior egress doors within a dwelling unit or sleeping unit that is not required to be an Accessible unit, Type A unit or Type B unit.
8. Door openings required to be accessible within Type B units shall have a minimum clear width of 31.75 inches (806 mm).

SECTION 1014 - EXIT ACCESS

1014.1 GENERAL

The exit access arrangement shall comply with Sections 1014 through 1017 and the applicable provisions of Sections 1003 through 1013.

1014.2 EGRESS THROUGH INTERVENING SPACES

Egress through intervening spaces shall comply with this section.
1. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas are accessory to the area served, are not a high-hazard occupancy and provide a discernible path of egress travel to an exit.
Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.
2. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.
Exceptions:
1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
2. Means of egress are not prohibited through stockrooms in Group M

occupancies when all of the following are met:
2.1. The stock is of the same hazard classification as that found in the main retail area;
2.2. Not more than 50 percent of the exit access is through the stockroom;
2.3. The stockroom is not subject to locking from the egress side; and
2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by full or partial height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.
3. An exit access shall not pass through a room that can be locked to prevent egress.
4. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

SECTION 1016 - EXIT ACCESS TRAVEL DISTANCE

1016.1 TRAVEL DISTANCE LIMITATIONS

Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.
Where the path of exit access includes unenclosed stairways or ramps within the exit access or includes unenclosed exit ramps or stairways as permitted in Section 1020.1, the distance of travel on such means of egress components shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.
Exceptions:
1. Travel distance in open parking garages is permitted to be measured to the closest riser of open stairs.
2. In outdoor facilities with open exit access components and open exterior stairs or ramps, travel distance is permitted to be measured to the closest riser of a stair or the closest slope of the ramp.
3. Where an exit stair is permitted to be unenclosed in accordance with Exception 8 or 9 of Section 1020.1, the travel distance shall be measured from the most remote point within a building to an exit discharge.
Occupancy: A, E, F-1, I-1, M, R, S-1(IBC Table 1016.1) Distance of 250 feet with sprinklers
1017.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).
Exceptions:
1. Twenty-four inches (610 mm)—For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)—With a required occupant capacity of less than 50.

3. Thirty-six inches (914 mm)—Within a dwelling unit.
4. Seventy-two inches (1829 mm)—In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)—In corridors serving surgical Group I, health care centers for ambulatory patients receiving outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)—In Group I-2 in areas where required for bed movement.

1017.3 DEAD ENDS

Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.
Exceptions:
1. In occupancies in Group I-3 of Occupancy Condition 2,3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B and F where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the
length of dead-end corridors shall not exceed 50 feet (15 240 mm).
3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

SECTION 1019 - NUMBER OF EXITS AND CONTINUITY

1019.1 MINIMUM NUMBER OF EXITS

All rooms and spaces within each story shall be provided with and have access to the minimum number of approved independent exits required by Table 1019.1 based on the occupant load of the story, except as modified in Section 1015.1 or 1019.2. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story, basement or individual space shall be maintained until arrival at grade or the public way.
From Table 1019.1
2 For Areas with Less than 500 Occupants
3 For Areas with 500-1000 Occupants
4 For Areas with More than 1000 Occupants

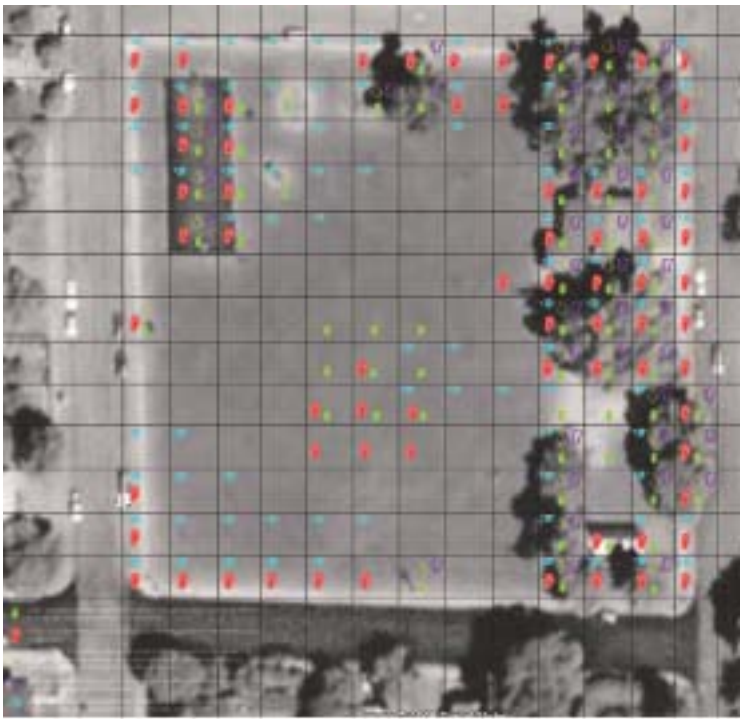
ACCESSIBILITY

The entire building must meet ADA accessibility requirements including but not limited to:
36 inch Wide Accessible Route
60 inch by 60 inch Passing Space
80 inch Head Room
1:20 Maximum Slope
4 inch Maximum Horizontal Protrusion
32 inch Minimum Clear Door Opening

CODE 123

DESIGN PROCESS

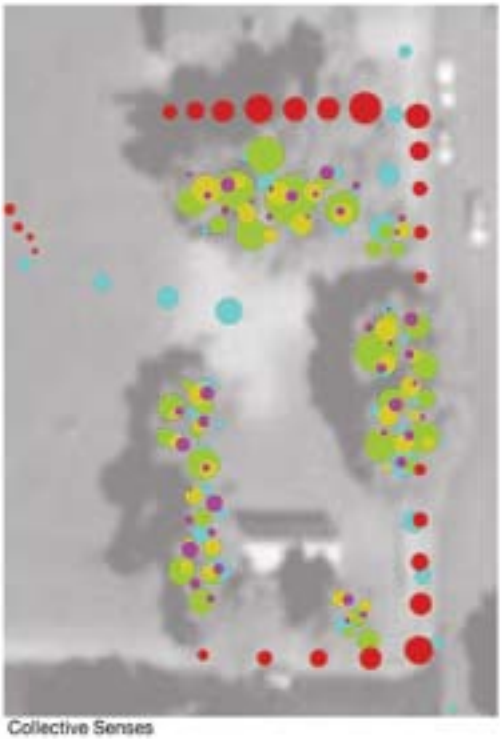
To locate the building site within the larger park site, a sensory site map was created. The map is an aerial photograph of the site, in which a grid is overlaid on top on the image. The individual senses were broken down and placed within the quadrants they pertained to. For instance, near a tree you have a visual connection (the tree with sun coming through the leaves), a auditory connection (leaves moving and blowing through the wind), a olfactory connection (the tree itself and the leaves as they change through the seasons), a taste connection aided by the smell sense, and a textural connection (all elements of the tree, such as the rough bark, and smooth leaves).



This map portrayed a dense sensory corridor on the right (East) side of the park. This corridor would become the area for my building site. Since just above (North) of the existing building is densely packed with trees, the building site became below (South) of the existing building.

The next study zoomed into the selected building site just South of the existing building. This map has the same intentions, of taking the space and overlaying sensory experiences of each sense on the map.

This map aided in dictating potential building shapes and sizes through the existing sensory connections within the site, as well as space adjacencies for individual sensory experiences



Collective Senses

Other studies included neighborhood studies throughout Bozeman. Three blocks from the North side, South side, and West side of town were taken and then drawn by hand to study their proportions, scales, and shapes. These studies became essential in their portrayal of the dimensions of the existing city, and the context the recreation center would have to fit within.

The same hand drawn studies were applied to the existing Beall Park Recreation Center. This displayed materials, proportions and scales the new building would have to be sensitive of.

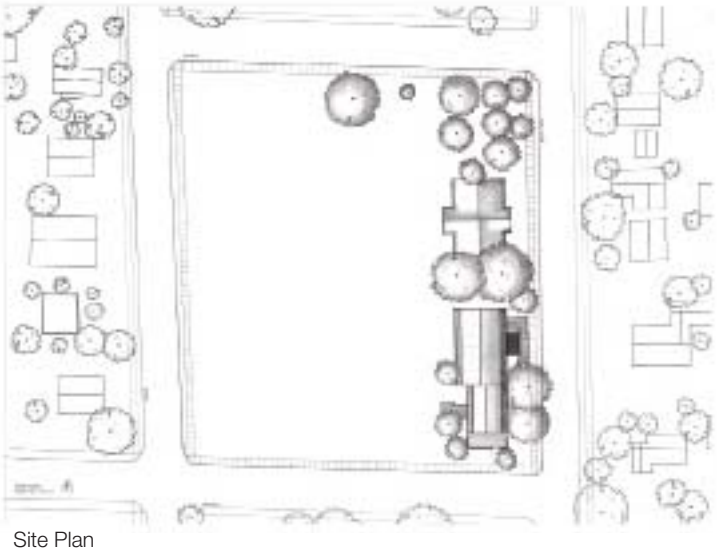
North, South, and West Side Block Studies

Existing Beall Park Recreation Center Studies

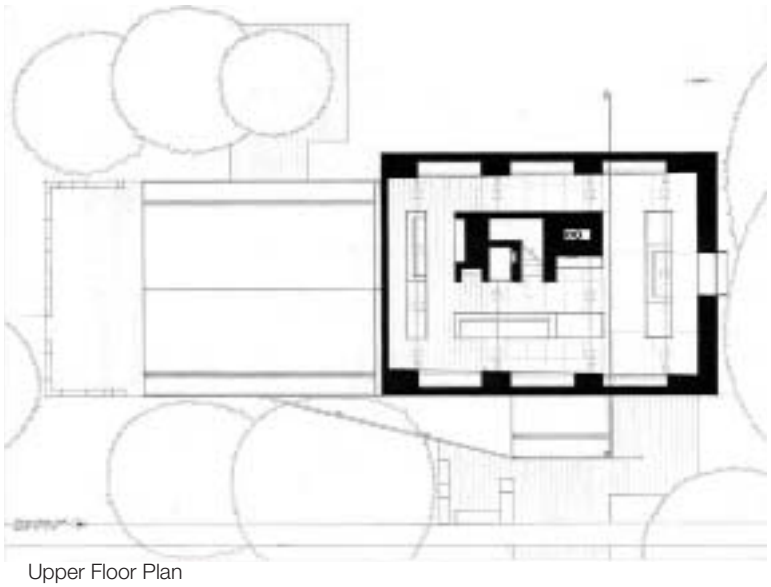
From all of the investigations, an over-arching idea was developed to help design and create the new Recreation Center.

The over-arching idea for the building is the changing experience from the dense, dark, and cold characteristics of the rock, to the light open, and warm nature of the wood as one travels through the building. This principle manifests itself in a linear experience of sequential spaces.

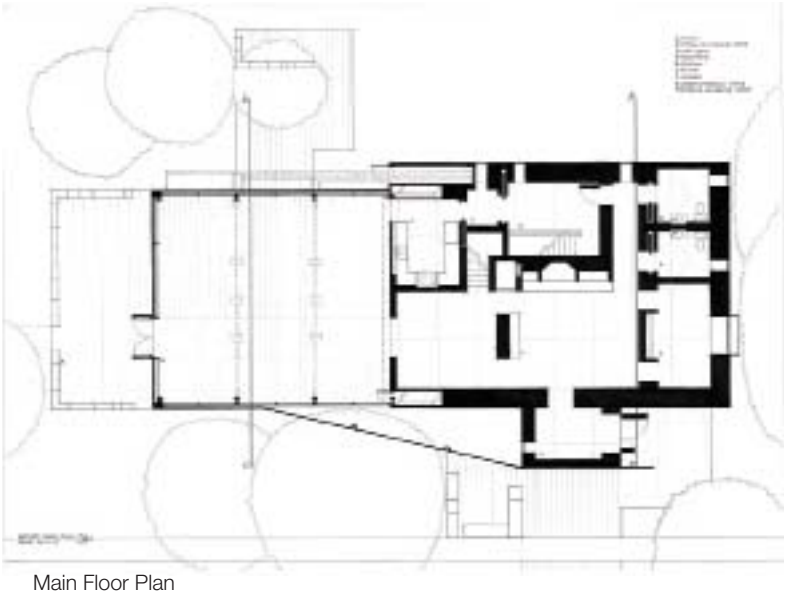
All final drawings were hand drawn in pencil. The process of design and connection to the site and building



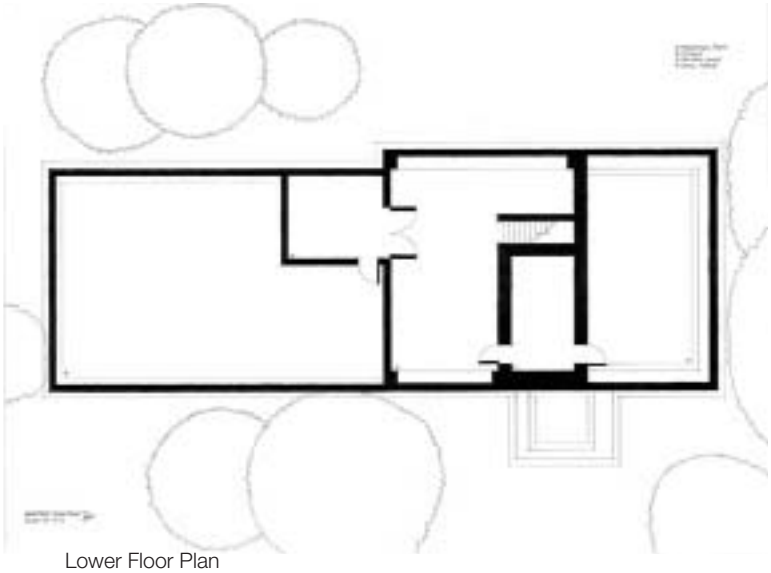
Site Plan



Upper Floor Plan

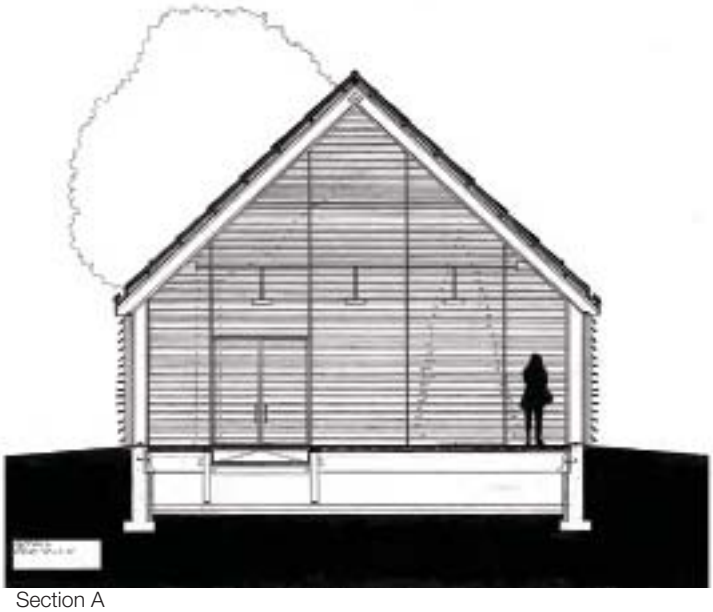


Main Floor Plan

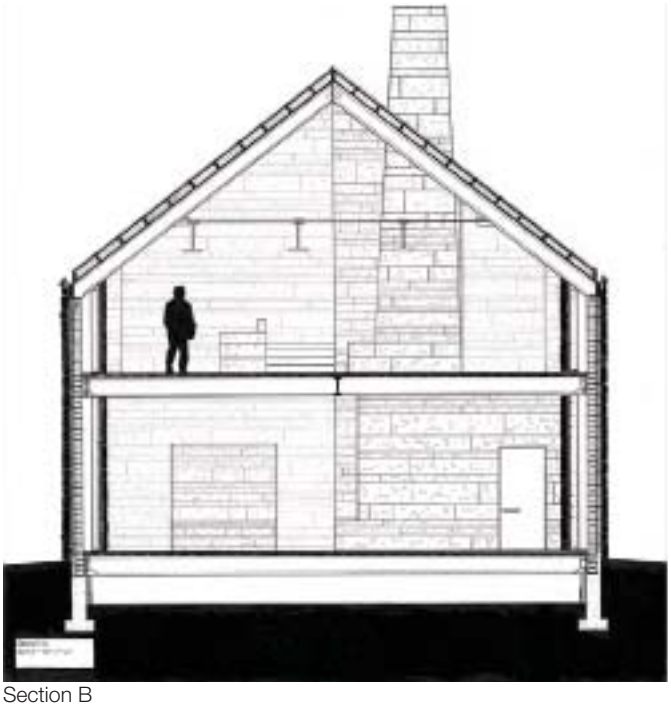


Lower Floor Plan

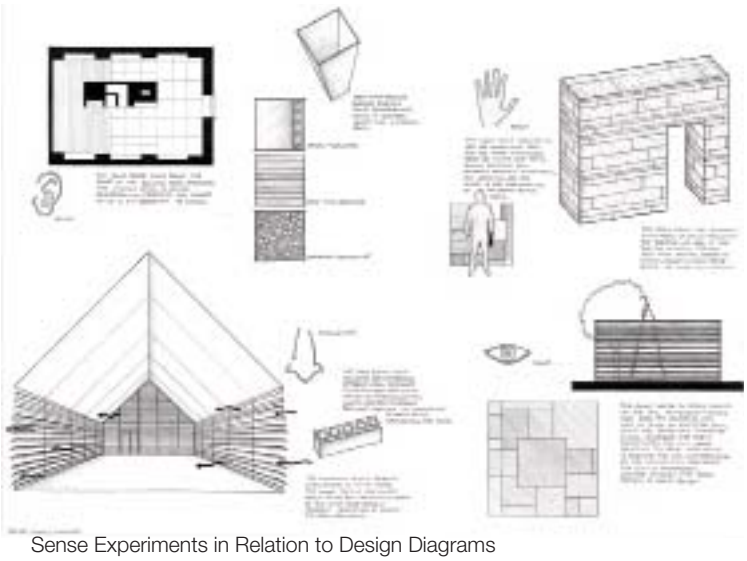
East Elevation



Section A



Section B



Sense Experiments in Relation to Design Diagrams

I believe that through sensory connection to our natural surroundings, we will reinvigorate a deeper connection with ourselves and to the environment. Architecture could become the medium to create that connection, as well as the manifestation of our understanding of existence of time, which facilitates this connection.

The intention of my project is to create another building in which to house the existing and past activities of the Beall Park Recreation Center. With a new building to allow adequate space for program requirements, the existing Beall Park Recreation Center can be fully restored to its original state, preserving the history, and cultural richness of its historical self.

Exterior Perspective

Interior Gathering Space Perspective

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2. Ibid, 16.
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4. Thomans Baldwin, Introduction: The World of Percep tion, (New York, 2002), 11.
5. Maurice Merleau-Ponty, The World of Perception, (New York, 2002), 46.
6. Ibid, 45.
7. Ibid, 48.
8. Ibid, 54.
9. Juhani Palasmaa, The Eyes of the Skin, (Great Britain, 2007), 13.
10. As quoted in Ibid, 24.
11. Ibid, 19.
12. Ibid, 46.
13. Ibid, 51.
14. Ibid, 59.
15. Ibid, 58.
16. Yi-Fu Tuan, Space and Place, (University of Minnesota Press, 1977), 141.
17. Juhani Palasmaa, The Eyes of the Skin, (Great Britain, 2007), 40.
18. Maurice Merleau-Ponty, The World of Perception, (New York, 2002), 47.
19. Ibid, 52.
20. Michael Benedikt, For an Architecture of Reality, (New York, 1987), 40.
21. Juhani Palasmaa, The Eyes of the Skin, (Great Britain, 2007), 50.
22. Ibid, 52.
23. Juhani Palasmaa, The Eyes of the Skin, (Great Britain, 2007), 41.
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25. Michael Benedikt, For an Architecture of Reality, (New York, 1987), 44.
26. Ibid, 4.
27. Kate Nesbitt, Theorizing a New Agenda for Archi tecture: An Anthology of Architectural Theory, (Princeton Architectural Press, 1996), 48.
28. Tadao Ando, Theorizing a New Agenda for Archi tecture: An Anthology of Architectural Theory, (Princeton Architectural Press, 1996), 460.
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34. Maurice Merlaeu-Ponty, The World of Perception, (New York, 2002), 43.
35. Juhani Palasmaa, The Eyes of the Skin, (Great Britain, 2007), 11.
36. Ibid, 41.
37. Ibid, 11.
38. Peter Zumthor, Thinking Architecture, (Germany, 2006), 85.
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40. Phenomenology in this thesis is defined as the study of the development of human consciousness and self- awareness as a part of philosophy.

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44. Ibid, 12.
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46. Ibid, 16.
47. Ibid, 12.
48. Ibid, 61.
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50. Ibid, 63.
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Pg. 81 Upper-http://www.montana.edu/level2/images/aboutmsu/aboutmsupic.gif.
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