

DISCOVERING SELF-ACTUALIZATION THROUGH  
THE EXPERIENCE OF ARCHITECTURE

by

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Shandra Rene Weaver

January 2010

DEDICATION

In memory of Collin Keck, and in recognition of his life that was, in the brief time he had, lived in devotion to others and by his strong belief that "...we are called to use our talents to the betterment of others."

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ABSTRACT

The relationship between architecture and the individual involves a process of discovery through revelation, opportunity for choice, engagement of the senses, and the use of symbolism. As the experience of architecture meets the needs of humanity on a personal level, it has the capacity to draw the individual toward ultimate self-actualization through the process of discovery, with the potential to impact and transform a community.

## THESIS STATEMENT

The relationship between architecture and the individual involves a process of discovery through revelation, opportunity for choice, engagement of the senses, and the use of symbolism. As the experience of architecture meets the needs of humanity on a personal level, it has the capacity to draw the individual toward ultimate self-actualization through the process of discovery, with the potential to impact the transformation of a community.

## THEORY

### Goals of Architecture

Architecture has an immense influence on humanity; to impact it for the better one of the goals of architecture must be to provide for human needs. There are obvious needs that architecture fulfills, such as the need for shelter. But these are simple survival essentials, needs that could be fulfilled by, say, a cardboard box. Mere walls and a roof are not the goals of architecture, says Anthony Lawlor, “they are boundaries that provide a framework for our way of perceiving the environment and for fulfilling our bodily needs.”<sup>i</sup> The built environment provides a structure for the way we, as humans, live our lives. If we want merely to live in a condition that promotes sheer survival, would it matter whether we spend our lives within four walls and a roof or within a cardboard box? For some reason we revolt at this idea. Could it be that as creative human beings, we desire, and are created for more than just survival? What is the reason for this? Could it be that there are greater needs beyond just basic physiological requirements that must be fulfilled?

Architecture has the ability and the obligation to build beyond simply meeting physiological needs packaged in an eye-pleasing exterior. It has the power and the devices to build meaning, purpose, and greater quality of life for individuals.

### Current Cultural Situation

Our Western cultural mindset has been deeply rooted in Greek thought, in which certainty is based on vision, knowledge is equated with sight, and truth with light.<sup>ii</sup> Notable Greek philosophers such as Plato and Aristotle have regarded vision as ‘humanity’s greatest gift’, and the ‘most noble of senses’.<sup>iii</sup> The Western mind has placed less value in the use of other senses—even to the point of discrediting them. Descartes, known as the “father of modern philosophy,” devised his theories in the idea that “I think, therefore I am.” His theory was that our senses can be deceptive; therefore they should not be trusted.<sup>iv</sup> With this heavy emphasis on the sense of vision and a foundation in rationalism, the combination of these contradicting philosophies at the root of our culture leaves us unsure; wondering which of our senses, if any, can be trusted.

The visual emphasis, which has taken precedence, has had a deep and negative affect on our culture. Take for example the marketing industry—great effort has been placed in the immediate visual draw of products which have a strong appeal to the consumerism mentality that has become established in our culture. This visually based ‘marketing’ mentality has translated into the architectural environment as well, where an

‘outside’ perspective has had priority.<sup>v</sup> This perspective emphasizes how a building or environment is seen—in its immediate visual appeal as seen from a distance—rather than as a place where people live, function, and develop and experience life. The inside of a building is more felt than it is observed; but more value has been placed on the iconic and detached ‘outside’ view, while neglecting the actual human experience of architecture. Take for example architecture periodicals. In MSU’s Creative Arts Library there are a number of magazines on display, twelve of which are architectural magazine subscriptions. At the time of this writing, and as is typical for an average month, seven out of twelve of those magazine covers present an iconic exterior view. Only one out of the twelve covers features an interior view. Of all of the images contained between the covers, exterior views were predominant, receiving greater emphasis even in the size of the image than that of interior views. This trend was also found in advertisements within the magazine—an average 70% of advertisements focused on products for the exterior appearance of buildings. Albeit a minor example of the greater issue, the result of this sort of detached and iconic “outside” view is a manifestation of a growing sense of alienation from our senses and from the world around us.

*The growing experiences of alienation, detachment, and solitude in the...world today...may be related with a certain pathology [deviation from a normal condition] of the senses...The dominance of the eye and the suppression of the other senses tends to push us into detachment, isolation and exteriority. The art of the eye...has not facilitated human rooted-ness in the world.<sup>vi</sup>*

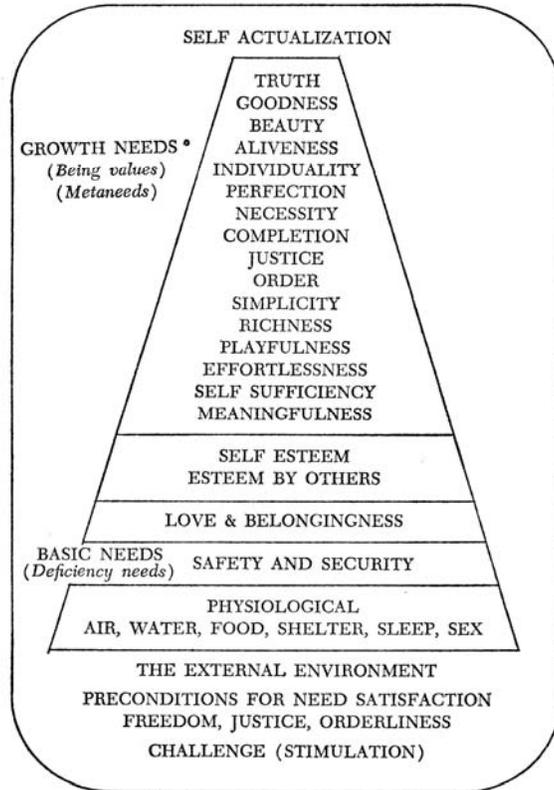
Indeed, architecture cannot be experienced out of the coldness of rationalism, or as a series of isolated magazine images. It must be encountered as fully integrated substance which engages all of our senses, directing our consciousness back to the world and towards a sense of self and being.<sup>vii</sup> Architecture that fails in this regard is neglecting its power and its responsibility to enrich humanity.

Needs

Abraham Maslow proposed a theory in 1943 in which he set up the Hierarchy of Needs in an effort to explain human motivations and subsequent behavior. The hierarchy

was arranged from the most basic and fundamental physical needs, to more psychological needs associated with personal growth. The most basic needs are designated *Physiological*, and include food, water, and oxygen, along with other basic bodily functions. The next level is *Safety*, which covers the need for physical and emotional protection and security. *Love/Belonging* builds from there, containing such needs as membership, belonging and affection. As the hierarchy advances into more psychological needs, *Esteem* rises as the need to be held in high value by oneself and by others. The pinnacle of the hierarchy is termed *Self-actualization*.<sup>viii</sup>

ABRAHAM MASLOW'S HIERARCHY OF NEEDS



\* Growth needs are all of equal importance (not hierarchical)

Self-actualization is described by Maslow as the desire to fulfill one's capacities, including both cognitive and aesthetic aspects, such as the thirst for knowledge, understanding, and a

desire for beauty.<sup>ix</sup>

The built environment is able to address many of the needs defined by Maslow. By providing a place where human functions can occur, the fulfillment of physiological needs can be facilitated. An innate characteristic of buildings is to provide protection and a level of security through shelter. A more psychological need for belonging can be addressed through providing a place where connection can be made and a sense of identity can be established. Buildings can even attend to the need for esteem; the quality of the environment in which a person is surrounded can start to speak to the value of the person who interacts with or inhabits that setting. But what about the need for self-actualization? Is it possible for architecture to address this need as well?

## Self-Actualization

Self-actualization is described by Jon Lang as “the desire to become more and more what one is”—to become everything that one is capable of becoming. This takes the form of a “quest for knowledge, understanding, peace, self-fulfillment, meaning in life, or beauty”.<sup>x</sup> There are apparent ways in which architecture can meet the desires for peace and beauty. Throughout history architects have been designing beautiful buildings; from phenomenal ancient Greek temples to modern marvels such as Louis Kahn’s Salk Institute. Can architecture then be able to aid the individual in satisfying the desire for knowledge, understanding, meaning, and ultimately for self-actualization? The key lies in Lang’s statement that the desire for becoming what one is capable of being is manifest as a “quest,” suggesting that attaining self-actualization is a process of discovery.

This quest for self-fulfillment speaks to the very core of how we function as human beings. The fundamental pattern of human thought is in essence a process of discovery. Discovery involves three major components: desire, search, and find. We have a desire, we seek out what we desire, and find it, thereby satisfying the initial need.<sup>xi</sup> There is a basic propensity toward this pattern of discovery in many aspects of the life of an individual, ranging from the most basic function of satisfying hunger with food, to finding meaning and purpose in life.

Architecture has the ability to incorporate this element of discovery, thus facilitating a crucial component in the attainment of self-actualization.

*How is Self-Actualization Achieved?* Self-actualization is a journey of discovering one’s self rather than arriving at a finished product. As human beings our potentials are unending. The exploration of reaching our potential and becoming our best is never wholly complete, but it is a goal toward which one can always progress.<sup>xii</sup> This process can be approached in many ways. In discovering one’s self, the route is marked by choices. The potentialities within us can be developed in vastly numerous ways depending on the choices that we make.<sup>xiii</sup>

In addition, fulfillment of our desires emerges as a form of self-fulfillment, or self-actualization.<sup>xiv</sup> Realizing that our desires come from a deeper need that is within us, we can return to Maslow and another aspect of self-actualization that he identifies as Being-values. The Being-values speak of elements of honesty, reality, unity, integration, order, spontaneity, change, individuality, intricacy, and wholeness, with nothing deficient or excessive.<sup>xv</sup> These values represent the greater needs and desires within us which, when fulfilled, aid in the process of discovering self.

*How is Self-Actualization Attempted?* To achieve self-actualization it is not enough to foster a shallow desire for these values. Self-actualization requires intentionality. We must venture beyond mere temporary fulfillment. We must become the values that we seek. Beyond merely possessing a quality, we must become the quality. Take, for example, a painting that embodies traits of beauty and tranquility. Simply owning this exquisite piece of art does not make us who we are—it does not in itself make beauty and tranquility a part of our life merely because we pass it hanging in the hallway. We start to grasp our own potentialities for embodying those qualities when we seek at a deeper level to resemble the values and qualities of beauty and tranquility. By assimilating those qualities we become more ‘actualized’. It is in the ownership of, or observation of such an object, that, Alain de Botton says, ‘may help us realize our ambition of absorbing the virtues to which [that object] alludes.’<sup>xvi</sup> A work of architecture that embodies these Being-values and qualities allows us to take ownership of those qualities through our experience of them. Just as the experience of an exquisite piece of art which demonstrates peace and beauty calls to the manifestation of those values within us, the experience of values through architecture allows the individual greater opportunity for absorbing those virtues.

*Self-Actualization in Relation to Architecture.* A work of art stands, as Friedrich Schiller describes, an ‘absolute manifestation of potential,’ functioning like ‘an escort descended from the world of the ideal’<sup>xvii</sup> to usher us in to a greater place of being. Architecture speaks to us about the type of life that should unfold within and around us. While meeting our basic needs and helping us in more mechanical ways, it ‘simultaneously hold[s] out an invitation for us to be specific sorts of people.’<sup>xviii</sup> Such a work of art, or architecture, gives us a chance to develop our own potentialities.<sup>xix</sup> This concept goes back to early Christian and Islamic theologians who proposed that beautiful buildings have the power to improve us morally and spiritually, and that exquisite surroundings could edge us towards perfection.<sup>xx</sup>

Spiritual works of architecture embodied values and qualities of self-actualization. They allowed the occupant to connect with something beyond themselves, while simultaneously connecting with something deep within. The work of architecture symbolizes what we seek to be, and thus draws us into becoming that very thing.

These early religious institutions all had a collective system of values and beliefs upon which the architecture drew; but what about non-religious architecture? Can this be achieved to a similar degree in secular architecture as well? The broader range of humanity has elements in common beyond religious beliefs that can be addressed collectively in architecture—these commonalities include sensory perception, a sense of being in the world, and the need for self-actualization.

By designing a building or environment that, in itself, encompasses the values and nature of self-actualization, it draws us into the same qualities. Using Maslow’s Being-values, we can design with order, integrity, wholeness, and beauty, as well as any of the

other values identified by Maslow. As these values are discovered through sensory experiences in this type of environment, there is progress made by the individual in the process toward self-actualization.

### Discovery

The process of Discovery is enhanced through such elements as revelation, freedom of choice, use of symbolism, and the engagement of the senses.

Discovering something makes it our own; we attach a memory and emotion to it, giving it a more personal meaning. It becomes a part of us, part of our identity. In discovering place, we are able to locate ourselves in relation to our surroundings, and are made more aware of ourselves and the world around us. There is something enthralling about a journey, the thrill of never knowing exactly what's around the corner. There is a mystery and excitement of what will be discovered, it's what propels us onward. Without discovery, our sense of self is diminished: not knowing where we fit in the world around us, not knowing the purpose of what we do or who we are.

In discovery we gain sight of something previously unseen or unknown. Discovery can occur as a surprise, a moment of epiphany; but it can also be an exploration, or process of searching. As we explore we perceive what is around us and what is revealed to us through our senses; uncovering the mysteries of the world around us. By experiencing and engaging in our environment we are also engaging in discovery.

Discovery is also essential in the development of one's potential<sup>xxi</sup> and in the search for values, which are both specified by Maslow. These "Being" values are identified in part as truth, beauty, wholeness, aliveness, uniqueness, perfection, necessity, simplicity, playfulness, self-sufficiency, and meaningfulness.<sup>xxii</sup> If these are the values that aid in the process of discovering self in the development of self-actualization, can architecture facilitate the discovery of these values? More specifically, how can architecture support the discovery of one's potential through expressing these values?

*Revelation.* Architecture reveals what is to be discovered through the experience of the built environment. To reveal is to uncover as in drawing away a veil or curtain, exposing what had been previously unseen<sup>xxiii</sup> If the "Being" values are essential to the process of self-actualization, these values should also be revealed through the design of the built environment. As beauty, truth, and simplicity are revealed through architecture, the individual who engages in the experience of this architecture should consequently become more alive to these values within themselves. As playfulness, wholeness, and uniqueness are experienced in the built environment, the individual begins to connect meaning between these values and themselves, coming closer to a realization of their self.

*Choice.* A journey of discovery, incorporated within the work of art, allows the individual to choose which values or qualities they are surrounded by. Providing glimpses of contrasting values, such as order and complexity, strengthens the appreciation of each value. Permitting this freedom of choice is another way to design for self-actualization.<sup>xxiv</sup>

As we uncovered earlier, the process of discovering ourselves is marked by our choices. Potentialities within us can be developed in copious ways depending on the choices that we make.<sup>xxv</sup> Through the various engagements of cognition and the senses, a variety of choices can be presented to the individual.

Each choice provides a different sort of experience evoking different sensations. For example, a choice between a steep stair and a long ramp: one directs attention to the placement of the foot and the movement of the body and the other allows greater ease of ascension, thereby allowing focus to rest on the surroundings or on what lies ahead. An example of this is at Castelvechio designed by Carlo Scarpa. The path through the museum comes to a decision point, splitting off into two different stairs leading in opposing directions, each providing a different sensory experience.



[http://farm3.static.flickr.com/2099/2514267769\\_dac6bdfbc0.jpg?v=0](http://farm3.static.flickr.com/2099/2514267769_dac6bdfbc0.jpg?v=0)

*Symbolism.* Symbolism is another device that can infuse the values of self-actualization into architecture. As Joseph Campbell describes, "...to live in a symbolic environment... This is a place where you can simply experience and bring forth what you are and what you might be."<sup>xxvi</sup> A symbol has greater meaning than itself. It is representative of something immaterial,<sup>xxvii</sup> and as such could be a method of portraying the values that call to the self-actualizing desires within us. The greater meaning is revealed to us when the intangible values are perceived through the experience of the symbolic. One value of self-actualization is truth. Truth can be symbolized in architecture through ways such as material integrity and exposing the structure and inner-workings of the building.

*Experience of the Senses.* My personal experience and discovery of architecture has had a deep and lasting impact on me, and is what led me to the exploration of its impact on me and how it could affect others.

Standing in Steven Holl's chapel I was in awe; it wasn't immense or unattainable, it was intimate and personal. It was transcendence that was within reach. All I had to do was stretch out my hand and take hold of it.

I could have sat and watched the play of lights forever; if God is light in architecture, like the architects of the Gothic cathedrals believed, then God was all around me, ever present, yet ever changing, showing a new facet of character at each passing moment. I was riveted, sitting in the hushed quiet of the sanctuary, waiting to see if in the next moment the shifting light would reveal something new. I was content just to be, to sit and explore with my eyes and to soak in the calming sound and smell of the atmosphere; yet I was drawn—compelled even, to discover more, to physically explore the spaces and gain new perspectives. As I slowly passed through various spaces of the chapel, new senses were brought to my awareness. The rough texture on the delicate surfaces of the walls begged for me to reach out and touch, to reconcile the contrasts in my mind and soul. Continuing to move through the spaces, raucous noises from other visitors that reverberated off of walls in one space resounded as curses to my ears compared to the tranquil reverent silence of the next space. Each movement made and each re-positioning of myself revealed something new about what surrounded me; revealing intricate moments that had been hidden, or new ways of looking at or approaching things. Each new sight, sound, smell, and touch revealed something about the space, and about its greater meaning in the context as well as within myself.

I wanted to find out what evoked these feelings within me but found no explanation. There was just something about the place that called to something deeper within me: my desire for beauty, truth, adventure and intrigue—and a certain connectedness to that deeper part of me. It was that need to be connected to those desires and see them fulfilled that invited me to explore; to engage my senses, my emotions, and my physical body. As I explored, seeking out those answers, occasionally I would catch a glimpse, or a sense of something—like a beam of light through an intricate opening—yet it was never in full view, the mystery of the light and its source remaining veiled. It excited and brought to awareness those deeper desires within me. In engaging my senses and exploring the environment, those desires were fulfilled to a degree—yet it left me thirsting for more.

In this experience there was a connectedness with something beyond myself, something spiritual. There was a joining with something of the bigger picture, being part of an instance in time while concurrently a part of eternity. It gave me a greater sense of significance and value in being a part of something greater than myself. Connecting with those deep desires evoked a greater sense of who I am, and who I could be: that if I have the capability of feeling this, how vast are my capabilities or potentials for greater feeling

or being? Even the memory stirs the thought of what is possible; it awakens creativity, and gives new realization of the possibility for a greater way of living, of creating, of being.



<http://www.flickr.com/photos/cisley/8696066/>, <http://www.flickr.com/photos/talljoe/52548914/>

Architecture can provide for the need of reaching self-actualization through the process of discovery by creating opportunity for sensory experience. Experience is the sum of our personal observations through our moment by moment encounter. As we gain awareness or insight from each encounter, we acquire firsthand knowledge; emotions come alive as sensations are heightened.<sup>xxviii</sup> We become engaged in our surroundings, perceiving what is around us and interpreting the relationship between ourselves and our surroundings.<sup>xxix</sup> Perception engages our senses beyond the sense of vision. However, vision can be a catalyst for the engagement of our other senses. Even the Greeks, with all their elaborate systems of optical corrections designed for the pleasing of the eye, realized that favoring sight did not mean the other senses were to be rejected. The evocative materiality and commanding mass of ancient Greek architecture stimulates the eyes and arouses muscular and tactile sensations.<sup>xxx</sup> The provocation of the eye is what invites the engagement of our other senses, such as touch and hearing. These sensations are what draws us, the viewer, into a more active participation in our environment and into a greater realm of awareness as the world is perceived, understood, and engaged through bodily movement and sensation.<sup>xxxi</sup> As Jon Lang describes:

*People explore the environment to perceive the finer details by moving their eyes, heads, and bodies. With experience, a person is able to identify the finer and finer details of the world and broader and broader relationships. With experience, a person learns to pay attention to details of the world that were not attended to before.*<sup>xxxii</sup>

By engaging our senses we become intrigued and more attuned to further experience. But experience is not merely for its own sake, it is beyond simply feeling good within a space; it has the capability of taking us beyond our senses. There is a strengthened sense of reality and of self through the engagement of senses involved in experience.<sup>xxxiii</sup> The more we experience, the more engaged and linked to the surrounding world, and the more connected to ourselves we become. Architecture communicates the experience of being in the world, and therefore strengthens our sense of reality and

self.<sup>xxxiv</sup> Our experience of the world then becomes a part of our existence.<sup>xxxv</sup> Therefore it is important to create an environment that engages and facilitates an encounter of the senses.

There are consequences for designing architecture in a way that denies an opportunity for experience, or that disregards the benefits of providing a quality experience through the environment. As perceptions of the quality of life are influenced by the quality of the built environment<sup>xxxvi</sup> architecture should stimulate experience accordingly. If it does not, then, as Winifred Gallagher expresses, “as the stimulation level...fall[s], we inch into boredom, relaxation, and finally, apathy.”<sup>xxxvii</sup> It is in that state of apathy that we get comfortable with the lack of stimulation. We therefore do not recognize the signs of, or look for, experience as readily, and withdraw from engaging even when there is an opportunity to do so. This hinders the process of discovery which is essential to what makes us human, and moves us away from our potential. To avoid this danger we must, as individuals and as a culture, develop a value for a greater level of stimulation and engagement in our inhabited environment.

### Influencing Change in Culture

In order to impact a culture, values and beliefs must first be influenced. This can be accomplished through affordances, or the opportunity for possible actions, within the environment.

The environment at a certain location composes experiences that afford the individual a potential for certain behavior. This could include anything from a method of movement through space to a manner of reverence in a place of significance. Whichever of these opportunities are chosen depends on the nature of the individuals, as well as “their motivations, experiences, values, and the perceived costs and rewards of their engaging in a particular set of activities or aesthetic interpretations of the world around them.”<sup>xxxviii</sup> What we know and what we have learned to look at has been shaped by what is made available to us by the environment that we have been a part of. If the built environment demands less of an individual than the competence that individual possesses, then it becomes too comfortable and not challenging enough. This can lead to the deterioration of a person’s perceptive abilities, resulting in a lack of competency in that area. Even if an environment provides for a certain set of behaviors, there is no guarantee that the behaviors will take place. However, “if the affordances are not there, the behavior cannot take place.”<sup>xxxix</sup>

Values have a part in the way individuals respond to the affordances of their environment; they “represent a link between a person’s motivations, emotional feelings, and behavior.”<sup>xl</sup> Individuals tend to interpret their environment based on culture—a set of

rules for behavior and belief shared with others in their social group.<sup>xli</sup> This set of rules can also affect a person's attitude towards their environment.

When we combine a belief about something with a value basis for it, we develop an attitude toward it.<sup>xlii</sup> Our attitudes are related to our motivations: what we like or dislike, what we believe is good or bad, or whether something is important or unimportant. Our attitudes are related to socialization processes and experiences we have had, and consequently influence other experiences.<sup>xliii</sup> Those values and beliefs that affect attitudes can be influenced through experiences provided in the built environment. Through exposure to sensory stimulation, the desires that lie deep within and that compel us toward self-actualization begin to be aroused. Consequential emotional feelings and behavior can lead to a change in attitude, in values and beliefs. This ultimately leads to the influence of a culture.

### Conclusion

Architecture has enormous power; power to move a person both physically and emotionally, and the power to touch a person in a way that nothing else can. Excellent architecture is magnetic—drawing people in, leaving its impression on those who come in contact. It has a way of being able to touch the deepest places of the soul in ways which surpass words. Architecture is an integral part of our lives, and as such, it bears a great weight of responsibility for the well-being of those who inhabit its spaces. This responsibility goes beyond merely meeting basic survival needs; it extends into the realm of transcendence. By meeting the need to grasp the potentials that lie deep within us through the process of discovery (through revelation, choice, symbolism, and an experience of the senses) we are drawn into a greater place of understanding and experiencing the world around us, thereby into a superior state of being. Architecture offers an opportunity for growth into self-actualization. As we as individuals further mature in this state, collectively we affect the culture around us. As culture begins to adopt this greater value for sensory experience there is an impact on the overall quality of life, further extending an invitation for individuals and society as a whole to an exploration of infinite possibilities.

## PRECEDENT STUDIES

Experience and Discovery

*A Matter of Time, Bilbao, Spain. Richard Serra.* Walking in to the bleached expanse of the Guggenheim gallery, I feel dwarfed by the immense steel sculptures that overwhelm my sight. Confronted by the masses, there is no way to grasp the magnitude or vastness of what lies beyond. The dominant masses prohibit me from being able to see the entirety of the sculpture, let alone the sculptures that lie beyond. There is no indication of how to be able to grasp or experience the sculptures, so I set out to navigate the exterior of the great ellipse to try to comprehend the magnitude and to discover the significance of such a sculpture. As I traversed the circumference of the rounded immensity, before me opened a narrow passageway into the sculpture.

I become immersed and enveloped in its twisted, warped, bending and breathing pathways. I could never have imagined the experience on the outside, but once I am inside, I am lost, disoriented even, unable to identify where my body is or if I am even standing straight. Never knowing what lies ahead as the path unfolds before me, the walls warp and bend and twist around me, continually shifting and simultaneously changing my perceptions as it plays with all my senses. Until I reach the end and there is a sudden release, leaving me feeling almost dizzy until I am able to get my bearings again.





<http://static.guim.co.uk/Guardian/culture/gallery/2008/aug/06/1/GD8263909@Visitors-walk-through-5640.jp>

No two identical instances exist in the experience of progressing through the sculptures. The walls are ever-changing, leaning in and then out in a way that is impossible to anticipate. Moving through these works supplies an off-balance sensation, as the body has no steady vertical with which to measure.<sup>xliv</sup> The Sculptures invite you as the viewer to become participant: to explore them, to find the spaces within, to play with sound, to stop and start at any point, to move at any speed, thus leaving different imprints on every person that passes through.<sup>xlv</sup>

### Detail and Reveal

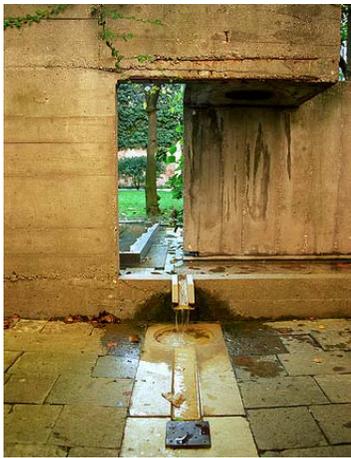
*Foundation Querini Stampalia, Venice, Italy, Carlo Scarpa.* The elaborate detail that Scarpa fashions creates a sense of value for the individual—value for the place they are in, and a feeling that they themselves are valued, that someone would take such care to design and craft such intricacy for them. Scarpa’s architectural language includes spaces that are designed to be experienced through movement; this is carried through from the detailed celebration of the meeting of elements, to opening up or closing off views depending on your position within the space.<sup>xlvi</sup> The way he designs movement through his projects draws focus to different areas. When he wants you to experience a transition to another room or level he offsets the steps or creates an edge that you have to step over, causing you to become aware of your movement and the way you interact with that space.

Entering the courtyard you are faced with a decision of which direction to take on the path. The sound of trickling water draws your attention ahead of you where a bench-height trough channels water into labyrinth drain. You are attracted to this, the only sound and movement in the peaceful space. You draw near, only to be held back from close inspection by a concrete barrier, in order to gain visual access you must ascend the obstacle. It is then you notice what appear to be steps that have been imbedded awkwardly between the barrier and the exterior wall of the building. The varied heights of the steps and their twisted orientation require concentration on the placement of your feet, and the discomfort brings attention to the transition in levels.



Following the path that circles the courtyard you come across a pool of water situated in a board-formed concrete niche. As you move on the narrow path that goes around the shallow pool, you concentrate on the effort it takes to maintain balance and keep from stepping over the minimal barrier into the water. As you move you also notice

how the positioning of the concrete walls opens up and closes off views as you traverse. The small glimpses you get of what lies on the other side are almost more enchanting than the pool that is before you. Moving to the opposite site you are confronted with a miniscule café. It seems as if the openings and changing views have been made more specifically for those patrons sitting at the tables. At every seated position, based on your angle to it, a different window into the courtyard is opened to you. It provides glimpses from a dull, hard, and enclosed space, into a soft and peaceful setting. The effect is riveting, drawing you to experience what lies on the other side.



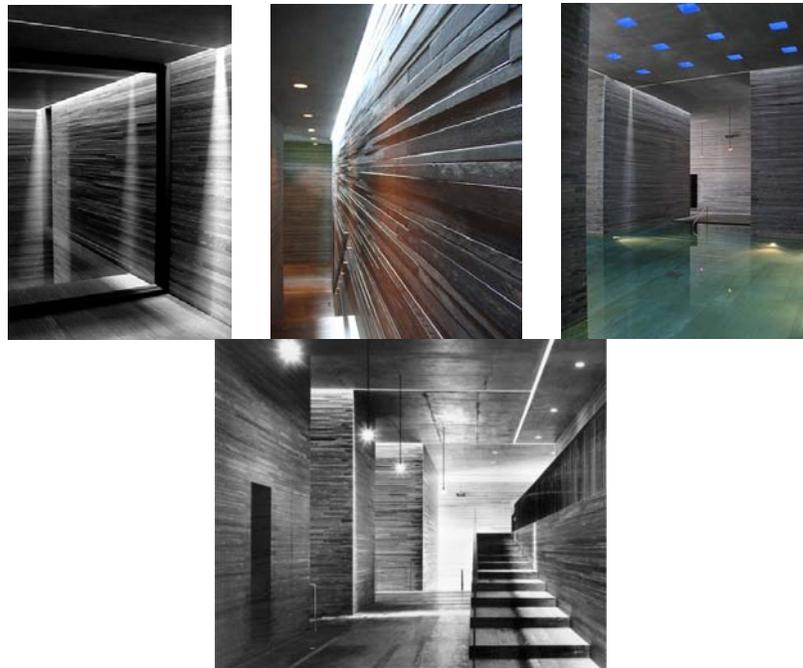
<http://www.flickr.com/photos/srdaly/2385858789/>, <http://www.flickr.com/photos/raphaelfranca>

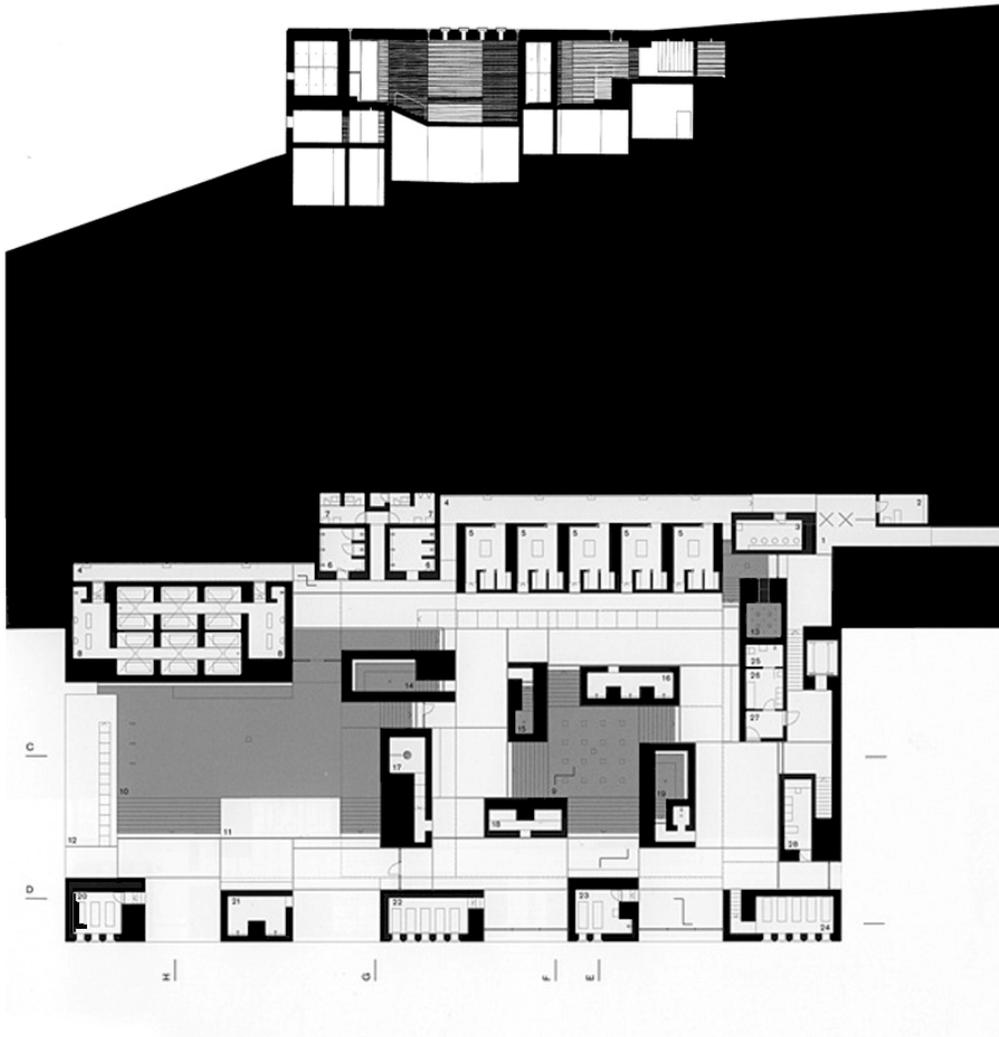
## Senses and Choice

*Thermal Baths, Vals, Switzerland, Peter Zumthor.* Peter Zumthor sees materials, and the craftsmanship thereof, as means to the creation of spaces and places that, as he says, “invite me to dwell in them.” The stone masses that house the thermal baths give it an almost labyrinth-like character, its mystery amplified by steam rising from the water and light that filters through narrow gaps.<sup>xlvii</sup>

The experience of the baths begins with a ritualistic entry sequence—a corridor lined with spigots, a trough, and a stepped ramp. These draw the participant in, and begin to engage their attention. However, once they have proceeded through the changing rooms and they reach the level of the baths, the ritual is no longer prescriptive—instead they are enticed to discover the variety of experiences available to them.<sup>xlviii</sup>

These baths have taken a common, unremarkable experience, and transformed it into a ritualistic and sensory experience. The treatment of materials, space, and light are combined with ritual and freedom of choice in such a way as to create a mystical atmosphere that makes the function of bathing an act of discovery and a more meaningful experience.



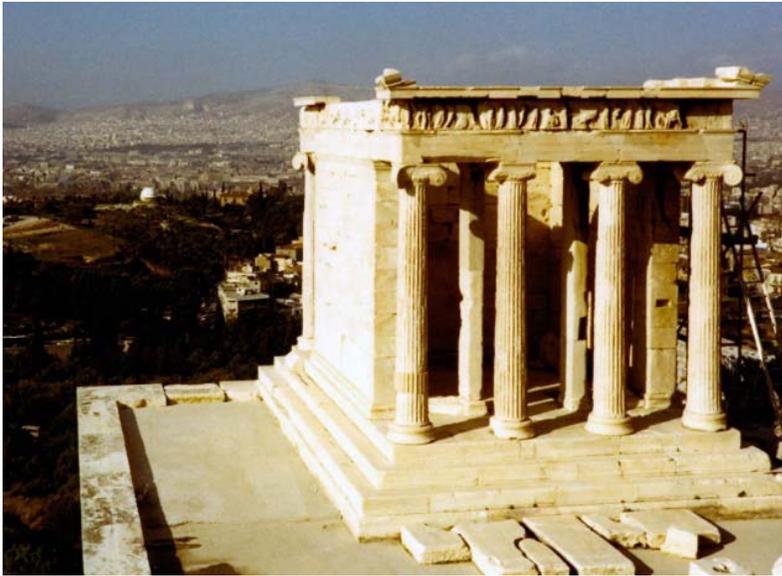


<http://www.flickr.com/photos/defoto/165394679/>, <http://www.flickr.com/photos/mattjchua/192561279/>,  
<http://www.flickr.com/photos/25483691@N05/2402306787/>, Steven Spier, "Place, Authorship and the Concrete: Three Conversations  
 with Peter Zumthor", *arq*, vol. 5, no. 1, 2001, 8.

In section, level changes and varying ceiling height range from more confined to more open in pool areas. This heightens senses and gives emphasizes the feeling of a cavern.

In plan the constricting of space and flow, and the opening up of space allows flexibility and choice of movement.

## Ancient Greek Architecture

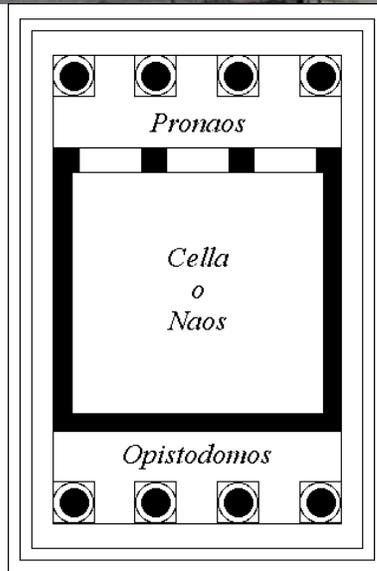


Greek architecture, according to Trachtenberg's *History of Architecture*, does not amaze and overwhelm with simply its scale and complexity; "it has vigor, harmony, and refinement that thrill the mind as well as the eye."<sup>xlix</sup>

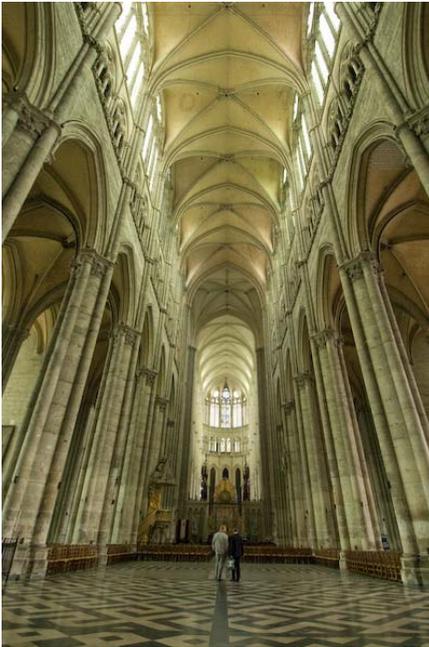
In Greece, between the eight and sixth centuries BC, philosophy, history, drama, epic literature, democracy, and science appeared. These

developments were inspired by a radical new sense of the nature of humanity and its place in the world, and the idea that individuals should strive to shape their own destinies, to exercise their own intellects and wills. These cultural values and beliefs translated into the realm of architecture as well, where man became the measure of all things. The Greek anthropomorphic outlook saw all things in the human image and with human relationships, such as male and female proportioned columns.<sup>1</sup>

Architecture for the Greeks was a way of expressing their cultural values and beliefs; even their humanistic views were used symbolically through their architecture in ways such as the use of human scale and proportion. Their values of intellect and beauty were expressed through a practical sense of order and symmetry.



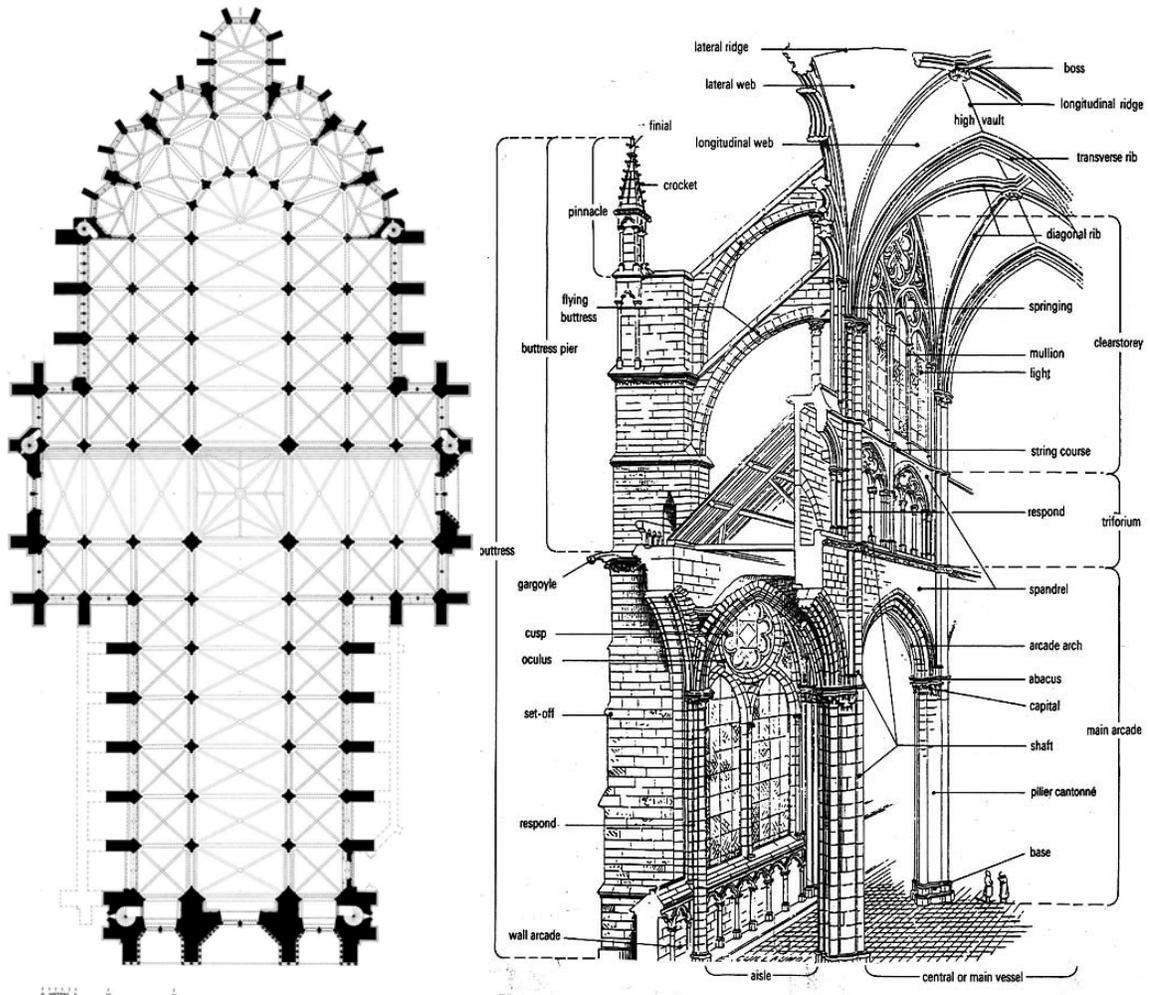
### Gothic Cathedral Architecture



During the Gothic era, the prevailing intellectual and religious movements achieved symbolic expression in cathedrals,<sup>li</sup> and used such pervasive symbolism as a representation of the house of the Lord on earth. As such, cathedrals were required to attain an otherworldly appearance, which was accomplished through its statuary and stained glass, its sheer scale and magnificence, and, most significantly, through its “inspired and calculated formal transcendence of earthly limitations.”<sup>liii</sup> The Gothic architects began with this symbolic vision of heaven as the goal, and everything else became a means to that end. Thus, the main architectural features—space, light, line, geometry—are used to help create the transcendent atmosphere of the building. The structural features—rib vaulting, pointed arches, flying buttresses—make these features possible.<sup>liiii</sup> From the inside, then, the form appears to stand “solely on the basis of supernatural force, miracle, and God’s Grace,

proclaiming the supremacy of faith over reason. As a transcendental style [these] rational, geometric structures create irrational effects.”<sup>liv</sup>

Such irrational effects are achieved in Amiens cathedral, which, as described, “Appears to overcome the limitations of mundane reality with a supernatural leap that denies its existence as mere stone and mortar” becoming a physical embodiment of transcendence.<sup>lv</sup> Gothic space is transcendent, or uplifting, because it urges the participant to rise. There are spatial experiences that are common to everyone: you feel confined in a low cavern or narrow passage, or free and exhilarated on a hilltop. “These are psychological and motor reactions that result from measuring one’s potential for movement against the surrounding spaces.” As a person enters an architect’s space, they measure it in terms of the degree and quality of the individual’s potential for movement. In the nave of a Gothic Cathedral, the high walls closely confine the individual on two sides, directing their movement, and suggesting they advance along the free space of the nave toward the altar. Their feeling of compression forces them to look upward to the vaults and the light overhead. In doing so there is a sense of physical release.<sup>lvi</sup>



The goal is to heighten senses, raise perspective upwards. Everything is in support of that goal: Tall thin elements, narrow space in proportion to height which emphasizes an already exaggerated height, and a structural system that makes this possible in a way that seems nearly impossible.

## PROJECT PROPOSAL

Project

When thinking about the potential for architecture to influence culture, one localized culture within the community of Bozeman stands out as a group that could be greatly benefited by such an endeavor: at-risk juveniles. Bridger Alternative High School is a publicly funded institution that provides, according to their mission statement, “educational alternatives for youth at risk.”<sup>lvii</sup> These at-risk factors include variables such as adolescents considering school to be meaningless, living in troublesome households, or spending time with peers who are participating in unhealthy activities.<sup>lviii</sup> The Bridger Alternative school was created as a smaller, more intimate learning environment that, as former students have recalled, provides a sort of family for many of the students, and a second chance at life for those who are in danger of dropping out.<sup>lix</sup>

Although not ideal, the current situation of the Bridger Alternative School is adequate in fulfilling the schooling needs of these adolescents. But there are limited options available for this sort of environment outside of school. I am proposing an after-school enrichment program and facility that would work in conjunction with Bridger Alternative School and that would carry on the family atmosphere as it provided for other needs as well. This facility would be able to address the physiological and psychological needs that are outlined in Maslow’s Hierarchy, as well as the need for self-actualization, through the experience of the senses. This will be achieved through the program as well as the architecture.

This facility will serve as an environment that will allow for the exploration of personal expression through different venues, such as art, music, writing, dance, drama and other hands-on experiences. It will contain spaces such as a gallery and auditorium that will allow participation in, and observation of, these expressions from peers as well as the general public, thus instilling a greater sense of pride, value, and purpose for these individuals. There would also be opportunity for students or faculty from the University, as well as for other community members, to bring their experience and expertise to this program as a further learning exploration.

The architecture itself would then address other values of self-actualization and the experience of the senses through the materiality of the architectural elements and the way they come together, as well as the arrangement of the programmatic space that would allow for choice, moments of revealing or disclosing, and symbolic treatment of materials and spaces.

Program

Spaces that respond to discovery, exploration, and experience that engage all of the senses, and open areas that allow spontaneity and growth

Offices (3) @ 100 sf. each	300
Child care facilities	1100
Studio for painting, sculpture, pottery, etc	1200
Music modules (19) @ 32 sf each for individual practice and instruction	608
Learning spaces for outside people to teach life-skills in interactive ways	1750
Kitchen, also for cooking instruction	450
Dining area	1000
Multi-purpose Auditorium (theater, dance, music, events)	1600
Library for knowledge and resources	1400
Gallery to showcase student work and interface with public	800

## SITE ANALYSIS

Site

The Proposed site is located in downtown Bozeman, on West Main Street, directly opposite from Bozeman High School. Currently the site is barren, serving mainly as a short-cut for motorists and overflow parking for adjacent businesses. It contains only a small building left over from a car wash, and a small coffee hut. The site is ideal as it is easily accessible to both Bozeman High School and students from Bridger Alternative School. It is especially convenient for those lacking transportation as it is within a block of two bus stops, and in close proximity to many other amenities. Its location in Downtown Bozeman makes it accessible for the rest of the community as well.

Site View

Circulation around and through site, and Existing Structures



Environmental Analysis**BOZEMAN, MONTANA****Monthly Climate Summary**

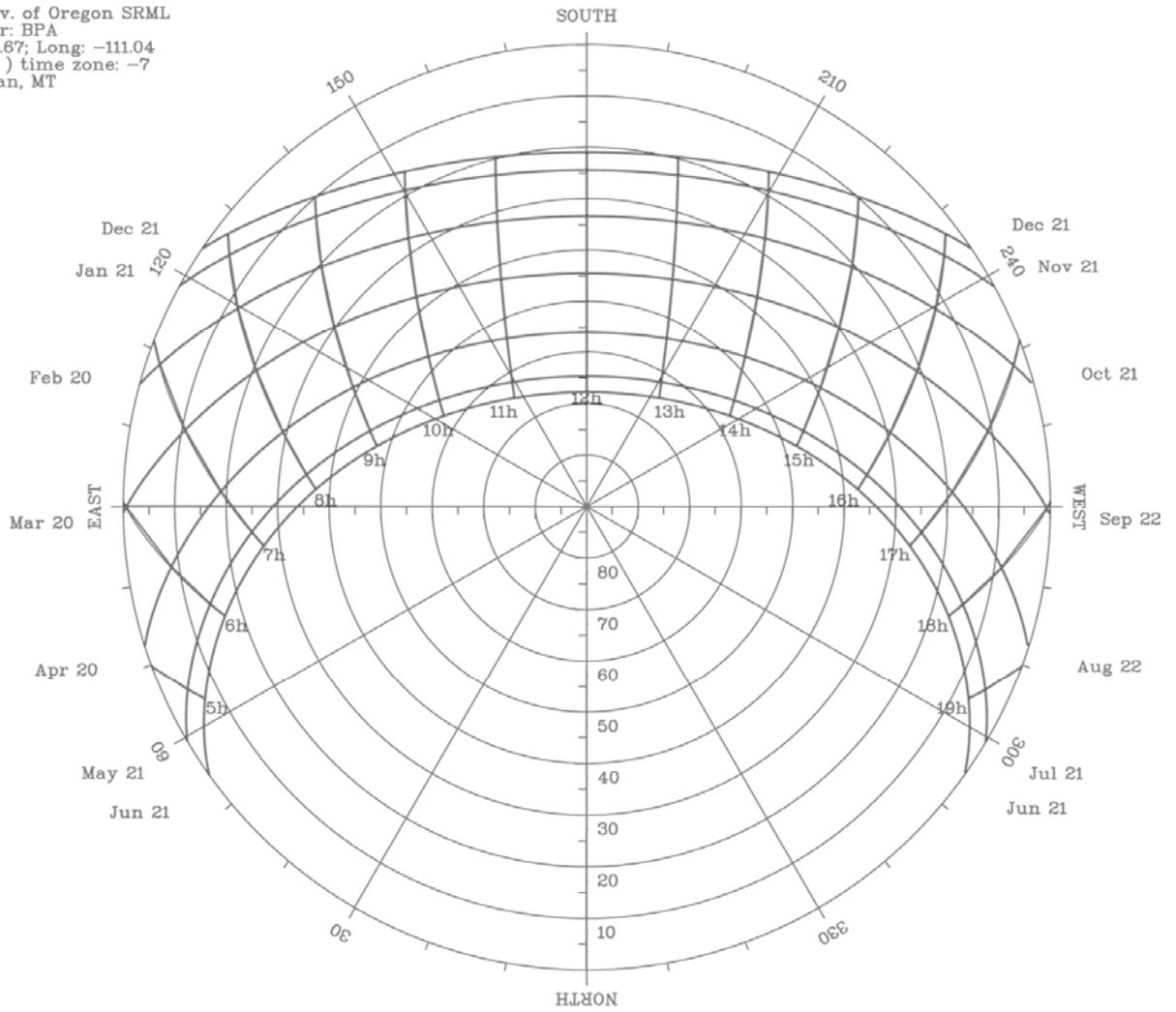
Period of Record: 4/ 8/1892 to 12/31/2005

	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Annual</b>
Average Max. Temperature (F)	31.4	35.4	42.4	53.7	63.1	71.5	81.1	80.2	69.1	57.5	42.1	33.7	55.1
Average Min. Temperature (F)	11.9	15.2	21.3	30.5	38.5	45.1	51.0	49.5	41.1	32.9	22.2	14.6	31.1
Average Total Precipitation (in.)	0.88	0.73	1.33	1.82	2.86	2.90	1.36	1.24	1.73	1.50	1.09	0.86	18.30
Average Total SnowFall (in.)	12.7	10.1	16.0	12.4	4.1	0.5	0.0	0.1	0.8	5.4	11.0	11.6	84.8
Average Snow Depth (in.)	5	5	3	1	0	0	0	0	0	0	2	3	2

<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?mtboze>**Solar Energy and Surface Meteorology**

<b>Variable</b>	<b>J</b>	<b>F</b>	<b>M</b>	<b>A</b>	<b>M</b>	<b>J</b>	<b>J</b>	<b>A</b>	<b>S</b>	<b>O</b>	<b>N</b>	<b>D</b>
Insolation, kWh/m <sup>2</sup> /day	1.46	2.27	3.38	4.45	5.24	5.89	6.29	5.37	3.99	2.62	1.65	1.26
Clearness, 0 - 1	0.47	0.49	0.50	0.49	0.49	0.51	0.57	0.55	0.52	0.48	0.46	0.46
Temperature, °F	19.94	22.73	30.97	40.44	49.82	58.08	64.94	63.70	52.43	41.00	28.18	19.99
Wind speed, mph	12.75	11.61	10.54	10.89	10.40	10.22	9.78	9.66	10.58	11.43	12.08	12.30
Precipitation, in	1.15	0.85	1.49	1.89	3.12	2.95	1.47	1.58	1.93	1.58	1.28	0.99
Wet days, d	9.1	7.6	9.7	9.3	11.4	10.2	7.1	7.3	7.3	5.8	7.4	8.8

(c) Univ. of Oregon SRML  
Sponsor: BFA  
Lat: 45.67; Long: -111.04  
( Solar ) time zone: -7  
Bozeman, MT



These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center;  
New et al. 2002  
<http://www.gaisma.com/en/location/bozeman-montana.html> , <http://solardat.uoregon.edu/cgi-bin/PolarSunChart.cgi>

CODE

**CURRENT ADOPTED CODES IN THE STATE OF MONTANA**

International Building Code, 2006 Edition - Effective: January 26, 2007

([http://mt.gov/DLI/BSDB/bc/current\\_codes.asp](http://mt.gov/DLI/BSDB/bc/current_codes.asp))

SECTION 305 - EDUCATIONAL GROUP E

**305.1 Educational Group E.** Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade. Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 508.3.1 and have occupant loads of less than 100, shall be classified as A-3 occupancies.

**305.2 Day care.** The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 <sup>1</sup>/<sub>2</sub> years of age, shall be classified as a Group E occupancy.

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.

Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to: Symphony and concert halls; Theaters

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: Art galleries; Libraries

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.

SECTION 504 - HEIGHT

TABLE 503  
ALLOWABLE HEIGHT AND BUILDING AREAS

Height limitations shown as stories and feet above grade plane.  
Area limitations as determined by the definition of "Area, building," per story

GROUP	HGT(feet)	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
A- 1	S	UL	5	3	2	3	2	3	2	1
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
A- 3	S	UL	11	3	2	3	2	3	2	1
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
E	S	UL	5	3	2	3	2	3	1	1
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500

UL = Unlimited, NP = Not permitted.

**504.2 Automatic sprinkler system increase.** Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum height is increased by 20 feet (6096 mm) and the maximum number of stories is increased by one. These increases are permitted in addition to the area increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum height is increased by 20 feet (6096mm) and the maximum number of stories is increased by one, but shall not exceed 60 feet (18 288 mm) or four stories, respectively.

SECTION 506 - AREA MODIFICATIONS

**506.1.1 Basements.** A single basement that is not a story above grade plane need not be included in the total allow-able area, provided such basement does not exceed the area permitted for a building with no more than one story above grade plane.

TABLE 508.3.3  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

	A <sup>e</sup> , E I		R <sup>d</sup>		F-2, S-2 <sup>c,d</sup> , U <sup>d</sup>		B <sup>b</sup> , F-1, M <sup>b</sup> , S-1		H-1		H-2		H-3, H-4,H-5			
OCCUPANCY	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS		
A <sup>e</sup> , E <sup>e</sup>	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3 <sup>a</sup>

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.  
 NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.  
 N = No separation requirement.  
 NP = Not permitted.

CHAPTER 6  
TYPES OF CONSTRUCTION

TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A <sup>e</sup>	B	A <sup>e</sup>	B	HT	A <sup>e</sup>	B
Structural frame <sup>a</sup>	3 <sup>b</sup>	2 <sup>b</sup>	1	0	1	0	HT	1	0
Bearing walls									
Exterior <sup>g</sup>	3	2	1	0	2	2	2	1	0
Interior	3 <sup>b</sup>	2 <sup>b</sup>	1	0	1	0	1/HT	1	
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior <sup>f</sup>	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	1 1/ 2 <sup>c</sup>	1 <sup>c, d</sup>	1 <sup>c, d</sup>	0 <sup>c, d</sup>	1 <sup>c, d</sup>	0 <sup>c, d</sup>	HT	1 <sup>c, d</sup>	0

a. The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.

b. Roof supports: Fire-resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

c. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking

where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

d. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

e. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

f. Not less than the fire-resistance rating required by other sections of this code.

g. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. The building elements shall have a fire-resistance rating not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602.

**602.2 Types I and II.** Type I and II construction are those types of construction in which the building elements listed in Table 601 are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code.

TABLE 602  
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H	OCCUPANCY GROUP F-1, M, S-1	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, U <sup>b</sup>
$X < 5^c$	All	3	2	1
$5 \leq X < 10$	IA	3	2	1
	Others	2	1	1
$10 \leq X < 30$	IA, IB	2	1	1 <sup>d</sup>
	IIB, VB	1	0	0
	Others	1	1	1 <sup>d</sup>
$X \geq 30$	All	0	0	0

#### SECTION 1004 - OCCUPANT LOAD

**1004.1 Design occupant load.** In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

TABLE 1004.1.1  
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Accessory storage areas, mechanical equipment room	300 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Business area	100 gross
Day care	35 net

Educational			
Classroom area		20	net
Shops and other vocational room areas		50 net	
Kitchens, commercial		200 gross	
Library			
Reading rooms		50	net
Stack area		100 gross	
Locker rooms		50 gross	
Mercantile			
Basement and grade floor areas		30	gross
Stages and platforms		15 net	

**1004.7 Fixed seating.** For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces and wheel-chair spaces, shall be determined in accordance with Section 1004.1.1 and added to the number of fixed seats.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

SECTION 1005 - EGRESS WIDTH

TABLE 1005.1  
EGRESS WIDTH PER OCCUPANT SERVED

OCCUPANCY	WITHOUT SPRINKLER SYSTEM		WITH SPRINKLER SYSTEM <sup>a</sup>	
	Stairways (inches per occupant)	Other egress components (inches per occupant)	Stairways (inches per occupant)	Other egress components (inches per occupant)
Occupancies other than H and I	0.3	0.2	0.2	0.15

a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

SECTION 2902 - MINIMUM PLUMBING FACILITIES

[P] **2902.1 Minimum number of fixtures.** Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 2902.1 Types of occupancies not shown in Table 2902.1 shall be considered individually by the building official. The number of occupants shall be determined by this code. Occupancy classification shall be determined in accordance with Chapter 3.

[P] TABLE 2902.1  
 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES <sup>a</sup>  
 (See Sections 2902.2 and 2902.3)

No.	Classification	Occupancy	Description	Water closets		Lavatories	Bathrooms/ Showers	Drinking Fountains	Other
				Male/	Female	Male/ Female			
1	Assembly (see Sections 2902.2, 2902.4 and 2902.4.1)	A-1 <sup>d</sup>	Theaters and other buildings for the performing arts	1 per 125	1 per 65	1 per 200	—	1 per 500	1 service sink
		A-3 <sup>d</sup>	Auditoriums without permanent seating, art galleries, and libraries,	1 per 125	1 per 65	1 per 200	—	1 per 500	1 service sink
3	Educational	E	Educational facilities	1 per 50		1 per 50	—	1 per 100	1 service sink

# PROJECT DOCUMENTATION

**Structural Analysis of Weaving**



**Woven sphere support cells**  
Members compressed and tensioned to resist external loads. In a spherical form, all members are equidistant.

Nodes self-supporting, combined with tension and compression members.

Method of forming wire structure.



Materials: various sizes of wood, bamboo, steel.  
Process: woven material, wooden framework.

Another layer continuously added to create a structure together. Only in certain places.

Interconnected thin plates designed to be self-supporting and continuously supported.

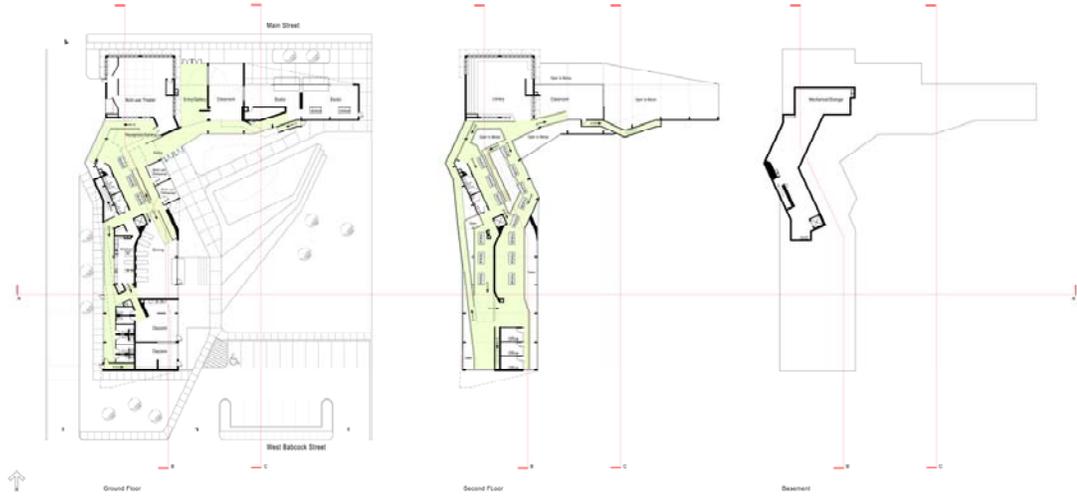
**Woven applied to building:**  
Internal arrangement of system and circulation through levels, walls, etc.

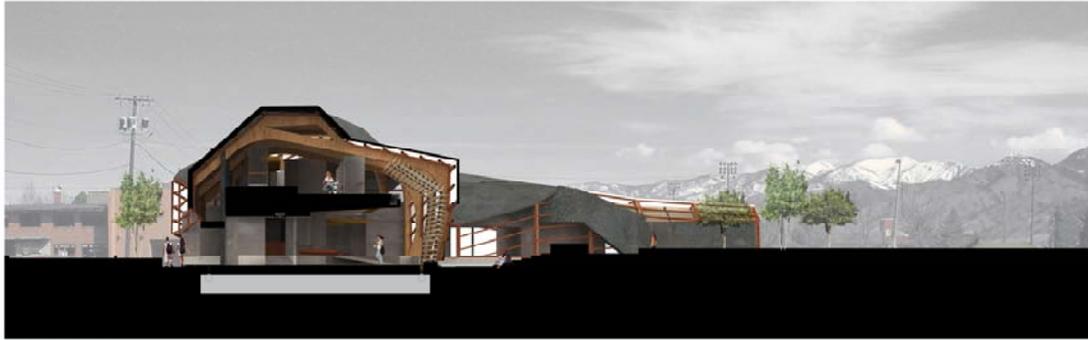
**External:** an arrangement of detail in proportion.

**Material/Structure/Action Space:**  
How important spaces support spaces.  
Main Secondary Spaces  
Legitimate Circulation

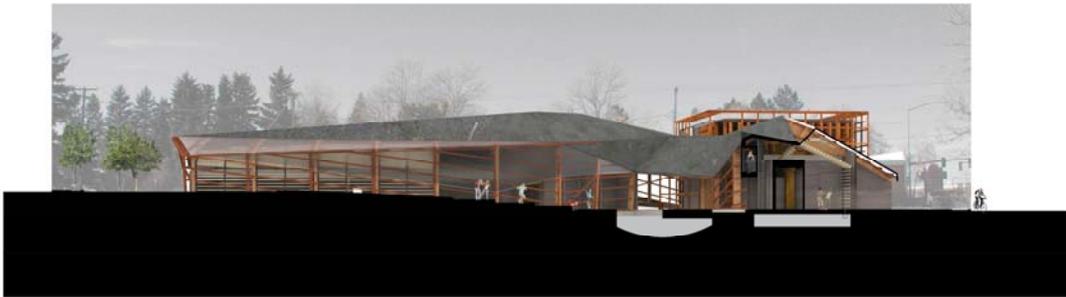
**Anchor Spaces:** Auditorium, Library, Dining Commons, Book Store, Entry.  
**Intermediate Spaces:** Board Room, Learning Spaces.  
**Support Spaces:** Kitchen, Offices, Office, Conference, Mechanical, Storage.  
Circulation Paths, Staff, Service Personnel, Entrances.







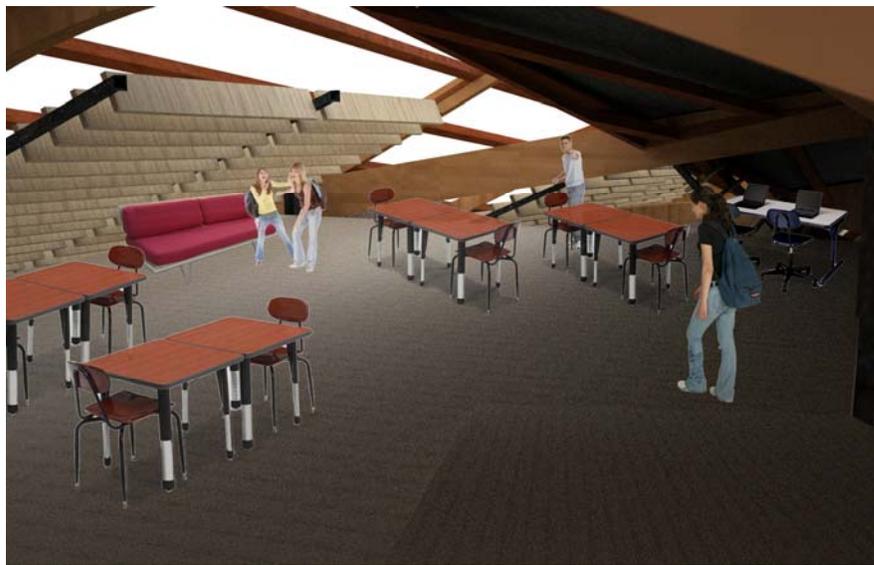
Cross Section A 1"=1/8"

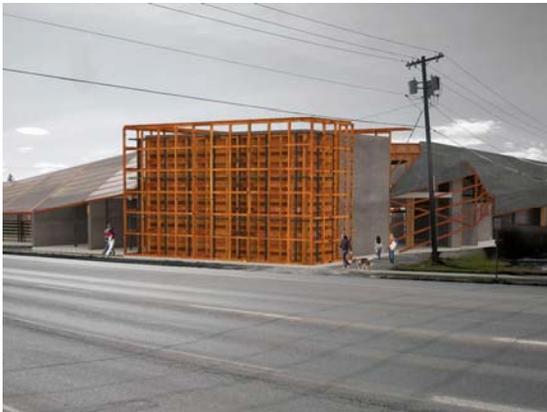


Cross Section C 1"=3/32"

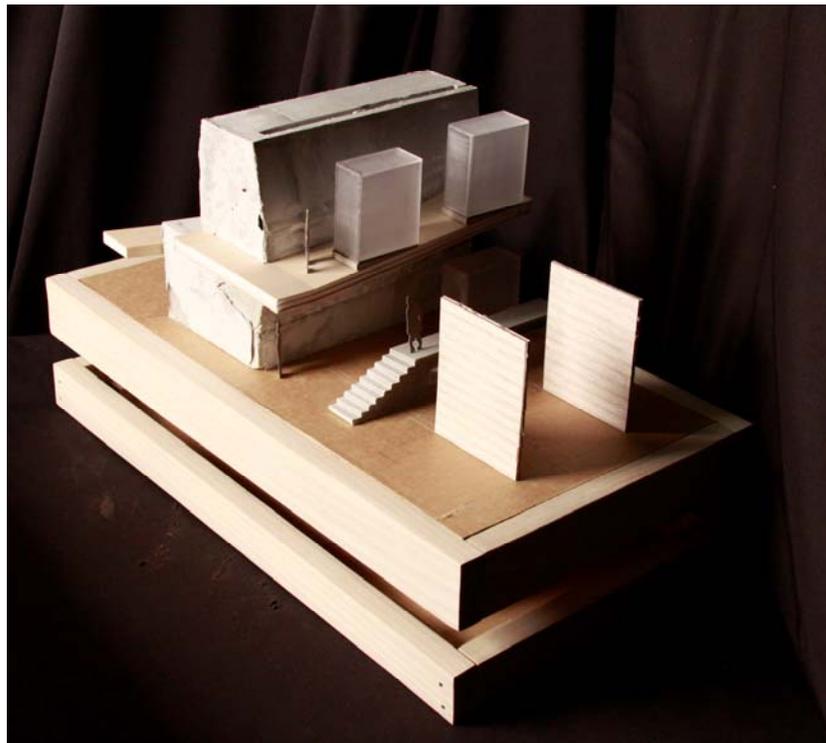


Longitudinal Section B 1"=3/32"











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