

Creating a Multiple Intelligences Landscape

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ABSTRACT

The built environment should facilitate a meaningful experience for a user by intellectually engaging their perceptual and cognitive abilities. In 1983, Howard Gardner published his cognitive theory of multiple intelligences. Gardner theorizes that human intelligence is not one single capacity, but is comprised of multiple capacities. Many teachers use the multiple intelligences theory as a tool to reach a larger number of students by engaging their unique learning styles. The theory of multiple intelligences is one way to interpret how an individual might understand, perceive or experience their surroundings. I used Gardner's theory as a framework to develop design criteria that can be used by designers to create landscapes or environments that engage people in an intellectual and meaningful way. By designing a site that will engage different individuals' unique methods of understanding, a landscape architect can create landscapes that will capture attention and promote a unique personal experience through the creation of sense of place. I believe that this in turn can also be used as a tool for articulating design ideas and analyzing current landscapes.

My research begins with a review of Mihaly Csikszentmihalyi's theory of flow and what is needed to achieve this playful state. The answer is to engage a user with a challenge. This led me to Howard Gardner's theory of multiple intelligences. After a review of his work, I used his theory to analyze several case study landscapes. Based on this research, I developed a set of preliminary design criteria that can be used as an outline or a starting point for designers.

I chose the Joe L. Evins Appalachian Center for Crafts (ACC) in Smithville, Tennessee as my site for beginning my understanding of the range of uses that the multiple intelligences possess within a landscape. The ACC is a visual arts school whose mission is to preserve and educate people about the culture and techniques of Appalachian crafts. The mediums that are taught are clay, glass, metal, fibers, and wood.

My design exploration leads me to conclude that the outcome of a multiple intelligences landscape will be shaped by several factors: the personal strengths and weaknesses within the multiple intelligences of the designer; the sites, which will determine the intelligences designed for; and the design process as a collaborative effort. Therefore, the design solution produced is not the strength of this research project, but rather it is that the development, process, and conclusions reveal a strong case for the inclusion of engaging the user intellectually.

DEDICATION

For my family - my rock!

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* Unless otherwise noted all figures, illustrations, and photographs were created by the author.

PART ONE

“Most people ... adhere to two assumptions about intelligence: first, that it is a single, general capacity that every human being possesses to a greater or lesser extent; and that, however defined, it can be measured by standardized verbal instruments, such as short-answer, paper-and-pen test. ...I ask you to perform two thought experiments. First of all, try to forget that you have ever heard of the concept of intelligence as a single property of the human mind, or of that instrument called the intelligence test, which purports to measure intelligence once and for all. Second of all, cast your mind widely about the world and think of all the roles or “end states” –vocational and avocational- that have been prized by cultures during various eras. ...In my view if we are to encompass adequately the realm of human cognition, it is necessary to include a far wider and more universal set of competences than we have ordinarily considered.”

-Howard Gardner, Frames of Mind, p. x, 1983.

CHAPTER 1: INTRODUCTION

To create meaningful experiences within a built environment, the landscape should engage the user's perceptual and cognitive abilities. In 1983, Howard Gardner, a developmental psychologist at Harvard University, introduced his theory of Multiple Intelligences. Gardner claims that intelligence is not limited to one capacity, but that intelligence can be broken down into eight different capacities. The eight intelligences are: logical-mathematical, musical-rhythmic, bodily kinesthetic, verbal-linguistic, visual-spatial, naturalistic, intrapersonal, and interpersonal. With an understanding of the inherent traits of each of the eight intelligences, a landscape architect can design exciting landscapes that cater to each of the user's skills within the individual intelligences. By creating a multiple intelligence landscape, a landscape architect will be providing a place for the user to potentially experience flow. Mihaly Csikszentmihalyi, professor and former chair of the psychology department at the University of Chicago, conceived flow theory in 1990. Csikszentmihalyi describes flow as a state of consciousness that occurs when a person's skill level is matched to an introduced challenge. The result of the convergence of skill and challenge produces a wondrous feeling due to the absorption into the activity. Flow is a creditable goal for landscape architects because of the many benefits that result. During a state of flow a user of a multiple intelligence landscape is utilizing her skills to the utmost to solve a problem, therefore those skills are being improved through cognitive development. This improvement allows the user to understand or tackle a more difficult challenge during the next encounter. According to Csikszentmihalyi, obtainment of higher skill levels causes a person to be a more unique individual by becoming less predictable and the owner of less common skills. This in turn helps a person to be more productive and creative, and to reach outstanding achievement. Overall the experience of flow aids in personal growth through experience (Csikszentmihalyi, 1990). Creating multiple intelligence landscapes is one way to provide the necessary challenges for the user to enter flow.

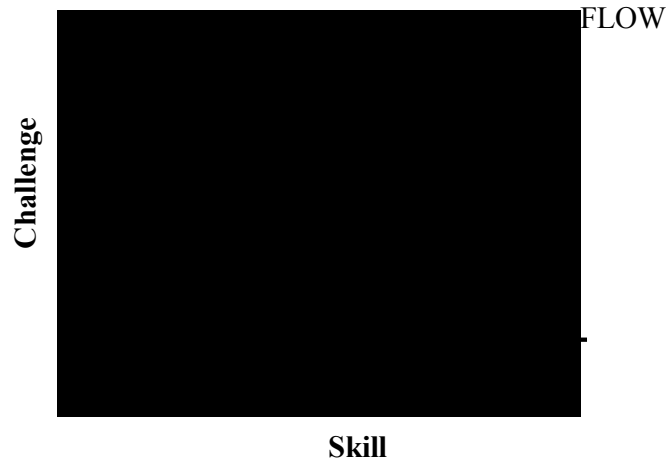
CHAPETR 2: LITERATURE REVIEW

Flow:

The state of flow has been described as an autotelic experience or a "state of mind when consciousness is harmoniously ordered" (Csikszentmihalyi, 1990, p. 217). The state of flow is intrinsically motivated because it results in an experience that has been described as playful, as feeling in control, concentration is highly focused, mental enjoyment, a distorted sense of time and a conjunction of ones skill level and introduced challenges.

Flow is the symbiotic relationship of engagement between life's challenges and one's skills (Figure 2.1). The state of flow only occurs when one's current skill level is equal to the activity's degree of challenge. If a person begins an activity that has a high degree of challenge and does not have the skills to match it, anxiety will occur. Conversely, boredom is the result of a skill level that is too advanced for the challenges presented. To reach flow a person must engage in an activity that has a degree of challenge that is comparable to his or her current skill level. The absorbing result of this is that the activity transforms the experience into a harmonious and restorative learning opportunity.

*Figure 2.1 Chart of Flow
(Csikszentmihalyi, 1990)*



A challenge can be almost anything from rock climbing to reading a book. A challenge is an activity that aids in the learning of skills, has set goals, gives feedback, can be controlled or varied, and has clear structure. Csikszentmihalyi (1990) found that all challenges “whether they involved competition, chance, or any other dimension of experience” had in common a “provided sense of discovery and a creative feeling of transporting the person into a new reality,” (p. 74).

Flow does not occur during times of sedentary relaxation or during activities that present little challenge, such as watching television. A person's mind must be engaged and be interactive with the activity. Given that the germane qualities are present, almost any activity can be playful and facilitate flow. The result of entering flow is the improvement of personal skills. A landscape architect can create opportunities for flow by providing challenges within a landscape. One possible way to design challenges is to address each of Gardner's eight intelligences in the development of physical design of places.

Multiple Intelligences:

Howard Gardner defines intelligence as “the ability to solve problems, or create products, that are valued within one or more cultural settings” (1983, p. x). Brian Haggerty (1995), an educator, interprets Gardner’s definition of intelligence by explaining problem solving as “the ability to locate and pursue appropriate routes to a desired goal” and that the “creation of a cultural product permits an individual to capture and transmit knowledge or to express views or feeling” (p. 4). Intelligence provides the opportunity for the recognition or creation of problems that require attainment of new knowledge to solve. Gardner’s view of intelligence covers a broad range of cognitive abilities by incorporating systems of symbols, different values of many cultures, and an acknowledgement of a variety of intellectual accomplishments (Haggerty, 1995).

Gardner (1983) proposes there are eight distinct forms of intelligence and every individual possesses each form to varying degrees. The eight intelligences are: logical-mathematical, musical-rhythmic, bodily kinesthetic, verbal-linguistic, visual-spatial, naturalistic, intrapersonal, and interpersonal.

The logical- mathematical intelligence is defined by the ability to recognize abstract patterns, perform inductive and deductive reasoning, perform complex calculations, and think scientifically about investigation (http://www.gardnerschool.org/multiple_intelligences.html). This intelligence is not auditorially or orally based but numerically based in thought. Someone who strongly possesses this intelligence would be able to think in numbers and understand the patterned relationship of objects, their order and quantity. The development of this intelligence progresses from the understanding of “objects to statements, from actions to the relations among actions, from the realm of the sensorimotor to the realm of pure abstraction and ultimately, to the height of logic and science” (Gardner, 1983, p. 129).

Musical- rhythmic intelligence is the ability to appreciate the rhythm and structure of music, to create and reproduce sound, rhythm, music, tone and vibration, and also a heightened sensitivity to sounds and vibration patterns (http://www.gardnerschool.org/multiple_intelligences.html). While most of the components of music are dependent on auditory ability, such as pitch and tone, rhythmic organization can exist without the ability to hear. Music is understood through the horizontal and vertical relationships of the pitches and tones through time. Rhythmic understanding can be demonstrated through the use of a “series of colored forms” (Gardner, 1983, p. 105). The musical- rhythmic intelligence tends to develop early during childhood and along a predictable path. The active participation of listening to music is symbiotic with the relationship of composing and performing; they nurture one another (Haggerty, 1995).

The bodily kinesthetic intelligence is classified by ones ability to control voluntary body movements, mimetic movements, to

gain understanding through the awareness of the body and through the mind- body connection (http://www.gardnerschool.org/multiple_intelligences.html). People who have a high skill level within the bodily kinesthetic intelligence have strong gross and fine motor skills and have a good sense of timing. The perception of the world is influenced by the degree of motor skills, in that the “position and status of the body itself regulates the way in which subsequent perception of the world takes place” (Gardner, 1983, p. 211). The development of bodily kinesthetic skills can be compared to Jean Piaget’s stage theory of cognitive development (Miller, 1999). Piaget, a professor and scholar of developmental psychology, proposed a theory that a child progresses from sensorimotor, to preoperational, to concrete operations and finally to formal operations corresponds with the development of bodily skills because both start with the combination of sucking and looking and move to reaching and looking. The combinations evolve to grasping, next to passing, building simple structures, and then complex displays (Gardner, 1983). This development tends to be constant across many cultures.

Linguistic intelligence takes the form of verbal memory and recall, having a flair for words, the ability to teach or explain verbally, and linguistic based humor (http://www.gardnerschool.org/multiple_intelligences.html). These individuals not only understand the meaning of words but also the subtle differences between synonyms. They comprehend grammar and know the appropriate times it should be followed or when it can be bent for artistic elegance. In addition, the ability to use language to evoke an array of emotions, such as excitement, suspense, or sadness is the understanding of the different functions of language. When a person possesses the ability for linguistics he or she can excel at the “rhetorical aspect of persuasion”, the ability for clear explanation, and mnemonic tools for memorization. This ability is taken to its highest form when the individual can artistically compose written works that express and reveal memories of experience. Linguistic intelligence is not limited to oral or auditorial ability, but can also be demonstrated by a deaf individual through gesture or rhythm, such as sign language or music.

The visual- spatial intelligence is associated with being able to form mental images, understanding your relationship to the space occupied, mental manipulation, visual perception from alternative angles, visual memory, and an active imagination (http://www.gardnerschool.org/multiple_intelligences.html). These qualities allow one to view the “visual world accurately, to perform transformations and modifications upon one’s initial perceptions, and to be able to re-create aspects of one’s visual experience, even in the absence of relevant physical stimuli” (Gardner, 1983, p. 173). Spatial intelligence is not limited to the visual realm but can be possessed by a blind individual. For that individual must have an understanding of space in order to move through it without visually seeing with his or her eyes; instead they see it with their mind. These tasks of transformation or modification can be challenging due to the number of mental rotations that may be required. Gardner (1983) cites psychometrician, L.L. Thurstone’s theory that spatial

intelligence is divided into three branches: “the ability to recognize the identity of an object when it is seen from different angles; the ability to imagine movement or internal displacement among the parts of a configuration; and the ability to think about those spatial relations in which the body orientation of the observer is an essential part of the problem” (p. 175). The ability to recognize an object that has been transformed is possible by being able to imagine the object turn in a “graphic likeness of spatial information” (p. 176). These abilities help one to recognize familiar surroundings or ones that have been altered; to use maps or other graphic depictions; or to understand the form and tension that is created by lines in a space.

The most recent intelligence added to Gardner’s theory is the naturalistic intelligence. This intelligence is associated with classification and recognition. The naturalistic intelligence encompasses the ability to grow things, sensitivity to flora and fauna, understanding peoples’ impact on nature and nature’s impact on people, and classification of not only species but also artificial items. These artificial items, such as artistic style, shoes, or cars, are classified by using the same skills that one would use to classify a species of flower. The naturalistic intelligence is not only being able to identify species but also the desire and enjoyment of interacting with nature. An example of this would be someone who enjoys a communion with nature through training and caring for animals, taking nature hikes, or simply watching the natural processes of the world. Naturalistic intelligence is not limited to sight, but can be experienced through touch, smell, and sound, which are vital to the understanding of small shades of differences of similar objects or species. Gardner also theorizes that the basic perceptual skills of artists, poets, and scientists aid in the recognition of patterns within nature and society (Gardner, 1999).

The personal intelligences, intrapersonal and interpersonal, are closely linked and intertwined. These personal intelligences work together in a circular relationship where the interpersonal interaction with others informs the intrapersonal knowledge of oneself, which then influences the interpersonal interactions and so forth. These two intelligences cannot develop separately. The intrapersonal intelligence is the understanding of one’s internal self, to understand feelings and emotions that can guide behavior. The basic form of intrapersonal intelligence is the ability to understand and label the difference between opposing emotions, feelings, and sensory stimuli. The other end of the spectrum is the ability to “detect and symbolize complex and highly differentiated sets of feelings” (Gardner, 1983, p. 239).

The interpersonal intelligence is defined by the outward relationship and understanding of other’s moods or motivations. The fundamental ability of this intelligence is to be able to distinguish among different people and their temperaments. The ability to understand and interpret others feelings or intentions, even when hidden, is the more advanced side of the interpersonal intelligence (Gardner, 1983).

The interpersonal knowledge gained from the observed consequences and reactions of other's behavior helps influence the intrapersonal understanding of internal decisions and choices. This new intrapersonal understanding dictates the interpersonal relationship with others. All of this understanding can be defined by a cultural system of symbols and meanings that aid in the interpretation of experience. These cultural symbols can be defined as "rituals, religious codes, and mythic systems" (Gardner, 1983, p. 242). According to Gardner (1983) the overall interaction and combination of these two intelligences helps to form one's "sense of self" (242). The result of the development of self helps a person to experience and interact with his or her environment.

CHAPTER 3: CASE STUDIES

Landscape architects have the opportunity to influence a user's experience through creatively designing landscapes that are cognitively engaging. John Dewey (1934) said "an experience has pattern and structure, because it is not just doing and undoing in alternation, but consists of them in relationship. ...The action and its consequence must be joined in perception. This relationship is what gives meaning; to grasp it is the objective of all intelligence" (p. 44). A stimulating landscape helps provide users with enjoyable and meaningful experiences.

One approach to encouraging meaningful experiences within a stimulating landscape is to design for flow by providing adequate challenges. By using Gardner's theory of multiple intelligences as the influencing design criteria, challenges can be produced that engage users at various cognitive levels. These challenges allow the user to exercise personal skills, which in turn set the user up for entering flow.

The relationship between landscape architecture and multiple intelligences begins to be demonstrated in the following landscape examples. The major landscape elements, their relationships, and the overall experience within these landscapes, provides the opportunity for one or more of Gardner's intelligences to be engaged (Figure 2).

Sonic Garden:

In 1992 Bill and Mary Buchen designed the Sonic Garden located in the Bronx of New York City. The Buchens have been working with and creating interactive sound since forming their firm SonArc, sonic architecture, in 1980.

The Sonic Garden is an excellent example of a unique and imaginative landscape that engages the musical/ rhythmic intelligence by providing stimulating elements that help foster the understanding of sound. Vercelloni (1996) described the garden as having a fence that has small wind chimes along the top surrounds the playground. The drum tables and chairs are designed for communal

collaboration. These tables and chairs are made of bronze and are hollow. The larger table is designed to auditorially resemble an Africa drum, while the smaller tables and benches resemble Chinese drums. The smaller tables and benches are different heights and therefore each emits a different sound. The parabolic bench is composed of two large parabolic dishes. Standing in-between these two parabolas allows the user to experience the refraction of sound. By clapping the sound is bounced back and forth between the two parabolas. Next, Big Eyes/ Big Ears combines sight with sound. The seventeen-foot high periscope transfers the surrounding sound and visual landscape from six feet above down to the user. Then, the echo chambers are acoustic sculptures that transmit sound down and through a buried drainage pipe. The sound taps in a nearby bench can then diffuse the sound from the echo chambers. The students can use all of these sound elements to create an instantaneous musical composition or use their newfound knowledge to compose with the large carillon bells on the roof. The Bronx sound garden is an interactive landscape that interactively demonstrates the properties of sound waves and diffusion of sound by engaging the musical/ rhythmic intelligence.

Nike Corporate Campuses:

The Nike World Headquarters in Beaverton, Oregon and the Nike European Headquarters in Hilversum, Holland, both provide an innovative work environment. Designed by Mayer-Reed and Nelson-Byrd, both corporate campuses provide opportunities and elements that engage the naturalistic, body/ kinesthetic, and personal intelligences. While the same intelligences are engaged on both campuses, they are approached in slightly different ways.

According to Bennett (2000), the Oregon campus accommodates employees by providing amenities on the campus, such as dry cleaning and childcare. As a result, employees can spend more time on campus. The overall design of the campus, such as the use of a twenty-foot berm to enclose the site, also contributes to the idea of creating a secure place for the employees. This fort-like campus provides an intrapersonal setting for the corporation. Conversely, the Hilversum campus was designed to physically connect with the surrounding town. This connection helps to create an interpersonal relationship between the corporation and the town. Even though the two campuses are different overall, within each campus engagement for each of the personal intelligences is provided. This engagement is intertwined with other intelligences. For example, the naturalistic intelligence is engaged by the preserved wetlands and forest, the addition of bioremediation ponds, and the serene gardens. The body/ kinesthetic intelligence is engaged through the provided sports opportunities, such as basketball, volleyball, American football, Olympic size track, and the running trail that intertwines through the campus and old growth forest. The elements that engage the naturalistic and body/ kinesthetic intelligence also provide opportunities for the interpersonal (teamwork) and intrapersonal (self-reflection) intelligences.

Living Water Park:

The naturalistic intelligence is highly engaged by the Living Water Park, located along the Fu River in Chengdu, China. The park was designed by Margie Ruddick as an educational model for people to learn and observe the natural processes of water. The polluted river water is pumped into the park and is then sent through a series of water elements to remove the pollutants naturally. After the water is pumped into the park it enters a settling pool that lets large pollutants drop out of the water's flow. The water then moves through an aeration canal. The canal is filled with flowing forms of sculpture that help toxins filter out. The next step is the filtering ponds that are shaped like fish scales. These ponds are constructed wetlands and fishponds. The revitalized water then moves down through the last phase of the filtration stream and back into the Fu River. This whole process can be watched and followed along paths and bridges. By moving through the site with the water, the system tells a story of how nature can heal itself and the consequences of pollutants. The journey that the water and user take through the site engages the naturalistic intelligence by increasing the understanding of nature and the users impact on nature and therefore heightening the users sensitivity to our connection with and dependency on nature (Living Water Park, 2000).

Jacob Javits Plaza:

The Jacob Javits Plaza in New York, City designed by Martha Schwartz, engages both the visual- spatial intelligence, as well as the interpersonal and intrapersonal intelligences. The looped design of the benches engage the personal intelligences by allowing the user to either gather with a group in the inter-curves of the loop or be secluded on the outer-curves. The loops either form a circle, which is conducive to a group gathering or an intimate conversation. The outer edges of the loops create an arc that gives the user the feeling of seclusion and the opportunity for privacy and personal reflection. The geometric shapes of the benches and grassy mounds engage the visual- spatial intelligence. The flowing forms move the eye and mind through the visual composition of the site. The imagination is invited to snake the bright green benches around the topiary like grass mounds that seem to be popping out of the ground. This visually stimulating plaza invites many interpretations and leaves one wondering if there is something happening below the surface (Weilacher, 1999).

The Green:

Through the use of programmed activities and opportunities for challenge, the relationship between multiple intelligences and landscape architecture begins to appear. The above-mentioned projects begin to show how a landscape can offer a challenge that

engages one or two of the eight intelligences. The Green in downtown Charlotte, North Carolina is an example of a landscape that begins to engage all of the multiple intelligences within one setting.

The Green, designed by Cole, Jenest, and Stone, is an urban park that offers a place for respite from the busy hustle of business. Projects for Public Spaces correspondent, Adam Hines said “people who visit the park, and I have seen packs of business men in suits in the park on their lunch hours, congregate there and take a mental break from the stress and mundane routine of life. The park sort of reminds you to be a child of life, to think outside the proverbial box, and smell the roses, etc. It feels like an artist and landscape architect got together and decided to create an outdoor room that would engage people of all ages, backgrounds, and education levels” (http://www.pps.org/gps/one?public_place_id=404).

The 1.5-acre park contains a scattering of commissioned artworks and is heavily planted. The mentally stimulating works of art set the whimsical atmosphere for people to feel invited to play. While there is minimal physical interaction, there are plenty of mental stimuli to engage the user. The alcoves and paths contain interactive elements such as areas to play chess, fountains to run through, and poems in the path to decode. Figure 3.1 shows an alcove which houses three smaller areas that engage the logical- mathematical, visual-spatial, linguistic, and the personal intelligences. The seating areas (Figures 3.2, 3.3, 3.4) include chairs, benches, and chess tables that are artfully decorated with mosaics (Figure 3.5) that contain inspirational words. Between these areas, five distinct mosaic stools form a third circular seating area. The chess table and mosaics engage the logical- mathematical and visual- spatial intelligences through reasoning, abstract pattern recognition, visualizations, and understanding relationships within space. The inspirational words engage the linguistic intelligence through the connotations of the words and their connections to one another. Lastly because these areas are for multiple users, they facilitate the engagement of the interpersonal intelligence.

The fountain (Figure 3.6) provides stimuli for several intelligences through its design. The rhythmic sound of the water engages the musical intelligence, while the innate qualities of the water engage the naturalistic intelligence. The giant fish also engages the naturalistic intelligence as well as the visual- spatial intelligence. The poetic words within the fountain employ the linguistic intelligence and the spiral pattern of the words along with the other spiral gestures engages the logical- mathematical intelligence. The overall interaction between the elements of height, water and movement engage the visual- spatial intelligence.

Within the paths tactile patterns have been integrated as well as riddles, poems, and sensor stimulated noises. The word elements require the use of the linguistic intelligence to sort through them and decipher their meanings (Figure 3.7). The tactile patterns and the hopscotch board utilize the bodily kinesthetic intelligence by incorporating fine and gross motor skills. The textured paths and patterns expands understanding through the interpretation of touch and body awareness. The hopscotch board, open spaces, stonewalls,

and flowing paths allow for running, jumping, and climbing. Finally, there are two paths that contain motion sensors that play recorded nature sounds that utilize the musical intelligence.



Figure 3.1 Alcoves with mosaics games & quotes



Figure 3.2 South checkers/ chess area of alcove



Figure 3.3 North checkers/ chess of alcove



Figure 3.4 Close up of mosaic chair



Figure 3.5 Mosaic seat in middle of alcove



Figure 3.6 Fish fountain



Figure 3.7 Riddles embedded in pathway

Multiple Intelligences Types

Site Name	Location	Designer	Type of Landscape	Visual/Spatial	Body/Kinesthetic	Verbal/Linguistic	Logical/Mathematical	Musical/Rhythmic	Naturalistic	Interpersonal	Intrapersonal
Sonic Garden	Bronx, New York	Bill & Mary Buchen, 1992.	Elementary School Playground					Sound Manipulation -Diffusion -Refraction -Creation			
Nike Corporation	Beaverton, OR & Hilversum, Holland	Mayer/Reed (US) Nelson-Byrd (Netherlands)	Corporate Campuses		Programmed Sports -Volleyball -Basketball -Football -Track				forest -Wetlands (preserved) -Ecological site remediation	-Holland Campus as whole, -Sports	-Oregon campus as a whole, -Nature trails
Living Water Park	Chengdu, China	Margie Ruddick, 19	Urban Bioremediation Park						-Presentation of natural systems -Display of remediation process		
Jacob Javits Plaza	New York City, NY	Martha Schwartz, 1997.	Urban Plaza	-Benches and mounds provide geometric division of vertical and horizontal space						arranged for group interaction	-Benches arranged for quiet personal reflection
The Green	Charlotte, NC	Cole, Jenest and Stone, 2002.	Urban Park	Division of space: -Symmetric flow -Patterns -Movement	Elements to climb and physically navigate -Walls -Sculptures	-Poems -Riddles -Word associations -Literary references	-Chess -Checkers -Mosaic -Geometric patterns, and distances	-Rhythmic pattern of sounds	Choice of: -Plant materials -Hardscape materials -Use of Water	-Multiplayer games -Group gathering areas	-Opportunity for self reflection and spiritual growth

Figure 3.8 Matrix of Case Studies

CHAPETR 4: FINDINGS & CONCLUSIONS

Findings:

Landscape Architects can begin to see the relationship between design and play by studying the Sonic Garden, Nike's Headquarters, Living Water Park, and the Jacob Javits Plaza. These projects demonstrate how one or two of the multiple intelligences can be engaged within or by a landscape to provide a playful experience. For example, a trait of the body kinesthetic intelligence is that a person's mind and body communicate with one another, resulting in an understanding between the two. Athletes often develop a level of communication that allows them to understand when they can push themselves and when they should stop. The design of the Nike Corporate Headquarters site provides the opportunities for employees to develop a connection between their body and mind. The site also engages the naturalistic intelligence through the preservation of forests and the opportunity to interact with nature. The Green in downtown Charlotte, NC is a good example of how a landscape can be designed to engage all eight of the multiple intelligences. The various elements within the small park engage each of the intelligences and therefore the overall atmosphere of The Green is very stimulating.

Figure 4.1: Preliminary criteria for multiple intelligence engagement, outlines the traits of each of the intelligences and then gives examples of how a landscape architect could design an element to engage that trait. For example, the naturalistic intelligence includes the understanding of natural processes. Living Water Park is a great landscape to demonstrate the relationship between the traits of the naturalistic intelligence and design. Through the design of the park the natural processes of water remediation is revealed. By revealing this process a visitor to the park can see how water and nature can restore itself and strengthen or begin their understanding of nature and the self. Traits of the Musical intelligence include the recognition, creation, and reproduction of sound, rhythm, music, tones, and vibration. The Sonic Garden provides opportunities for all of these traits to be engaged through the playful drums and sound parabolas.

Unintentionally most landscapes engage at least one or two of the multiple intelligences, but consciously designing a landscape to engage multiple intelligences can help to produce a more meaningful experience for the user. This meaning comes from the understanding that is gained by interacting with the site and the elements within the site. These elements or the site itself engages the user because they are being cognitively challenged in eight different ways. These challenges will hopefully engage the user to the point the surrounds or activity absorbs them into a flowful and playful experience.

Traits of Intelligence

Design Criteria for Landscape Architects

<p>Logical/Mathematical Intelligence</p> <ul style="list-style-type: none"> • Abstract pattern recognition • Inductive reasoning • Deductive reasoning • Discerning relationships and connections • Performing complex calculations • Scientific thinking and investigation 	<ul style="list-style-type: none"> • Elements that convey or compare distances • Logical sequences of elements or events • Creation of line, geometric form • Patterns using mathematical elements
<p>Musical/Rhythmic Intelligence</p> <ul style="list-style-type: none"> • Appreciation for the structure of music and rhythm • "Schemas" or "frames" for hearing music • Sensitivity to sounds and vibrational patterns • Recognition, creation and reproduction of sound, rhythm, music, tones and vibration • Appreciating characteristic qualities of tones and rhythms 	<ul style="list-style-type: none"> • Music, Sound, Vibration, Tone: <ul style="list-style-type: none"> • Creation • Manipulation • Mimic/ Reproduction • Description/ Explanation • Sounds of nature or man emphasized
<p>Bodily/Kinesthetic Intelligence</p> <ul style="list-style-type: none"> • Control of "voluntary" body movements • "Pre-programmed" body movements • Expanding awareness through the body • Mind-body connection • Mimetic abilities • Improved body functions 	<ul style="list-style-type: none"> • Challenges various levels of fitness: <ul style="list-style-type: none"> • Understanding of limits • Fine/ Gross motor skill challenges • Movement, Balance, Stretch, Stillness, Agility challenges • Movement effects movement of other element: <ul style="list-style-type: none"> • Relationship between mind and body
<p>Verbal/Linguistic Intelligence</p> <ul style="list-style-type: none"> • Facility with words • Explaining, teaching and learning verbally • Convincing others of a course of action (persuasive speaking and writing) • Meta-linguistic analysis (language investigating itself) • Linguistically-based humor • Verbal memory and recall 	<ul style="list-style-type: none"> • Literary references • Riddles, rhythms, puns • Areas for communication

Figure 4.1: Preliminary criteria for multiple intelligences engagement

<p>Visual/Spatial Intelligence</p> <ul style="list-style-type: none"> • Active imagination • Finding your way in space • Forming mental images (visualizing) • Graphic representation (painting, drawing, sculpting, etc.) • Recognizing relationships of objects in space • Mental manipulation of objects • Accurate perception from different angles • Visual Memory 	<ul style="list-style-type: none"> • Patterned or Geometric space divisions • Visual stories • Mental manipulation challenges: <ul style="list-style-type: none"> • M.C. Escher like <ul style="list-style-type: none"> ▪ le: sculpture • Distortion of space, size, shapes, colors • Opportunity to create or manipulate space, size, view, color
<p>Naturalistic Intelligence</p> <ul style="list-style-type: none"> • Communion with nature • Sensitivity to nature's "flora" • Growing things • Caring for, taming and interacting with living creatures • Recognizing and classifying members of a species • Appreciating the impact of nature on the self and the self on nature 	<ul style="list-style-type: none"> • Reveal natural process of nature • Planting areas for creation, reproduction • Planting choice: <ul style="list-style-type: none"> o Different plants but relate in small hidden way • Interaction with surroundings: Urban or Rural
<p>Interpersonal Intelligence</p> <ul style="list-style-type: none"> • Effective verbal/non-verbal communication • Sensitivity to others moods, feelings, temperaments and motivations • Creating and maintaining "synergy" • Deep listening to and understanding the perspective of another • Empathy • Working cooperatively in a group 	<ul style="list-style-type: none"> • Sports areas • Group interactive elements • Gathering areas • Outdoor classrooms
<p>Intrapersonal Intelligence</p> <ul style="list-style-type: none"> • Concentration of the mind • Mindfulness ("stop and smell the roses") • Metacognition ("thinking about thinking") • Awareness and discrimination of one's range of emotions • Awareness of personal goals and motivations • Transpersonal sense of the self • Spiritual awareness 	<ul style="list-style-type: none"> • Quiet areas • Memorial areas • Areas w/ views of large expanses of land <ul style="list-style-type: none"> • Reflection areas • Areas for individual creation or manipulation of space and surroundings • Labyrinths • Contemplation points or walks

Left Side of Table:
Traits of Intelligences from: http://www.gardnerschool.org/multiple_intelligences.html

Right Side of Table: Developed and created by author.

Conclusion:

Play is often associated with simple tasks performed by children, but this perception is inaccurate. Play is a powerful phenomenon that is intrinsically motivated and therefore sought after by people of all ages. The euphoric feeling of play engrosses a person into a world of imagination and a state of uninhibited exploration. This state of play can best be described by Mihaly Csikszentmihalyi's theory of flow. Csikszentmihalyi proposes that for flow to be reached a person must encounter a challenge. This challenge can be almost anything that engages the mind cognitively.

While all people perceive and experience the world differently, we all have the ability to learn and process information. Howard Gardner developed the theory of multiple intelligences and claims that intelligence is not a single capacity, but can be classified into eight different frames of mind. Each of the eight intelligences is composed of unique characteristics that all people possess to varying degrees. Landscape architects can use this theory to their advantage in developing designs. By using the design criteria based upon engagement of each intelligence, any landscape can become more engaging and satisfying for its users.

A landscape can be designed to encourage the state of flow by providing the necessary challenges. By using Gardner's theory to inform the criteria for designing challenges within a landscape, a flowscape is created. This flowscape can then be considered the ultimate playground.

PART TWO

CHAPTER 5: INTRODUCTION

The landscape is all around us. When a person is paying attention the surroundings or environment she cognitively processes the experience at hand. Cognition can be defined as “the process involved in knowing, or the act of knowing, which in its completeness includes perception and judgment. Cognition includes every mental process that can be described as an experience of knowing. It includes all processes of consciousness by which knowledge is built up, including perceiving, recognizing, conceiving, and reasoning” (Encyclopaedia Britannica Online). Howard Gardner’s cognitive theory of multiple intelligences is one way to interpret how an individual might understand, perceive or experience their surroundings. Gardner’s theory breaks down an individual’s intelligence into eight frames of mind. Individual experiencing their surroundings may begin their cognitive processing or understanding of the experience by drawing on their unique strengths within the eight frames of mind.

An individual visiting The Green, in downtown Charlotte, North Carolina may begin their interpretation of the site by drawing on their personal strengths among the multiple intelligences. For example, if this person were strong in the visual- spatial intelligence their understanding of the site might begin by visually interpreting the space. The Green’s spatial layout allows this individual to see the site as divided into rooms or sections. Visually, topography and materials delineate these rooms to create three grassy patios. As the individual moves through the site and continues to understand or process the experience, she may begin to see patterns or shapes emerge. The experience begins to expand as other areas of the multiple intelligences are stimulated. The total perception or understanding of the site influences the overall experience. Therefore, by designing a site that will engage different individuals’ unique methods of understanding, a landscape architect can create landscapes that will capture attention and promote a meaningful experience.

To explore my hypothesis further I needed a site that would complement a multiple intelligence landscape. This means a site where the users are predisposed to being open-minded, aware and engaged by their surroundings, and preferably an educational facility. This set of criteria led me to choose the Joe L. Evins Appalachian Center for Crafts in Smithville, Tennessee.

The Appalachian Center for Crafts (ACC) is an educational art facility where creativity is promoted and the expansion and abstraction of thought and everyday understanding is encouraged. Whether the user of the site is a student or visitor, the purpose or mission of the ACC is to educate and promote the philosophy of craft. This mission sets the initial framework for understanding the site, but by engaging the multiple intelligences an individual may begin to understand the experience of the ACC. By using the multiple intelligences theory as a guide for designing the ACC, my goal is to engage a wide variety of individuals and their unique intellectual abilities.

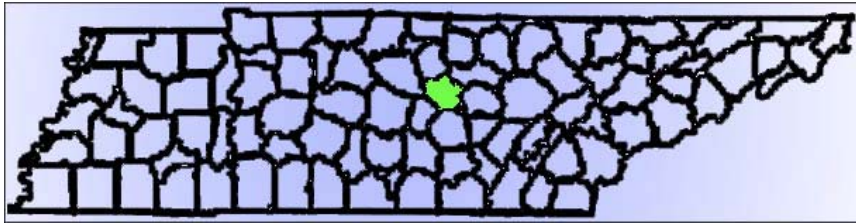


Figure 6.1 State of Tennessee

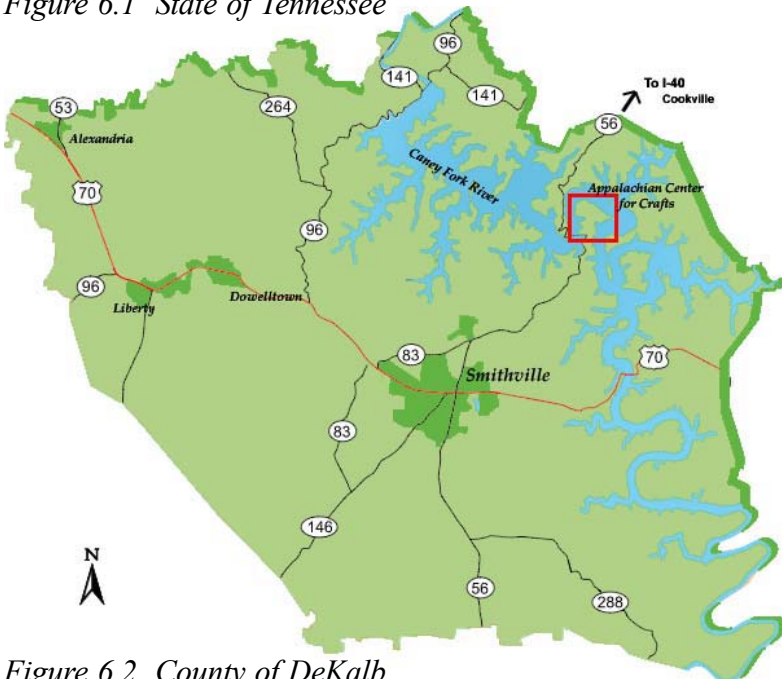


Figure 6.2 County of DeKalb

ages in traditional and contemporary crafts. The facility is nationally renowned and offers quality academic and professional programs from beginning to advanced classes, workshops and seminars. The ACC offers professional craft certificates in five areas: wood, fibers, clay, glass, and metals.

The ACC holds two annual events: the Holiday Festival and the Celebration of Craft. Both events draw large numbers of visitors and provide a showcase for the work of students, faculty and regional artists. These events help promote the school and the preservation of craft. The Holiday Festival is held after Thanksgiving and the Celebration of Craft is held the first Saturday of April.

The ACC is composed of approximately 50,000 square feet of studio facilities. The glass studio's 5,000 square feet is designed and equipped for both hot and cold functions, including blowing, acid-etching, and sand blasting. The 10,000 square feet of the clay

CHAPTER 6: SITE ANALYSIS

The Joe L. Evins Appalachian Center for Crafts is located just outside of Smithville, Tennessee in DeKalb County. The ACC campus, leased from the U.S. Army Corps of Engineers, encompasses the top 180 acres of the 562 acre peninsula and is situated along the Highland Rim, overlooking Center Hill Lake and is surrounded by wilderness (Figures 6.1, 6.2, 6.3).

The largest grant to date devoted to crafts was awarded and administered by the Appalachian Regional Commission. The Tennessee Arts Commission developed the five million dollar complex in hopes to preserve and stimulate the rich tradition of crafts in the Appalachian region. Over time the ACC has grown to include the education of designers and artist in craft techniques, exhibition and marketing, and “fostering the documentation of crafts and ethnic traditions of the Appalachian region (<http://www.craftcenter.tntech.edu/history.html>).”

The ACC, an 87,000 square feet facility, opened in December 1979 and is today a division of Tennessee Technology University, twenty-two miles away in Cookeville, Tennessee. The mission of the ACC is to foster artisans and educate people of all

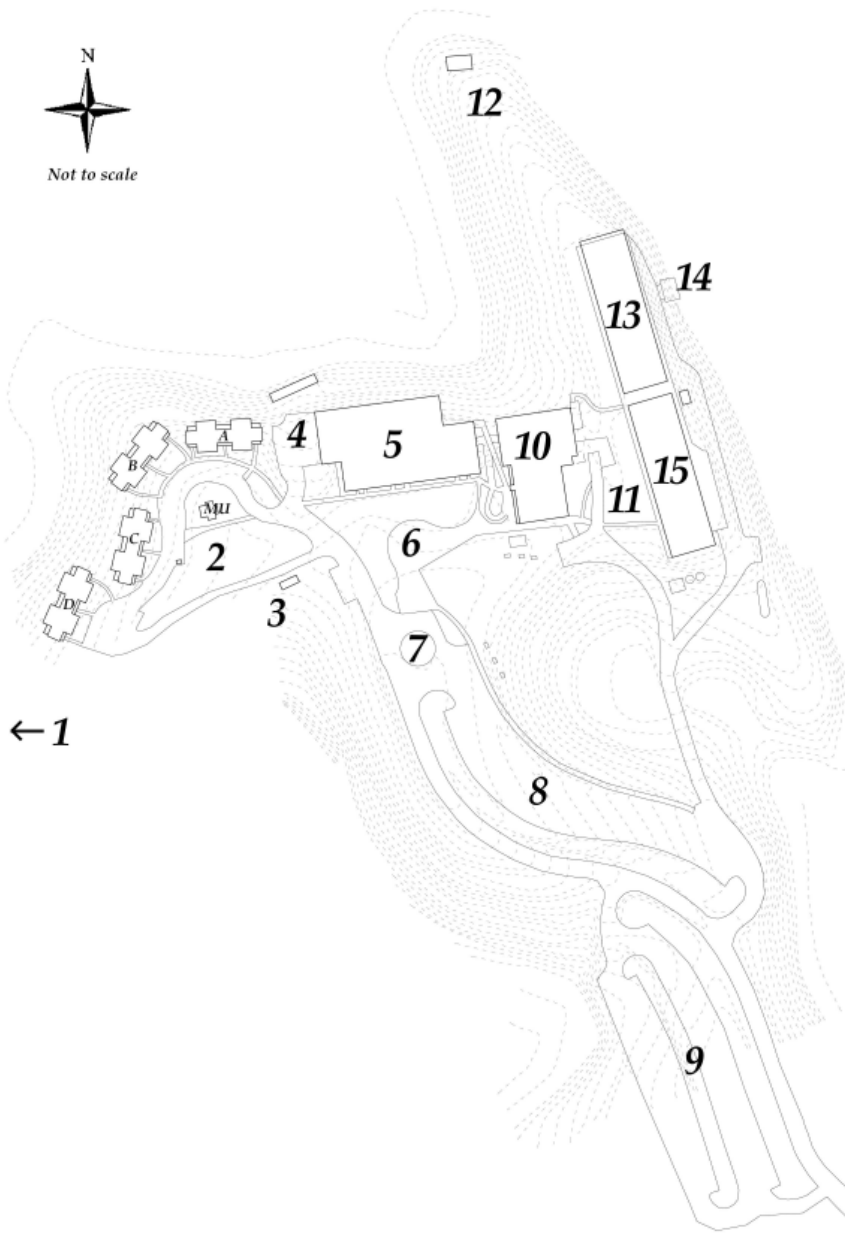


Figure 6.3 Appalachian Center for Crafts Peninsula

Craft Center Gallery sells the work of over 100 regional artists of traditional and contemporary crafts, as well as the ACC faculty, artist in residence, and the advanced students. The Gallery houses a small art supply store. The exhibition areas host over twenty-five shows annually; the exhibits range from senior BFA students, regional artist, to national and international artists. Mama Lea's Café was started and currently operated by Lea Bryan, a local resident of Smithville and a former student. The student housing area is comprised of four large cabins with front and back decks and one small cabin. The larger cabins are divided into three sections; the two end units have two bedrooms and baths and share a common kitchen- living room area, while the middle unit has four bedrooms and baths and a common living room with two kitchens. Each large cabin can hold sixteen students at double occupancy in each room. The option of having a single is available. The smaller cabin has one bedroom, a bath, and a small living room; this unit can house two students. At full occupancy the total number of students able to live in the housing units is sixty-six. The average number of students living at the ACC during the fall and spring of the academic years is around thirty-five. Most rooms are single occupancy. During the summer there are fewer students, but workshop participants fill the remaining occupancies.

studio is equipped with gas, electric, salt, wood, and raku kilns. The facilities include large areas for hand building, throwing and glazing. Fibers provides 7,500 square feet of space for weaving, spinning, dyeing, surface design, paper and book making. The 7,000 square feet wood studio houses a wide assortment of power and hand tools for laminating, joinery, carving, turning, and finishing. The 6,000 square feet allocated to the metals studio is divided among jewelry, hollow ware, blacksmithing, welding, enameling, electroplating, and space for buffing and finishing. The remaining studio spaces house classroom space, a darkroom, drafting studio, and private studios.

The ACC is also equipped with 4,000 square feet of retail and exhibition space, a supply store, two audiovisual lecture rooms, a small library, a conference room, a café, a laundry room, administration and maintenance offices and student housing. The



The ACC offers a combination of several opportunities and programs for learning. A student has the option of perusing a Bachelor of Fine Arts degree or a non-degree Craft Certificate. There are two certificates available; a Certificate of Accomplishment, for the artist that has not yet reached a professional level of skill and an Advanced Certificate, for the experienced artist wanting to develop a body of work. There is also a program for Artist in Residence (AIR). The AIR can maintain a semi-private studio space and may live and study at the ACC for up to two years. The AIR duties include teaching workshops, assisting students, and helping manage classes. Workshops are also available throughout the year. The fall and spring semesters offer evening and weekend classes and during the summer intensive five-day courses. Annually over ninety workshops are offered for all ranges of skill levels form beginner to professional. The ACC also provides outreach programs for thousands of students from regional schools. The outreach program is partly funded by the Tennessee Arts Commission and provides lectures, demonstrations and hands-on workshops.

Existing Site Map:

- | | |
|--|---------------------------|
| 1) Long Point/ Fire circle | 8) Parking |
| 2) Student Housing | 9) Overflow Parking |
| 3) Community Garden | 10) Main Building |
| 4) Shipping & Receiving/ Sewer Treatment | 11) Small Courtyard |
| 5) Fibers- Wood Building | 12) Sculpture Garden |
| 6) Main Courtyard | 13) Glass-Metal Building |
| 7) Arrival Point | 14) Deck overlooking lake |
| | 15) Clay Building |

Figure 6.4 Existing Site Map

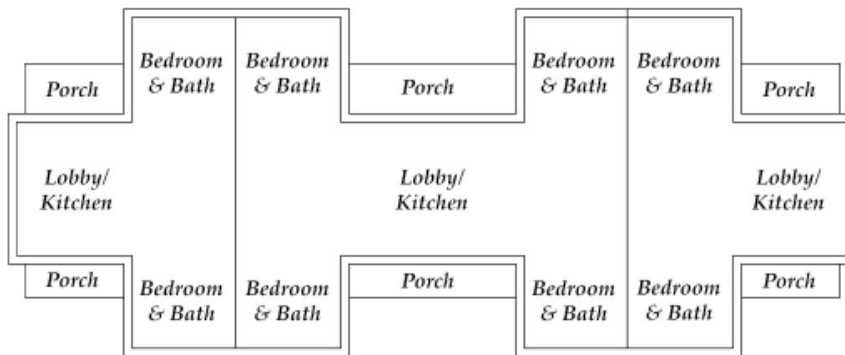


Figure 6.5 Student Housing Plan

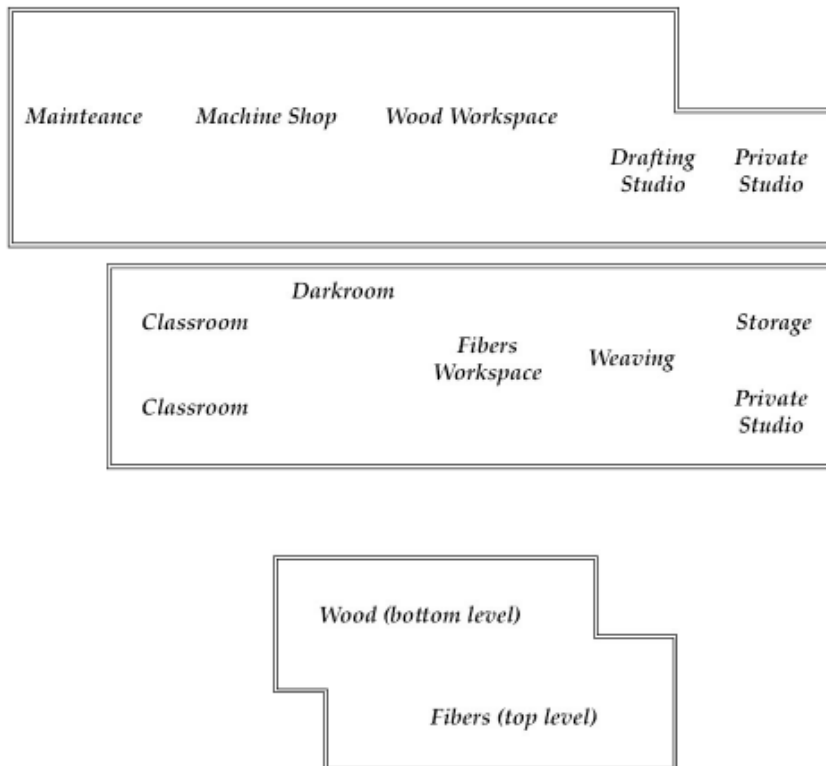


Figure 6.6 Fibers-Wood Building Plan

Existing Facilities Inventory:

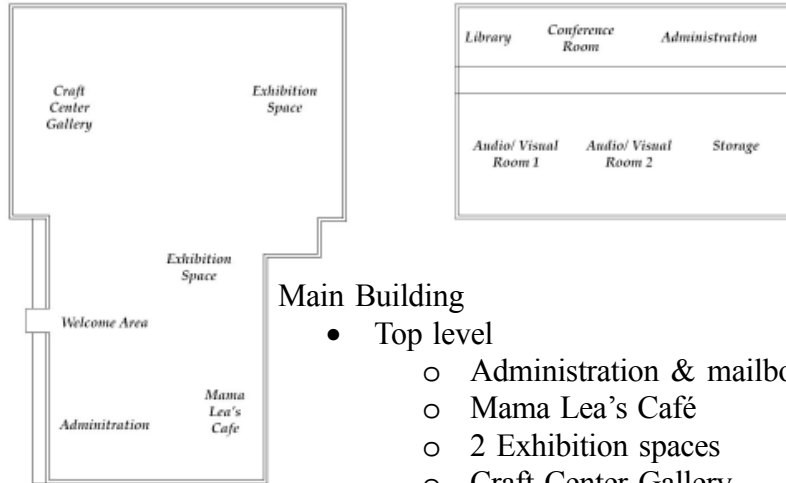
Student Housing Area

- 5 housing cabins: 4 large, 1 small
 - Each room has a full bath, walk-in closet, and Ethernet
 - A shared common area with a kitchen and overhead storage space
 - Gravel Road with student parking
 - Parallel parking along units C1-C3, D1
 - Side by side parking in front of units A1-A3, B1-B3, D2-D3
 - Dumpster located across road from C2
 - Community Garden

Fibers- Wood Building (cool wing)

- Fibers on upper level
 - Weaving area
 - 2 Group work areas
 - Private studio space
 - Office, & storage space
 - 2 Large classrooms
 - Darkroom
 - Hallway with exhibition space
 - Bathrooms
- Wood on lower level
 - Machine room
 - 2 Workrooms
 - Wood storage
 - Office & storage space
 - Drafting studio
 - Private studio
 - Maintenance
 - Shipping & Receiving
 - Water- Sewer Treatment

Figure 6.7 Main Building Plan



Main Building

- Top level
 - Administration & mailboxes
 - Mama Lea's Café
 - 2 Exhibition spaces
 - Craft Center Gallery
 - Security/ Computer room
 - Bathrooms
- Bottom level
 - 2 Audio- Visual rooms
 - Small Library
 - Large conference room
 - Storage
 - Additional office space

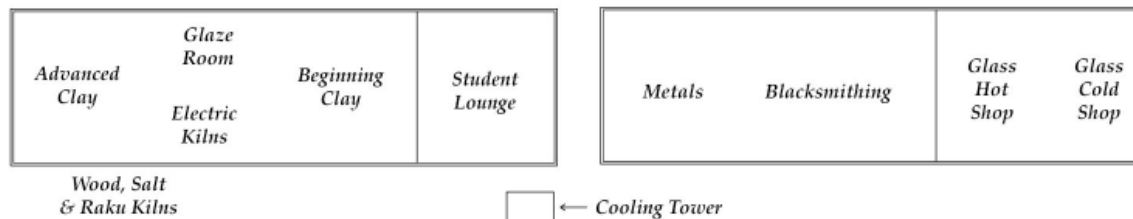
Clay Building

- Advanced student area
- Glazing room
- Beginning student area
- Electric kiln room (inside)
- Wood, Salt, & Raku kilns (covered outside)
- Clay mixing & storage room
- Office
- Private studio
- Additional shared studio space
- Bathrooms
- Student lounge area
 - Couch, TV, Computer, Drink machines, Bathrooms

Metal- Glass Building

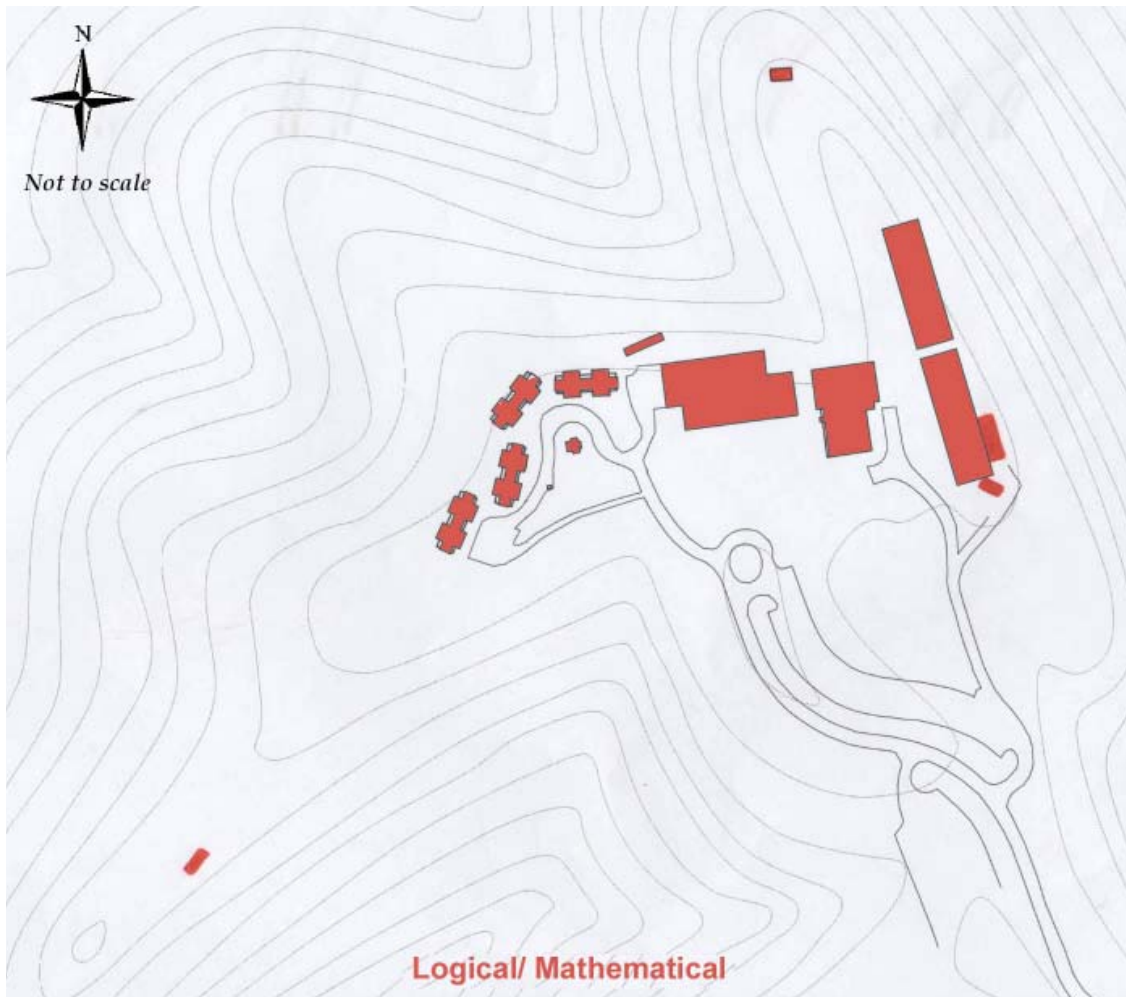
- Metal
 - Main workspace for jewelry and hollowware work
 - Blacksmithing room
 - Office
 - Storage
 - Bathrooms
- Glass
 - Hot shop
 - Cullit room
 - Cold shop
 - Office
 - Private studio
 - Shared studio
 - Informal lecture area
 - Storage
 - Bathrooms

Figure 6.8 Clay, Metal-Glass Buildings Plan



Multiple Intelligences Inventory:

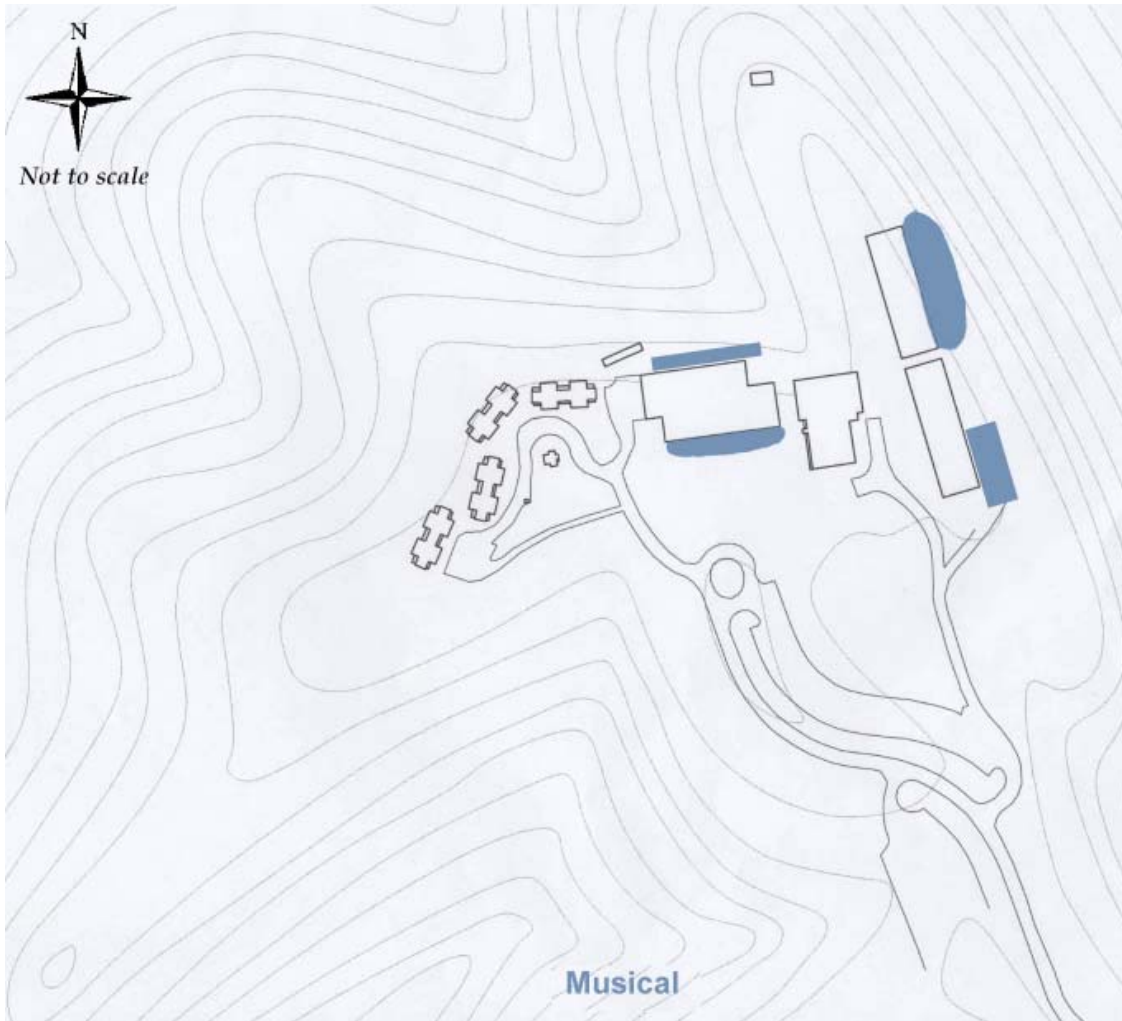
The following section inventories and maps the locations of where the multiple intelligences are engaged on the existing site.



Logical/ Mathematical

- Kilns
 - Running kilns correctly requires a mathematical understanding of temperature and time.
 - There is also a logical sequence of events that happen during the firing process, i.e.: drying, water-smoking, quartz inversion, and vitrification.
- Visual Geometry
 - The geometric shapes within and created by the architecture of the site.
 - The remaining foundations of old buildings provide a contrast between geometric and organic form.

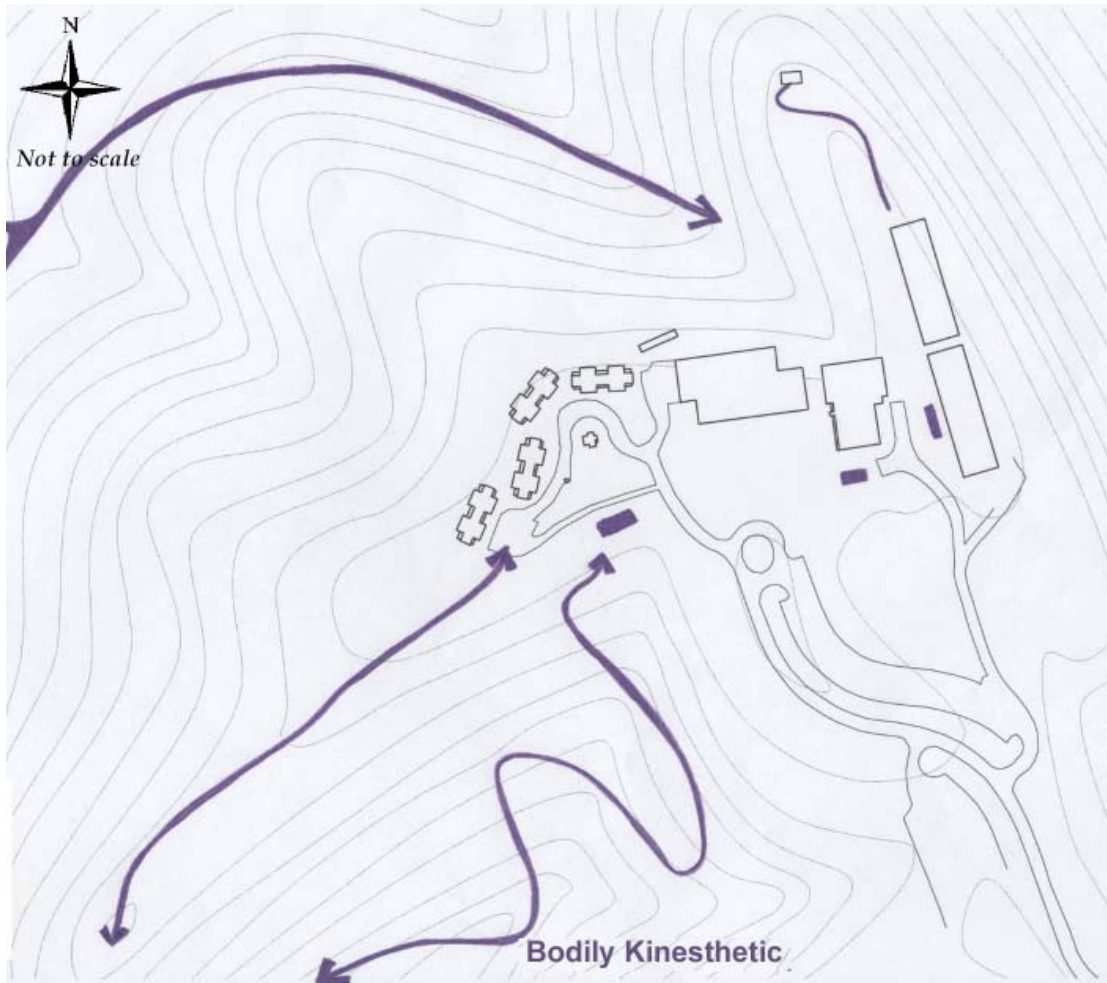
Figure 6.9 Logical-Mathematical Inventory



Musical

- Nature & Man
 - The qualities of tone and rhythm that can be heard from singing birds, trees moving in the wind and groundcover or gravel being crunched underfoot.
 - The vibrational pattern felt by trucks and cars traveling across Hurricane Bridge.
- Studio Sounds
 - Fibers: The repetitious and patterned sound created by weavers operating the beater and treadles of the loom; the rhythmic Hollander Beater working pulp for handmade paper.
 - Wood: The squeal and grind of wood being manipulated by large and small machines; the pounding and chiseling of hand tools.
 - Clay: The vibration, tone, and rhythm of throwing wheels turning, wedging tables rocking, and the fans and fire of the kilns hissing.
 - Metal: The repetition, vibration and tone of hot metal being struck by a hammer and the clicking of smaller amounts of metal being twisted into jewelry.
 - Glass: The rhythmic combination of sounds from the fans blowing, gas hissing, fire flaming, and metals tools clinking. The sound of the grind of grit and pumice to smooth glass edges.

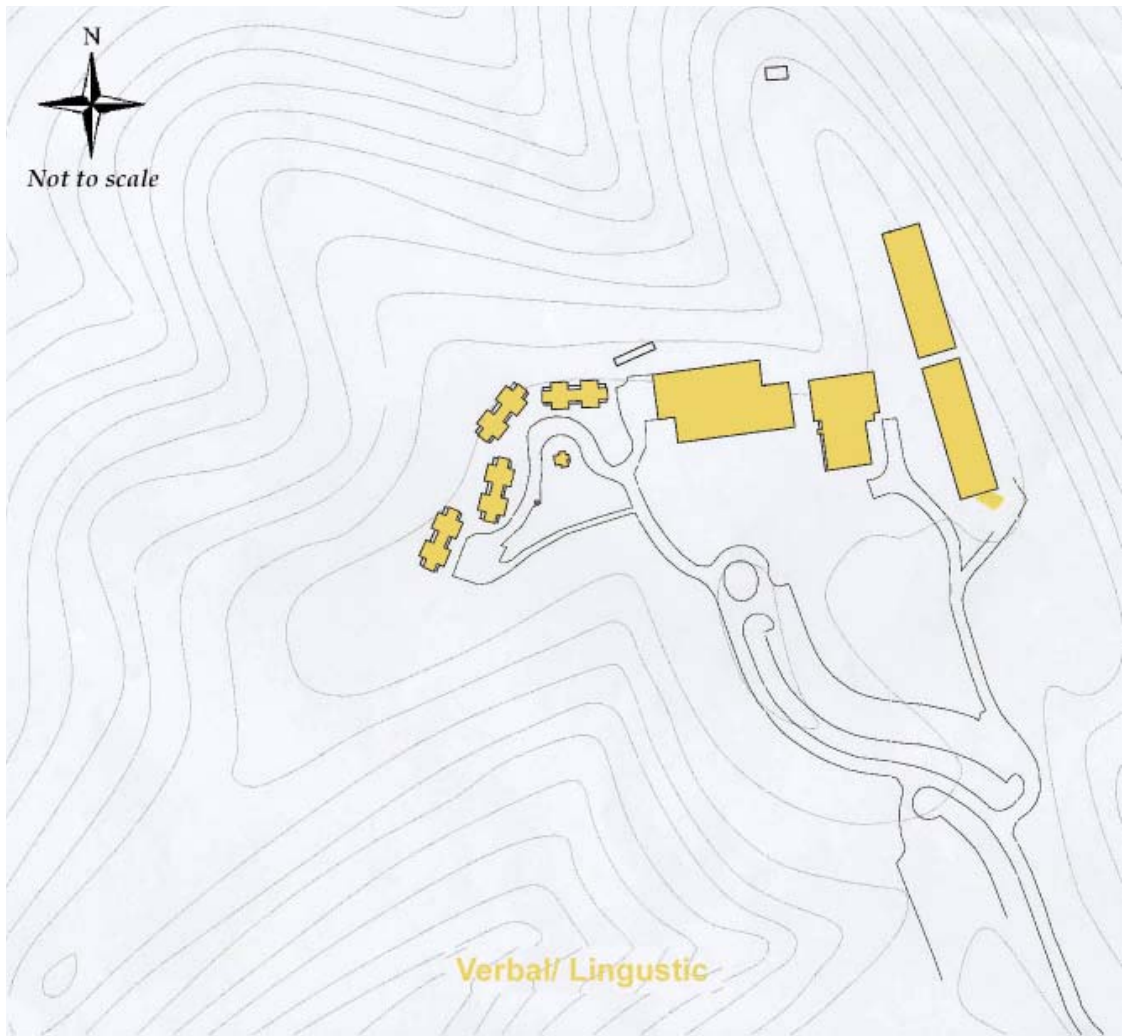
Figure 6.10 Musical-Rhythmic Inventory



Bodily Kinesthetic

- Hiking Trails & Water Activities
 - Provides opportunity for physical exertion, which tests balance, strength, endurance, and agility.
 - Each trail has different levels of difficulty. This helps the user to learn bodily limits and strengthen the mind-body connection.
- Community Garden
 - Allows the user to work both gross motor skills and fine motor skills.
 - Therapeutic activity that can increase understanding of abilities.
- Volleyball & Horseshoes
 - Tests motors skills
 - Competitive element increases mind-body connection.

Figure 6.11 Bodily Kinesthetic Inventory



Verbal/ Linguistic

- Explaining, teaching, and learning verbally happen within each studio building, outside around the kilns, and spontaneously anywhere on the site.

Figure 6.12 Verbal-Linguistic Inventory

Visual/ Spatial

- The visual and spatial elements of the site create depth, line, scale, and form. These elements can spark vivid images and imagination.
 - Views from Gathering Spaces
 - Back porches have wooded view with occasional view of lake.
 - Cabins A & B have best view of lake.
 - Outside of unit B1, facing back porch of unit A3 is beautiful dogwood and view of lake.
 - Longpoint has view of lake and bridge and large rocks as viewing platform.
 - Glass-Metals deck has view of lake with the experience at night being a visual light show.
 - Trail to Sculpture Garden
 - Moves person down and through space.
 - Sculptural elements provide geometric shape in organic environment.
 - Old building foundation creates shape contrast and engages the imagination.
 - Placement of sculptures creates new forms and spatial relationships.
 - Artwork
 - Studio created projects or spontaneous environmental art challenges ideas of form, color, negative and positive space, and subtractive and additive properties.

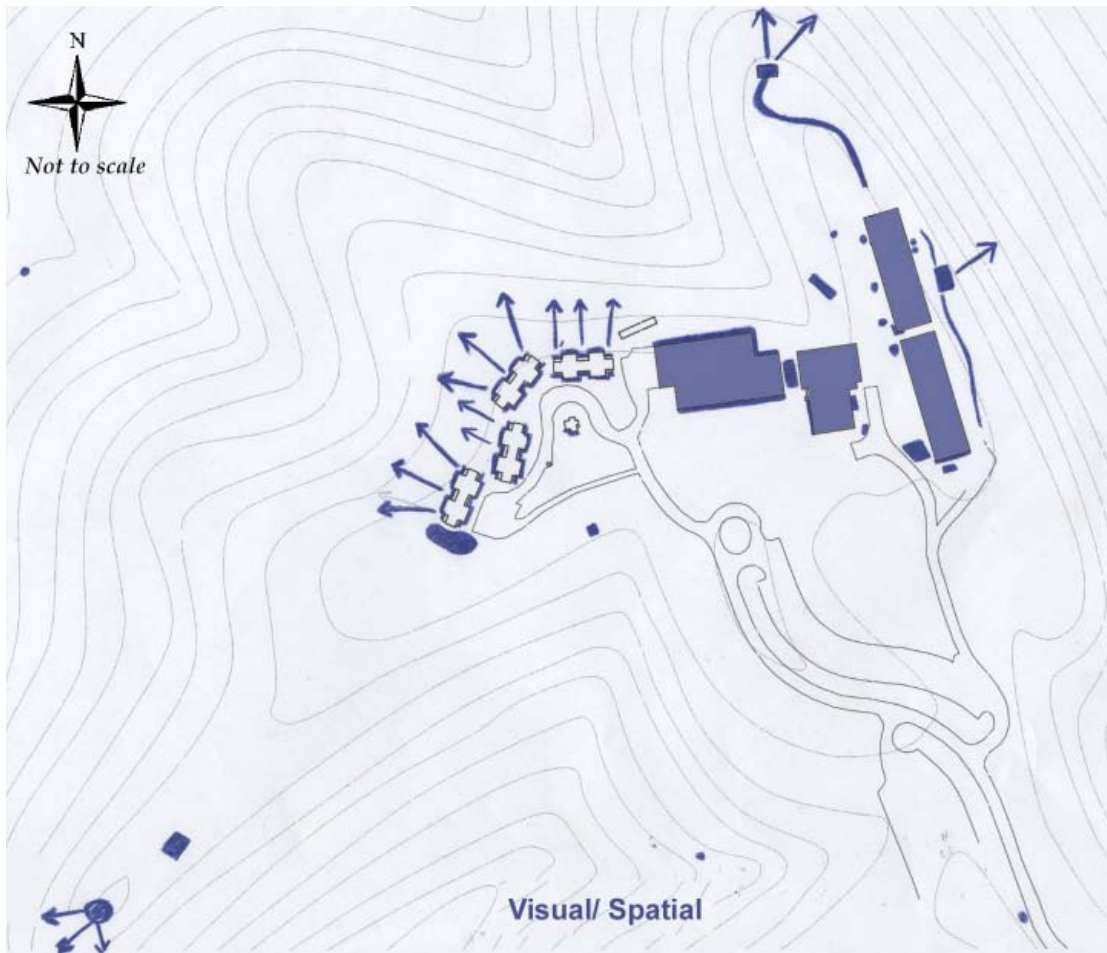
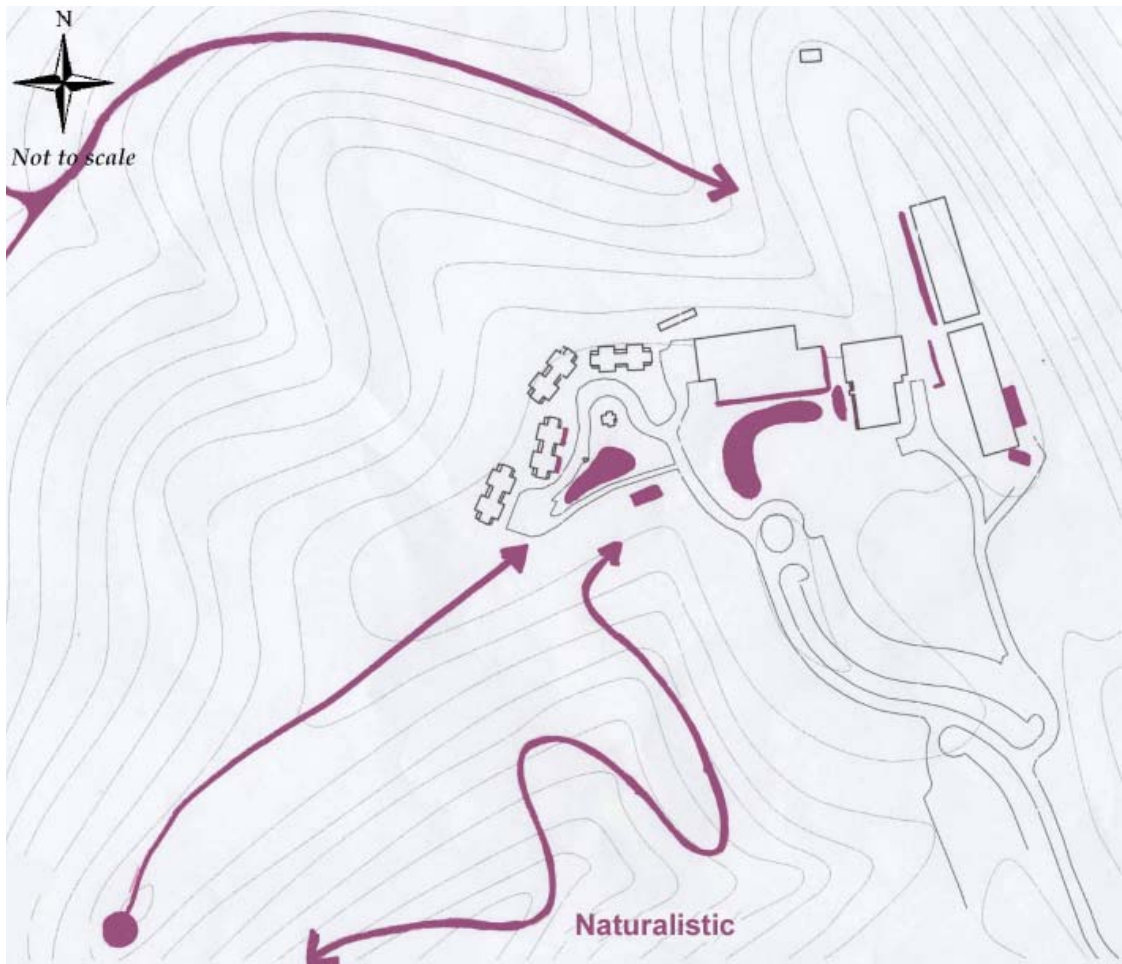


Figure 6.13 Visual-Spatial Inventory



Naturalistic

- Slopes and swales reveal the natural process of land formation and erosion.
- Communion with Nature & Sensitivity to its Flora
 - Surrounding Vegetation
 - Woods provide a lower-impacted environmental playground containing native species of plants, wildlife and the visual evidence of the interaction between plants, wildlife and man.
 - Planted species provide seasonal color and erosion control.
 - Community garden provides opportunity to grow and nurture nature.

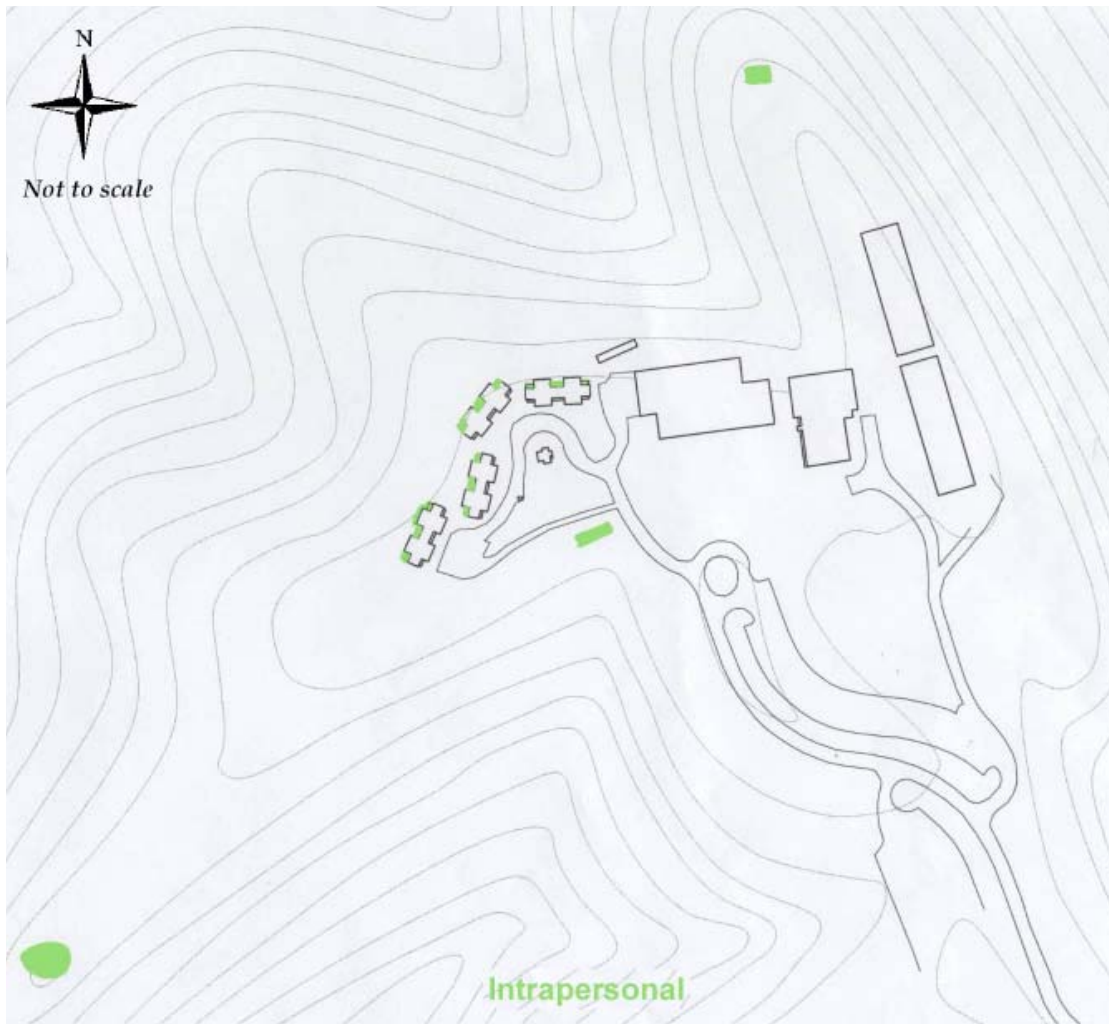
Figure 6.14 Naturalistic Inventory



Interpersonal

- Spaces for Group Gatherings
 - Porches of cabins: front more spontaneous gatherings, and back used more for planned event.
 - Main courtyard is used for social interaction, Frisbee, and ceremonial events
 - Wood studio informal patio is used as a smoker corner.
 - Wood kiln “The Hog” becomes a social space during a firing.
 - Sculpture garden can be used as a social spot for relaxation.
 - Glass-Metals deck is used as a social space for relaxation and reflection.
 - Longpoint at night is used as an area for group gatherings around a fire.
- Group Activities
 - The community garden, volleyball court, and wood kiln all provide an activity where the users have a common goal and must work cooperatively.

Figure 6.15 Interpersonal Inventory



Intrapersonal

- Areas for reflection, contemplation, and mindfulness
 - Longpoint and the sculpture garden provide a place for quiet time closely surrounded by nature and with a view of the lake.
 - Back porches provide a hiding place with a view of the woods.
 - Community garden provides a spiritual communion with nature.

Figure 6.16 *Intrapersonal Inventory*



Figure 6.17 Division, Direction, & Movement of Site

Analytic Breakdown of Space:

When entering and moving around the site the spatial intelligence is engaged. Spatial perception allows the user to see that the orientation of the buildings create a linear east-west movement and the roads a north-south division of space. While the actual pedestrian movement through the site is much more loose and flowing. The transitional areas are undefined visually but noticeable to the user. These transitional spaces help to define the three major areas of the site; area 1 is student housing, area 2 is the main courtyard, and area 3 is the secondary courtyard and main studio space. Figure 6.18 shows the breakdown of areas 2 and 3 into more specific spaces. Area 1 and the student housing area in figure 6.17 are the same.

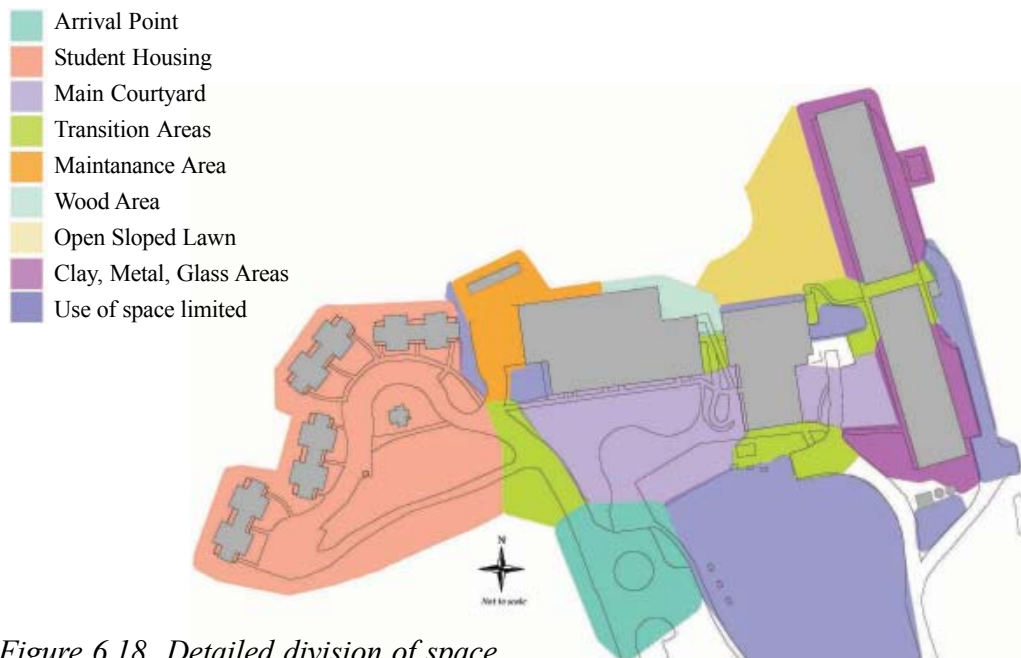


Figure 6.18 Detailed division of space

Materials:

The entrance to the ACC is an asphalt road which winds up the peninsula past the overlook entrance. Deciduous trees with an occasional view of the lake and surrounding hills surround the drive up to the campus. Upon entering the campus the space begins to open up and becomes flat, and grassy patches begin to appear. If one were to park in the main lot and continue the journey on foot she would take a concrete sidewalk to the main courtyard. Here the terrain is slightly sloped and open. The courtyard includes a concrete area bordered by grass and a few specimen trees. The front of the fibers building is lined with a concrete sidewalk and plant beds that are a mixture of gravel, mulch, and flowers. Figure 6.19: Breakdown of materials, shows the materials that are encountered along the rest of the journey. The student-housing road is gravel that migrates into the grass areas. All of the units have concrete sidewalks to the gravel edge and units A and B have a concrete sidewalk that curves around the gravel road. The courtyard in this area is half naturalized with trees and perennial plants and half grass. There is a mulch walkway that leads to unit C. Scattered along the front of some of the units are small plant beds that were installed by students.

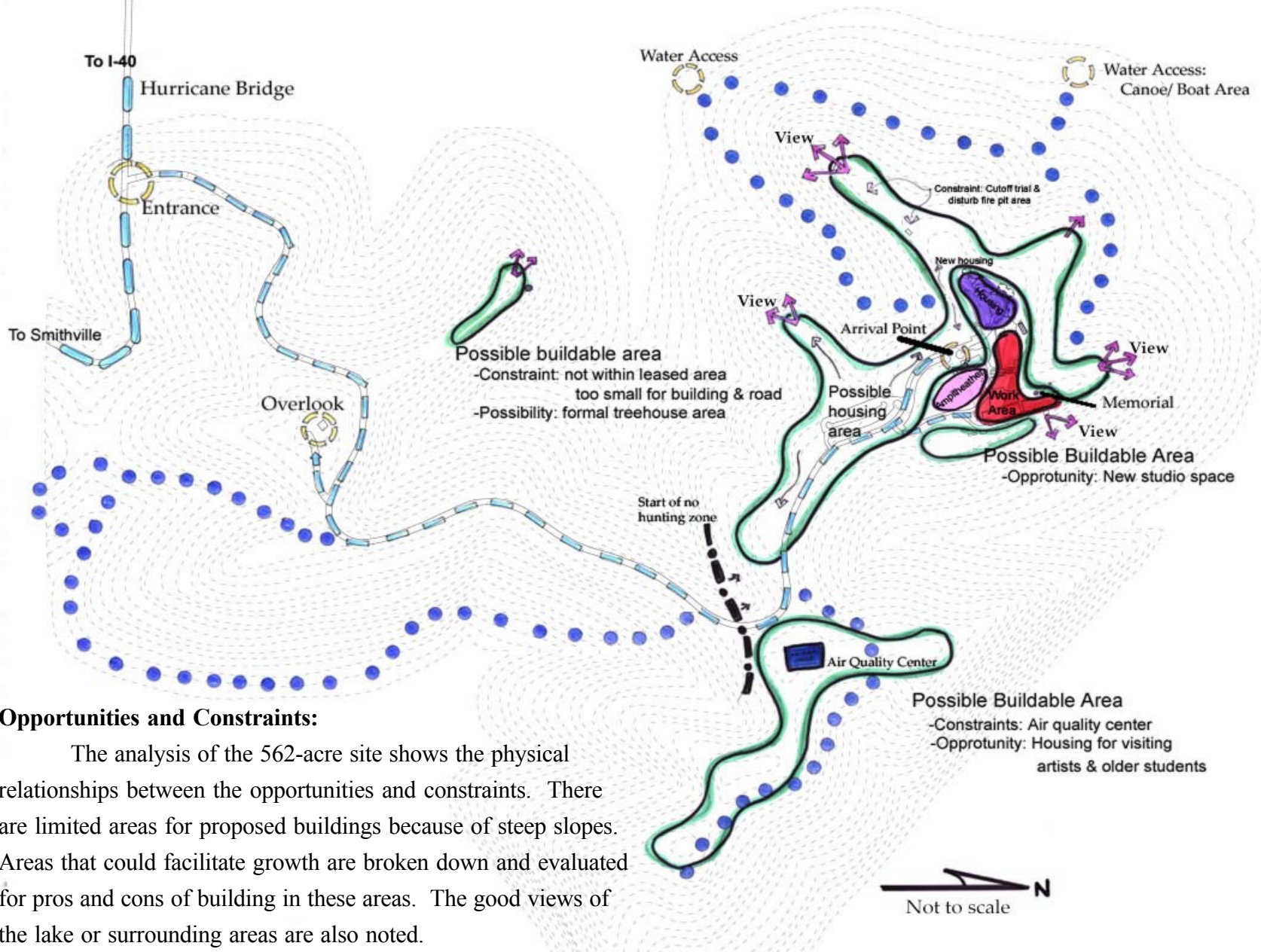
The secondary courtyard and surrounding areas of the clay, metals, and glass buildings are planted in grass and a few specimen trees and one plant bed. There is a concrete sidewalk that borders the two studio buildings. Behind the clay and metals-glass building is a makeshift gravel road and a wooden deck. The only metal encountered on the site, beside the occasional sculpture, is the water towers, propane tank, cooling tower and the water-sewer treatment plant. The materials help to produce a sense of place and define spaces and paths throughout the site. Some of the materials visually create form, line and textures, while other materials produce sound.

- Metal
- Wood
- Gravel
- Mulch
- Grass & Vegetation
- Wooded (steep slope begins)
- Concrete
- Asphalt



Figure 6.19 Breakdown of materials

Figure 6.20 Opportunities & Constraints



Opportunities and Constraints:

The analysis of the 562-acre site shows the physical relationships between the opportunities and constraints. There are limited areas for proposed buildings because of steep slopes. Areas that could facilitate growth are broken down and evaluated for pros and cons of building in these areas. The good views of the lake or surrounding areas are also noted.

CHAPETR 7: THE DESIGN

Concept:

A concept is needed to begin the process of creating a design. Having been a visitor and a student for a semester at the ACC I drew on that experience. In January of 2000 I moved in and started classes. I realized immediately that the students of ACC were a close-knit family. This idea of the ACC being a family of artists, students, and educators inspired and influenced the development of my concept.

The ACC can be viewed through a metaphor of a house (Figure 7.1). Its foundation is the purpose for which it was started: the education and preservation of craft. The walls that surround are the encouragement of creativity. These walls have windows and doors that allow for the open exchange of ideas and philosophies. The roof represents the opportunity that is provided by the protection of Tennessee Tech, the Tennessee Arts Commission, and other outside funding.

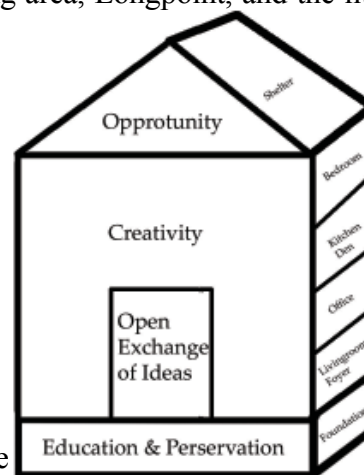
A family does not just live in a house, but a home. The interior elements and their qualities are what make this house a home. The spatial divisions shown in figure 6.18 show the beginning formation of rooms. These loosely defined rooms can be divided into areas of access that are public, semi-public, semi-private, and private. So what rooms of a home would correspond with these four types of spaces of access and how do they relate to the ACC? The public areas of a home are the foyer and living room, which are the entrance or arrival point and the courtyards with in the ACC. The semi-public areas of the ACC are the studios and sculpture garden, which are similar to an office or a recreational room. The kitchen and den of the house are areas where visitors are often invited into, but serve a more meaningful purpose for the family. These rooms are the gathering spaces and wooded surroundings of the ACC. The private areas or bedrooms of the site are the student housing area, Longpoint, and the little known tree house along a ridge rarely visited by outsiders.

Roof = Protection of opportunity to create & learn

Walls = Surroundings of creativity & play

Windows & Doors = Open exchange of ideas,
techniques, & philosophies

Foundation = The education & preservation of craft culture



Private: Treehouse, Longpoint, Housing

Semi-Private: Gathering spaces

Semi-public: Studio, Sculpture Garden

Public: Arrival Point, Courtyard, Café, Gallery

Figure 7.1 Concept drawing

Needs & Options:

The current and future needs of the school were assessed from the viewpoint of the institution and the users. The needs and options that were developed will help to provide a continuation of quality craft education and help the school grow and prosper. Some of the options will provide the needed elements for expansion. By expanding, the school will be able to provide larger and up-to-date studios that will benefit students and resident artists and attract more prestigious visiting artists.

- Needs:
 - Increased studio space for all mediums
 - Outdoor or open-air blacksmithing studio
 - Increased function of wood kiln area
 - Space for display of permanent collection
 - Create private student housing
 - Increase the amount of housing
 - Student housing = space for 48 possible students
 - Visiting artist and older student housing = 24 possible residents
 - Truck access to all work areas
 - ADA accessibility
 - Develop solutions for drainage problems
 - Private studio space for visiting artists
 - Create space for larger media center

Site Program: Design Objectives of Site:

The proposed design elements and programs were influenced by five things: the engagement of the multiple intelligences, creating solutions for the needs and programs, staying within the mission of education and preservation, incorporating the five mediums, and for the design elements to be flexible, so that students or faculty can change and manipulate the surroundings with their art.



Figure 7.2 Site Master plan

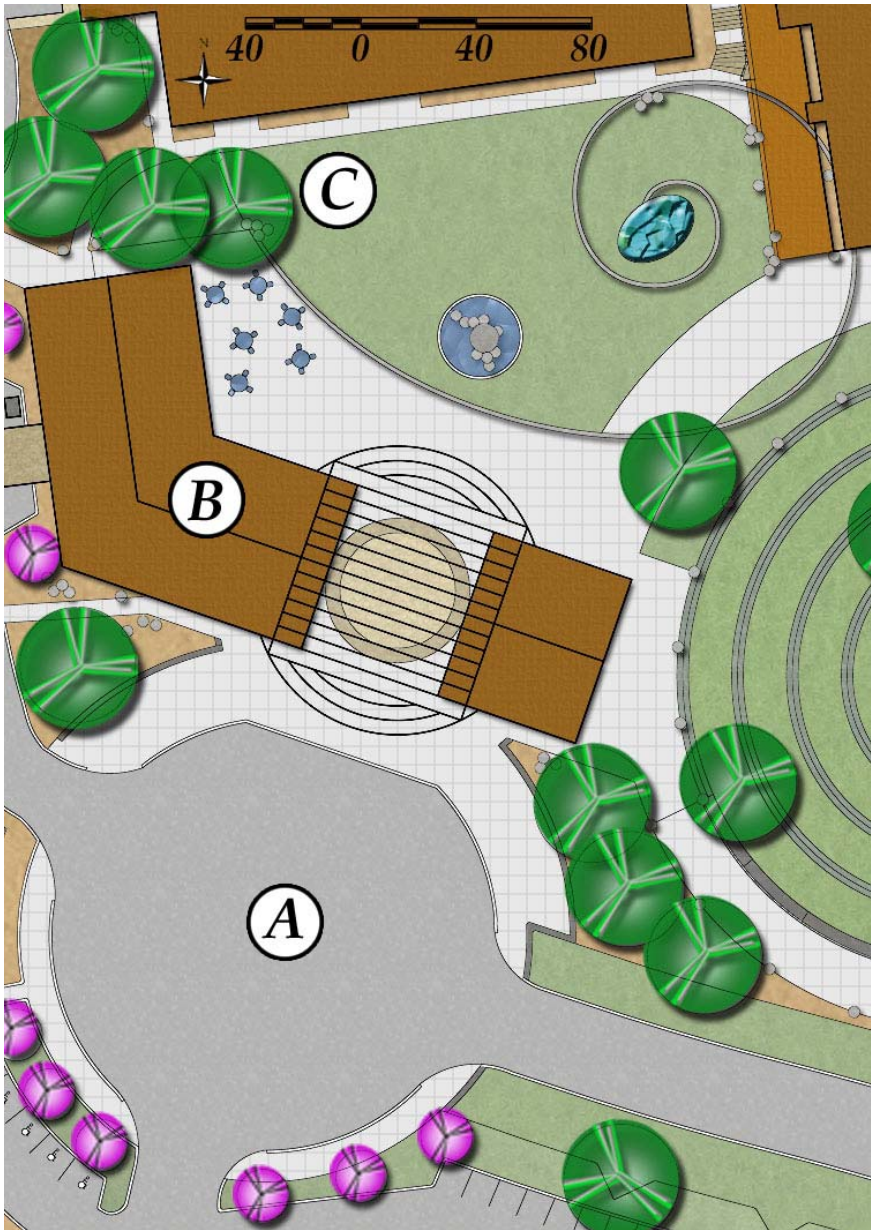
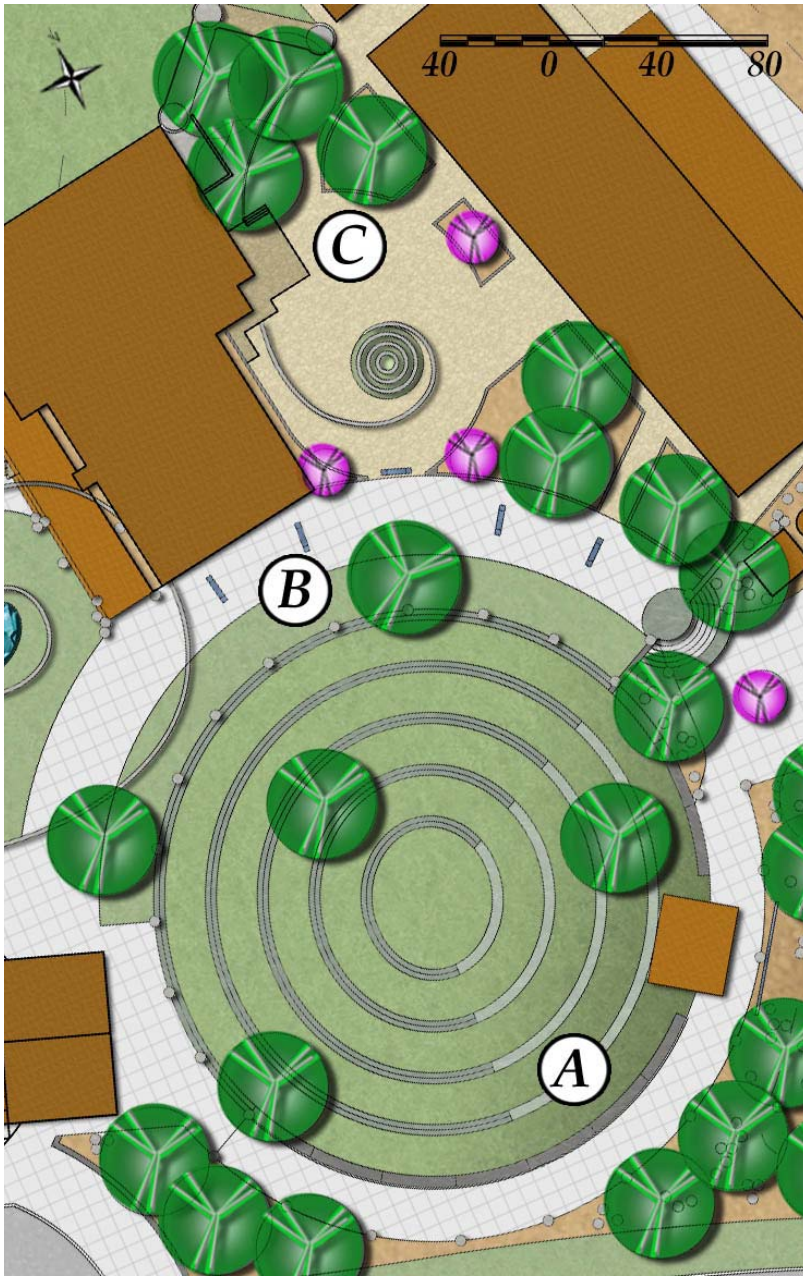


Figure 7.3 Detail of Arrival Point, Main Building, & Main Courtyard

- A: Arrival Point & Entry Drive
 - Creates a sense of entering space and arrival
 - Creates space for more parking and alternative housing

- B: Proposed Main Building
 - Creates visual gateway into site
 - Skeleton roof, ground icon, flexible design for art installations
 - Visual-spatial, installations determine others
 - Creates more room for needed expansion of studios, exhibition, and library
 - Houses: Gallery, café, welcome center, security office, administration offices, conference room, and public bathrooms

- C: Main Courtyard
 - Creates areas to gather
 - Outdoor café, seating areas
 - Interpersonal
 - Open space for Craft Center Celebration tents and main activities
 - Visual geometry created by materials emphasizing line, form, and texture
 - Visual-spatial, Math-logical
 - Rocks reveal underlying geology
 - Naturalistic
 - Water feature
 - Reflects lake that surrounds the peninsula
 - Creates sound and a visually playful element
 - Naturalistic, Musical, Visual-spatial
 - Sculpture
 - Large sculpture that visually creates focal point from several directions when entering space
 - Sculpture to be chosen from entries of ACC structure competition
 - Form, size, and material will determine intelligences engaged
 - Seasonal changes of plants and plant beds
 - Naturalistic, Visual-spatial



A: Amphitheater

- Gathering space
 - Interpersonal
- Music stage
 - Musical
- Outdoor classroom
 - Can be used for Celebration or visiting local junior high or high school students
 - Interpersonal, others determined by type of activity
- Screen behind stage is metal frame with fibers cover that is replaced every spring
 - Shows weathering process and movement
 - Naturalistic & Visual-spatial
 - Metal, Fiber
- Design allows for perception of change in size, scale, and elevation
 - Visual-spatial
- Materials
 - Musical, Naturalistic, Visual-spatial

B: Courtyard to Courtyard Transition area

- Five Arches, each one represents one of five mediums
 - Creates physical and visual connection between spaces
 - Clay, Glass, Metal, Fiber, Wood

C: Shade Courtyard

- Materials provide texture, form, and function
 - Visual-spatial, Naturalistic
- Sculptures
 - Musical, Visual-spatial, Naturalistic
 - Metal, Clay, Glass
- Stairs are metal art that allow nature underneath to show through
 - Visual-spatial, Naturalistic

Figure 7.4 Detail of Amphitheater, Courtyard Transition, and Shade Courtyard

- A: Exhibition Building (current main building)
 - Deck connects building to Fibers and provides area for elevator
 - ADA accessibility
 - Wood
 - Visually mimics other building with decks/ gathering spaces
 - Contains elements that can be manipulated by students and faculty
 - Interior floor plan changed to provide space for media center, student lounge, permanent collection, student and visiting artist exhibitions, and classroom
-
- B: Courtyard to Wood Transition area
 - Materials of stairs provide sound and visual texture contrast, movement, and line
 - Musical, Visual-spatial
 - Metal railing
 - Slope beside stairs is naturalized with rocks, shade plants, and sculpture
 - Decrease erosion by slowing of drainage
 - Provides visual show of hydrology
 - Naturalistic, Visual-spatial
 - Help correct drainage problems
 - Glass, Clay, Fiber
-
- C: Fibers
 - Floor plan changed to provide space for private studios and additional work space
 - Courtyard design provides gathering space outside
-
- D: Wood
 - Expansion of work space provides for private studios, discussion space and formal critique area
 - Patio space defined
 - Interpersonal
 - View of bioretention area 2
 - Naturalistic
 - Decreases erosion
-
- E: Maintenance (proposed building)
 - Allows for the expansion of Wood studio
 - Creates better defined space for maintenance crew to work and relax
 - Interpersonal, Intrapersonal

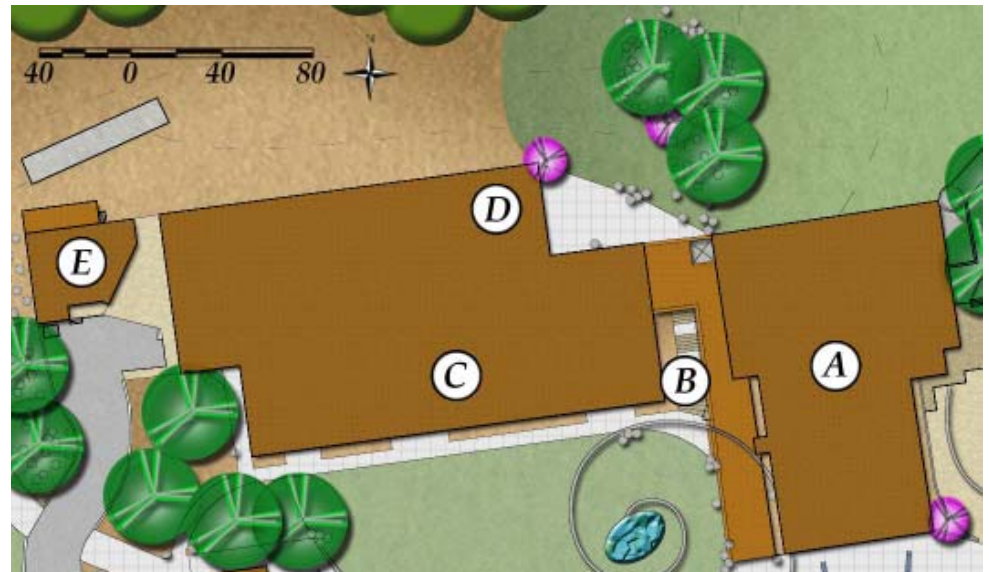


Figure 7.5 Detail of Exhibition Building, Transition, Fibers, Wood, Maintenance

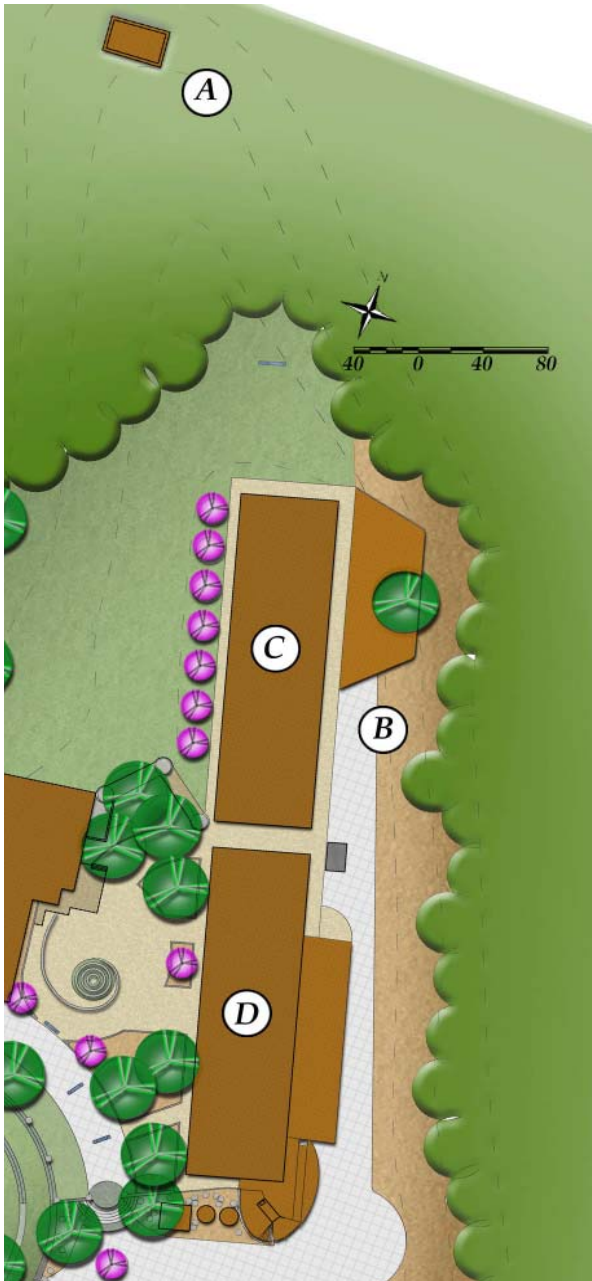


Figure 7.6 Detail of Sculpture Garden, Studio Road, Metals, Clay

A: Sculpture Garden

- A trail leads down the ridge and out to an old foundation. Along the trail are student sculptures and art installations. The foundation is covered with a metal roof that produces sound when rain or debris falls on it.
 - Visual-spatial, Musical, Interpersonal, Intrapersonal
 - Wood, Metal, Glass, Clay, & Fiber

B: Studio Road

- The road is lined with student artwork that continues down into the sculpture garden. This visually connects the back of the studios to the sculpture garden.
 - Visual-spatial
 - Metal, Clay, Glass, Wood

C: Metals

- Expansion of work space provides for private studios, discussion space and formal critique area
- Open air blacksmithing studio
- Expansion of deck allows for observation area of blacksmithing and area for relaxation and reflection
 - Increases understanding of medium through visual display
 - Interpersonal, Intrapersonal
 - Wood, Metal

D: Clay

- Expansion of work space provides for private studios, discussion space and formal critique area
- Integration of wood kiln (The Hog)
 - Provides observation deck when firing occurring
 - Increased understanding of medium through discussion
 - Gathering space
 - Interpersonal
 - Design increases functionality of space
 - Wood, Clay, Fiber

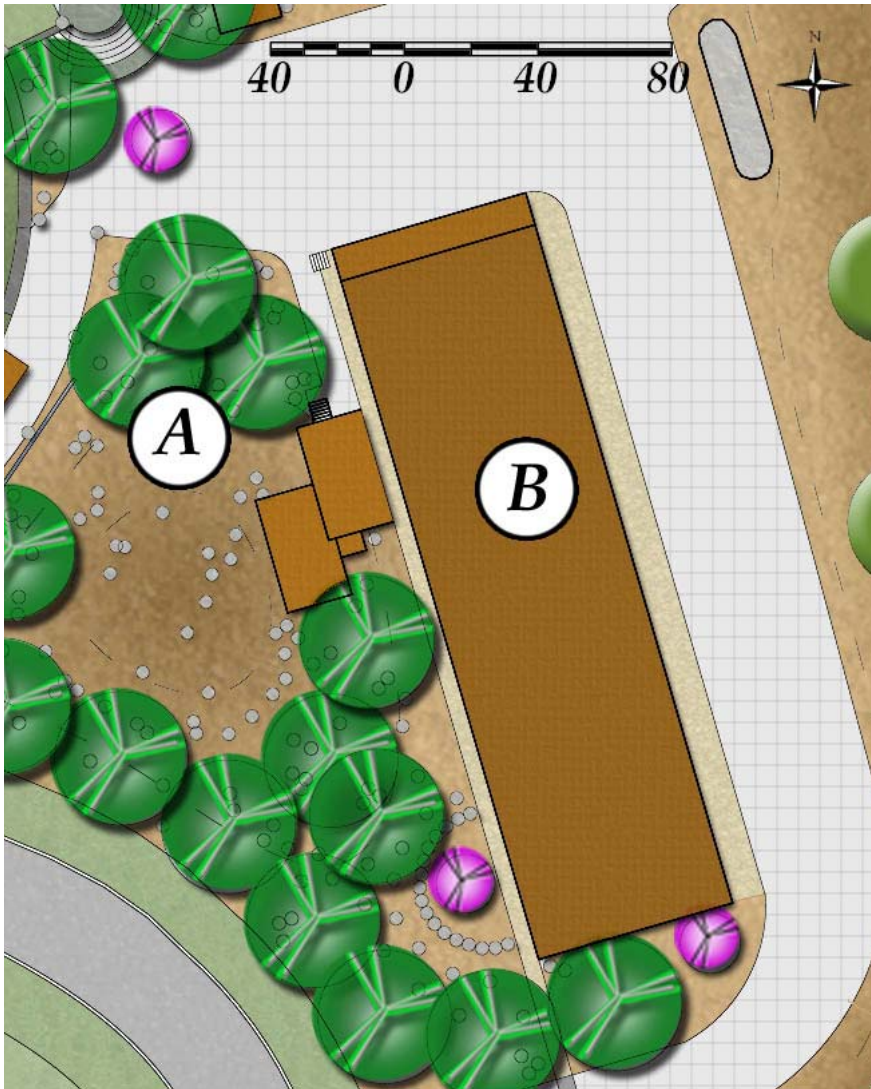


Figure 7.7 Detail of Glass Building and Bioretention Area

A: Glass (proposed building)

- Expansion of work space provides for private studios, discussion space and formal critique area
- Integration of deck with building and landform
 - Provides observation of hot shop
 - Increased understanding of medium through visual display
 - Provides area for relaxation and reflection
 - Interpersonal, Intrapersonal
 - Design visually emphasizes change in elevation and brings user down into bioretention area
 - Visual-spatial, Naturalistic
 - Wood, Glass
- Lower level/ basement
 - Large capacity darkroom with more functional layout
 - Room for critique of work
 - Large archival storage space
 - Allows for other spaces to be used for more appropriate functions
- Memorial
 - Intrapersonal

B: Bioretention Area 1

- Helps to correct drainage problems
- Planted with tall grasses that have feathery spikes for year around show
 - Rhythmical movement is produced by wind
 - Musical
- Rocks
 - Reveal geology and control erosion
 - Naturalistic

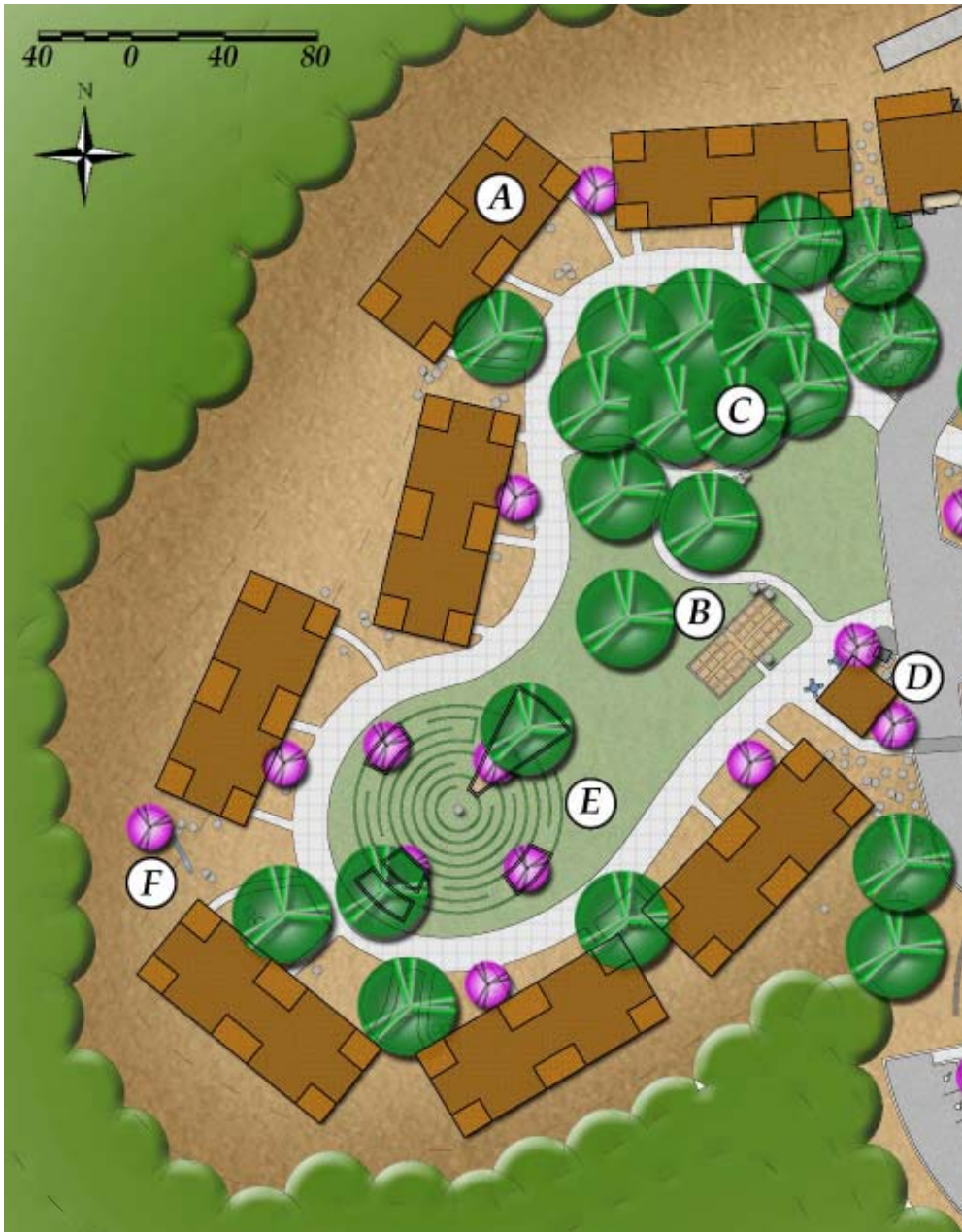
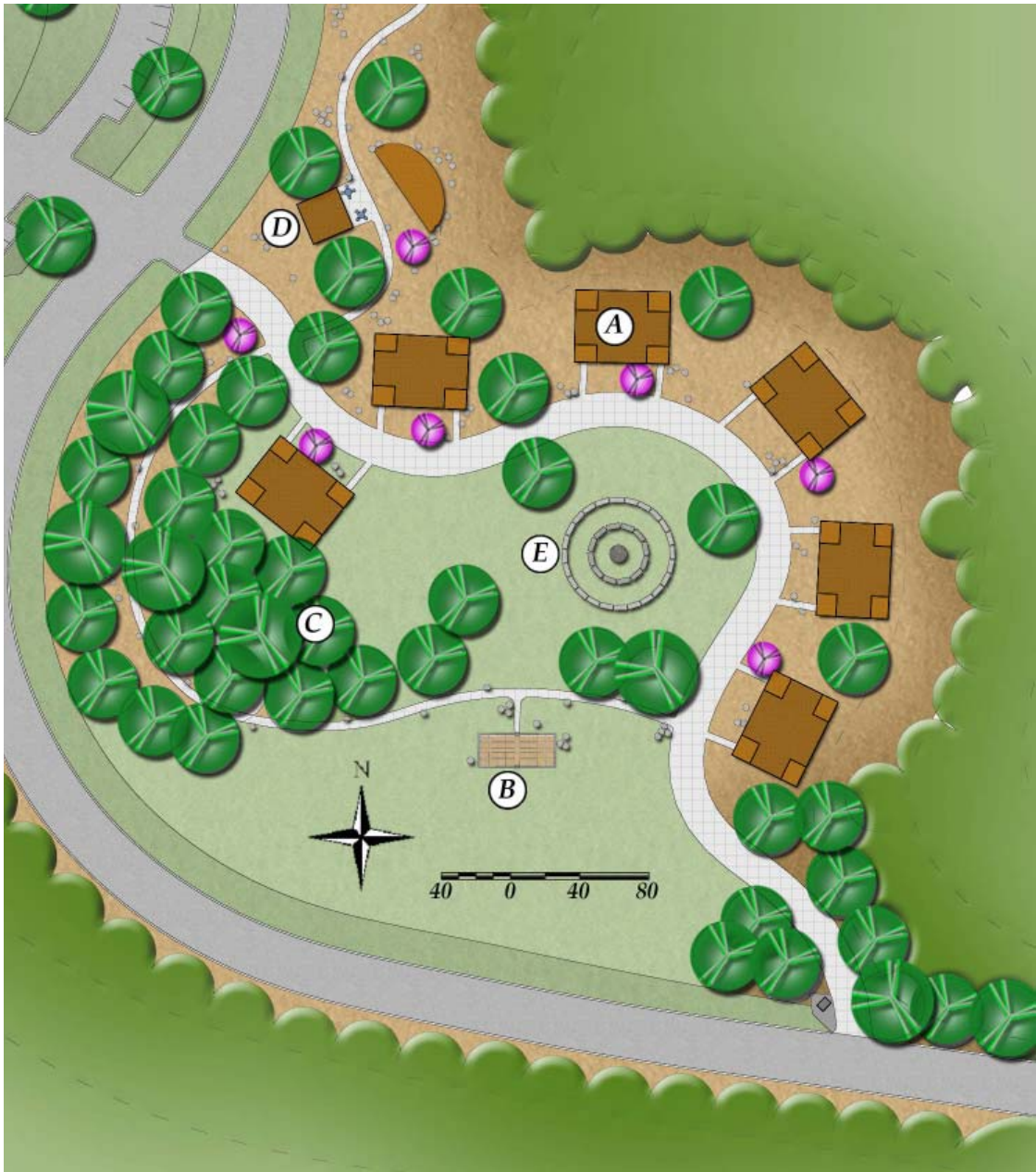


Figure 7.8 Detail of Student Housing and Trail Head

A: Student Housing 1

- The porches on the existing units are to be replaced and expanded. This will provide more space for gathering.
 - Interpersonal
- B: Community Garden
 - Interpersonal, Intrapersonal, Naturalistic
- C: Hammock area provides a relaxed leisure area for warm weather.
 - Interpersonal, Intrapersonal
- D: Laundry building allows fibers to have more room and makes the facility more convenient. The building has an outdoor patio for gathering.
 - Interpersonal
- E: Labyrinth
 - Is laid out so that there are four raised plant beds that can be used as seating. The labyrinth is planted in two grasses, a cool season and a warm season. This allows for visual contrast to form the path but allows the courtyard to still feel open.
 - Intrapersonal, Naturalistic
- F: Trail Heads
 - These structures indicate where a trail begins or ends.
 - Naturalistic, Bodily kinesthetic
 - Wood, Glass, Metal



- Alternative Housing (proposed)
 - A: Housing units are half the size of the housing in area 1. These units allow visiting artist and older students to have a quieter and more private place to live.
 - B: Community Garden
 - Interpersonal, Intrapersonal, Naturalistic
 - C: Hammock area provides a relaxed leisure area for warm weather.
 - Interpersonal, Intrapersonal
 - D: Laundry building allows fibers to have more room and makes the facility more convenient. The building has an outdoor patio for gathering and a wooden deck for viewing nature.
 - Interpersonal, Visual-spatial, Naturalistic
 - E: Small sunken amphitheater allows for campfires and gathering.
 - Interpersonal

Figure 7.9 Detail of Alternative Housing

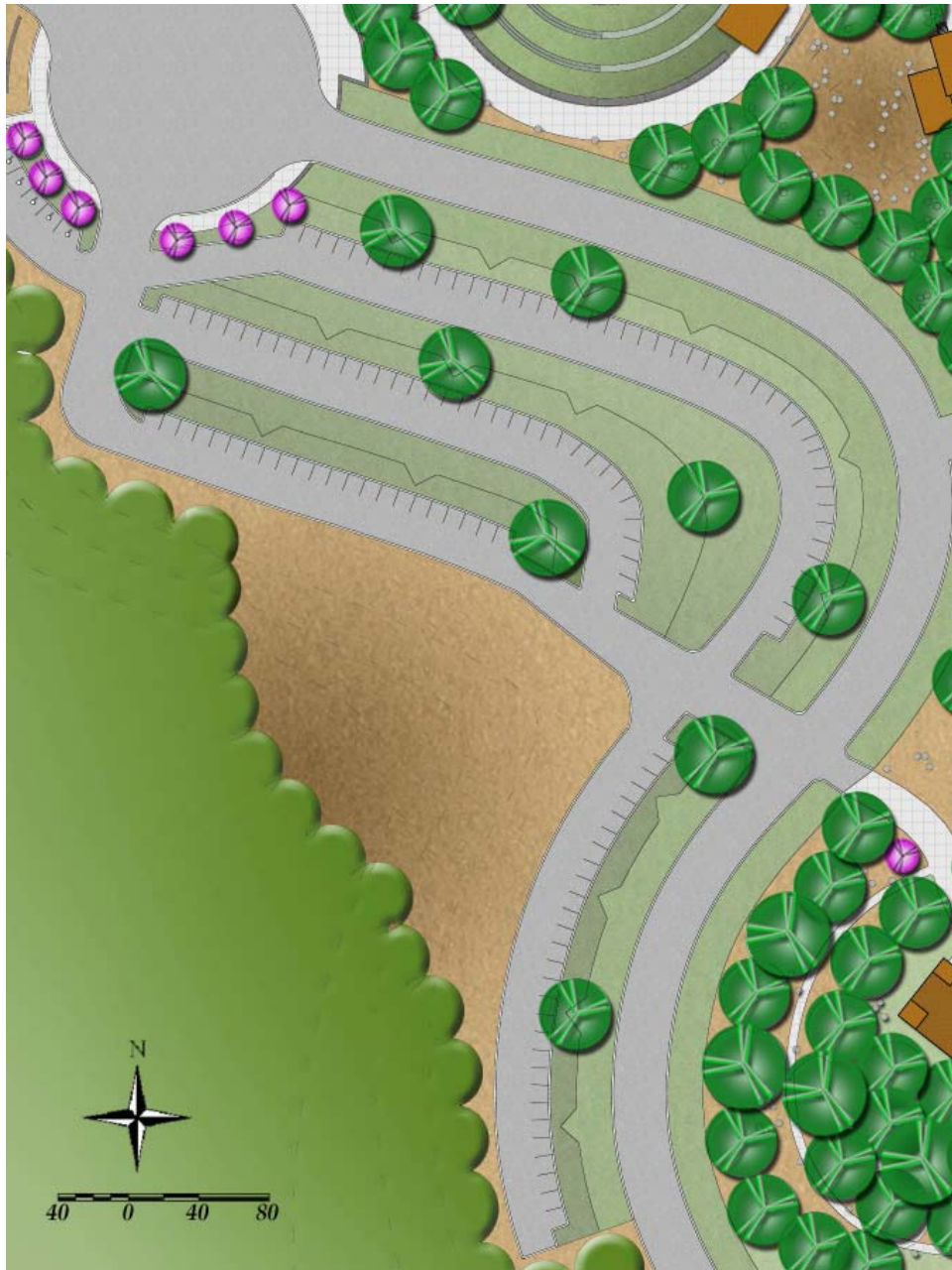


Figure 7.10 Detail of Parking

- Parking
 - The parking is tiered so that the view is not blocked. The slopes in-between the rows of parking are naturalized with large rocks to help prevent erosion.
 - Naturalistic
 - Along the slopes are several triangle shaped pedestals that serve as areas for artwork to be displayed and some as tree planters.
 - Visual-spatial, Naturalistic

Narrative Description of Design:

The design proposal begins with the entry road. To increase the feeling of entering a place, the road and parking have been shifted and the road edges have been bermed to channel the user into the arrival point. This shift creates space for expanded parking and the additional of more housing. At the arrival point the user will see stone sidewalks and seating walls encompassing the traffic circle. The user can then decide to park or stop at the drop off area in front of the entry building.

The parking is divided into five sections and tiered into three levels (Figure 7.11). The top level is divided into three sections, the first is handicap accessible parking, the second is similar to the two lower levels, and the third is the furthest away from the arrival point, but close to the alternative housing area. The third section in the top level is designed for student parking. The parking lot is designed to be functional, but also to engage the user. The sloped areas between the tiered parking are stabilized with rocks and vegetation. They also contain fifteen pedestals, made of wood and gray river pebble, which jut out of the slope. Nine of the pedestals display a sculpture and the other six contain small trees. When leaving the parking lot the user will enter back into the arrival point and move along the stone sidewalk to the entry into the main campus.

The seating walls, that mimic the arrival point circle, flank the two proposed main buildings (Figure 7.12). The seating walls start near the handicap parking and visually cross an access road and continue around to frame the entry into the campus. They then visually cross the entrance road again and stop after several feet. The framing of the access road by the walls gives the visual appearance that this road is restricted to only authorized users. These users are the students, staff, and deliveries. The section of the walls that frame the buildings, display the name of the school and channel the user along the sidewalk and across the stone patio, into the site.

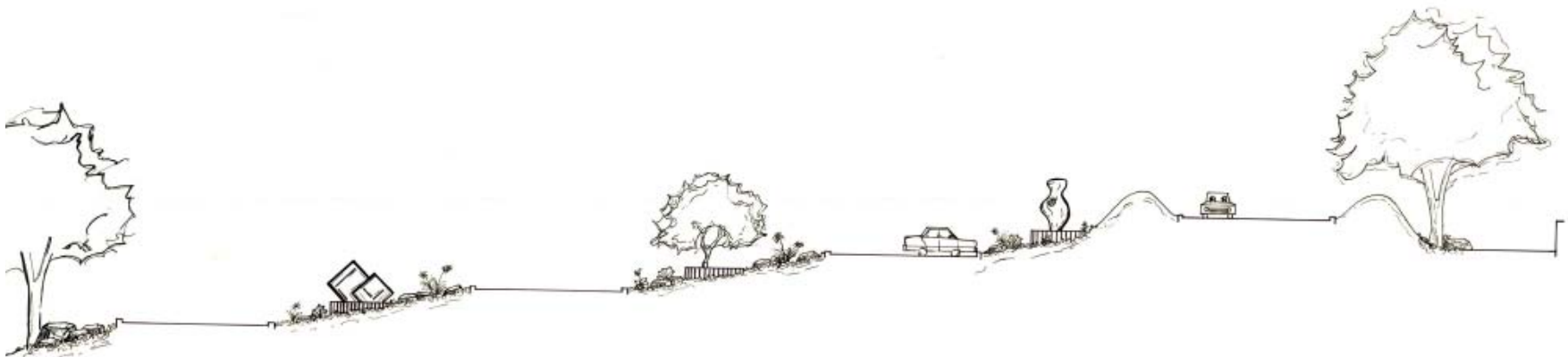


Figure 7.11 Section of parking

The main buildings create a visual gateway into the main courtyard. The overhead wood trellises mimic the structure of the roof and visually connect the two buildings into one unit. The logo for the school is etched into stone and encompassed by five small sections that contain one of the five mediums. When in this gateway the user may choose to enter a building or move into the courtyard. The smaller east building houses the administrative offices, student mailboxes and a conference room. The larger west building contains a welcome area with information about the school, bathrooms, the Craft Center Gallery, Mama Lea’s Café, and a room for security. The two proposed main buildings contain many windows for ample natural light and displays of art.

When entering into the courtyard from the main entrance the user first sees a sculptural water feature within the grass ahead (Figure 7.13). The water feature is comprised of various sized rocks and gently lets water trickle down and over them. These rocks give a glimpse into the geology that lies beneath. To the west, the stone patio continues and provides outdoor seating for the café. The grassy

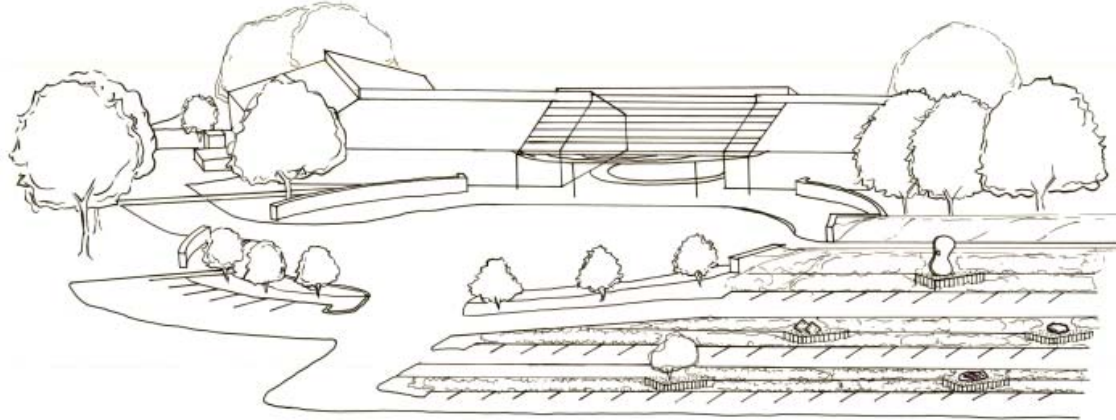


Figure 7.12 Perspective of arrival point, main buildings, and parking

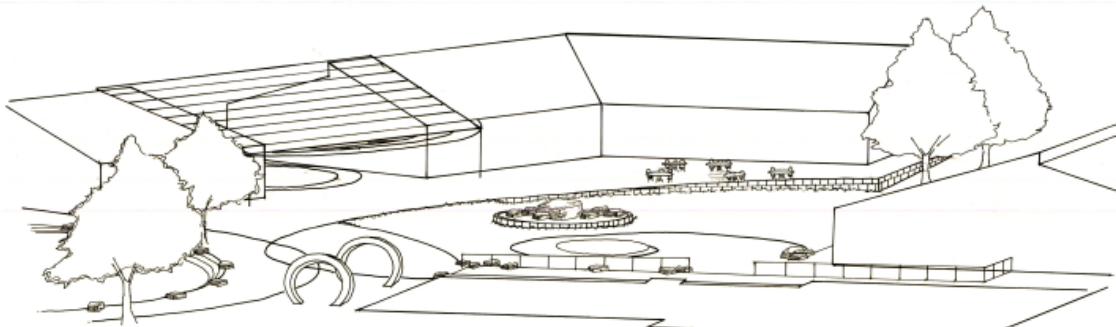


Figure 7.13 Perspective of main courtyard

area slopes up from west to east to meet the stone patio just past the water feature. The patio is edged with river pebble that leads the eye east towards the amphitheater and the exhibition building. The pebble crosses the stone patio and into the grassy strip that borders the amphitheater and back into the stone to run into the south side of the exhibition building. It then emerges again on the west side and crosses the building’s deck, down the steps, across the path and into the main grass area where it swirls around and ends at a large sculpture. This sculpture will be selected from an open competition.

The exhibition building is formerly known as the main building. The interior of the building has been reconfigured to allow for the top floor to house the permanent collection,

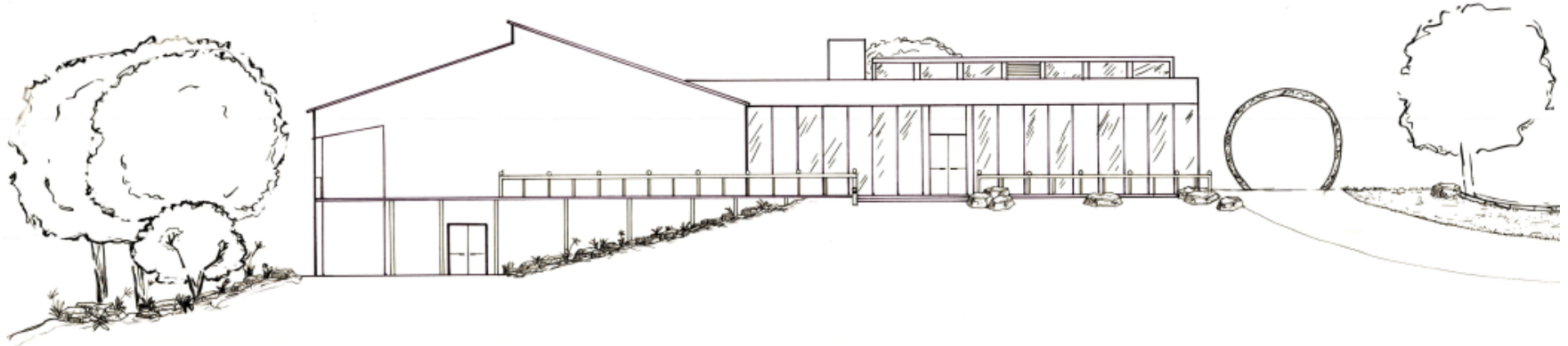


Figure 7.14 Section of front of exhibition building

student exhibition space, featured exhibitions, visiting artist work, a reception area and a small classroom. The lower level now has room for the small library to expand into a larger media center that contains a large volume of reference materials and computers for research and development of portfolios and web pages. The remaining space contains the two present audio-visual rooms and storage, but now also houses the student lounge. The main entrance into the exhibition building is a wood deck that mimics the other decks on campus (Figure 7.14). This deck allows space for gathering and connects to the top floor of the fibers-wood building. This connection allows for easy access and handicap accessibility to the buildings and the elevator.

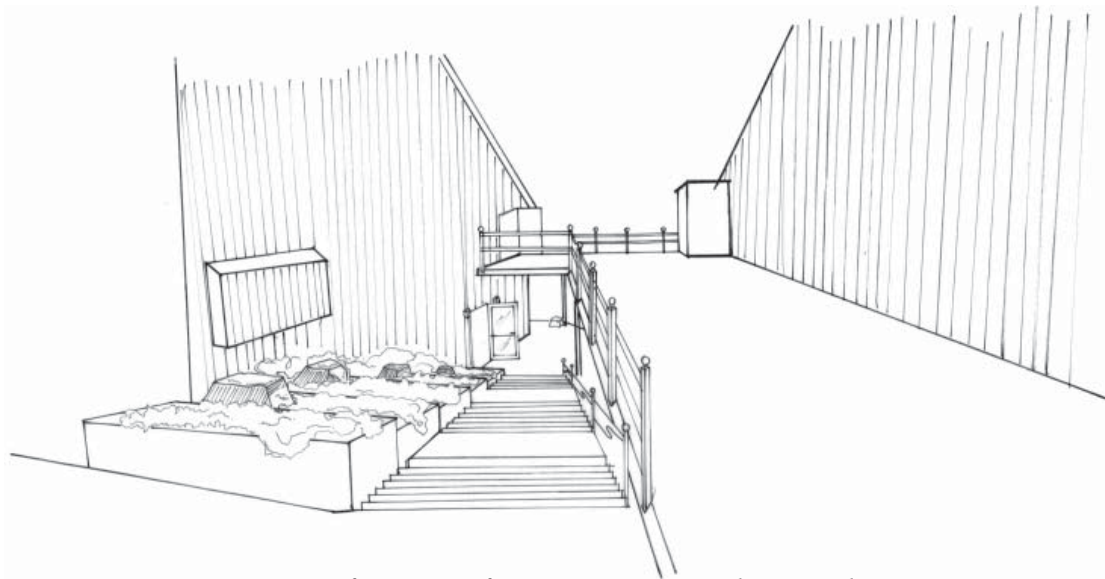
The fibers-wood building layout has been altered to provide more workspace and private studios. On the top floor the darkroom, one classroom, and the laundry room have been moved to other buildings. The wood studio, on the bottom floor, can expand because the maintenance and shipping and receiving area has been moved into its own proposed building. This small maintenance building is proposed for the open space beside the loading dock. This building will allow the staff to have more room for offices and a back deck that allows the observation of the water treatment tanks. This back deck also provides an area that is designated just for the maintenance staff. By moving the maintenance area this allows for the wood studio to expand and have more workspace, private studios and a more functional critique area.

Just outside of the wood studio on the northeast side of the building, a formal gathering space is proposed. The patio is paved with the same stone as the main entrance and is spotted with large rocks that can be used as seating or pedestals for art. These rocks also lead the eye down the slope and to the small bioretention area or rain garden. This bioretention area helps to slow and reduce the amount of runoff from the site. This will help with the visible erosion that occurs down the peninsula and reduce sediment entering into the lake. This patio extends over to the exhibition building where there are doors into both buildings. This area is partly covered by the

above deck. Below the deck is a steep slope that is stabilized by rocks and shade loving plants. This slope is designed for storm water to run between the rocks and down into the bioretention area. Sporadically placed within the rocks are sturdy sculptures. Artwork by fiber students can be displayed here by hanging the piece for the underside of the deck.

Beside the slope is a stairway that connects to the main courtyard (Figure 7.15). The stairs have an eighteen-inch trend and six-inch rise with a five-foot platform every five to six steps. They are constructed with stone and river pebble. The contrast between the materials provides texture and the possibility for sound. The metal railing is a functional sculpture whose design leads the eye up or down the slope. On the other side of the stairs are tiered wood planters that resemble the pedestals in the parking lot. When coming up these stairs and back into the main courtyard the user can turn west and follow the sidewalk along the front of the fibers studio. In-between the fibers building and the path there are plant beds that reveal or hide sculptures depending on the season.

At the top of the stairs the user can also walk in a southerly direction straight across the grass or up along the deck of the exhibition building. Both ways will lead back to a stone path that to the east connects to the main building patio. This path curves west around the amphitheater and alongside the exhibition building and shade courtyard entrance. Along the stone path are five arches; these arches are constructed of materials that represent one of the five mediums. On the south side of the curved stone path is a curved area of grass that is spotted with rocks and stone along the far edge. These rocks and stone provide a visual indication of the beginning of the



steps down into the amphitheater (Figure 7.16). There are five sets of three stone steps that lead to the center of the oval. Where the stone ends, a vein of river pebble visually finishes the oval. At the bottom of the amphitheater is a wood stage. Behind the stage is a tall metal frame that is designed for a fibers artwork to hang as a screen. This installation is to be replaced once a year and allowed to weather. Along the west side of the amphitheater is a stone pedestrian ramp that leads down to the bottom and behind the stage.

Figure 7.15 Perspective of stairway from main courtyard to wood

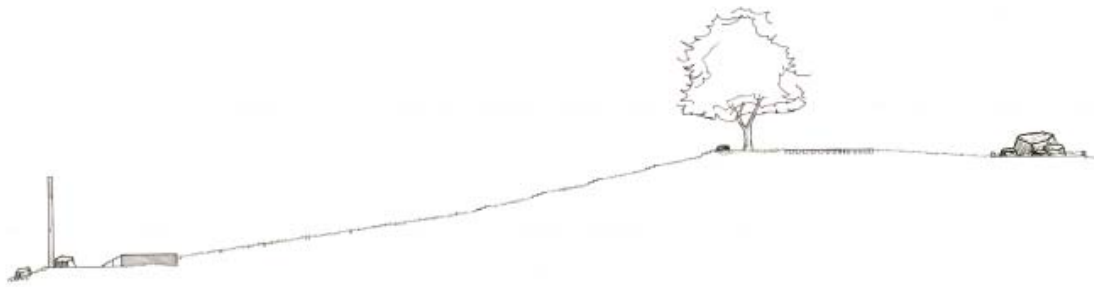


Figure 7.16 Section of amphitheater

This ramp and the stone path at the top of the amphitheater lead in opposite directions to the same shady transition area. The stone path reaches the area by changing to metal stairs and back to stone at the bottom. These stairs are open and allow tall ferns and shade plants to emerge and show through. The stone transition area is shaded by tall trees, surrounded by lush vegetation and is accented by a flowering specimen tree. The tree grate for the specimen tree is student designed and unique in character. The shady transition area leads the user to the glass studio building or past the wood fired kiln, to the rear of the clay and metal studio buildings. The stone path is wide and can accommodate cars and delivery trucks.

As the user approaches the glass studio building, she will see a set of stairs that lead up to the covered loading dock and a ramp that leads down to the basement of the building. The stairs lead to the upper level of the studio, which is designed to house the hot shop, cold shop, private studios, offices, and a critique area. The hot shop is highly visible from the outside of the building so that visitors and students can observe. The best location to observe the hot shop is from the upper level of the studio deck. This deck has multiple levels that allow people to gather and view the studio or the amphitheater and bioretention area. This bioretention area is larger than the other one and receives most of the site's runoff. The various levels of the deck allows the user to be drawn down into the bioretention area, to observe the plants and natural processes that occur when wet. The deck and the stone ramp lead to the lower level of the glass studio building. This basement area houses an expanded darkroom, small critique area, and archival storage.

If the user instead decides to walk to the clay building, she would pass the wood fire kiln. The design for this area improves the functionality of the space by improving access to loading the kiln, protecting the stored wood from getting wet and providing a covered gathering space for the working students and observers. Past the wood kiln is the loading dock for the clay and metals studio. Behind the loading dock are more kilns. This area has been expanded to provide more room for movement and additional kilns or expansion of the current ones.

Next is the metals studio and its large wood deck. This deck has a beautiful view of the lake and allows for observing the blacksmithing studio. The metals studio is now able to expand because glass has its own building. This also allows for the end of the

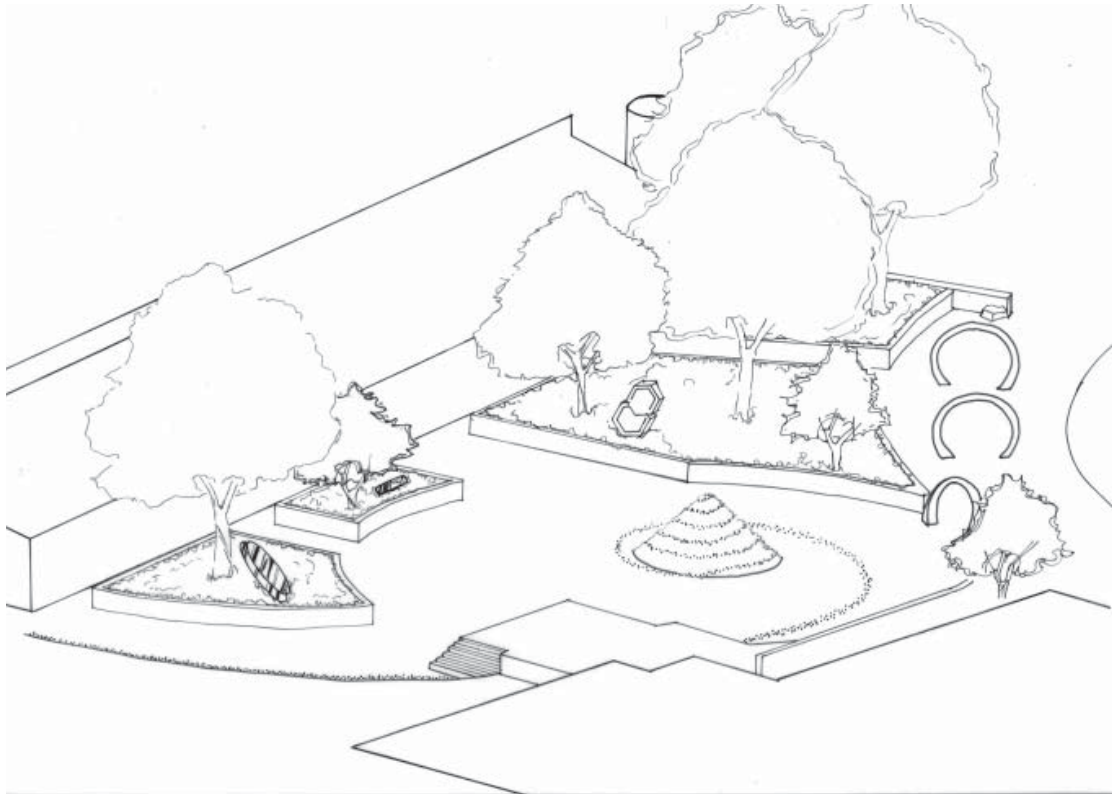


Figure 7.17 Perspective of shade courtyard

sidewalk, on the west side of the metals studio, she will come to a small shaded intimate courtyard (Figure 7.17). Raised planters that allow for seating and placement of artwork, shape this courtyard. The path into the courtyard is edged with a vain of river pebble and passes a loading dock that can be used as a small stage or transfer of art to be displayed in the exhibition building. The vain of pebble reappears on the other side of the dock and circles around and up a protruding grassy mound. This courtyard connects back to the stone path that outlines the amphitheater. The entrance into the courtyard from the stone path is accented with one of the five arches.

Next the user can visit the student housing. The path to the secondary housing will take the user back through the small shaded transition area and along the west side of the glass building. Along the way to the housing she will pass a small memorial for a glass student who passed away in the late 1990s. The path will then encounter a deck on the east and a small laundry building on the west. This laundry building allows for the current laundry to be moved out of the fibers building and become more convenient to the housing.

building to be restructured so that during the warm months the windows and some walls panels can be removed and a covered open workspace is created.

Along the walk from the small transition area to the rear of the studios the user will see student artwork lining the wide path. These art pieces extend down the length of the studio buildings and down into the sculpture garden. The sculpture garden currently has an old building foundation. I propose that this be transformed into a formal seating area and covered by a metal roof. This will allow users to take a break, sit and view the lake while wind blown objects or rain create musical sounds on the metal roof.

When the user comes back up from the sculpture garden and walks along the concrete

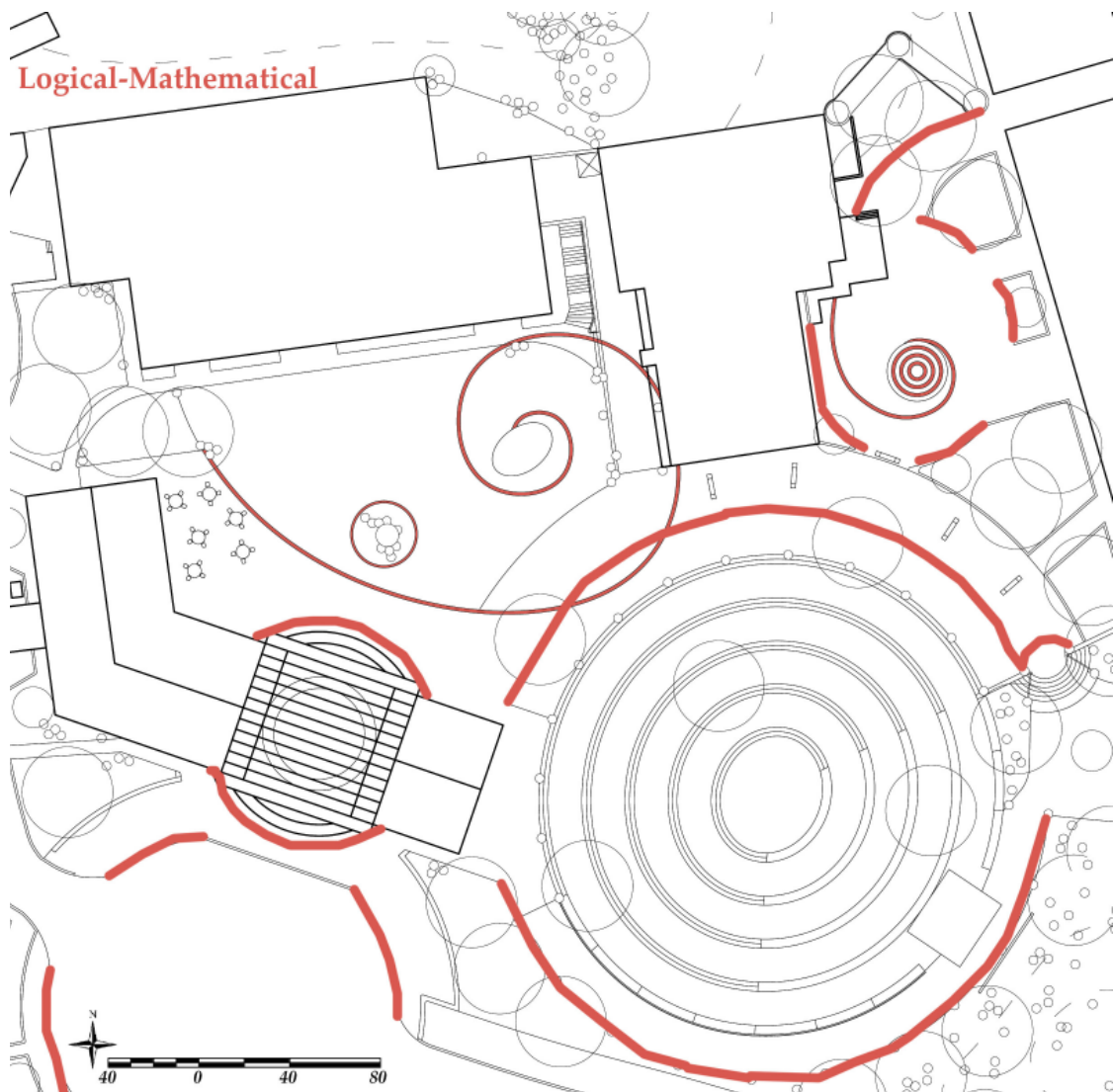
The building has a small patio with seating and the deck across the path allows for larger gathering and observation of nature. Further along the path the user will reach the housing units. Here the user can either turn east and walk along the wide path, that can be use by cars, past the housing or they can continue to walk straight. These two paths form a small courtyard in the center. If the user continues on straight, the path enters a wooded area. The path emerges from this wooded area to reveal to the south a small open area with a community garden. Further along the path, the trees on the north side part and show a small sunken stone seating area within the courtyard. The center of this area can be used as a small fire pit. Also in the courtyard is an area for hammocks.

From the amphitheater to the main student housing the user would walk back through the main courtyard and either along the stone patio past the café to the handicap ramp or across the grass and past the water feature, onto a short stone path that ends at the same place as the handicap ramp. From here the user would cross an asphalt road, which leads to the new maintenance building, and back onto a stone path. This path is wide and can be used by cars. The path winds around past each housing unit and a laundry building and connects back again to the asphalt road. This creates a small courtyard in the middle of the housing area. This courtyard contains a community garden, a hammock area and a labyrinth. The labyrinth is designed with four small raised planters that allow for seating. The paths of the labyrinth are created by the contrast between a cool season grass and a warm season grass. This allows for the space to visually appear open and the ground plane unobstructed.

Throughout the site there are several trails that are marked by trailheads. These are wood signs with either a glass or metal panel that displays the name of the trail. Also throughout the site is student artwork that has either been created in the studio or has been created by found objects in the surroundings.

CHAPTER 8: INVENTORY OF THE MULTIPLE INTELLIGENCES IN THE PROPOSED PUBLIC SPACES

The following figures inventory the locations of engagement of a specific intelligence within the main public spaces. This analysis was preformed to help further understand where the intelligences are being engaged in the proposed plan. The comparison of the existing inventories with the proposed inventories reveals that the proposed design increases the number of times that an intelligence can be engaged. The only exception is the bodily kinesthetic because the engagement is changed in such a way that the comparison of the two is unclear. In the existing plan the bodily kinesthetic is engaged by elements like the volleyball court and horseshoe pit. The proposed design no longer contains these elements, but instead engages the bodily kinesthetic from an ADA accessibility approach. These are two different types of bodily kinesthetic. While both engage physical abilities, one provides engagement for the physically moblie, and the other addresses a need and engages the physically disabled.



Logical/ Mathematical

- Visual Geometry
 - Phi: The golden mean or golden section that is created by the vein of pebble
 - Phi is a natural occurring number that unfolds and occurs in steps, such as the structure of the nautilus shell
 - It represents and expresses proportion and rate of growth
 - Circle, squares, and angles
 - Geometric shapes created by intersections of materials, outlines of areas, and the additive or subtractive qualities of forms used

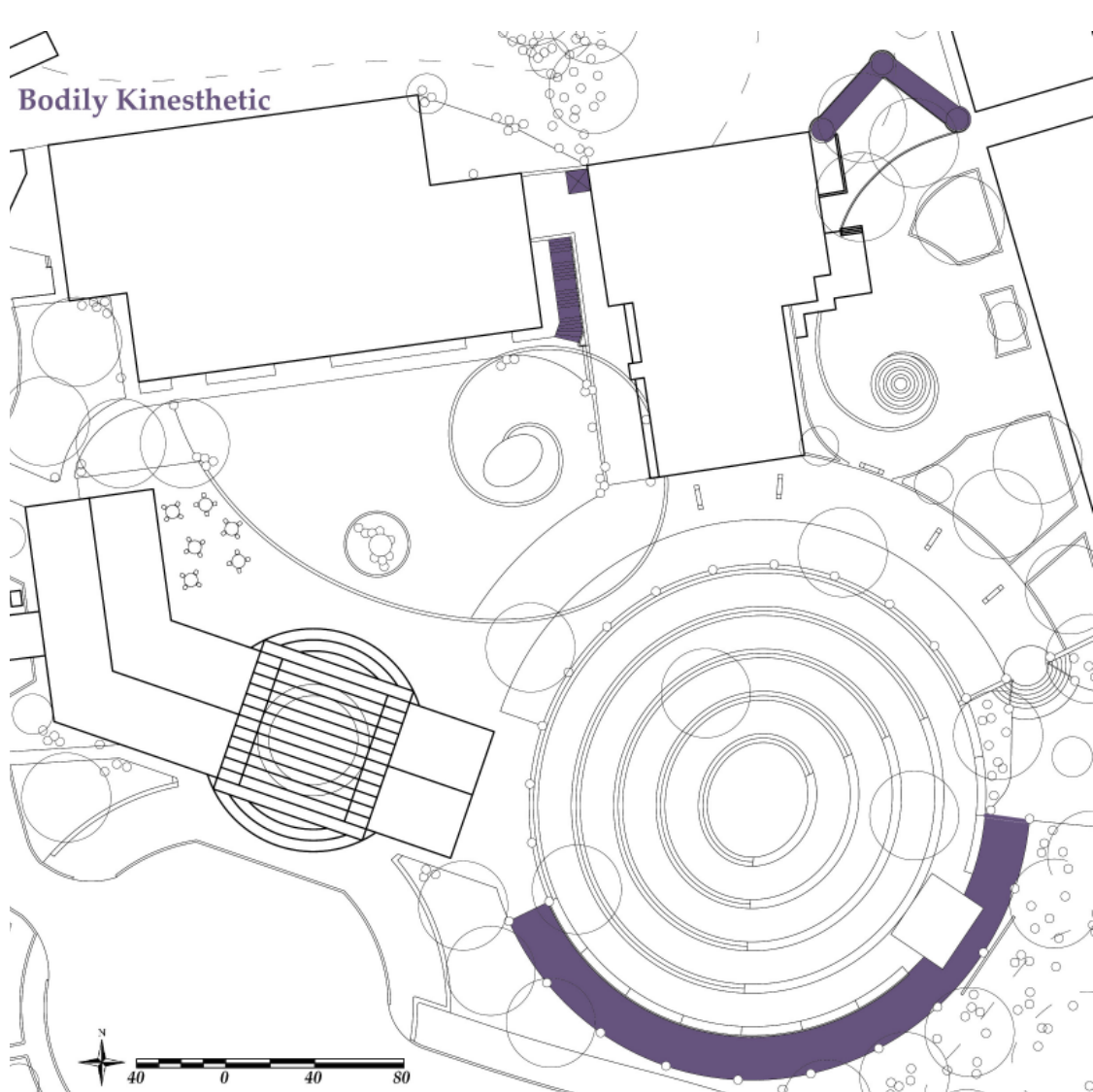
Figure 8.1 Inventory of logical-mathematical intelligence in proposed public spaces



Musical/ Rhythmic

- Amphitheater
 - The stage provides a setting for a musical concert
 - The steps within the amphitheater are designed with loose pebble, which creates sound when walked upon
- Bioretention Areas
 - Grasses create visual rhythm when dancing in the wind
- Water Feature
 - The sounds of the water moving over the rocks and splashing into the pool
 - Possibility of new sounds and tones created by added artwork
- Stairway from main courtyard to wood
 - The design of the stairs includes loose pebble that creates sound when walked upon
 - The rock-covered slope beside the stairs will create sounds and rhythms when water is moving through it

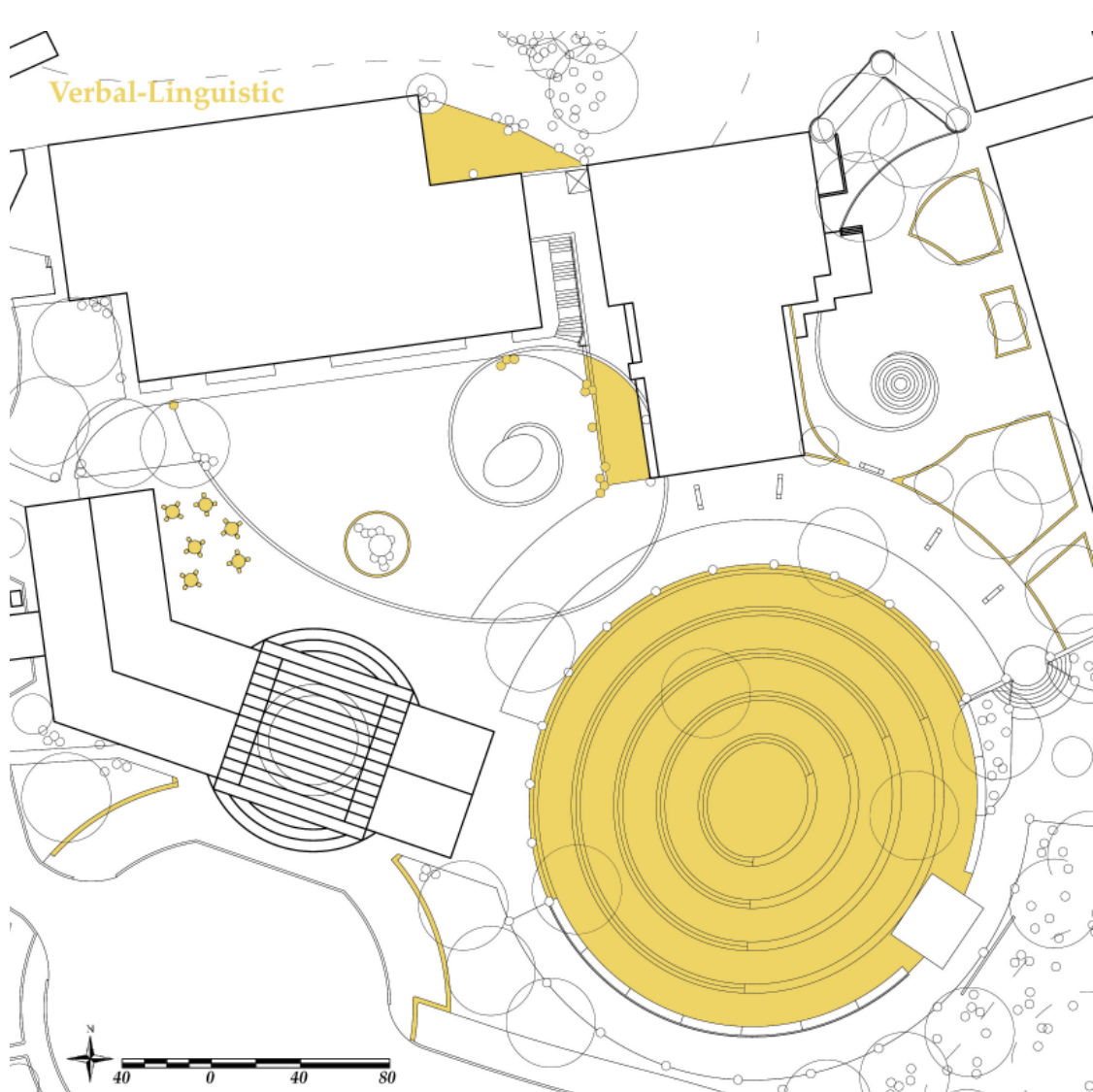
Figure 8.2 Inventory of musical-rhythmic intelligence in proposed public spaces



Bodily Kinesthetic

- ADA Access
 - Elevator
 - Handicap ramp around amphitheater and from metals to lower level of exhibition building
 - Creates ease of access for physically disabled users
- Stairway from main courtyard to wood
 - The proposed design changes a very steep ramp into a long stairway with landings every five to six steps
 - This will allow more users to comfortably use this path

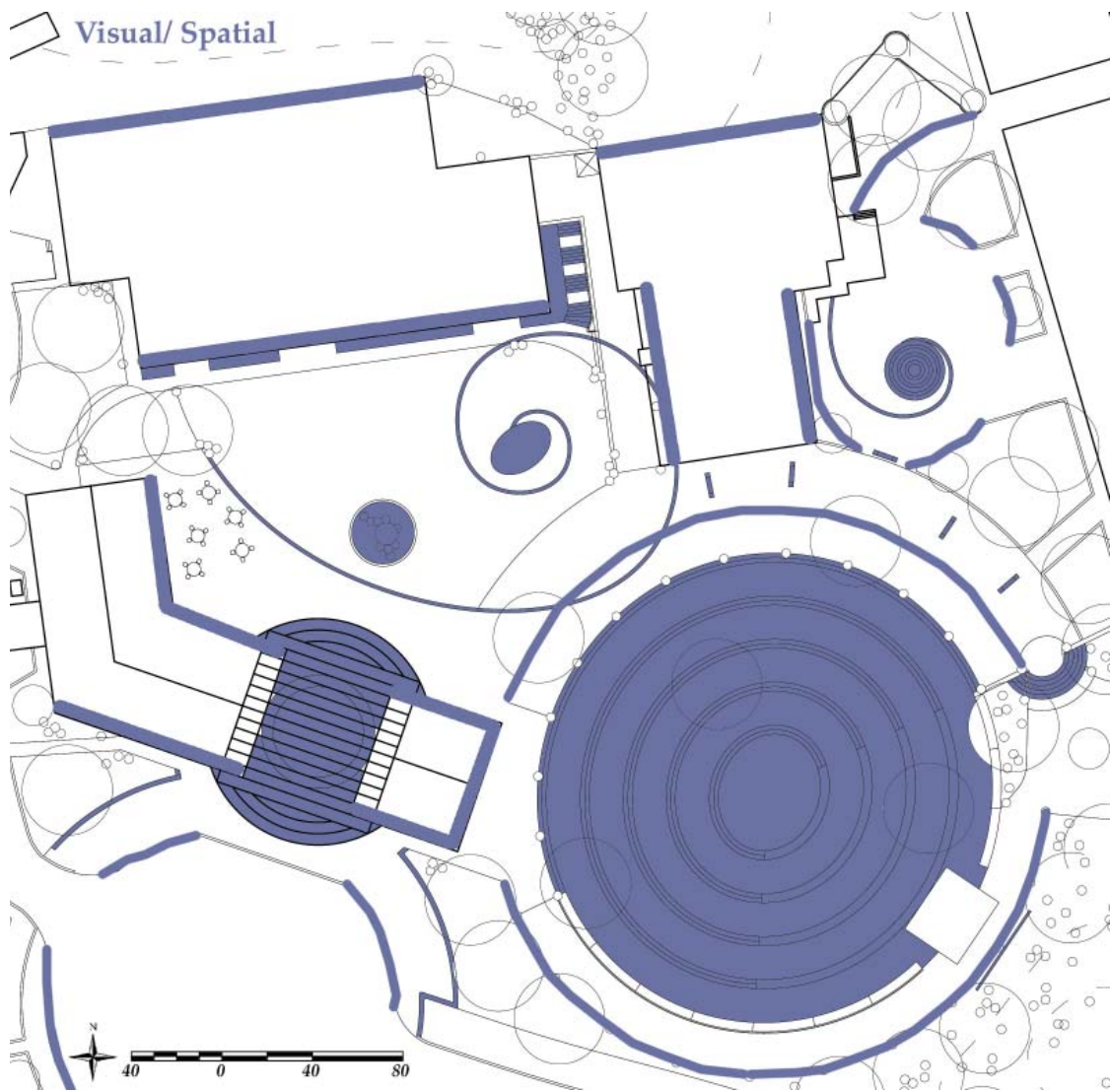
Figure 8.3 Inventory of bodily kinesthetic intelligence in proposed public spaces



Verbal/ Linguistic

- Communication
 - Gathering spaces
 - Seating walls, deck, café tables, amphitheater, and wood patio
 - Amphitheater
 - Outdoor classroom

Figure 8.4 Inventory of verbal-linguistic intelligence in proposed public spaces



Visual/ Spatial

- The intersection of and interaction between materials creates line, form, scale, and depth
- Patterns and spaces are created by the relationships between elements

Figure 8.5 Inventory of visual-spatial intelligence in proposed public spaces



Naturalistic

- Plants allow for communion with nature
- Rocks reveal underlying geology
- Bioretention areas and rock slope provide erosion control and water reclamation

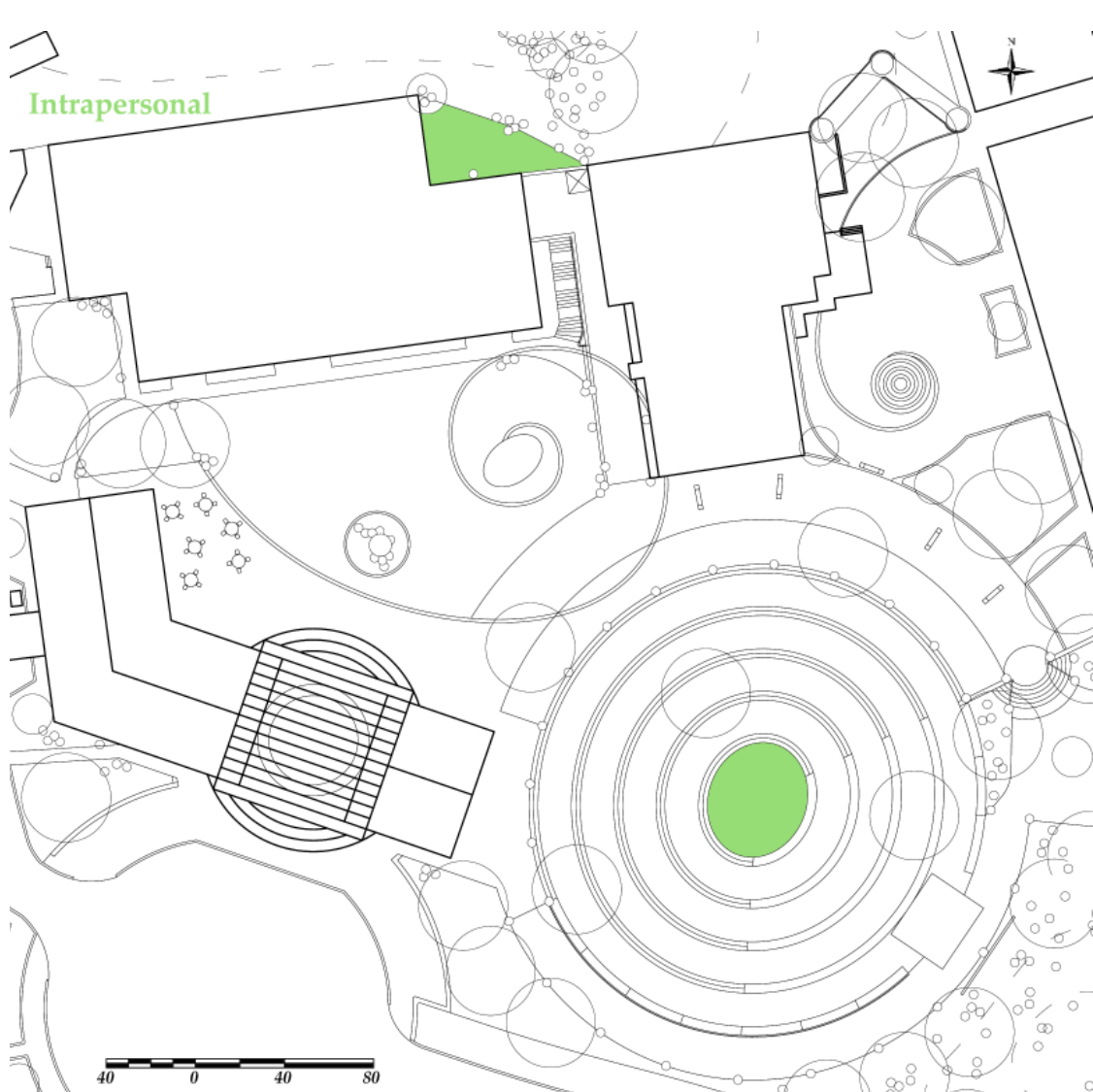
Figure 8.6 Inventory of naturalistic intelligence in proposed public spaces



Interpersonal

- Gathering space facilitates communication and interaction with others.
- Main courtyard and amphitheater provides space for group activities

Figure 8.7 Inventory of interpersonal intelligence in proposed public spaces



Intrapersonal

- Areas for quiet reflection
 - Wood patio (when alone), center of amphitheater
 - These areas are public space, but can have a secluded feel if alone

Figure 8.8 Inventory of intrapersonal intelligence in proposed public spaces

CHAPTER 9: CRITIQUES AND COMMENTS

Overall I believe that the design solution is not the strength of the project, but instead the development, process, and conclusion of the ideas. I believe that using Gardner's theory or any applicable educational or psychological theory is a step in the right direction for creating meaningful experiences through the landscape. These theories can increase the designers' understanding of human nature, which will produce landscapes that engage people more wholly. The other advantage is that a tool is created that can be used to articulate ideas and analyze proposed and existing landscape designs.

Design:

The proposed design is evaluated on the fulfillment of the criteria, the possible view of the users and financially interested parties, through the lens of multiple intelligences, and my personal view.

- The criterion for the site was to fulfill the needs of the school and students. I believe that each of the listed needs was addressed with a reasonable solution. The proposed design adds opportunities for the school to highlight itself and gain recognition by inviting sought after visiting artists and the marketing of their new opportunities. For example, the studio spaces have been increased. This will allow students to have more personal room, but will also provide the visiting artist a private studio. The increased space will also help to facilitate a more functional studio atmosphere because there will be more room for equipment and ease of movement.
- The proposed design provides the users of the site more opportunities to create and be creative. The design solutions would best satisfy the students, for most of the solutions are geared toward improving their experience. The faculty will benefit as well because they will have more space for their offices and private studios, and more room for the equipment, therefore helping to facilitate better mentoring. The staff also benefits by having adequate space for their offices and centrally located.
- The Board of Directors and other people who are financially tied to the success of the school may only be interested in parts of the design. The design elements that pose a solution to the needs of the school will be of most importance, while the elements that engage the multiple intelligences may be of no interest at all. However, if marketed correctly, I believe that having a school

that is progressive enough to be designed to engage the multiple intelligences inside the classroom and out would be extremely attractive to potential donors interested in furthering education.

- I suspect that given more time to explore and grow as a designer would lead to a more unique and well thought out solution. Currently the placement or shape of some elements are not fully resolved and therefore form awkward spatial relationships or fail to create uniqueness. However, I believe that the exploration of this design is heading in a positive direction.

Process and the Use of Multiple Intelligences Theory:

- The process of this exploration started out difficult and never became easier. The first hurdle was the difficult task of converting an educational and cognitive theory into a framework for the design of a physical place. There were no specific examples or prior studies from which I could draw precedence.
- The design criteria developed for landscape architects (Figure 4.1) is a beginning point for designers creating a multiple intelligences landscape. Individual designers and projects will spark and create additional solutions and methods of engagement.
- The success of the incorporation of the multiple intelligences is difficult to evaluate without actual observation; as a result, the level of engagement can only be speculated. If the design elements do engage the intelligences, they engage some more than others. This leads me to think that the number of intelligences designed for should be limited to only the most appropriate for the site.
 - The purpose, function, and physical elements of the site chosen should influence which of the multiple intelligences are chosen for the design.
 - For example, if designing for a sports camp or arena the MI chosen would be body kinesthetic, interpersonal, and intrapersonal. Other MI might also be included depending on the sport: baseball = math-logical, soccer = visual-spatial.
 - The ACC is more difficult to narrow down because it is a school that by the nature of the subjects taught engages most of the intelligences.

- The designer's personal strengths and weakness within MI will both enhance and limit design solutions.
 - Each person possesses some level of ability within all eight of the multiple intelligences with some being stronger than others. In my case, I am strongest in visual-spatial, intrapersonal and naturalistic and weakest in musical and verbal-linguistic. The remaining intelligences fall somewhere in the middle. My strengths allow me to design and understand the landscape best through those lenses, while my weaknesses limit my understanding.

Final Comments:

- While everyone possesses all eight intelligences to varying degrees, they also have weaknesses in some areas. I believe that because of this, collaboration is the best way to design a multiple intelligence landscape. This allows for two or more unique individuals to draw upon their strengths and have others compensate for their weaknesses. Within the field of landscape architecture, it is most likely that the individuals in the design group will share the strength of visual-spatial intelligence. This shared strength is helpful as a base from which to work. From there the individual designers can draw on their unique strengths and the others can learn from them. The best part is that the improvement of personal skills is unending. This is due to the fact that when one person in the group creates an element that the others do not quite understand, an explanation will be needed. This explanation will force the creator to verbally and visually articulate the idea and how the specific intelligence is engaged. This will therefore provide the opportunity to grow in the verbal-linguistic and visual-spatial areas. The members that are listening to the explanation will also be learning through the same intelligences and will increase their understanding of the specific intelligence being discussed.
- A complete inventory evaluation of a site that is designed to engage the multiple intelligences will be difficult to determine due to the almost endless possibilities of engagement. For example, the proposed design for the wood kiln area engages the interpersonal intelligence by facilitating a more conducive gathering space. However, by engaging the interpersonal, the verbal-linguistic and mathematical-logical are potentially engaged as well. This is due to the explanation of the firing process to the novice and non-clay onlookers. Other intelligences may also be engaged, but are not known until observations can be done.

- I believe that one of the ingredients to engaging the multiple intelligences through the landscape is by choosing the materials wisely. The right materials can help to form visual cues, musical tones, logical sequences, physical challenges, and hierarchies of nature, as well as create or delineate places for solitude or gathering.
- The exploration of engaging people intellectually not only increased my understanding of landscape architecture and of peoples' responses to it, but also to human perception and reaction as a whole.
- The use of the multiple intelligences as a guide for developing a framework creates a new direction for the design process.
 - The engagement of the multiple intelligences challenges more than the five senses, but incorporates intellectual thought processes.
 - The use of this theory also gives a new and more thorough way of articulating the potential of a design.
 - It can also be used as a tool for analysis.

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Landscape Photography Exhibition, 2001; Sweet Briar College Permanent Art Collection; Charlotte Country Day Permanent Art Collection; Student Art

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