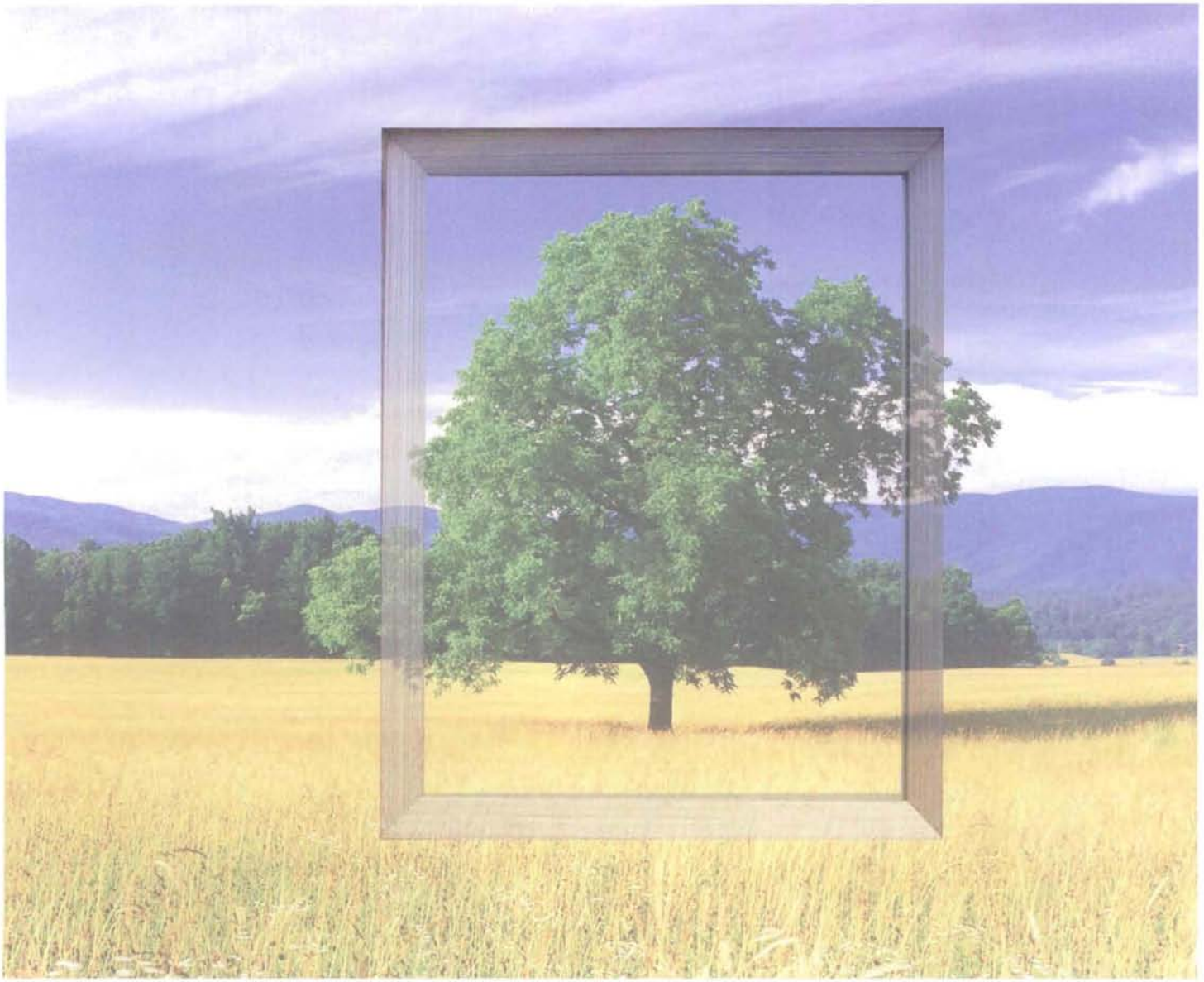
Cultured Growth:

Nature as Cultural Object



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Abstract

Although seemingly contradictory, Nature and Culture are inextricably linked to each other, with modern culture wholly developing as a result of the natural physical world, which has in turn been affected by the culture it helped nurture. The developed, civilized world as it is known today is the result of natural and cultural forces influencing each other to such an extent that to speak of one implicates the other. The march of progress and the spread of humanity to all corners of the globe make it uncertain that there are truly any "untouched" expanses of true wilderness unaffected by human activity, while even the most artificial of built landscapes derive their origins in some way from the natural world. In this way, the "nature" that we originally came from has become a reflection of the culture we have produced from it. Our interaction with and representation of nature through cultural developments such as art, architecture, agriculture and landscaping throughout our history is indicative of the substantial value nature has and still does have in our growth and progress as a civilization. Through the very cultural developments made possible through Nature we are given the means to describe and celebrate the connections between them. By creating a hybrid of these elements: nature and culture through the fusion of art and architecture, agriculture and landscaping, we can more fully understand and appreciate the importance of both.

Project Summary

The society in which we live in is the result of a cause and effect relationship between the natural world and the cultural world that emerged from it. As a result of this, nature has taken on a cultural connotation that has been expressed through multiple and highly varied forms, including art, architecture, agriculture and landscaping. In order to more fully explore these themes and ideas, a combination of programs that allow for the adaptable exhibition of cultural works pertaining directly to Nature as a cultural object is necessary for the project to be a success. In this sense, the program is that of a botanical museum, fragmented into multiple buildings that necessitate the movement between indoor and outdoor environments, each of which has direct correlation with specific subjects relating to nature and culture. While traditional art pieces such as paintings and sculpture wil deal with all aspects and representations of nature, the outdoor and indoor gardens and landscaping will deal more strictly with ideas of Nature as cultivated object, The spaces that are to comprise the museum are to , spincluding traditional art pieces such as paintings and sculupture, permanent expanses of both vegetative and non vegetative meeting and recreation space, formal and agricultural gardening installations

Major Components:

The major components of the project are intended to bring large numbers of people into an immersive, interactive exploration of the cultural influence of nature. Exhibition space intended to show permanent and temporary artworks in both indoor and outdoor settings as well as general and specialized recreation

Permanent and Temporary Exhibition Space: A combination of permanent and non-permanent indoor and outdoor exhibition spaces intended to explore the connections between nature and culture through various media.

Vegetative and Non-Vegetative Recreational Space: A mixture of indoor and outdoors, the recreational spaces are to promote traditional park activities such as sports and picnicking with interior recreations such as movies and concerts.

Formal and Agricultural Gardening Space: potentially a part of the recreational space, the gardening portion of the program is intended to showed the connections between sustenance farming and formal gardening

Thesis

Although seemingly contradictory, Nature and culture are inextricably linked to each other, with modern culture wholly developing as a result of the natural physical world, which has in turn been affected by the culture it helped nurture. The developed, civilized world as it is known today is the result of natural and cultural forces influencing each other to such an extent that to speak of one implicates the other. Indeed, the effects of civilization and human culture can be found in every corner of the globe, whether it be the expansion of cities and developed farmland to intangible effects such as global warming exacerbated by industrial processes. The march of progress and the spread of humanity to all corners of the globe make it uncertain that there are truly any "untouched" expanses of true wilderness unaffected by human activity, while even the most artificial of built landscapes derive their origins in some way from the natural world. In this way, the nature from which we originate has become a reflection of the culture we have produced from it. The built cultural landscape that we inhabit has as much validity as the natural landscape from which we were born. Although the relationship between culture and nature has always been one of deeply related cause and effect, the two still have marked distinctions between them, with the most obvious being our tendency to see nature's explicit separation from the built environment that dominates our everyday lives. While this can be attributable to necessary protections and functional purposes that define so many of our structures, the failure of architecture to find a resonant interrelationship with nature, both physically and abstractly, remains a challenge even in an era that marks the expanding popularity of purposeful green design. By finding this resonant type of hybrid architecture/nature, however, we can gain a deeper and more profound realization of how closely culture and nature are related.

The dynamic between the built and natural landscape is at once intricately connected and completely opposed to each other, with "civilized" prosperity typically coming at the expense of our natural resources. As our cities expand, the remaining green space once marked by unrestrained growth becomes the very opposite of natural: it becomes planned, built

and maintained. Nature in this way becomes as much a part of the built environment as the buildings surrounding it. "Nature" produced in this way becomes a completely different entity, a thoughtful representation of an idealized world expressed as an Enlightened sensibility. Intended to be pleasing to the eye, "Nature" represented in this way then becomes less a living expanse and more a cultural experience, to be viewed and admired as one would admire a painting or a sculpture. Nature in this way becomes blurred by the culture that produced it. The differences between the built and natural fade, with the only boundary left being the integration of the natural, organic world and architecture into a cohesive, multi-dimensional whole. The hybridization between what we could call natural and artificial into an architectural form represents the perfect amalgamation of nature as cultural object, injected into the form of what can be considered our natural environment. By integrating the phenomenon of nature as a cultural experience into architectural form, architecture and "nature" become fused; creating an experience that subverts the traditional view of nature and creates an entirely new hybrid condition both contradictory and deeply related to each other.

The relationship between nature and culture is one born out of cause and effect. From nature the first vestiges of culture appeared, which in turn began to inform how we further interacted with nature. When discussing the two terms, however, it is important to gain an understanding of what these words really mean. Each word has a unique history and both have acquired meanings far beyond what they initially described. By understanding the words, the relationship between the two becomes more defined and the connections between nature and culture can be more fully appreciated.

Nature is a word at once so simple and stunningly complex that to look it up in any dictionary reveals a wealth of definitions, each one more elaborate than the next and, most unusually, different from dictionary to dictionary. Raymond Williams, in his Keywords, describes nature as "perhaps the most complex word in the language."[1] Williams lists three major definitions of nature: (1) the essential quality and character of something; (2) the inherent force

which directs either the world or human beings or both; and (3) the material world itself, taken as including or not including human beings. Nature has its roots in the Latin nasci, meaning to be born. The earliest usage of the word was to describe the essential quality or character of something, the nature of things. This definition of the word appeared in the 13th century, with the last two definitions appearing in the 14th and 17th century, respectively.[2] The most common usage of the first definition, when describing human nature, has in fact characteristics of all three main definitions, referring to human character, our driving forces and the idea of man himself, a man in nature. The idea of nature as a representation of the entire world was a relatively late development, with common usage beginning in the 17th century, although there were instances of this definition in place long before then. The idea of nature as the physical manifestation of the world itself has undergone numerous mutations, the basis of which begins with the idea of nature personified. The idea of a nature goddess finds its origins in numerous cultures throughout the world, many originating with multiple gods and goddesses representing all manner of natural phenomenon, such as having a good hunt or harvest. The rise of monotheism as the dominant religious viewpoint in the early centuries A.D. gave rise to the idea of a singular deity, which manifested itself as the now common "Mother Nature" or "Mother Earth". The use of the word nature to describe the material world as we know it today developed in the 17th century with refinement through the 18th and 19th centuries due in large part to the Scientific Revolution, which revealed many of the natural laws that, up until that time, had been a mystery. The discoveries brought about by the Scientific Revolution not only brought the current usages of the word nature into their final form, but it also gave nature a connotation of enlightenment, reason and order.[3] The view of nature as being purposeful, with clear intent and design is notable in that it has many similarities with culture, both in origins and in the meanings that are attributed to them. Nature, through these definitions, takes on multiple meanings: that which drives our innate soul, and the actual physical world in which we live. Nature, through these meanings, remains the single most important term in relation to our history, our development and, most importantly, our culture.

Culture, as described by Williams, is "one of the most complicated words in the English

language." [4] This is due in no small part to the fact that it has had a complicated history, but also because of the wide variety of different professional disciplines that make use of the word. The word culture has its roots, quite aptly, in the physical manifestation of nature. From the Latin cultura, meaning to grow, which has its root in the Latin colere, meaning inhabit, cultivate, protect and honor. The early usage of the word was almost entirely based around the tending of something, plants or animals, the necessary work of farming, from which the word agriculture was formed. The meaning of growth was then applied to human development in the 18th and 19th century, to culture one's mind became a common phrase to describe education.[5] This association with education gradually allowed culture to be used abstractly to describe other ideas, most notably the sciences, where growth cultures of bacteria and other organisms became common, as well as society, specifically the social values and artistic achievements that a society produces. This last definition, relating to the arts, has become the most common definition used in relation to culture. Culture has become a catchall word to describe a society's pattern of human activity, with particular emphasis on the arts and social customs prominent in a given society.

Culture, born out of nature, both human and physical, shares similarities with nature in both history and thought that suggests that their connection is far more important than might be casually glanced. Culture, like nature, deals with processes concerned with growth, progress and the innate character of things, whether they are living organisms or abstract ideas and philosophies. This character found in humans, our human nature, has had a direct and lasting effect on the natural world in which we live, while also contributing to the distinct and sophisticated cultures that have developed throughout the course of our history. Increases in the food supply allowed for the proliferation of other occupations outside of agriculture, leading to the establishment of permanent settlements that would become the first vestiges of modern cities. The establishment of permanent settlements as a result of agricultural advancements represents the first major step towards a modern culture as well as the first example of man altering the natural landscape to meet his needs. In effect, the domestication of nature through the act of

farming is the first example of nature as a cultural object. The importance of having a successful harvest, coupled with the notion of Nature as deity, led to the first examples of religion, a cornerstone of cultural development. The greater availability of food, in addition sustaining a burgeoning population, allowed for the establishment of new, distinct fields of study, including philosophy, the arts and architecture.

The development of architecture represents the second major shift in the natural and cultural environments. Architecture, though initially simple, allowed for the first permanent settlements to be established, literally paving the way for cities as we know them today. Although largely at the mercy of nature, cities were the second major development in which man began to physically change their surrounding environment for their benefit. The large populations of these settlements allowed for significant social and cultural development that allowed all types of disciplines to develop, expand and flourish. During this initial phase of settlement, the importance of nature and its relation to culture can be seen through the structures of such Neolithic monuments as Stonehenge in England and Goseck Circle in Germany, both monumental structures widely thought to be instrumental in predicting solstice and lunar movements. [6]

As human settlements expanded, the density and layout of the city changed. The need for protection from outside forces necessitated the construction of large, defensive walls to repel invaders. The defensive walls that would become common in many ancient cities significantly separated the city from the surrounding environment, in effect codifying what would be considered today as the city and the country, two distinct environments in which one, the city, would come to rely on the country for food and labor, with the city providing protection for the inhabitants of the country. The surrounding agricultural land that lay directly outside of the city walls, already significantly altered for human use, would begin to be seen as intrinsically different from the city, two foreign worlds connected through mutual need of each other. The ancient civilizations of antiquity are also the first likely examples, at least in theory, of extensive

gardening for uses other than the production of food. Indeed, one of the first examples of nature as a purely cultural object comes to us through the historical account of the Hanging Gardens of Babylon. According to legend, the Gardens were built by Nebuchadrezzar II as a gift to his homesick wife, Amyitis, to remind her of her verdant homeland.[7] While considered unlikely that such elaborate hanging gardens existed in Babylon, it has been postulated that such gardens possibly existed at Nineveh, as supported by records discovered at the site which support this conclusion. [8] Regardless of the reality, the powerful appeal of the Hanging Gardens, along with the fact that it is the first significant account of nature as a purely aesthetic object, in this case for their beauty and as a reminder of a far distant land, make it a significant example of the early use of nature as a cultural experience

As agricultural and technological advances furthered the growth of cities throughout Europe from the Middle East, Christianity came to the forefront of Western thought. Religious examination of human nature became the subject of scholarly pursuit and artistic expression. The dominance of the Church in cultural matters would be felt throughout Europe, with nature becoming just one aspect of God's kingdom. Nature, in this view, became subservient to God's Will, often being seen as a subordinate in the hierarchy of divinity. [9] The separation between the city and country took on greater complexity, largely due to steadily developing infrastructure made possible through exploration and engineering. The countryside and its inhabitants, while always in the majority, were able to spread out to vast distances, made possible to the emerging feudal system throughout most parts of Europe. The power and scope of the Church, while not directly concerned with the physical manifestation of nature, indirectly influenced our architectural and cultural growth through the development of the church, which introduced multiple new building techniques that would greatly expand the realm of architectural possibility, culminating with the building of the cathedral. The development and realization of the cathedral, while impressive in its own right, marks one of the first buildings to introduce concepts of nature's relationship to divinity, intangibly through the use of light. The vast quantity of light

able to penetrate the lofty interiors of the cathedral were remarkably not only for the highly intricate feats of engineering necessary to make it feasible, but more significantly for the intense spiritual connection forged between the occupants and the divine. Nature, in the form of sunlight, becomes a highly emotional cultural symbol amplified through the use of architecture.

The later development and refinement of the cathedral coincided with the beginning of the Renaissance era. As before, religious subjects dominated the cultural discourse, although the renewed focus on human nature, specifically the revival of classical learning and the arts, brought with it a renewed focus of natural subjects. According to Giorgio Vasri's *Vite de' più eccellenti architetti, pittori, et scultori Italiani* (The Lives of the Artists, 1550-68) it was not just the growing awareness of classical antiquity that drove this development, but also the growing desire to study and imitate nature. [10] The church remained the foremost patron of the arts, however, and as such the majority of the great artworks of the time dealt almost strictly with religious imagery and events. The Renaissance, however, would ultimately become the first major historical event that would lead the idea of nature as cultural object as we know it today. The ideals of the Renaissance towards enlightenment, beauty and truth would deeply influence future thinkers and artists, and this philosophy ultimately saw the beginnings of the scientific revolution which would ultimately have the greatest impact on the role of nature as significant cultural force.

Beginning after the High Renaissance period, the Scientific Revolution is generally agreed to have begun in 1543, the year in which Nicolaus Copernicus published his *De revolutionibus orbium coelestium* (On the Revolutions of the Heavenly Spheres) and Andreas Vesalius produced the *De humani corporis fabrica (*On the Fabric of the Human body). [11] These achievements, in addition to the numerous others carried out by others such as Francis Bacon, Johannes Kepler, Galileo Galilei and Isaac Newton, led to the establishment of the modern scientific process as well as a newfound appreciation for the natural laws proven to govern the universe. The irrefutable mathematical evidence used to support the heliocentric view of the

universe along with the Newton's Theory of Universal Gravitation gave proof that the world, and indeed the entire universe, was governed by a set of laws and principles that could be deduced through scientific inquiry. This truly revolutionary change in thought led to a newfound appreciation of nature not as a wilderness but as a rational environment whose complex systems could be understood and thus, was perfect in form and function. The Scientific Revolution not only introduced the first disciplined examples of science in the Western world, but it would propel the establishment of countless other scientific disciplines that have directly effected the natural environment and the perceptions thereof. [12]

The contributions to human culture brought about through the Renaissance and the Scientific Revolution led to the beginnings of a conscientious manipulation of nature towards a cultural aesthetic. The beginnings of this can be seen in the Italian Renaissance gardens of the mid 16th century that deliberately arranged and maintained particular types of plants and flowers in patterns intended for leisurely pleasure. The first of these gardens, Boboli Gardens in Florence, Italy, utilized axially laid out gravel paths, built stone elements and a distinct hierarchy of space that included prive and semi-private spaces adorned with classical accents, unconventional for its time. [13] The care and diligence required to maintain such gardens left such pursuits to the very wealthy, giving nature a cultural cachet as being the domain of the rich, with the prosaic concerns of agriculture being a necessity of the lower classes. The breadth and complexity of the designs became a way of publicly displaying ones power and prestige, and so the spread of the formal garden made its way across Europe. As the formal garden spread, it underwent notable changes that drastically affected its style and presentation. Of the two most notable changes, the French and English formal gardens would have the most lasting impact, with the French garden representing nature at its more abstract and refined and the English garden moving toward the picturesque representation of nature.

The French formal garden was directly transplanted from the Italian gardens made popular in the 16th century. Particular to the French designs, however, were highly intricate

geometric patterns held within a parterre of stone or rigorously maintained hedging. Additionally, the French brought in the extensive use of water features into their gardens, most notably fountains, which would form the central anchors around which the gardens would radiate. The apex of the formal garden movement, the gardens at the Palace of Versaille, represent one of the largest expanses of landscaped architecture ever produced. Designed by Andre le Notre, the gardens feature extensive parterres, fountains and canals, all of which are centered along the Grand Canal leading to the massive Fountain of Latona. [14] The expansiveness of the gardens in addition to the splendor of the palace itself represented the absolute apex of cultural sophistication at the time of its production. The influence of Versailles in all manner of arts and culture caused imitations of these gardens to become standard throughout the rest of Europe, including England, where it would ultimately be abandoned in favor of their "natural" English gardens.

The English garden has its origins in the romantic art movement of the late 18th century, a movement which in and of itself was a rejection of the scientific view of nature brought about by the Scientific Revolution and the Enlightenment. More so than any other art movement, Romanticism sought to capture the awe, mystery, horror and sublimity of nature through all manners of cultural artistic expression. Romantic art made extensive use of landscapes as subject matter; often grand, untamed wildernesses with idealized individuals determinedly making their way through them. The works of John Constable, Caspar David Friedrich and the Hudson River School best show the Romantic view of nature as defined by the notions of the Picturesque. Described as '"that kind of beauty which is agreeable in a picture" by William Gilpin, the Picturesque ideal made popular through Romanticism would become a hugely influential idea whose practices are still being used by contemporary landscape architects. Rejecting the notion of well manicured, ornate gardens, the picturesque ideal would become the main influence in English garden design, which would then expand to include entire landscapes. The Picturesque, rather than the artful, prized the untamed wilderness as the true representation

of beauty worth capturing. Irregular sight lines, rough and unpredictable terrain become a more potent and resounding representation of nature. Many individuals of the time sought to find such examples of nature in the world, most often within the deep English countryside. After returning from their trips, they were encouraged to replicate these landscapes on their own estates. The ideals expressed by these landscapes would become the most familiar type of park design seen throughout the majority of the English Royal Parks and iconic public parks such as New York's Central Park. Best exemplified by Capability Brown, then continued by architects such as Frederick Law Olmsted and Calvert Vaux, the picturesque landscape combines elements of formal planning with a deep-seated desire to preserve a sense of "wildness" and untamed beauty. Here nature interacts with culture subtly, with often classical buildings discretely nestled into the expansive fields and dense tree lines to evoke a type of measured tranquility. Rather than being directly placed into the thick of nature, the picturesque ideal demands to be observed visually, best enjoyed while taking a leisurely walk along one of the many carefully placed paths that typify their design. Here, architecture becomes an accent of the surroundings, rather than the opposite. It is at this junction, right before the dominance of the Industrial Revolution, that the cultural importance of nature reaches its apex before technological achievements gradually subvert the importance of nature and architecture radically shifts the relationship between the natural world and the built.

The technological changes brought about by the Industrial Revolution dramatically shifted the role of nature from being primarily a source of food, to also become a source of food, fuels and raw materials needed to produce goods on a massive scale. The fascination of nature exemplified by the Romantic movement was replaced by the depiction of everyday activity through Realism. The city, although always a commercial center, underwent a period of drastic growth due to the massive influx of people seeking work, as well as the rapid establishment of new urban centers to exploit nearby resources. The industrialization of new materials, most notable iron and, later, steel, allowed for dramatic new types of construction

previously impossible to build. The industrial architecture of the time allowed for the expression of unconventional building forms that would become the basis for bold new architectural theories that took advantage of the widespread availability of mass produced materials. The most influential and lasting of these movements, Modernism, would have an incredible impact in marginalizing nature not only within the city, but within the rapidly expanding suburbs that were beginning to fully form around them.

Modernism developed in large part due to the changes wrought by the Industrial Revolution. The widespread availability of new, simple materials coupled with the desire for simple, economical buildings led to a style of architecture composed of simple geometries unadorned by ornament or superfluous design. By the early 20th century, the forms main proponents, Le Corbusier in France, Ludwig Mies van der Rohe and Walter Gropius in Germany, had become established architects in their own right each creating highly influential works which for Philip Johnson's 1932 Museum of Modern Art exhibition. These works would become known to the general public as the Inernational Style. An instant sensation, the International Style quickly became the standard architectural representation of corporations, government and educational facilities and public buildings. Placing an emphasis on form following function, Modernist buildings exemplify the principles of thoughtful architecture meant to utilize the best elements of a site while discarding any extraneous elements. This resultant architecture creates a paradox, with natural elements such as sunlight providing a significant element to the overall experience, yet the structures themselves seem almost completely divorced from the surrounding landscape. The adoption of modern conveniences such as air conditioning and florescent lighting only further the sense of alienation from the natural world outside, with the inhabitants living in a perfectly controlled interior without and direct connection to the outside. The widespread use of glass, sometimes encompassing the entire building, seemingly connects the inhabitant to the outside world, but without any accompanying sensations such sight typically provides. As the style expanded, the effect of Modernist architecture wasn't one of simple beauty, but soulless

conformity. Modernism, in being a perfect expression of architectural form, became the ultimate example of civilization divorcing itself from the nature it had been born from.

The separation of built and natural environments into dichotomous, exclusive units remains one of humanity's most distinguishing characteristics. The basic need for shelter in our early history slowly gave way to more specialized structures intended to perform specific functions related to our needs. As our needs have become more sophisticated, the desire and need for efficiency and convenience has risen dramatically. The ability to completely regulate the interior conditions of a structure, a recent achievement made possible through technology, represented a radical departure from traditional architectural principles. The evolution of architectural theory and practice over the course of the last century has led to an urban environment that places heavy emphasis on accessibility, efficiency and functionality. This, combined with the technological innovations of the same period, resulted in an architecture that was finally free to exist as a completely separate entity wholly apart from nature. As a result, the indeterminate conditions that exist in the natural environment, conditions that were previously incorporated in the design of older structures, were excised from modern buildings, creating sealed environments with little to no regard for their natural surroundings. The interiors of these buildings, controlled, precise and closed off, represent the antithesis of the complex, organic exterior environment just beyond its walls.

The integration of these spaces, fundamentally opposed in origin, represents a deeply challenging design endeavor that seeks to incorporate seemingly contradicting forces into a functional whole. As it has been examined, however, these forces have in fact consistently informed the other, resulting in constant shifts in attitude towards nature and culture, with the most dramatic taking place through architectural expression. The architecture we build displays our attitudes about our environment in plain sight. The careful integration of our buildings into our landscapes, taking care to remember the role of nature in our cultural well being, will result in architecture far more resonant and memorable now and in the future. To do so, a conscious

decision must be made on the part of the designer to introduce multiple and varied elements of nature, from the abstract use of sunlight, wind, water and rain to the subtle incorporation of the physical environment through the use of topography and plant life. Each represents an important aspect of nature, and each allows itself to be explored in architectural contexts that can be separated or combined together to create an atmosphere both connected to the natural world, yet distinctly distilled through the medium of architecture.

For example, light, specifically sunlight, is so fundamental to life that it is easy to take it for granted. As it has always been there, it seems absurd to conceive of life without it, as it simply wouldn't be possible. Light provides us with the warmth and illumination necessary for us to go about our lives. It provides the energy necessary for plants to grow, which in turn allows every other organism on the planet to grow as well. As light, along with water, is largely responsible for the nature from which our culture has derived, it makes sense that light has always been an important cultural element, influencing our beliefs, our arts and our architecture. As the sun provides us with a means to live and prosper, it makes sense that it was one of the first objects to be worshipped as a deity. The idea of a sun god has been a prominent part of every major civilization throughout recorded history, being so ingrained into our psyche that even the Bible, the foundation for Christianity, refers to light within its first few lines, regarding light as the product of God, who in turn declares it to be good. The heat provided by the sun, although arguably the most significant contribution to life on Earth, is generally the second most distinguishing characteristic, behind illumination, for which it is celebrated and synonymous with. Light in this context takes on a variety of cultural meanings: goodness, truth, learning, reason and order. From lights illumination we are able to perceive the world around us, allowing us to live and produce all of those things which have become society as it exists today. From an architectural standpoint, the importance and necessity of light can be seen in the simple and ubiquitous development of the aperture, a feature found in every type of regional architecture throughout the world. The simple and utilitarian nature of the aperture belies the importance

that it has in relating culture, nature and architecture together. Through the aperture, we are able to view either into or out of, perceiving the natural and cultural worlds in equal measure. In accordance with the picturesque, the window frames nature and allows us to view it admiringly. A room with a view; bold, sweeping and beautiful, has become an ideal for which architecture continually strives, regardless of the site or circumstances. The window is at once static and dynamic, providing an eye on a world stationary but in constant motion. It is through the window that sunlight can achieve its greatest effects, allowing light to pour in floods and trickles, creating voids of shadow and dizzying patterns throughout the interiors in which people live. In combining culture and nature in an architectural framework, the play of light and shadow must play a significant part, creating spaces whose sole connection to nature is through the patterns they cast and the view they allow the inhabitant to enjoy. Nature through light remains one of the key aspects to expressing nature as a cultural phenomenon.

Wind, unlike the sun, is tempestuous. A chameleon, wind can presents itself as a soothing summer breeze that pleases the body or a hurricane gale that destroys houses. Culturally, wind represents unpredictability, youth and change, all which reference its unstable nature. Although potentially devastating, wind has, like all other aspects of nature, been harnessed by civilization to fulfill its needs. For travel, wind has powered sea faring ships since antiquity, each major civilization having its own unique type of ship to harness the winds local to the area. Architecturally, wind has been used to cool hot, humid interior spaces through the use of operable windows, the earliest examples of which used hide or cloth to block winds too strong or cold to be desirable. Passive air systems, such as those found within traditional Iranian homes, direct wind through tall chimneys, which directs it through the lower living spaces to protect them from sandstorms. Perhaps the most iconic of wind harnessing architecture, the windmill, has had uses in milling, pumping water and generating electricity since the Middle Ages. As wind's character changes with the circumstances in which it is perceived, the importance of being able to adapt according to the situation becomes the foremost concern when integrating

it into a culturally engaging architecture. This adaptability comes in two forms, the ability to change the flow of wind when able and the ability to harness energy when possible. The first comes through the incorporation of operable windows and the second through the use of passive air systems such as those exemplified by modern circulation systems and wind powered generators. Operable windows, the most basic and universal of air conditioning technologies, allows those who wish to change their environment to do so while remaining connected to the outside environment, a connection often lost through modern cooling and heating equipment. The second, while not always possible, allows for the harnessing of wind towards what are typically mechanical processes, air circulation and power generating. The integration of wind in this fashion, both actively and mechanically, into an architectural model allows for a level of interactivity and resourcefulness that connects nature and culture into a functional whole.

Water, the most abundant and precious of all natural resources, is both a necessary component of life and a dangerous natural element that one must be sheltered against. Water, in its numerous forms, has presented numerous blessings and hardships throughout our history, from the life giving properties it inherently has to the imminently dangerous qualities it possesses when taken to its natural extremes. As our survival depends on the use of fresh water, it is understandable that the first civilizations were those grouped around fresh water sources, major rivers that provided water to drink as well as water to irrigate crops. Water has provided the impetus for us to develop new technologies and techniques to help us shape and influence the world. The engineering necessary to irrigate our land, to travel across and over water and to transport water to dense city centers became the cornerstones of the first major civilizations. As society flourished, so did the role of water within it, becoming not just a necessity for life, but also a symbol for power, purity and strength. Architecturally, this manifested itself in the iconic form the fountain. The fountain represents a perfect synthesis between architectural design, natural beauty and cultural significance. Originating in ancient Persian and Islamic cultures, the symbolism and dynamism of the fountain has endured to contemporary times, becoming a

standard element within and without major public and private buildings, ranging from parks and museums to residences and hospitals. The fountain has morphed, like architecture itself, ranging in presentation from classical to post-modern, constantly being adapted in new and refreshing ways, some attempting to mimic small, idyllic steams, some utilizing powerful jets to perform massively elaborate, choreographed shows. No matter what its presentation, however, the fountain is a conscientious attempt to display sophistication through the manipulation of nature. Within an architecture that attempts to present nature as a cultural object, however, the simple inclusion of a fountain into the program is not sufficient, nor relevant to the overall intent of the project. In this case, the fountain must not only be a powerful representation of nature, it must serve an explicit purpose that benefits the whole of the building. To do so, it must interact with other programmatic elements of the building in which its unique characteristics would be most beneficial, in this case, as a means for delivering water to the last, and some might say definitive, representation of nature, organic life.

The numerous eco-systems that make up earth's biological makeup are astounding not only for their complexity and diversity, but also for the strong visual connotations we connect with certain individual components of those eco-systems. The thought of cactus brings up an immediate image of a hot, arid scrubland while a toad conjures up thoughts of a fertile, dense forest or wetland. The same holds true for the city, or any other built environment. The thought of a pigeon brings to mind a constructed park while a cockroach might remind some people of a dense city. The strong visual associations that we hold with plants and animals and the environments in which they live represents both a challenge and an opportunity to explore the relationship between nature as it is popularly seen, and the built, cultural environment. Within this architecture, nature becomes a cultural object, the focus of the project rather than a simple accent to compliment the built structure. The combination of the natural and the cultural results in a hybrid condition that is neither. The precise, organized placement and manipulation of plant life to both inform the physical space as well as juxtapose itself from it will remain the ultimate

goal of integrating the natural and the physical.

The roles that culture and nature have played in our development have been profound. The nature from which we developed allowed us to form the first semblances of civilization, from which our own unique cultures developed. As we became more sophisticated, our ability to change and manipulate the natural environment began to create a cause and effect relationship between the two, with one's changing conditions informing the other and vice-versa. As a result of this, nature has taken on a cultural dimension that transcends its mere physical reality and has informed nearly every aspect of our society. Although the two are intrinsically linked, there remains a direct and opposing relationship between the two, with the natural and cultural worlds beings distinctively separated. As the built environment that we increasingly call home expands, the connections between the cultural, civilized world and the natural world from which it was born are more important than other. By finding this resonant type of hybrid architecture/nature, however, we can gain a deeper and more profound realization of how closely culture and nature are related.

Precedent Analysis

Institute For Forestry And Nature Rsearch
Behnisch, Behnisch & Partner

Jubilee Campus, University of Nottingham
Michael Hopkins and Partner

Millennium Park
Frank Gehry, Katheryn Gustafson

Elephant & Eco Tower
Kenneth Yeang & Associates

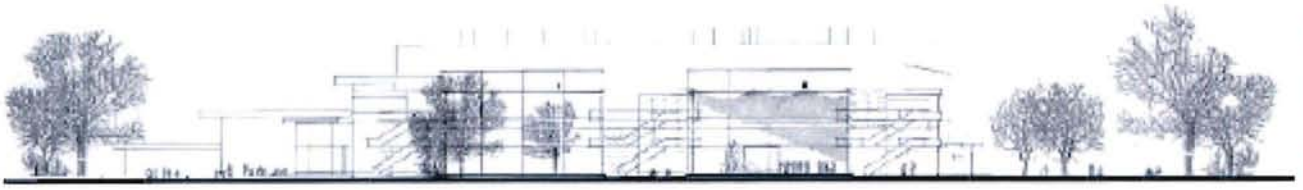
Institute For Forestry And Nature Research

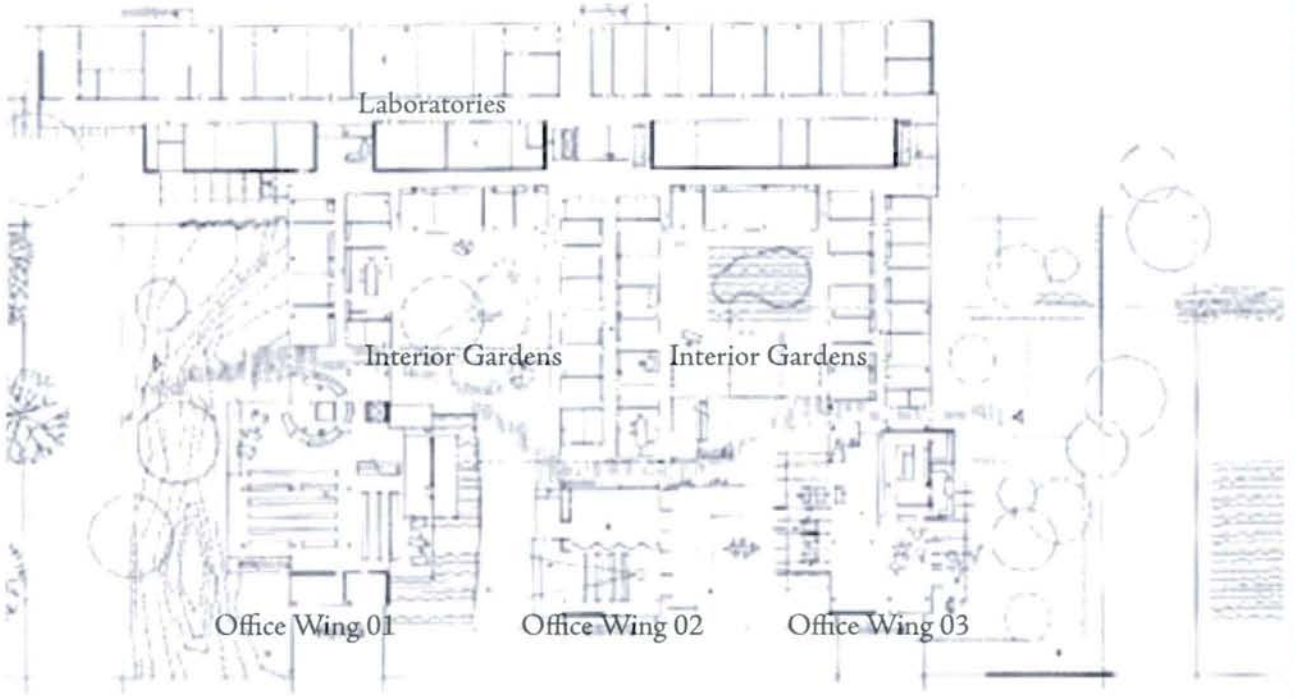
Behnisch, Behnisch & Partner

Droevendaals Steeg 3a / 6708 Wageningen/
The Netherlands / 1993-1998

A consolidation of what had previously been three seperate offices, the Institute for Forestry and Nature Research is arranged as three seperate buildings with buffer green spaces placed between them. The garden spaces serve as natural insulation within completely enclosed spaces, the roofs of which are composed entirely of glass. Depending on exterior conditions, the gardens can be covered by blinds to reduce heat, or windows can be opened to transfer heat from the gardens to the rest of the building or allow a natural cross breeze to permeate the building. A Northern spine containing labratories allows for futher expansion, should it be necessary, while the office spaces are located to the South. Three stories in height, balconies and catwalks located in the interior of the gardens allow for easy access around and through the green spaces, while also providing an intense juxtaposition between building space and landscape. The Institute was built with the strict goal of remaining within normal cost limits, with the intent to prove that sustainable architecture can be built without additional funds or incentives. The resultant structure provides numerous long lasting and effective ecological effects along with an innovative blending of natural and built environments.

Plans / Elevation





Located in a field North of the town of Wageningen in the Netherlands, the Institute for Forestry and Nature Research was designed with the goal of rehabilitating the surrounding countryside, which had been devestated through intense agriculture4. The main spine located in the Northern portion of the building contains labratory spaces, with three wings of office space extending southward. Enclosed garden spaces are located between the office wings, with balconies, catwalks and stairways connecting the offices through the gardens. The layout of the plans allows large amounts of sunight into the garden spaces, which are regulated using large expanses of operable windows and vents. The maniplation of the garden spaces provides heating or cooling, depending on the circumstances, to the surrounding office spaces, while the labratories themselves remain as seprate entities.

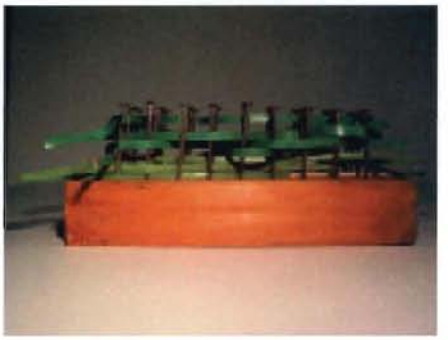
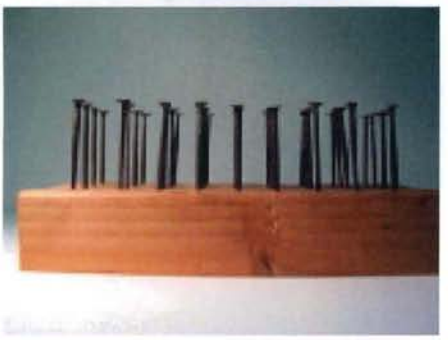
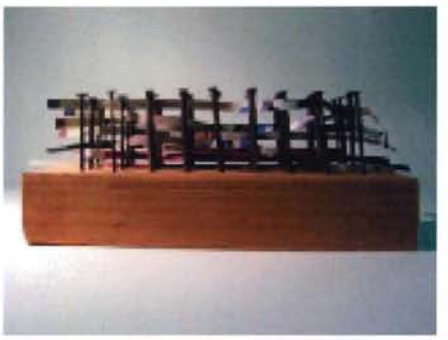
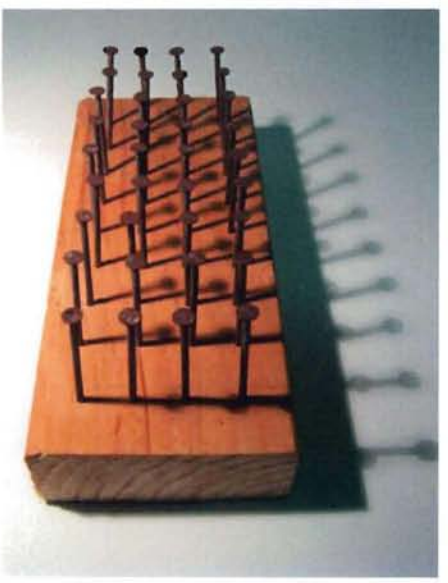
Analysis

The heart of the Institute for Forestry and Nature research is unquestionably the interior garden spaces within the Southern wing of the building. Providing a number of roles: buffer zone, themal insulator and regulator, meeting place, connective hub; the gardens are a perfect representation of what the Institute stands for as well as a tremendous example of integrating natural elements such as plants and water with the functionality of the building into a seamless whole. The formal compisition of the gardens themselves, featuring formal as well as more organic layouts, is layered through the use of terraces throughout, giving each section its own identity that, when taken in as a whole, forms a stunning internal landscape. Operable exterior windows and roof top vents enable breezes to flow through the building while simultaneously creating an interaction between the enclosed gardens and the outside environment. The interaction between the two creates a blurring beteen the permeable "indoor" gardens and the natural landscape located "outside" of it. Certain features of the gardens, such as the precise rectangular ponds, contrast sharply with the wetland vegetation that fills them and surrounds them, creating a intersection between built form and natural growth. Rather than looking like a planned green space, the gardens appear to be nature overruning what had previously been a sterile office space, filling in its planned contours with green and blue. Connective sections of the gardens, including catwalks, balconies and a spiral staircase in the middle, seem like growths initiated by the building to bring order to the foliage. The juxtaposition between nature and building, formal composition and rampant growth, is what makes the Institute so compelling. Rather than placing a building in a field, the designers placed a field within a building, blurring what it means to be "inside".

Critique

The Institute for Forestry and Nature Research is defined by its two interior gardens. Although the gardens provide a number of useful benefits to the health of the building, primarily in regulating temperatures within the surrounding offices, the gardens nevertheless remain as seperate distinct entities which are confined to specific areas in the building. The conditions that are present within the garden necessitated that the surrounding office spaces be double glazed to protect them from fluctuating temperatures and moisture concerns. This effectively seals off the gardens from the rest of the building, although the level of ventilation encourages interaction and use, as well as adding a distinct outdoor element that would be otherwise missing in the enclosed space. The gardens themselves feature a smart mix of water and vegetation in formal and informal layouts, instilling them with a sort of ordered wildness. The implementation of the gardens within the program of the building is an excellent example of using foliage in a functional and aesthetically appealing manner, however, rather than confining the use of such heavily vegetated space to two designated areas, a more thorough integration of the garden spaces into the functional areas of the building, principally the offices, would make the project a more successful examination in blurring the lines between the natural and built environment. As it stands, the gardens, while smartly implemented into the building, can be seen as merely fencing nature into a built corral, rather than being a vital component throughout the entire building. The gardens, while vibrant, have distinct edges which clearly mark their boundaries in relation to the building. Green spaces that threaten to overtake their built surroundings, which present themselves throughout the structures they inhabit, while also remaining functional spaces in which people are able to live and work would be the ultimate expression of an architecture made indistinct from its natural surroundings.

Precedent Diagrams

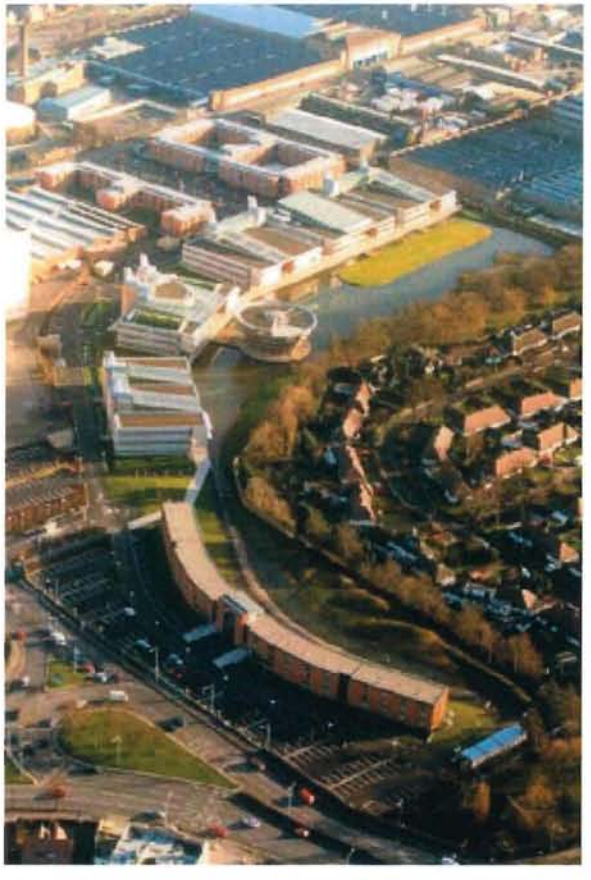







The first two precedent diagrams were inspired out of the idea of planned forestry, specifically the idea of the windbreak, rectangularly aligned rows of trees intended to prevent soil erosion. The perfectly laid out grid of trees goes againt our traditional expectation of nature as an irregular enviornment. The use of nature as a practical object was one aspect of my thesis that I intended to explore, andI decided to use this template for several future precedent investigations.

Jubilee Campus / University of Nottingham

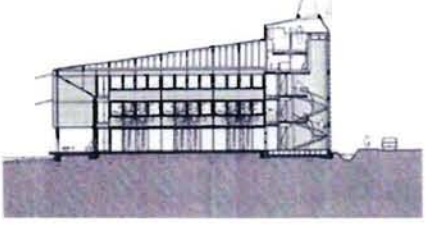
Michael Hopkins and Partners
Nottingham, England 1996-1999

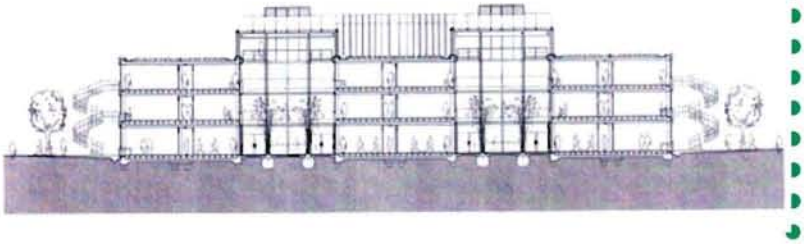
Built on what had previously been an industrial "brown-field" site, the Jubilee Campus extension of the University of Nottingham uses the careful manipulation of the landscape in conjunction with sustainable design practices to maximize the efficiency of the buildings while retaining a simple and elegant design aesthetic. Located a mile away from the the University of Nottingham's main campus, Jubilee Campus houses the departments of computer science, education and the entire school of business. The learning facilities, totalling three seperate buildings, are arranged along the curving form of an artificial lake. Within the lake, the university library spirals upward in the form of an inverted cone directly connected to the central teaching facility on the shore. Lake side arcades run the length of the campus, while large atria within the seperate teaching facilities act as thermal buffers and social meeting places for the students. Residential halls are located to the North and East of the learning facilities. The landscaping of Jubilee Campus, perhaps its most distinguishing feature, is not merely cosmetic, but rather integral to the functioning of the buildings, cooling and filtering air that approaches the buildings and dissipating built up heat energy. Economically built, Jubilee Campus is notable for deceptively simple and functional buildings that tie closely to the lush landscape they benefit from.



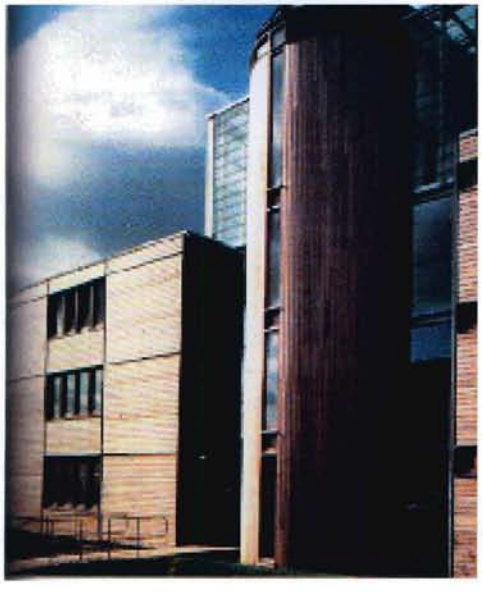
Plans / Sections

Jubilee Campus is located one mile away from the University of Nottingham's main campus. The buildings are arranged along the curving artificial lake that borders residential housing to the West and industrial buildings to the South. The layout takes advantage of natural breezes that come across the lake from the West, using them to drive internal ventilations systems that greatly reduce the need for mechanical heating and cooling. The learning facilities are broken up into multiple buildings, each arranged into classroom wings seperated by large atria that act as thermal buffers that absorb excess heat energy. Within the lake, the campus library and recreational island are connected to the mainland campus through walkways, giving the campus signature landmarks that anchor the school.





Analysis

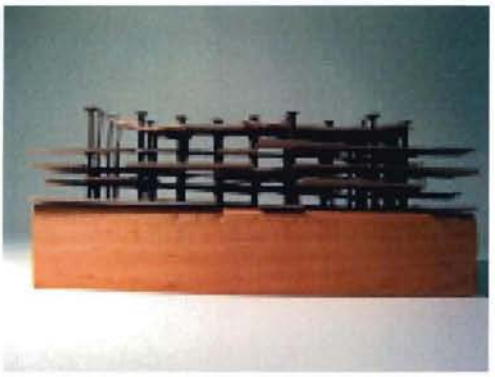


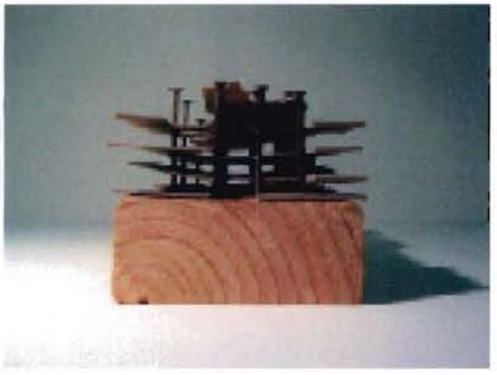
The University of Nottingham's Jubilee Campus showcases sustainable design as a goal achieved through careful consideration of site and form. The learning and residential facilties that make up the campus are composed of simple geometries that allow the buildings to take great advantage of natural sunlight and wind patterns, the latter of which is used to drive the buildings internal ventilation systems. These ventilation systems greatly reduce the need for mechanical ventilation, saving money that would otherwise be used for heating and cooling. The wings of classrooms that form the interiors of the three main learning facilities are connected to each other through large, glass-covered atria. These atria serve as communal gathering areas for the students and act as a thermal buffer between the various sections of the building. A lake-front arcade links the campus together, acting as an informal gathering spot during warmer months. From the arcade students can walk across a short bridge to a rectangular island overlooking the entire campus. Directly across the lake from the island lies the campus library. Serving as an abstract counterpoint to the rectilinear plans of the academic buidings, the library appears as an inverted cone, seemingly drilled into the ground itself. Located within the lake, the library is connected to the main learning facilitiy by a wide concrete walkway. The entire campus, when seen as a whole, appears as two edges bleeding into each other at both ends. The lake, along which the campus is situated, acts as a sharp boundary that is deliberately violated by the projection of the library. Rather than chaotic, the projection of the library into the water appears perfectly natural, a building existing within a nature man-made.

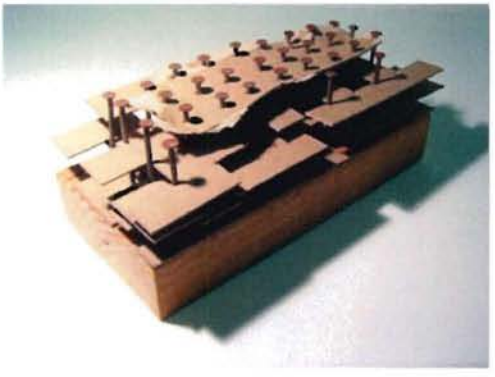
Critique

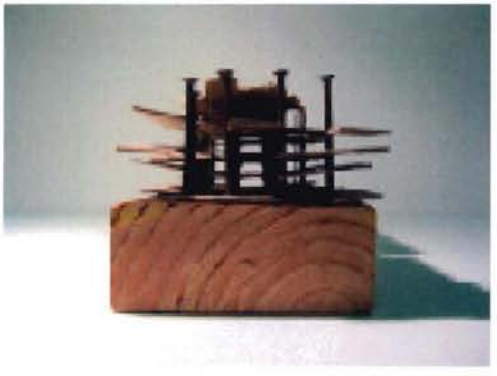
The University of Nottingham's Jubilee Campus is a rare example of "green" design in that, rather than designing the buildings to make a minimal impact on the site, a tremendous amout of energy was put into converting the site into a more "natural" condition. In this case, previous industrial use necessitated the addition of susbstantial landscaping to rehabilitate the conditions of the site. Using the situation to their advantage, the designers at Michael Hopkins and Partners implemented a large, curving lake with undulating masses of green space to act as a design element which would provide natural benefits for the campus. Seen from this perspective, Jubilee Campus is a tremendous success, one that impoves upon the site while incorporating a number of design innovations that take advantage of the newly formed topography. Jubilee Campus features an idealized nature, perfectly suited for the buildings program and complimenting the physical form of the building itself. The buildings themselves rely on simple, easily adaptable spaces that work with natural conditions to limit the amount of artifical heating and cooling needed throughout the course of the year. The relationship between the buildings of Jubilee Campus and the landscape that surrounds is nearly symbiotic, with the buildings being the reason for the landscapes' existence and the buildings reaping the natural benefits that arise from the landscapes presence. The dynamic, formal elements of the project, primarily the spiraling, inverted university library and lake island give the project a abstract quality that elevates the project above being merely a heavily landscaped university extension. By moving the library into the "nature" the designers have created, it is in a sense just as organic as the water that surrounds it. The form of the library reflects this, its twisting forms seemingly growing from the water that nurtures it. The Jubilee Campus, by creating both buildings and the nature they inhabit and interact with, become extensions of nature itself.

Precedent Diagrams









Like the previous precedent models, this one centered around a strict grid of nails, this precedent model used a series of irregular chipboard layers to form interior spaces in a structure that can be seen as a very early stab at building form. The layers were randomly cut along a grid system, then nailed into place and raised to roughly equal heights in relation to each other. This diagram was inspired by Nottingham University's distinct site plan as well as its materiality. The varied interior volumes that this model features would play a heavy factor in later 1st semester building designs.

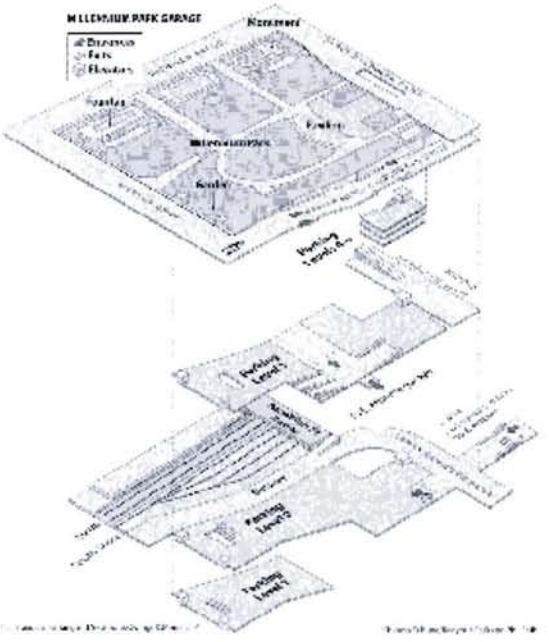
Millennium Park

Various Architects
Chicago, Illinois 1998-2004

On the borders of Michigan Avenue to the west, Columbus Drive to the east, Randolph Street to the North and Monroe Street to the South; Millennium Park was envisioned by Mayor Richard M. Daley to extend Edward Bennett's 1922 Grant Park in conjunction with Daniel Burnham's original Plan of Chicago. Functional rail yards and parking lots on the site necessitated the park be built on top of a concrete supporting structure, making the park one of the world's largest rooftop parks. Intended to be a Chicago landmark, four distinct park installations were commissioned and implemented into a cohesive master plan beginning in 1997 with construction beginning in 1998. A showcase of renowned design talen, the four installations consist of Frank Gehry's Jay Pritzker Pavilion and pedestrian footbridge, fountain towers by Jaume Plensa, the sculpture Cloud Gate by Anish Kapoor and the Lurie Garden by Kathryn Gustafson. An emphasis has been placed throughout the park on contemporary design elements and landscapping, giving the park a distinctly modern edge that contrasts with the classically planned Grant Park. An immediate success, the park has attracted hundreds of thousands of visitors a year to the numerous concerts, festivals and activities the park provides. Amongst the installations, Cloud Gate has proved to be the most popular, becoming a symbol for Chicago while simultaneously becoming one of the most photographed objects in the city. While seen as a success, the park has been subject to some controversy, primarily due to the cost of the installations, which went well over their respective budgets, ballooning from an initial cost of 150 million to 475 million over a period of six years.

Plans / Orthographic

Millennium Park forms the Northwest corner of the much larger Grant Park that surrounds it to the East and South. Built over functioning railways and parking lots, Millennium Park is in fact an incredibly large rooftop installation. The largest of the parks features, The Pritzker Pavilion and Great Lawn, is located in the Eastern half of the park and represents a central point from which all other parts of the park can be reached. The Lurie Garden forms the Southeastern corner of the park, with paths that link it to Grant Park and the Great Lawn. The Southwestern corner of the building is taken up by the Crown Fountains, which connect directly to the main entryway and promenade to the North. The Park is linked through linear paths arranged in a grid formation, exceptions being the Gehry footbridge that links Millennium Park to Grant Park to the East.



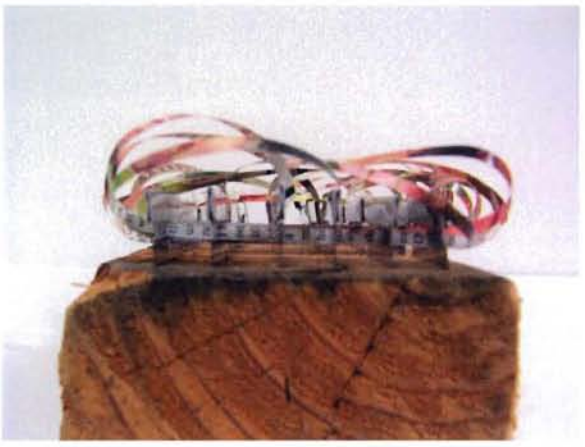
Analysis

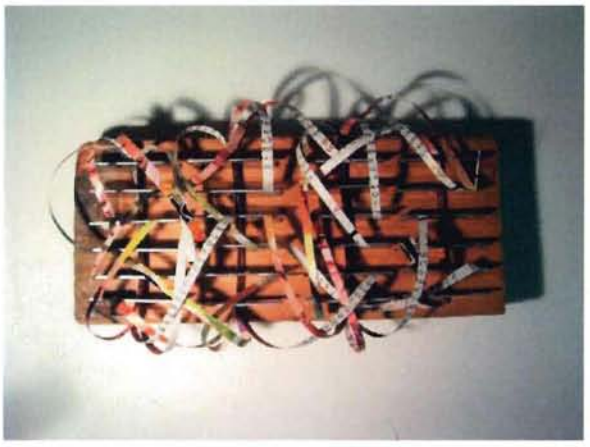
The seperate installations that form Millennium Park are incredibly stylish updates on features found in more conservative and picturesque parks such as New York's Central Park and London's Hyde Park. Fountains, amphitheatres, sculptures and gardens are all represented by sleek, incredibly sophisticated structures that give the park a futuristic sensibility quite unlike that of the surrounding, classically planned Grant Park. Principally divided into Eastern and Western halves, the park is connected by a central promenade featuring Anish Kapoor's sculpture Cloud Gate. Built of highly polished stainless steel, Cloud Gate forms the heart of the park and has quickly become known as a symbol for the city. The sculpture itself appears as what many Chicago residents refer to it as: a bean. In this case a mirrored, seeming fluid bean that archs over the ground. Instantly recognizable, the sculpture provides the park with a perfect landmark meeting point from which the rest of the park can be enjoyed. East of Cloud Gate is Frank Gehry's Pritzker Pavilion. An outdoor concert venue, the Pritzker Pavilion is made of up of the flowing ribbons of the brushed stainless steel that have become the architects trademark. Extending from the stage southward is the immense Great Lawn. Providing addtional seating during concerts, the Great Lawn serves as a picnic and activities area throughout the course of the year. Above the great lawn, steel tubes form a latticework from which the Pavilion's soundsystem is suspended. Seen from the Great Lawn, the latticework gives the illusion of shelter, becoming a dynamic space that juxtaposes the visual feeling of being indoors with the wide range of bodily stimulus that occurs whn one is exposed to the elements. South of the Great Lawn is Kathryn Gustafson's Lurie Garden. An abstract interpretation of Chicago's shoreline, Lurie Garden is composed of raised gardens bisected into two halves by a lowered diagonal boardwalk. The gardens are seperated from the boardwalk by a small moat, giving them a purposeful yet irregular formality that stands in contrast to their surroundings. The last major installation of the park, Jaume Plensa's Crown Fountain, is located directly Westof Lurie Garden along Michigan Avenue . Rising 50 feet and composed of glass block, the rectangular fountains sit opposite of each other on a concrete bed. The sides of the blocks facing each other are covered with a screen that features the faces of 1,000 Chicagoans. The faces are projected onto the screens with the use of an LED projector and are changed throughout the course of the day. A specially designed water outlet allows the faces to spout water onto the crowd, making the fountains an interactive park element that draws its appearances from the people who make up the city. Formally composed and incorporating technologically based design innovations, the fountains, along with all of the installations found in Millennium Park, provide a thoroughly modern contrast to the surrounding green landscape.

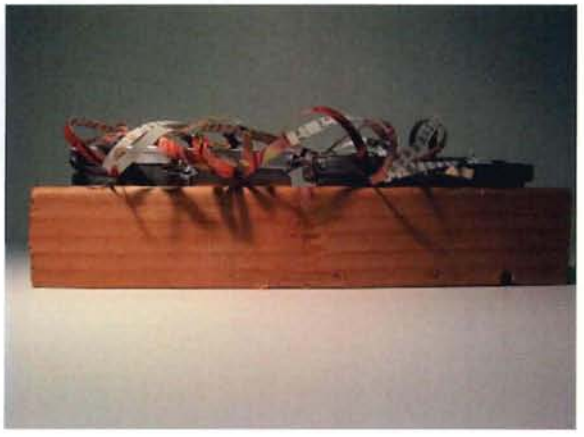
Critique

A deliberate attempt to fuse contemporary design ideals and park aesthetics into a cohesive whole, Millennium Park is the ultimate expression of nature as architectural flourish. Intended to be a major destination point, the park fufills its role beautifully, with each of the major installations serving as a focal point and magnet for the thousands of people who visit the park throughout the year. The installations themselves are individually unique, while also possessing a distinctive modern aesthetic that ties the pieces together. Epic in scale and form, the installations serve as cenral hubs from which all activity is carried out throughout the park. For all of the wonder and awe these pieces inspire, however, the presence of such unique sculptural and architectural elements within the park creates a tension between themselves and the natural elements which traditionally have been (and rightfully so) the dominate feature in park layouts. Rather than being discreetly nestled into the park's landscape, the installations dominate the layout of the park, supplanting trees and fields as the most important aspects of the landscape. The effect of this gives the park an almost artifical atmosphere, with the majority of trees used to simply line the wide pathways linking the hip architectural pieces together while expansive promenades take up expanive amounts of land for use as gathering space. In contrast with the adjacent Grant Park, a traditional city park in the mode of previously mentioned Central and Hyde Parks, Millennium Park exudes a certain kind of sterility that suggests simply admiring the works contained within from a distance, rather than physically engaging the park and reveling in its natural setting. This best illustrated in the lattice work roof of Frank Gehry's Priztker Pavilion. Designed as a means to support the Pavilions sound system, the arching steel tubes give the illusion of enclosure, an open air park venue that seemingly exists indoors. The incredibly manicured law takes on the appearance of carpet, a flooring system thats installed rather than grown. The result distorts the differences between natural and artificial space, what is indoors and what is outdoors. Nature becomes periphery and built to specification, another material to be incorporated into a building. Millennium Park is nature refined to a razors edge, so beautiful one's nearly afraid to touch it.

Precedent Diagrams







The Millennium Park precedent diagram emulates Gehry's Pritzker Pavilion's fluid design by grafting thin strips of paper onto several rows of razor blades that were pounded into place. This was done to create a tension between more "natural" flowing spatial elements and the precision structural system represented by the razor blades. This model follows in the same vein as previous precedent diagrams, a rigid skeleton with spatial elements attached accordingly.

Precedent Diagrams

The 2nd razor blade model was a quicky representation of earth over an artifical foundation, with sod on top as well as one side. The top-left photo is how the object was intended to be viewed, suggesting a thin layer of built space overwhlemed by "nature" but supporting by a built condition.

Elephant & Castle Eco Towers

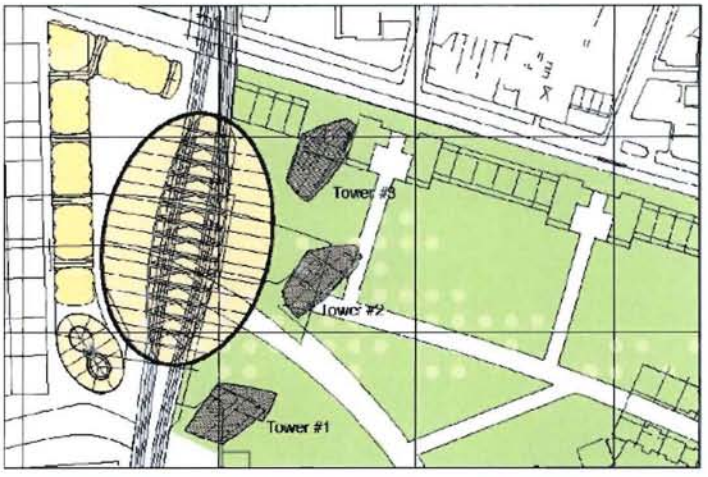
T.R. Hamzah & Yeang International

Location: Elephant & Castle, South London, UK
Date: 2000-
Areas of Tower #1:
Total gross area: 276,304 sq.ft.
Total nett area: 232,095 sq.ft.
Total area of plantation & circulation:44,209 sq.ft.
Areas of Towers #2&3:
Total gross area: 95,765 sq.ft.
Total nett area: 79,485 sq.ft.
Total area of plantation & circulation:16,280 sq.ft.

Commissioned with the hope of rehabilitating the depressed Elephant & Castle section of South London, the Elephant and Castle Eco Towers by T.R. Hamzah & Yeang International is in fact three seperate residential towers with commercial and retail bases designed by Benoy Limited. The Towers themselves take up only one half of the total site, the other half being designed by Norman Foster and Partner and the entirety of which is divided through the middle by a new railway interchange that separates the two. The central concept behind the design of the Eco-Towers is that of a "city in the sky", one that emulates the zoning of the local geographic area and translates it into the form of the vertical skyscraper. In doing so, the towers contain multiple and varied programs, with residential, commercial, retail and entertainment facilities all being represented within the structure. The residential units that take up the majority of the upper stories are diversified to appeal to a wide cross section of individuals, with both single and family units as well as luxury apartments all being options to propsective tenents. The design of the towers is intended to facilitate the interaction of these residents with each other and their immediate surroundings, making the Towers, in effect, an all encompassing facility.

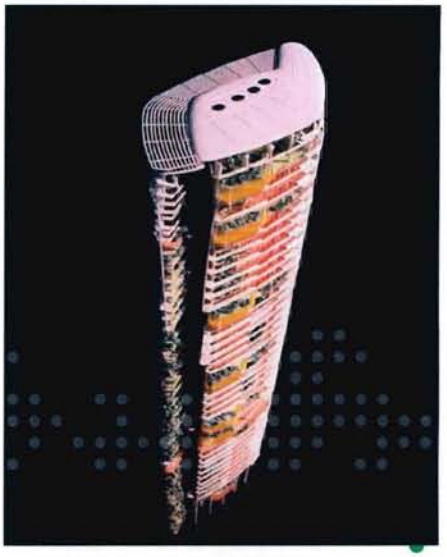
In addition to the functional program facets of the project, the Eco Towers are notable for the extensive amount of park landscaping that is incorporated not only within the surrounding environment, but also directly within the building itself. Significant green space in the form of trees and gardens make themselves apparent throughout each floor of the building, giving them a uniquely verdant appearance not common amongst multiple story residential towers. Coupled with the 15 acres of parks that are located between the surrounding structures, and the entire complex achieves a significant advancement in the integration of interior and exterior space with the intention of creating an all encompassing experience.

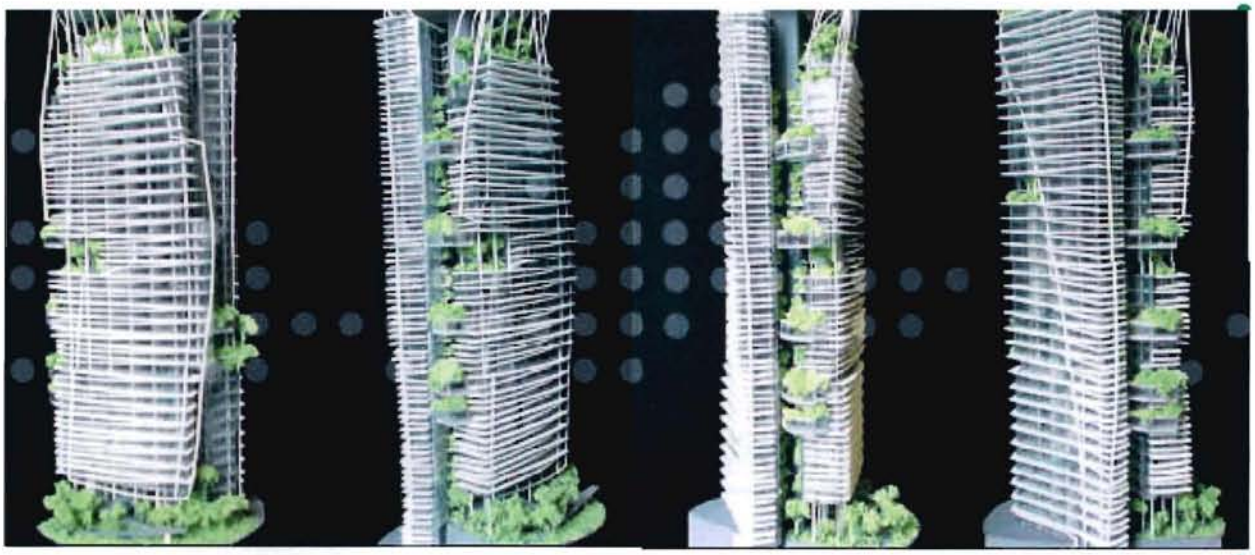
Rendering / Site Plan / Section



Elephant & Castle Ecto Towers Thesis Relation

The Elephant and Castle Eco Towers are significant with regards to my thesis for several major reasons: the successful and dynamic incorporation of interior and exterior green space over multiple stories and throughout the site; the relationships between interior and exterior spaces via openings throughout the building and the connective tissues between the towers themselves. The combination of office and park funtions that is the primary focus of my thesis will require the design and placement of multiple multi-story office towers that must interact on some level with the surrounding park spaces that will form the majority of the site around them. The placement of some park facilities within the buildings themselves presents a unique challenge that few buildings have attempted to undertake, this precedent being one of them. The most important aspect about the Eco Tower's multi-story green spaces, wth regards to my thesis, is that rather than being statically contained within the upper stories without outside interaction, there are many large and varied openings that directly link the upper story gardens to exterior balconies that provide a connection between interior and exterior spaces and, at least in one intance, a connection between the towers themselves. The interactivity between the exterior and interior conditions along with the ease of movment that the project instills, although in a limited way, by having multiple circulation routes throughout the project and between the towers is important in that there is a constantly shifting series of experiences that relates outdoors with indoors and built and natural environments thoughout. The inclusion of park space over several stories that can be enjoyed by both the workers within the office and park attendees, while maintaining its functional integrity in at least some capacity, is one aspect that I intend to pursue throughout the coure of my thesis studies, this project providing a finished example of what is possible when combining these seemingly disparate conditions together.





Site Analysis and Selection

Site Possibilities

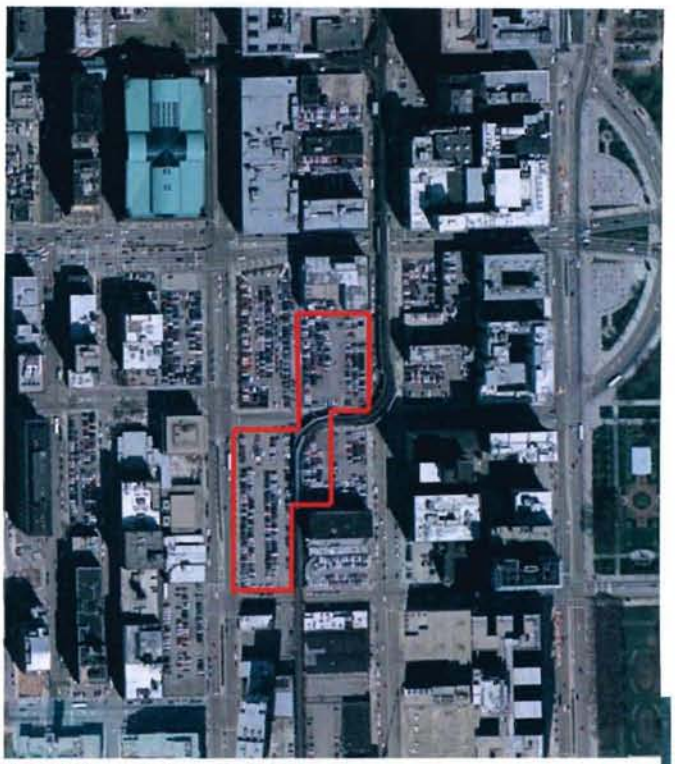
1 East Harrison and State Street
Chicago, Illinois

2 Cork Town
Detroit, Michigan

3 Brush Park
Detroit, Michigan

East Harrison & State

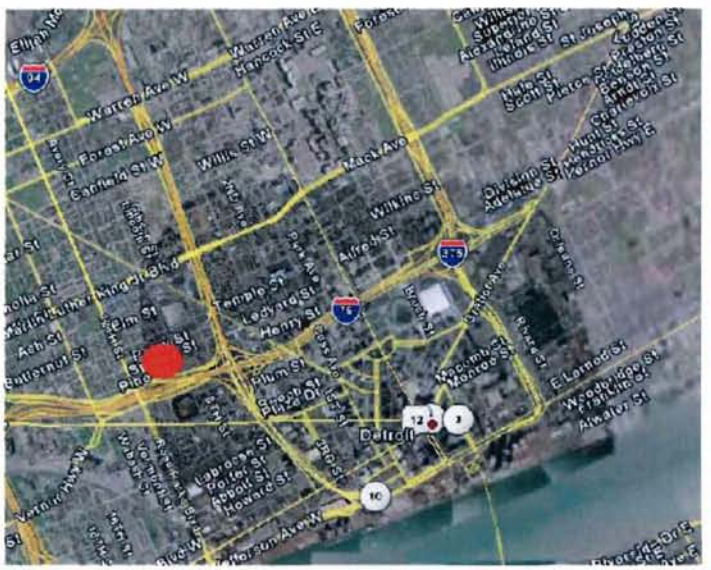
Located a few blocks West from Chicago's expansive Grant Park, this site meanders over several lots across multiple blocks. The site's unique layout fufills the desired site criteria exceedingly well, with the densely populated downtown high rises forming hard boundaries as well as providing large amounts of pedestrian traffic throughout the area. Public transportation if easily accessible through buses and a nearby "L" train station. Grant Park provides a physical connection to green park space, giving the project an anchor from which to explore interior and exterior relationships.



East Harrison & State

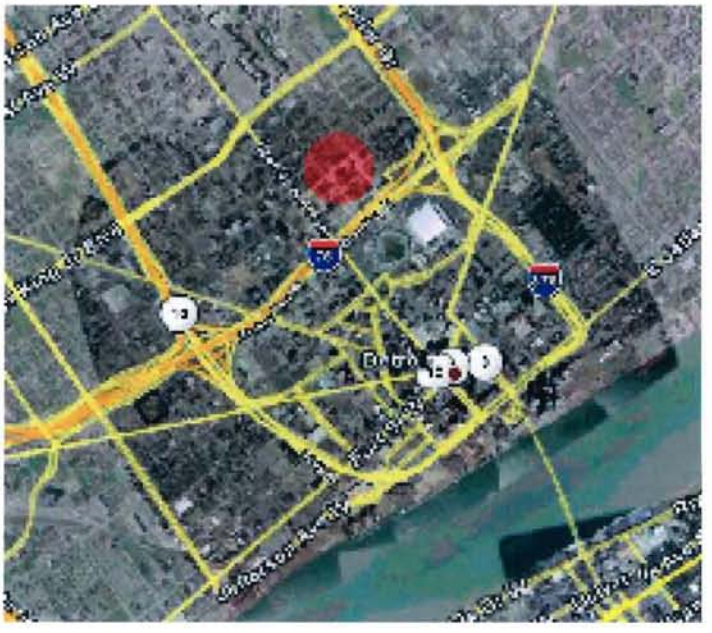
Corktown

The Corktown site has only one hard boundary in I-75 to the South. Neighborhoods to the North and West are stepped and partially abandoned, while well maintained homes and UAW offices are located to the East. The site itself is a mixture of parking lots and fields, with some areas being rigorously upkept and others left completely unattended. The area has little pedestrian foot traffic and limited access to public transportation in the form of buses. The size and contrasting make up of the site give it some aspects that could be beneficial to the project, but it ultimately lacks too many of the site criteria to be seriously considered



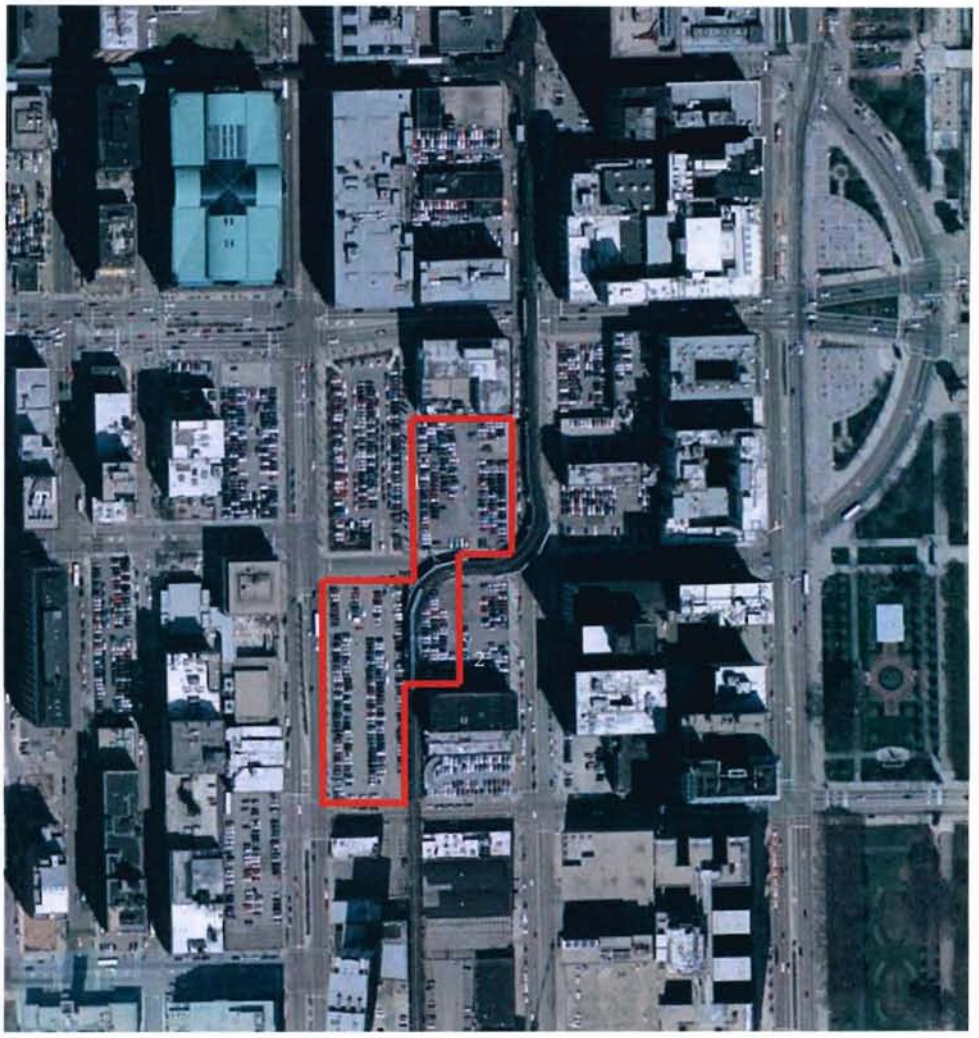
Brush Park

The Brush Park site is located several blocks North of I-75 and is nearly completed surrounded by housing, with condominiums to the West, traditional homes to the North and South, and apartments to the East. The site features both occupied and abandoned brick homes spaced irregularly throughout, with the areas in between being a mixture of kept lawns, unkept fields and graveled parking lots. The spacing of the houses, along with the respectable amount of located within and around them, provide a number of ways to respond directly to the site, potentially incorporating the houses into the program and effectively making them part of the natural landscape. The site is subject to sporadic foot traffic, the majority coming from nearby Comerica Park to the South and Wayne State University to the North.



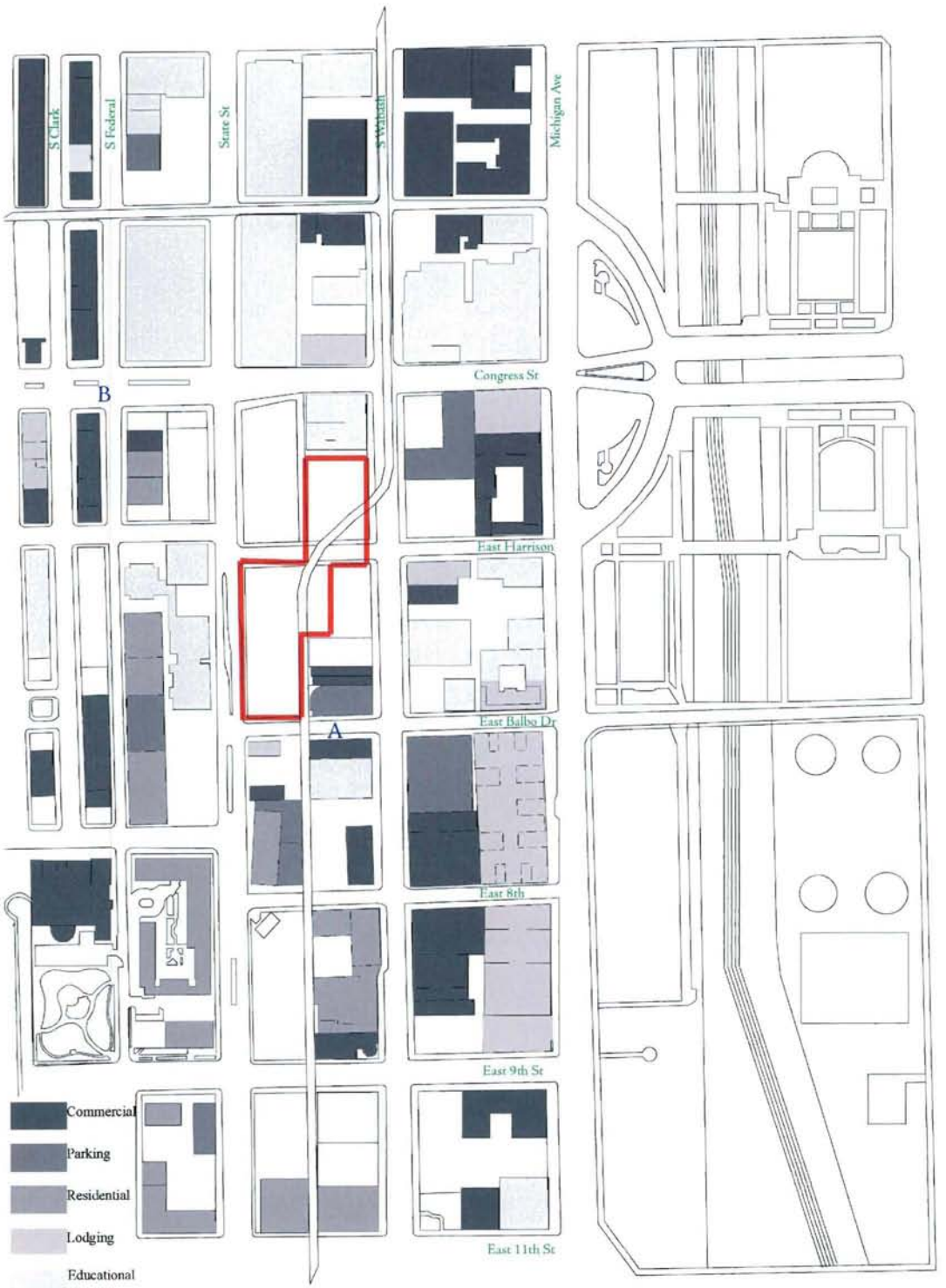
Brush Park

Site Selection - Downtown Chicago



Downtown Chicago was selected as my site after it garnered a significant amount of praise as an interesting and challenging site to develop with regards to my thesis ideas. The expansiveness of the proposed site, combined with the density of the city and the close proximity of Grant Park made it a perfect starting point to start exploring my thesis ideas which, t this point in the development, was a radically different thesis concept than the one that would eventually become my final project. This initial thesis concept was concerned with the relationship between inside and outside, built and "natural" spaces and an effort to "blur" these spaces together. By 'natural" I almost unilaterally meant "plants", an association that would plague my projec for the entirety of the 1st semester. Even though the project would change, however, the decision to go with the Chicago site ended up being one of the best I made all year.

Site Analysis



Site Analysis

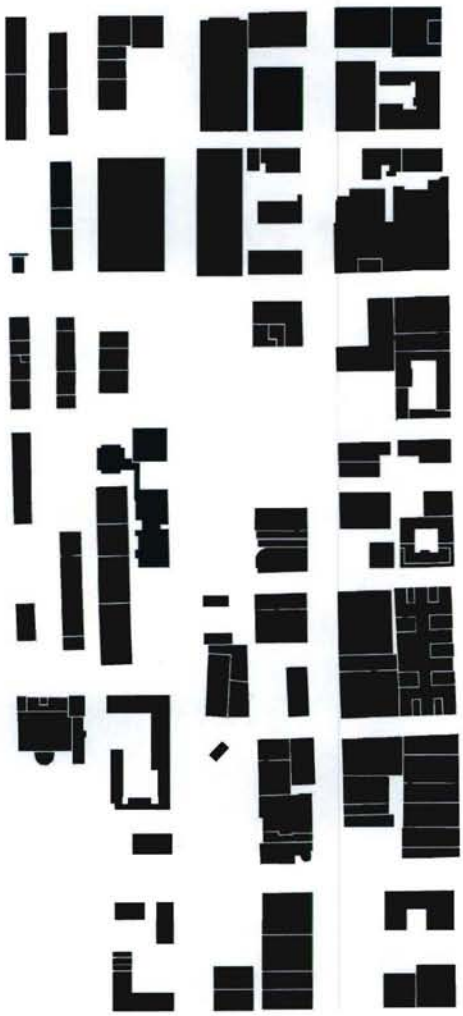
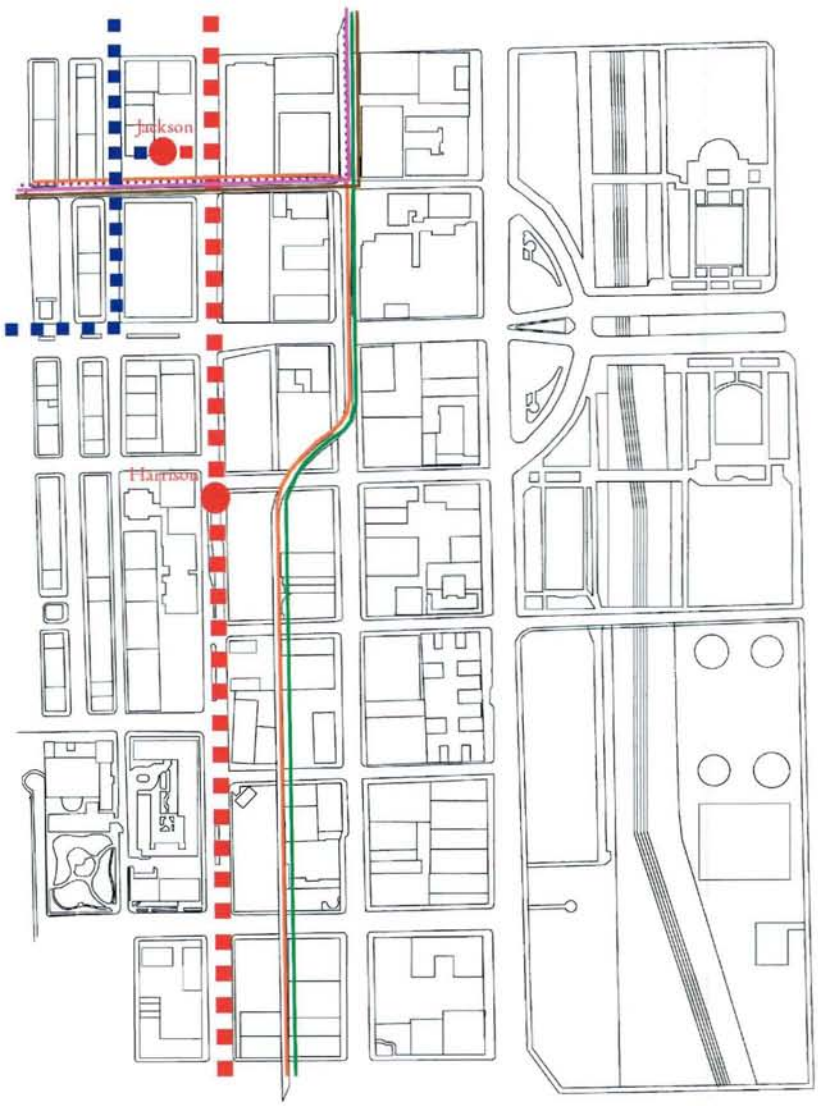


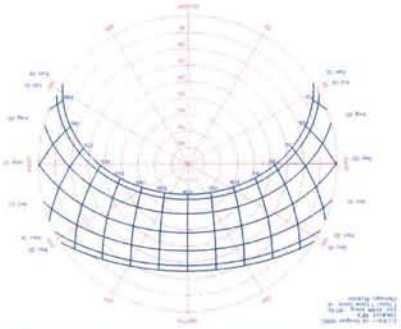
Figure Ground

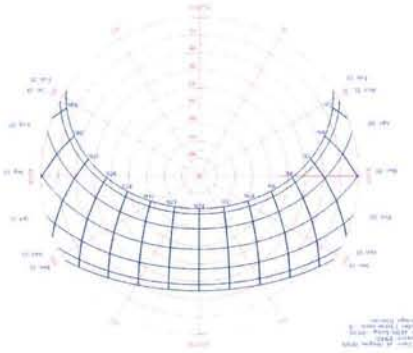


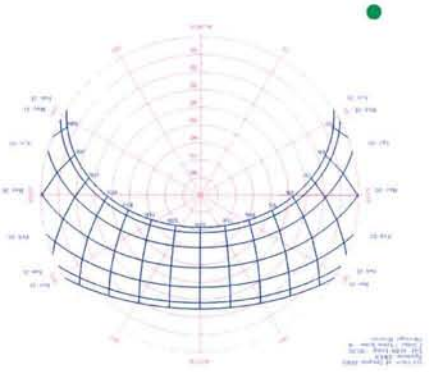
Transit / Circulation Plan

Red Line (Below Ground)
Orange Line
Green Line
Blue Line (Below Ground)
Pink Line (Loop)
Brown Line (Loop)
Express Line (Rush Hour Only)

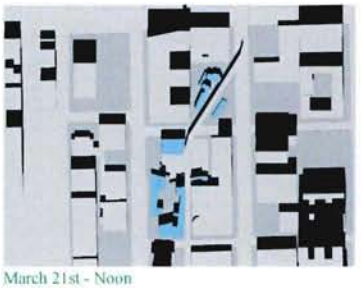
Site Analysis - Sun Paths / Shadows



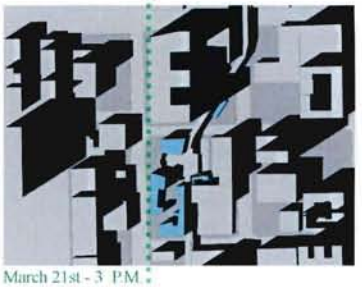




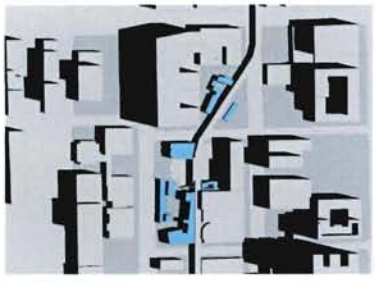
March 21st - 9 A.M.



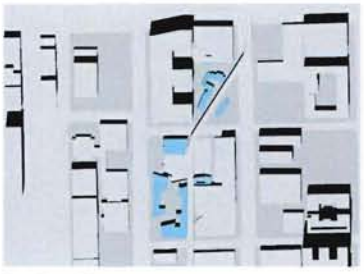
March 21st - Noon



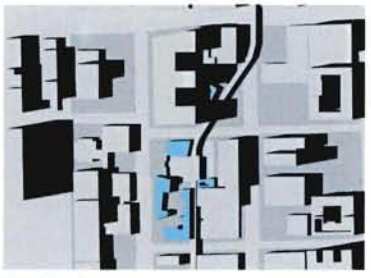
March 21st - 3 P.M.



June 21st - 9 A.M.

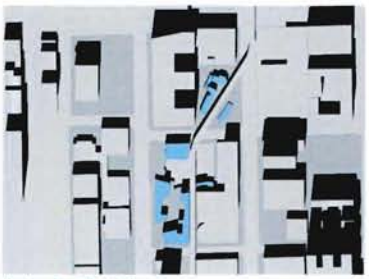


June 21st - Noon

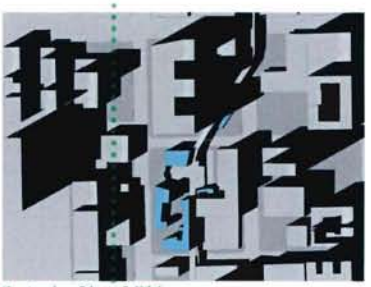


June 21st - Noon

September 21st - 9 A.M.



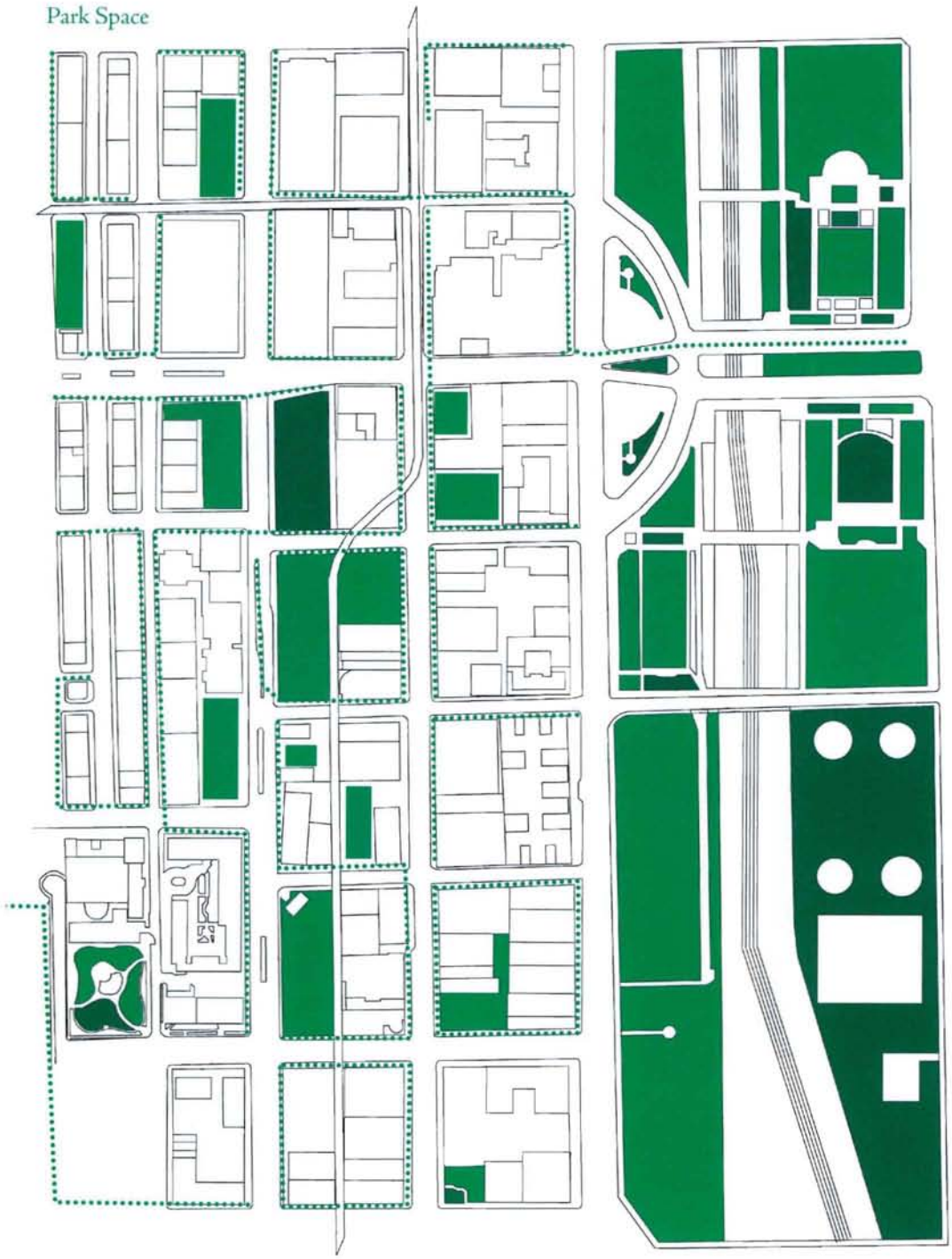
September 21st - Noon



September 21st - 3 P.M.

Site Analysis

Park Space



Art Museum

The society in which we live in is the result of a cause and effect relationship between the natural world and the cultural world that emerged from it. As a result of this, nature has taken on a cultural connotation that has been expressed through multiple and highly varied forms, including art, architecture, agriculture and landscaping. In order to more fully explore these themes and ideas, a combination of programs that allow for the adaptable exhibition of cultural works pertaining directly to Nature as a cultural object is necessary for the project to be a success. In this sense, the program is that of a botanical museum, fragmented into multiple buildings that necessitate the movement between indoor and outdoor environments, each of which has direct correlation with specific subjects relating to nature and culture. While traditional art pieces such as paintings and sculpture will explore all aspects of nature as a cultural object, the outdoor and indoor gardens and landscaping will deal more strictly with explorations of Nature as a cultivated object, one manipulated for necessity as well as beauty, as represented through agricultural and aesthetic gardens.

Articulation of Intent

It is the intent of this program is to highlight the connections between Nature and Culture as expressed through art, architecture, landscaping and agriculture and how those connections have led us to our current state of development. This project seeks to show how Nature and Culture have influenced the development of each other and how this complex relationship of cause and effect continues to have a profound impact on our civilization.

Major Components:

The major components of the project are intended to bring large numbers of people into an immersive, interactive exploration of the cultural influence of nature. Exhibition space intended to show permanent and temporary artworks in both indoor and outdoor settings as well as general and specialized recreation

Permanent and Temporary Exhibition Space: A combination of permanent and non-permanent indoor and outdoor exhibition spaces intended to explore the connections between nature and culture through various media.

Vegetative and Non-Vegetative Recreational Space: A mixture of indoor and outdoors, the recreational spaces are to promote traditional park activities such as sports and picnicking with interior recreations such as movies and concerts.

Formal and Agricultural Gardening Space: potentially a part of the recreational space, the gardening portion of the program is intended to showed the connections between sustenance farming and formal gardening

Enumeration of Actions

Learning/Discovering/Analyzing

The main purpose of the botanical museum is to highlight the cultural significance of nature in art, architecture, landscaping and agriculture. Exhibitions within in the center are to promote the connections underlying nature and culture through permanent and semi-permanent installations that range from fully constructed landscapes to individual works of art. Indoor and outdoor landscaping features along with indoor art galleries are seperated into six different structures meant to faciliate indoor and outdoor movement as well as give each structure is own focus dealing with a specific area of study or concern. As one moves throughout the musuem, they will be exposed to different cultural interprations of nature organized by geographical and historical organizing principles. Although each building is intended to stand on its own, actually moving through the musuem in its planned order will give a broad overview of the major categorizations and examples of Nature as a cultural object.

Growing/Cultivating/Planting

The botanical museum, as it focuses on the connections between nature and culture, has as a major program component the cultivation of plantlife throughout the site. Numerous gardens, landscapes and agricultural installations dot both the interiors and exteriors of each structure in the program, making their health absolutely vital to the success of the project as a whole. The variety of plants and the conditions that they will be subject to makes for a complex situation that calls for the best possible integration of architecture and horticulture for it to be feasible. The mixture of exposed interior courtyard spaces , rooftop gardens, enclosed greenhouses and traditional landscaping installations requres each to be able to exist in close proximity to the other without overtly affecting each other in terms of water and sunlight. The conditions of downtown Chicago only add to this challenge, making access to these resources scarce and irregular, demanding the careful understanding the local weather conditions in order to best design for the extenisive plantlife necessary for the project to be a success.

Walking/Strolling/Sitting

The organization and layout of the botanical museum is intended to encourage a great deal of movement throughout the site, from structure to structure and through the numerous gardens and landscapes that connect each structure together. The fragmentation of the project allows inividuals to walk either directly through the site, or circuitiously from the gallery buildings that define the major edges of the museum. The many and varied ways to move within and without the site encourage exploration of the museum in non traditional ways that strive to add a layer of spontaneous discovery to the exhibits, letting individuals define their own path, as they would in Nature.

Enumeration of Actions

Gathering/Laughing/Socializing

Although a musuem, the layout and non traditional program of the project are meant to encourage a greater degree of gathering and socializing than a regular fine arts or natural history museum. As a signifcant portion of the museum is outside with many paths connecting the seperate structures together, the museum complex as a whole is intended to evoke a recreatonal park like atmosphere, a social setting that is not necessarily enjoye as a museum, but as an interesting, dyanmic outdoor space that can be enjoyed in a wide variety of different ways depending on which portion of it you are frequenting.

Eating/Drinking

Eating and drinking, although not a substantial portion of the program, represent a tremedously important aspect of nature as a cultural object. Cuisine, the skillful preparation and cooking of food, holds immense cultural importance throughout the world, with entire cultures being distinguished by the types of foods they eat as well as how they go about preparing those particular foods. The vast majority of food that we consume today is a direct result of our manipulation and utilization of nature to suit our needs. The plants that we grow and the animals that we raise to eat act as the first and most significant examples of nature as a cultural object, without which the development of society and culture wouldn't have been possible in the first place. Within the museum, the importance of food and drink will be made explicit through art and agricultural gardens that make reference to its importance in the foundation of civilization, while the actual acts of eating and drinking will be confined to a small stand-alone cafe that will serve a variety of simple meals and snacks that reflect the importance of cuisine as a natural cultural product.

Project Program

Program Quantitative Summary: Art Musuem

The program for the art museum consists of 7 different buildings, each of which will be documented seperately for ease of understanding.

Main Entrance/Overview Gallery Building

One (1) Atrium @ 575 sq ft	575 sq ft
Secondary Entryway:	
One (1) Secondary Entryways @ 260 sq ft	260 sq ft
Information Space:	
One:(1) Space @ 100 sq ft	100 sq ft
Enclosed Art Exhibition Galleries:	
Three (3) Seperate Galleries @ 2,000 sq ft avg	6,000 sq ft
Rooftop Agricultural Installation	
One (1) @ 1,580 sq ft	1,580 sq ft
Apple Tree Installation	
One (1) @ 320 sq ft	320 sq ft
One (1) @ 260 sq ft Dirt Enclosure	260 sq ft
Mechanical Room	
1 @ 675sq ft	675 sq ft
Bathrooms	
2 @ 180 sq ft	360 sq ft
Storage	
3 @ 150 sq ft	450 sq ft
Employee Breakroom	
1 @ 180 sq ft	180 sq ft

Main Entry/Lobby

B. Purposes/Function

The Main Entry way serves as the offical starting point for the Botanical Museum. It accesses the main gallery spaces from which the recommended path of circulation begins. The main entryway is to be easily recognizable as the main entrance to the entire museum, in contrast to the more ubiquitious but smaller entryways for the rest of the museum buildings. The entry is slightly setback from State street and borded to the north by East Harrison street.

C. Activities

The main entry is intended to act as a gathering and meeting area for large groups of people as well as the main source for information about the musuem and its features and collection.

D. Spatial Layout

The Main Entry to the Museum is a glass atrium space, three stories in volume and dominates the north-west corner of the main entry museum building. Upon entering the space, the user has the information office to their direct right and the gallery spaces around the corner from this office.

E. Equipment/Furnishings

The atrium spaces has several small couches lining the the north facade for people to sit on while wiaiting for other individuals before going in to the museum proper.

Gallery Spaces

B. Purposes/Function

The main entry building's galleries feature a broad overview of the complete museum collection, with a broad spectrum of works to include paintings and sculpture, etchings and other media from multiple time periods and cultures.

C. Activities

The gallery spaces are to be used for the exhibition of art and as such the main activity in these spaces is the viewing of these objects and artifacts.

D. Spatial Layout

The gallery spaces are aliged sequentially along and East-West axis, with circulatory hallways running on the perimeter. The galleries are straight-forawrd, rectangular spaces intended to be walked through linearly,, then around along the hallway overlooking the outdoor French formal garden and to the stairs leading to the upper story spaces.

E. Equipment/Furniture

There is no equipment or furniture in the gallery spaces.

Information Office

B. Purposes/Function

The information office provides visitors with information about the entire musuem, maps, audio toursequipment and other materials to help them navigate the expansiveness of the entire site.

C. Activities

The office is a smaller space intended to be work only by one or two employees who greet visitors as they arrive and handle any questions that visitors have.

D. Spatial Layout

The office is located to the user's immediate right when they enter the musuem and overlooks the atrium space and East Harrison street beyond.

E. Equipment/Furniture

Two computers for the musuem employees as well as a desk lining the length of the room to house musuem materials to give the visitors

Apple Tree Installation

B. Purposes/Function

The apple installation is a second storey, partially enclosed space that houses a single apple tree, both to serve as a defining image for the musuem as a whole as well as to actively display the program of the musuem to pedestrians on the street. The apple tree has many different cultural connotations, particularly with learning and knowledge, and it is this type of deeper meaning that the musuem hopes to

impart on visitors the musuem.

C. Activities

The apple tree installation is mainly a striking visual element that helps to define the musuem as a whole.

D. Spatial Layout

The installation is located on the 2nd storey of the building, in the middle of the western facade with two entries along the North and South walls enclosing the tree. A glass facade frames the tree in a manner meant to evoke a work of art. The installation is open to the air to allow rain and direct sunlight in for the tree as well as create an interesting spatial experience of being outside while still feeling like you are inside a building

E. Equipment/Furniture

There is no equipment or furniture within this space.

Rooftop Agricultural Installation

B. Purposes/Function

The rooftop agricultural installation is intended to act as a visual connection to the agricultural roots that are so important to the establishment of civilization and culture as we know it. Corn is to be the crop selected, both for the architectural quality of its planning as well as its status as its many American cultural distinctions.

C. Activities

People can walk around and through the corn crop, lounge and observe the rest of the musuem complex from the highest point in the entire facility. The corn crop will act as both a novel first time experience for people who have never seen or walked through a corn crop as well as be an interesting visual juxtaposition from the rest of the heavily built up cityscape.

D. Spatial Layout

The crop is placeed in the middle of the roof with wide walkways surrounding the pathways. The lowerd apple tree installation is viewable to the west with the elevator, stairs, fire egress and equipment storage space taking up the northern edge of the roof. One can also peer into the atrium space along the north west corner of the rooftop

E. Equipment/Furniture

The rooftop has no equipment on it during operating hours, but regular care for the crop demands that a certain amount of equipment be kept on hand to allow for after hours work, tillage, fertilizing and watering. This equipment is to be kept in the rooftop storage space and taken out during non-operational hours and nighttime when no guests are on hand

Mechanical Room

B. Purpose/Function

The mechanical room will hold all of the necessary equipment to regulate the heating, cooling and plumbing of the building and operate the elevator.

C. Activities

The use and maintenance of the equipment are are the two primary activities that go on in the mechanical room.

D. Spatial Conditions

The mechanical room is a straightforward, functinoal space in the basement level of the entry building. It takes up the majority of space in the basement along the the Northern and Western edges of the basement level.

E. Equipment

All of the heating, cooling and plumbing equipment will be housed in the mechanical room.

Bathrooms

B. Purpose/Function

People go to the bathroom in the bathrooms.

C. Activities

Going to the bathroom, washing up, peronal needs and baby changing.

D. Spatial Conditions.

The bathroom is another straightforward and functional space, located off of the main hallway running in the middle of the building on the ground floor.

Lightwell/Ivy Buildings

Main Entries:

Two (2) @ 200 sq ft	400 sq ft

Information / Office

One (1) @ 230 sq ft	230 sq ft
One (1) @ 160 sq ft	160 sq ft

Lightwell Gallery Space

One (1) @180 sq ft	180 sq ft
One (1) @ 345 sq ft	345 sq ft
One (1) @ 160 sq ft	160 sq ft
One (1) @ 100 sq ft	100 sq ft

Regular Gallery Space

Four (4) @ 125 sq ft	500 sq ft
One (1) @ 1,000 sq ft	1,000 sq ft

Mechanical

One (1) @ 290 sq ft	290 sq ft
One (1) @ 80 sq ft	80 sq ft

Bathrooms

Four (4) @ 100 sq ft	400 sq ft

Storage

Two (2) @ 200 sq ft	400 sq ft

Shipping /Receiving

One (1) @ 200 sq ft	200 sq ft

Main Entry/Lobby

B. Purposes/Function

The main entry for the Lightwell building is located below street level next to the formal French garden. It can be accessed in a variety of ways: via a stairway from East Harrison street, elevator from the Ivy Building or any of the various pathways that lead through the French garden.

The main entry for the Ivy Building is located ontop of the Lightwell Building, south of East Harrison street. It can be accessed via stairwell leading up from the Lightwell Building or along a pathway running through the street level meadows on top of the same building.

C. Activities

People enter both buldings through these spaces.

D. Spatial Layout

The entryway for the Lightwell Building leads into a long concrete corridor that leads into naturally illuminated gallery spaces.

The Ivy Building Entryway leadings into a circular gallery space, the center of which is an outdoor courtyard planted with ivy.

E. Equipment/Furnishings

There is no furniture/equipment in the entryways

Information Offices

B. Purposes/Function

The information office provides visitors with information about the entire musuem, maps, audio toursequipment and other materials to help them navigate the expansiveness of the entire site.

C. Activities

The office is a smaller space intended to be work only by one or two employees who greet visitors as they arrive and handle any questions that visitors have.

D. Spatial Layout

The Lightwell Building's informational offices are located to the right after walking down the entry corridor.

For the Ivy Building, the information offices are the first thing seen after opening the doors.

E. Equipment/Furniture

A small assortment of regular office equipment

Illminated Gallery Spaces

B. Purposes/Function

The main entry building's galleries feature a broad overview of the complete museum collection, with a broad spectrum of works to include paintings and sculpture, etchings and other media from multiple time periods and cultures. The illumination of the galleries themselves is intended to be an abstract expression of light that reflects its importance in many world cultures. Sculpture from prehistoric and ancient civilizations will be the primary art form to be displayed within these galleries, although other resilient art types such as woodcuts and etchings may also find a place here.

C. Activities

The gallery spaces are to be used for the exhibition of art and as such the main activity in these spaces is the viewing of these objects and artifacts as well as the showcasing of light as an elemental cultural object that has a tremenous impact in the way we view and experience space.

D. Spatial Conditions

There are four illuminated galleries broken up along a linear, L shaped pathway. Framing each gallery is a low masonry wall with imbedded steel structural beams that support the roof and the lightwells. This allows the light to seep over the masonry wall and create irregular light patterns in the surrounding gallery spaces to make a dynamic and constantly changing interior condition.

E. Equipment / Furniture

None

Regular Gallery Space

B. Purposes / Function

Auxillary exhibition space that houses light sesitive ancient artifacts and works of art that compliments the illuminated galleries by virtue of their "darkness". These galleries highlight the powerful effect of light as a cultural object through the contrast between light and dark and how these two conditions change over the course of the day, different weather conditions and seasons.

Within the Ivy Building, the galleries are centered around an exterior courtyard covered in ivy. The galleries are circularly laid out with fenestration coming along the northern facing exterior facades of the building. This allows natural light in without the need for shading devices.

C. Activites

The viewing and appreciation of art is the main activity of these spaces.

D. Spatial Conditions

The "regular" gallery spaces surround the the central lightwell spaces and feature lower ceilings than them as well. The light quality is the main spatial condition that sets it apart from other areas of the museum, with intense juxtapositions of light and dark that slowly change over time.

The Ivy Building's galleries are simple in form, with the space entirely defined by the exterior walls. This creates a very simple and easy to follow floor plan that allows users to walk around the core of the building to admire the interior art works. The courtyard of the building allows guests to walk down to the lower level in what can be term a "green well", a well completely ivy covered courtyard space that empties into the French formal garden area.

E. Equipment / Furniture

Small benches for rest during perusal of the gallery.

Greenhouse Building

Entrances	
2 @ 65 sq ft	130 sq ft
Information Booths	
Two @ 60 sq ft	120 sq ft
Office	
One @ 350 sq ft	350 sq ft
1st Floor Gallery Space	
4,500 sq ft	4,500 sq ft
Greenhouse Space	
8,000 sq ft total	8,000 sq ft
Bamboo Forest	
One @ 750 sq ft One @ 100 sq ft	850 sq ft
Black Oak Garden Space	
One @ 250 sq ft	250 sq ft
Asian Plum Gardening Space	
One @ 1,400 sq ft	1,400 sq ft
Cypress Garden	
One @ 400 sq ft	400 sq ft
Olive Tree Planting	
One @ 450 sq ft	450 sq ft

Tea Planting	
One @ 650 sq ft	650 sq ft
Lotus Garden	
One @ 450 sq ft	450 sq ft
Storage	
Two @ 100 sq ft	200 sq ft
One @ 1,000 sq ft	1,000 sq ft
Mechanical Room	
One (1) @ 850 sq ft	850 sq ft
Pumping Room	
One (1) @ 850 sq ft	850 sq ft
Outdoor Zen Garden	
One (1) @ 2,395 sq ft	2,395 sq ft
Outdoor Chinese Water Garden	
One (1) @ 2,880 sq ft	2,880 sq ft

Main Entrances

B. Purposes/Function

The entrances of the Greenhouse Building double as the fire egress routes, being completely enclosed spaces at both ends of the building. They allow the safe exit and entry of the building.

C. Activities

The entry and exit of the building by employees and visitors.

D. Spatial Layout

The fire egress stairs lie directly behind the entry doors, with a second set of entry doors being located to the left or right after entering. A person walks in and to the right to gain access to the museum, or up the stairs to get to the greenhouse.

E. Equipment/Furnishings

None

Information Booths

B. Purposes / Function

The information booths are small spaces where visitors gain information about the museum and its exhibits.

C. Activities

The booth is a space used by the employees to give verbal information, pamphlets, maps and similar materials to visitors of the museum. It a place where people are intended make a quick stop and then proceed into the museum proper.

D. Spatial Layout

A small space, the booth is the first thing seen on the museum level of the building upon entrance.

E. Equipment / Furnishings

A small computer for the employee working the desk as well as a variety of informational materials.

Office

B. Purposes / Function

Main employee work space where work is coordinated and the business functions are taken care of. One office of many scattered throughout the site.

C. Activities

Office functions such as data entry, worker coordination, printing, promotional activities etc.

D. Spatial Layout

The office is located in the southeast corner of the Greenhouse Building. Apart from the gallery, mechanical and storage spaces it is the largest interior room in the building. It is slightly tucked away from the main pathway through the building to insure some measure of privacy. There is no fenestration along the outside walls.

E. Equipment / Furnishings

Office equipment such as computers, fax machines and copiers.

1st Floor Gallery Space

B. Purposes / Functions

The gallery space in the Greenhouse Building is the art exhibition space that features a wide variety of different media that shows nature as a cultural object.

C. Activities

The viewing and appreciation of art, learning about different cultural values.

D. Spatial Layout.

The gallery spaces are broken into two "wings", northern and southern, the southern being the larger of the two. The wings are separated by a covered outdoor space centered around a Japanese Zen rock garden. The southern wing curls around an exterior Chinese water garden. The galleries are broken into irregular viewing galleries, a vast difference from the orderly galleries found in the "earlier" museum buildings.

E. Equipment / Furniture.

Benches in the larger gallery spaces

Greenhouse Space

B. Purposes / Function

The 2nd floor Greenhouse is the definitive space of the building, celebrated in elevation and serving as the main focus point for the southern edge of the museum complex. It is intended to draw people into exploring the site and act as an attractive point of interest for pedestrians walking down State Street. The rooftop greenhouse is the main interior growth space holding care intensive care vegetation that requires large amounts of sunlight and/or water. The greenhouse is afforded the greatest amount of sunlight uninterrupted by adjacent buildings or train tracks along is southern position, which is the main reason for its placement there.

C. Activities

The greenhouse is used to house plant species not suited for Chicago's climate. Tropical plant species, particularly those found in eastern and Mediterranean eco-systems, are the main focus of the green-house space. The experience of the being in a densely vegetated, culturally meaningful urban space is the main activity of the greenhouse, one that directly relates to the cultural artifacts housed below.

D. Spatial Layout

The greenhouse takes up the entire 2nd floor of the building, with entries located at the north and southwestern corners. The greenhouse is similar in shape to a lowercase "j", with a slender neck that runs north to south expanding into a much large space along the border of E. Balbo Street. Within the greenhouse, the following plant species are housed:

Japanese Black Oak: A very popular Japanese symbol of strength and unity. Additionally, the black oak is a regular species to be used for the practice of bonsai, the Japanese art of miniature tree growing.

Bamboo: Distinct Chinese grass species that is known for its structural qualities, both in practice and appearance. It is nearly ubiquitous in all forms of Chinese art, architecture and landscaping.

Chinese Ume: Known as the Chinese plum tree, the Ume blossom is used as a traditional decoration during Chinese New Year and well loved for their blossoms and fruit, which is similar to that of an apricot.
Monterey Cypress: A Californian ornamental tree chosen because of its relevance in many picturesque landscape paintings, the Monterey is known for is beauty and distinct patterns of growing, particularly in fog rich rocky outcroppings.

Olive Tree: Mediterranean tree with significance in Greece and Italy, the olive tree is known as a symbol

of peace and cooperation throughout the world. Its significance can be seen in any society based in some way on the democratic ideals first espoused by the Greeks.

Tea: The 2nd most drunk beverage in the world, after water, tea is host to a number of elaborate rituals throughout the world, particularly Japan and England, where it a significantly social phenomenon.

Lotus Blossoms: Rare flowers that represent a wide variety of ideals and virtues through eastern cultures.

E. Equipment / Furniture

Sprinkler systems run along the structural beam system of the greenhouse and link directly to the water storage tank placed in the Chinese water garden. Operable windows allow access heat and moisture to escape in summer months.

Mechanical Room

B. Purpose/Function

The mechanical room will hold all of the necessary equipment to regulate the heating, cooling and plumbing of the building and operate the elevator.

C. Activities

The use and maintenance of the equipment are are the two primary activities that go on in the mechanical room.

D. Spatial Conditions

The mechanical room is a straightforward, functinoal space in the basement level of the entry building. It takes up the majority of space in the basement along the the Northern and Western edges of the basement level.

E. Equipment

All of the heating, cooling and plumbing equipment will be housed in the mechanical room.

Pumping Room

B. Purpose/Function

The pumping room is unique to the Greenhouse Building in that it houses all of the necessary equip-

ment to run the large water storage tank that feeds the greenhouse space.

C. Activities

Purely functional, the pumping room is used to distribute water throughout the greenhouse.

D. Spatial Conditions

The pumping room is located beneath the Chinese water garden in the basement of the Greenhouse Building.

E. Equipment / Furniture

The lower portion of the water storage tank as well as all relevant pumping gear and supplies are located in the pumping room.

Storage

B. Purpose / Function

The storage spaces come in two different types: art storage and practical storage. The art storage space is the larger of the two and holds additional art pieces that part of the museum's collection but not on display. The practical storage space refers to cleaning and office supply storage that enable the functional integrity of the building to remain intact.

C. Activities

The storage of art and supplies.

D. Spatial Conditions

The storage rooms are utilitarian spaces that hold excess materials for the museum. They are straightforward spaces that fulfill this purpose.

E. Equipment / Furniture

Shelving for the materials, ladders moving equipment.

Japanese Zen Garden

B. Purpose / Function

An outdoor attraction framed by the Greenhouse Building, the Zen garden is a highly significant cultural representation of nature based on architectural and sculptural principles and as such, is important to include in a museum that attempts to explore such themes.

C. Activities

The activities of the Zen garden include contemplation, observation and meditation.

D. Spatial Conditions

The garden is located in a notch "cut-out" of the Greenhouse building, giving the garden the sense of enclosure that is the standard of such installations. The garden can be fully walked around, and the eastern portion of the observation deck covered by the 2nd story greenhouse.

E. Equipment / Furniture

There are a number of benches tucked near the garden to allow admirers to stop and contemplate the garden

Chinese Water Garden

B. Purpose / Function

Similar to the Zen garden, the water garden is a Chinese institution that seeks represents nature through organic, sculptural and architectural elements, making it an important tradition to include in the museums program.

C. Activities

The activities of the Zen garden include contemplation, observation and meditation.

D. Spatial Conditions

The water garden forms the northern border of the Greenhouse Building's southern gallery. It includes a small island that holds a singular cherry blossom tree, ubiquitous in Japan culture as a symbol of the nation and in the United States as a symbol of democracy. The garden itself is irregularly shaped in accordance with the buildings that frame it as well as the strictures of water garden principle, which rule that such installations be asymmetrical. In the southeast corner of the water garden is a tall, slender

water storage tank that pierces the ground into a sublevel pumping chamber.

E. Equipment

The water storage tank previously mentioned acts as an interesting visual element as well as a functional necessity that manages to distribute water to the greenhouse.

Park Building

Entrances	
2 @ 100 sq ft	200 sq ft
Information Booth	
1 @ 100 sq ft	100 sq ft
1 @ 200 sq ft	200 sq ft
	300 sq ft
Gallery Space	
3,275 sq ft	3,275 sq ft
Offices	
One @ 490 sq ft	490 sq ft
Kitchen Space	
One @ 500 sq ft	500 sq ft
Service Area	
1 @ 220 sq ft	220 sq ft
Indoor Café Area	
500 sq ft	500 sq ft
Rooftop Park	
1 @ 4,500 sq ft	4,500 sq ft
Outdoor Limber Pine Installation	
1 @ 2,400 sq ft	2,400 sq ft
Mechanical	
1 @ 650 sq ft	650 sq ft

Storage

1 @ 1,000 sq ft	1,000 sq ft
2 @ 220 sq ft	440 sq ft
Bathrooms	
2 @ 160 sq ft	320 sq ft

Main Entrances

B. Purposes/Function

The entrances of the Park Building are corridors that lead into the gallery core that runs the length of the building along State Street.

C. Activities

The entry and exit of the building by employees and visitors.

D. Spatial Layout

The two entrances of the of the building are located along the south façade and north end of the east façade. Upon entering both, the user walks down a small corridor that empties into a long gallery area, separated into two spaces by a large load bearing wall.

E. Equipment/Furnishings

None

Information Booths

B. Purposes / Function

The information booths are small spaces where visitors gain information about the museum and its exhibits.

C. Activities

The booth is a space used by the employees to give verbal information, pamphlets, maps and similar materials to visitors of the museum. It a place where people are intended make a quick stop and then

proceed into the museum proper.

D. Spatial Layout

A small space, the booth is the first thing seen on the gallery level of the building upon entrance.

E. Equipment / Furnishings

A small computer for the employee working the desk as well as a variety of informational materials.

Office

B. Purposes / Function

Main employee work space where work is coordinated and the business functions are taken care of. One office of many scattered throughout the site.

C. Activities

Office functions such as data entry, worker coordination, printing, promotional activities etc.

D. Spatial Layout

The office is located in the northwest corner of the Park Building. Apart from the gallery space and mechanical room it is the largest interior room in the building. It is located in the north service end of the building where nearly all of the administrative and functional processes of the building take place. Like the Greenhouse Building's office space, there is no fenestration along the interior walls of the office, an effort to emphasis the museum aspect of the complex rather than its inner workings.

E. Equipment / Furnishings

Office equipment such as computers, fax machines and copiers.

1st Floor Gallery Space

B. Purposes / Functions

The gallery space in the Park Building is the art exhibition space that features a wide variety of different media that shows nature as a cultural object.

C. Activities

The viewing and appreciation of art, learning about different cultural values.

D. Spatial Layout.

The Park Building's galleries are aligned on a north-south axis divided in two by a load bearing wall that runs the length the of the interior core. The western façade of the gallery spaces is a glass wall that opens up the galleries for pedestrians walking down state street, while the eastern façade opens up into the semi-enclosed limber pine installation to the east.

E. Equipment / Furniture.

Benches in the middle of the gallery corridors.

Kitchen Space

B. Purposes / Function

The kitchen is located on the lower level of the Park Building and serves an indoor café area that opens out into the French garden. The kitchen cooks a variety of inexpensive meals and offers a multitude of beverages for customers.

C. Activities

The preparation of food for the café.

D. Spatial Layout

The kitchen is located in the lower level service core in the northern section of the building. It is tucked behind the service elevator to insure the easy deliver of goods and remain discreet amongst the buildings activities. The kitchen area itself is broken into three areas: the service counter, the preparation and cooking space and the storage / freezer space. All three are directly connected to each other in a linear fashion as described about. They are arranged in an "L' shaped pattern around the elevator and are next to the large lower level storage space that is adjacent to the freezer section of the kitchen.

E. Equipment

Stoves, freezer, ovens and counters necessary for the preparation of food.

Rooftop Park Space

B. Purposes / Function

Similar to the greenhouse in the building opposite, the rooftop park acts as the definitive space of the Park Building. The rooftop park is intended to act as a relaxing, "picturesque" environment for people to lounge about, view the city and learn about the evolution of parks as we know them today. This is done through the planting of several variety of trees with distinct cultural connections to Western cultures that can be leaned about and understood through exhibitions found throughout the rest of the building.

C. Activities

The main activities of the rooftop park are to lounge and relax, view the surrounding environment and museum facilities and gardening spaces, have a walk about and generally enjoy the atmosphere.

D. Spatial Layout

The rooftop park takes up the majority of the 2nd floor, with circulation cores being located at the north and southeast. The park tapers from north to south, with a curving tree line that features the following species:

Northern Pin Oak: Hardy northern oak species that is a symbol of strength, unity and endurance. The oak is culturally significant in multiple cultures, particularly in the United States, Germany, England and France, who identify it as their national tree.

Elm: The most popular ornamental tree in the United States and Europe from the mid 19th century to today, the elm tree is highly valued for the funneling effect it creates when planted along avenues. It remains to this day known for its use in avenues in American towns and trees, to such an extent that "Elm Street" is the most common street name in the United States

Norway Maple: Highly valued for their seasonal color changes, lumber and, in certain species, syrup, the maple tree is a highly valued cultural symbol across the United States, Europe and particularly Canada, which prominently features a maple leaf on its national flag.

Linden Tree: Tall deciduous tree that has significant cultural connotations in Germany and Northern Europe, especially in Slavic communities and Nordic countries, where it is a dominate tree.

E. Equipment / Furniture

Basic Maintenance equipment such as mowers and trimmers are located in the storage space located adjacent to the rooftop park. There is no future.

Mechanical Room

B. Purpose/Function

The mechanical room will hold all of the necessary equipment to regulate the heating, cooling and plumbing of the building and operate the elevator.

C. Activities

The use and maintenance of the equipment are are the two primary activities that go on in the mechanical room.

D. Spatial Conditions

The mechanical room is a straightforward, functinoal space in the lower level of the building. Along with the storage spaces, the mechanical room is the largest interior space in the Park Building, Is located beneath the office in the Northwest corner of the lower leve.

E. Equipment

All of the heating, cooling and plumbing equipment will be housed in the mechanical room.

Storage

B. Purpose / Function

The storage spaces come in two different types: art storage and practical storage. The art storage space is the larger of the two and holds additional art pieces that part of the museum's collection but not on display. The practical storage space refers to cleaning and office supply storage that enable the functional integrity of the building to remain intact. Additionally, maintenance equipment such as mowers and trimmers are located in certain 2nd story and 1st floor storage spaces.

C. Activities

The storage of art and supplies and maintenance equipment,

D. Spatial Conditions

The storage rooms are utilitarian spaces that hold excess materials for the museum. They are straightforward spaces that fulfill this purpose.

E. Equipment / Furniture
Shelving for the materials, ladders, moving and maintenance equipment equipment.

Indoor Café Area

B. Purpose / Function

The indoor café area is the enclosed eating area serviced by the kitchen to provide customers with shelter should the weather be inclement, or just serve as another option if customers don't feel like sitting outside.

C. Activities

Eating and drinking, lounging, talking, relaxing and resting.

D. Spatial Conditions

The indoor café area takes up the northeast corner of the lower level. As such, the indoor café area is directly connected to the outdoor French garden area and easily accessible from the main stairwell that is located nearby.

E. Equipment / Furniture

Tables and chairs to accommodate patrons.

Outdoor Limber Pine Installation

B. Purpose / Function

The limber pine installation is located in a notch similar in design and presentation as the Japanese Zen rock garden opposite it in the Greenhouse Building. Consisting of eight limber pine trees whose lower branches will be trimmed down, the pine was chosen to represent coniferous trees in a broad sense, because of its many cultural associations with religion, its practical use as wind break to prevent soil erosion and, finally, because of the architectural quality the pine has when presented as a canopied "interior" space. The use of this installation is intended to serve as an interesting contrast between interior and exterior space as one moves through and into the Park Building.

C. Activities

Walking, observing and learning about practical applications of nature toward the greater good.

D. Spatial Elements

The installation is located in a notch "cut out" of the Park Building surrounded by art gallery to the

west and circulation cores to the north and south. The pine installation to be cultivated in such a way as to have a dense overhead canopy with no lower branches to impede movement. This will be done so as to create an interesting tension between what is enclosed and unenclosed space.

Lower Level French Formal Garden Space

One (1) @ 16,500 sq ft 16,500 sq ft

B. Purpose / Function

The lowered French formal garden acts as the central organizing space around which all of the south site buildings revolve around. It is intended to be both the defining outdoor garden space and the visual anchor that draws people into the site in a desire to explore the museum. From this space, all areas of the museum can be reached, including the north site which is accessed via underground pathway that tunnels underneath East Harrison Street and empties out directly in front of the Great Plains Building. Finally, the French formal garden is simply an interesting space that allows people to enjoy a rich, leisurely experience in the heart of downtown Chicago.

C. Activities

Strolling through the grounds, eating and drinking in the outdoor café area, lounging, relaxing and experiencing formal gardening techniques.

D. Spatial Conditions.

The French formal garden is located 15 feet below street level, accessible through six staircases: two along State Street, one along East Harrison, one within the Ivy Building, one running between the Park and Greenhouse Buildings and via pathway accessed by the north site stairway. It can be directly accessed from the Main Entry Building, the Lightwell and Ivy Buildings and the Park Building. The garden is laid out in an grid pattern aligned along a central series of fountains, from which the tended parterres extend north and southward. The "main" entries to the gardens are the two grand staircases that lead downward from State Street. The patterns of the parterres themselves are angularly irregular to provide visual interest and a contemporary spin on a classical gardening style. Above the gardens is the orange and green line L Train tracks that rise some 40 ft above the lower museum level.
E. Equipment / Furniture

Tables and chairs are located in the outdoor café seating area near the Park Building. Maintenance equipment such as trimmers are held in storage rooms held in the Main Entry Building while an internal sprinkler system takes care of the vegetation. Benches line the main fountain pathways.

Great Plains Building

Entrances	
2 @ 200 sq ft	400 sq ft
Information Offices	
1 @ 220 sq ft 1 @ 80 sq ft	300 sq ft
Gallery Spaces	
4,250 sq ft	
Bathrooms	
2 @ 120 sq ft	240 sq ft
Mechanical	
Two @ 270 sq ft	540 sq ft
Storage	
One @ 175 sq ft One @ 225 sq ft	400 sq ft
Café	
Service / Kitchen Area	
1 @ 340 sq ft	340 sq ft
Eating Area	
1 @ 375 sq ft	375 sq ft
Bathrooms	
2 @ 110 sq ft	220 sq ft

Main Entrances

B. Purposes/Function

The entrances of the Plains Building open directly into the gallery spaces, with informational booths located in an immediately adjacent space.

C. Activities

The entry and exit of the building by employees and visitors.

D. Spatial Layout

The two entrances of the building lead into similar gallery spaces, with circulation cores located either straight ahead or directly to the side upon entry.

E. Equipment/Furnishings

None

Information Booths / Office

B. Purposes / Function

Within the Great Plains Building, the information booths and office space are one and the same, although in this case providing limited functions intended to carry out the basic services that the gallery needs.

C. Activities

The booth is a space used by the employees to give verbal information, pamphlets, maps and similar materials to visitors of the museum. It a place where people are intended make a quick stop and then proceed into the museum proper.

D. Spatial Layout

A small space, the booth is the first thing seen on the gallery level of the building upon entrance.

E. Equipment / Furnishings

A small computer for the employee working the desk as well as a variety of informational materials.
Gallery Space

B. Purposes / Functions

The gallery space in the Great Plains building is really in three parts: the continuous first floor gallery and the two upper story galleries that are separated by an outdoor 2nd story walkway. The walkway overlooks a semi enclosed Ironwood tree that acts as a visual anchor point for the interior of the building looking outward. The gallery spaces themselves are to feature artwork in multiple different media formats and have a general, but not stringent theme about the development of Chicago and the natural landscape of Illinois.

C. Activities

The main activities of the gallery spaces are the viewing and appreciation of art and the exterior landscape that the galleries frame and relate to.

D. Spatial Layout.

The galleries were designed in a reverse "?" shape, with users moving through long, slender galleries that curve around an a semi enclosed exterior landscape space. The galleries are similar to the Park building in that a load bearing wall runs like a spine through the form of the building, breaking the galleries into two hallway type environments throughout. On the 2nd floor, the galleries are split in two in what can be termed north and south wings, separated along the western curve of the plan.
is adjacent to the freezer section of the kitchen.

Great Plains Landscape

B. Purposes / Function

The surrounding landscape of the Great Plains Building features the grasses, wildflowers and hardy shrubs that are native to region. The intention of the project is to let the landscape develop itself over time, essentially letting it "go to see" with respect to the site. The exception of this is the planting of several ironwood trees along the interior façade and semi-interior enclosing space of the gallery building. Ironwood was selected for its ability to thrive in the shade, a necessity because of the many tall buildings surrounding the north site, as well as its striking appearance, giving the northern site a hardy, naturalistic appeal.

C. Activities

The landscape will eventually be densely vegetated, making most activities difficult. However, the purpose of the site is to compliment the function of the gallery building, which is to inform people about the natural history of Chicago as well as the transformation of the site from vast plain into densely settled urban enivornment.

D. Spatial Layout

The landscape takes up the site surrounding the Great Plains Building with the exception of the paved pathway beneath the L train and the small café opposite the galleries.

E. Equipment / Furniture

Some outdoor benches aligned along the main pathways through the site.

Mechanical Room

B. Purpose/Function

The mechanical room will hold all of the necessary equipment to regulate the heating, cooling and plumbing of the building and operate the elevator.

C. Activities

The use and maintenance of the equipment are are the two primary activities that go on in the mechanical room.

D. Spatial Conditions

The mechanical room is a straightforward, functinoal space in the in the northern section of the building. They are fully enclosed, utilitarian spaces.

E. Equipment

All of the heating, cooling and plumbing equipment will be housed in the mechanical room.

Storage

B. Purpose / Function

The storage spaces come in two different types: art storage and practical storage. The art storage space is the larger of the two and holds additional art pieces that part of the museum's collection but not on display. The practical storage space refers to cleaning and office supply storage that enable the functional integrity of the building to remain intact. Additionally, maintenance equipment such as mowers and trimmers are located in certain 2nd story and 1st floor storage spaces.

C. Activities

The storage of art and supplies and maintenance equipment,

D. Spatial Conditions

The storage rooms are utilitarian spaces that hold excess materials for the museum. They are straightforward spaces that fulfill this purpose.

E. Equipment / Furniture

Shelving for the materials, ladders, moving and maintenance equipment.

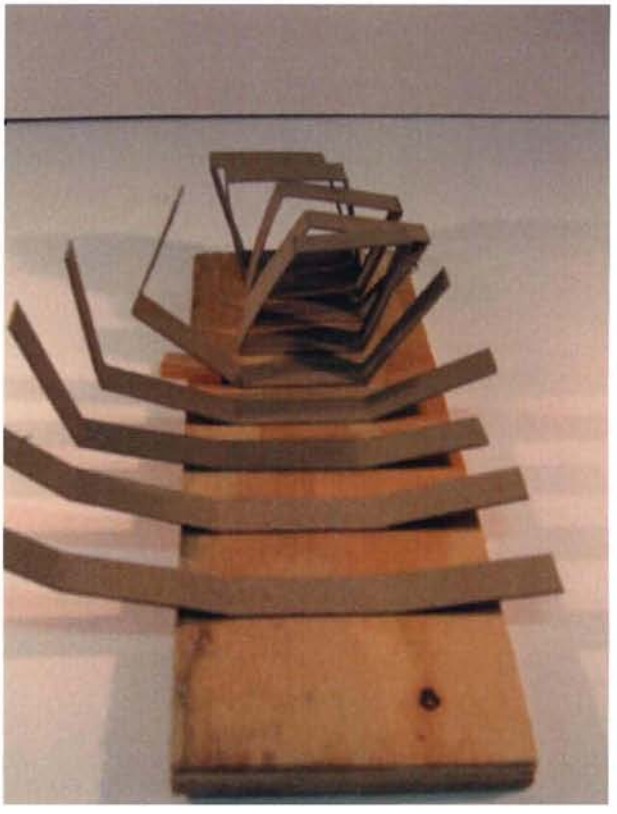
of this installation is intended to serve as an interesting contrast between interior and exterior space as one moves through and into the Park Building.

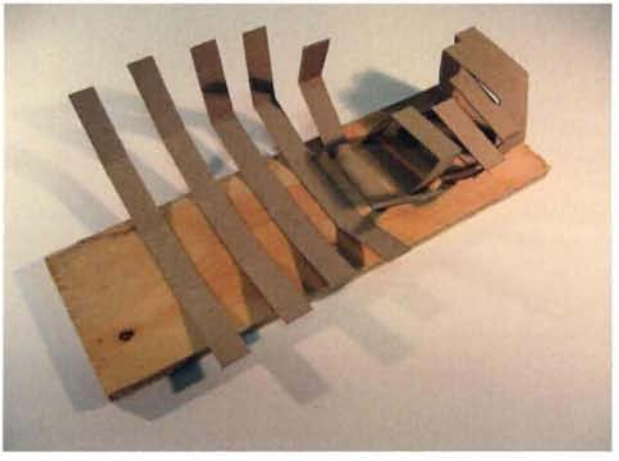
Springboard Design

The Springboard design process would begin to refine abstract thesis ideas into concrete representations of architectural possibilities through models, drawings and diagrams. The constant output of media during this phase allowed for the exploration and maturation of certain fundamental theories and proposals that would form the foundations of a building proposal. While this period of production was fruitful in terms of pushing the boundaries of my thesis, it ultimately exposed many glaring flaws in my thinking that would contribute to a complete overhaul in my thesis.

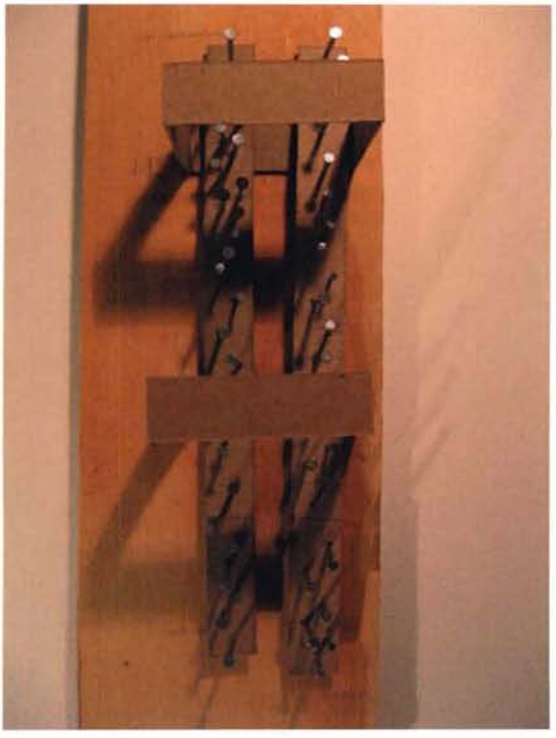
Springboard Design

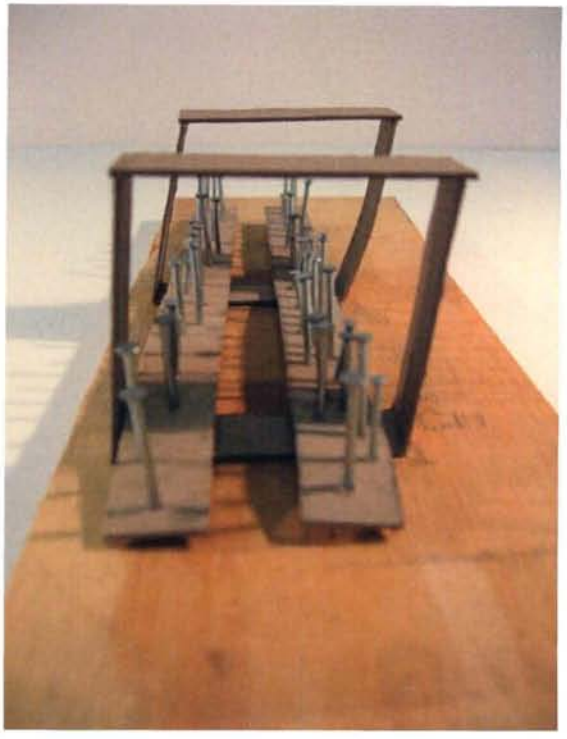
The first series of models produced during the Springboard design phase were investigations into the relations between what constitutes interior and exterior space and how those distinctions could be blurred to create a type of hybrid space. These investigations would have at least some meaure of influence throughout the entire course of the Springboard design phase. This particular model was an attempt to show how the same material could be used to create a slow transition between "inside" and "outside" while maintaining an appearance of being together.



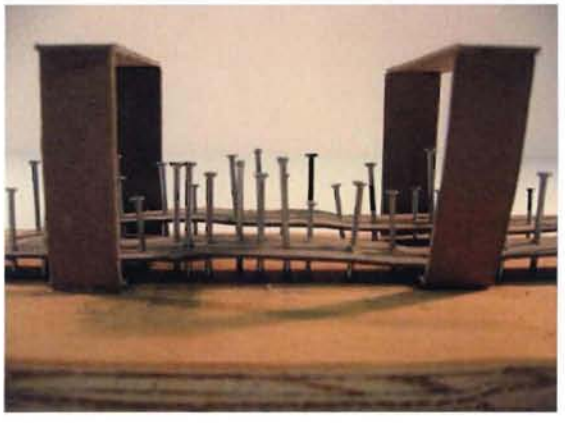


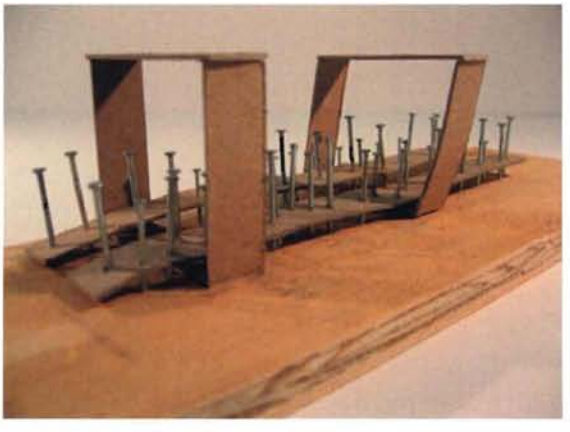
Springboard Design

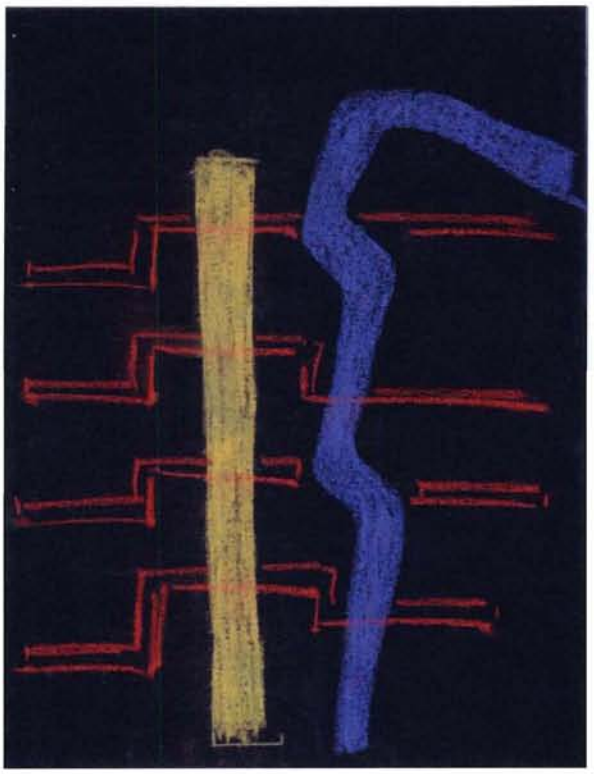


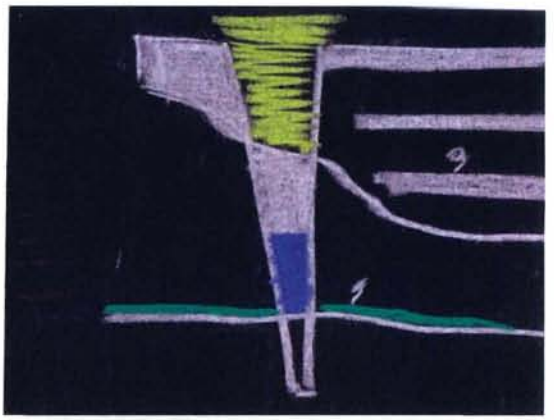


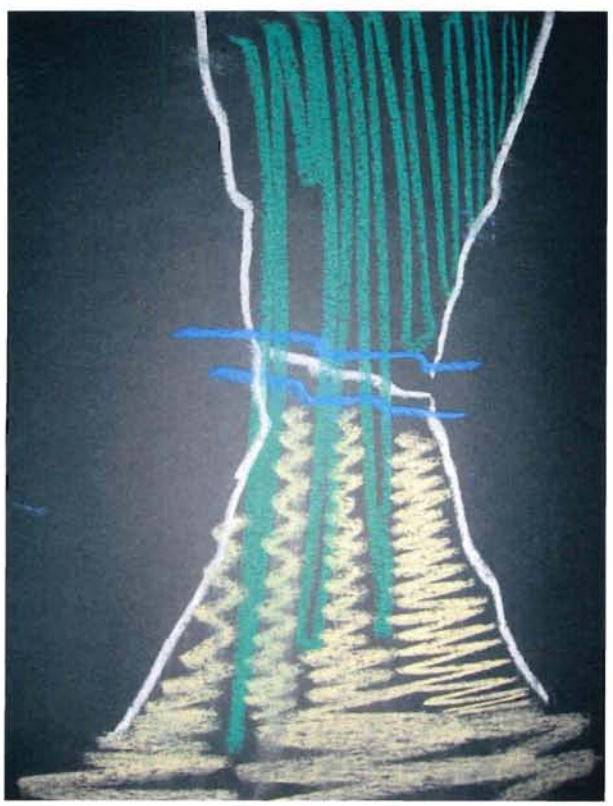
This model attempts to achieve a hybrid nterior and exterior space through the direct intersection of exterior space through the interior of a enclosed space. The two squares are representative of an interior space that is directly cut through by a swath of trees, in this case represented by a plethora of nails.





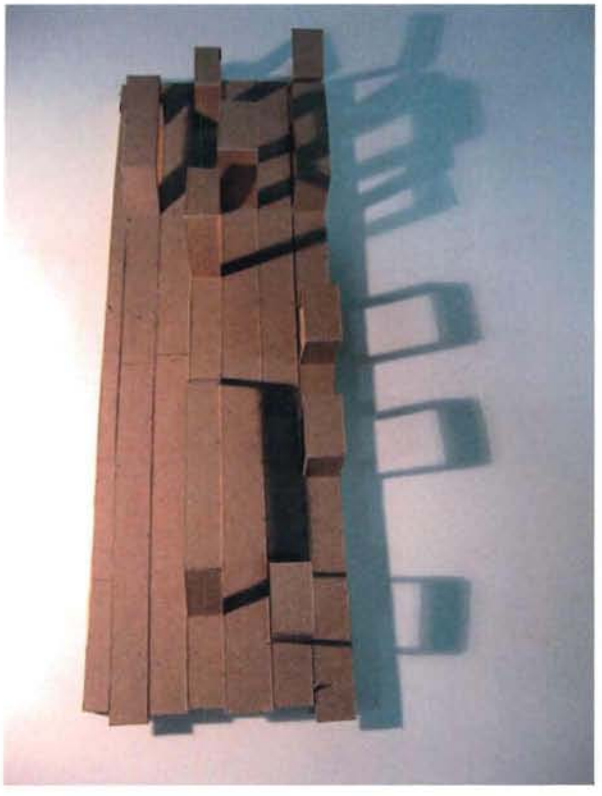




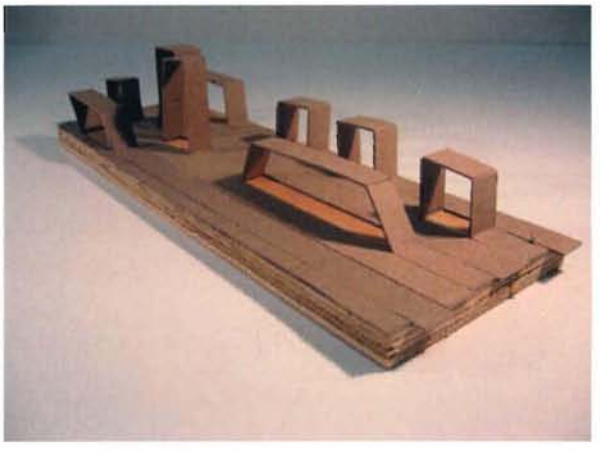


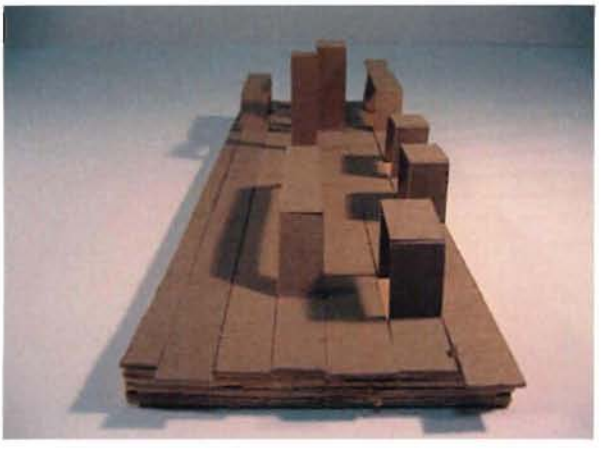
The following pastel drawings were exceptionally quick studies that looked for ways to integrate natural phenomenon such as sunlight and water as well as natural plant life such as grass directly into the structure of a building. Clockwise from top left: A depction of vertical light well and an interior waterfall, a section dealing with wall thickness and its relation to regulating interior and exterior environments, an underground walkway with openings for light, a plan view of a threshold with interior and exterior conditions mixing together

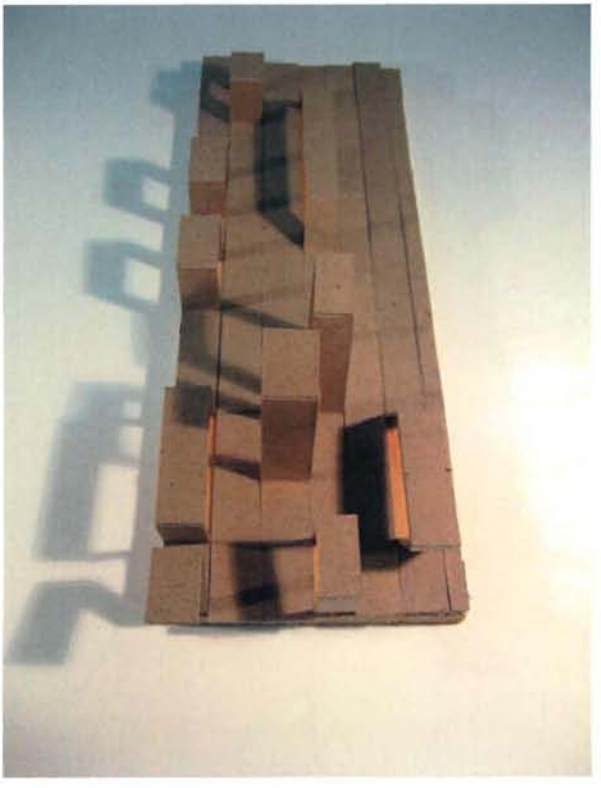
Springboard Design



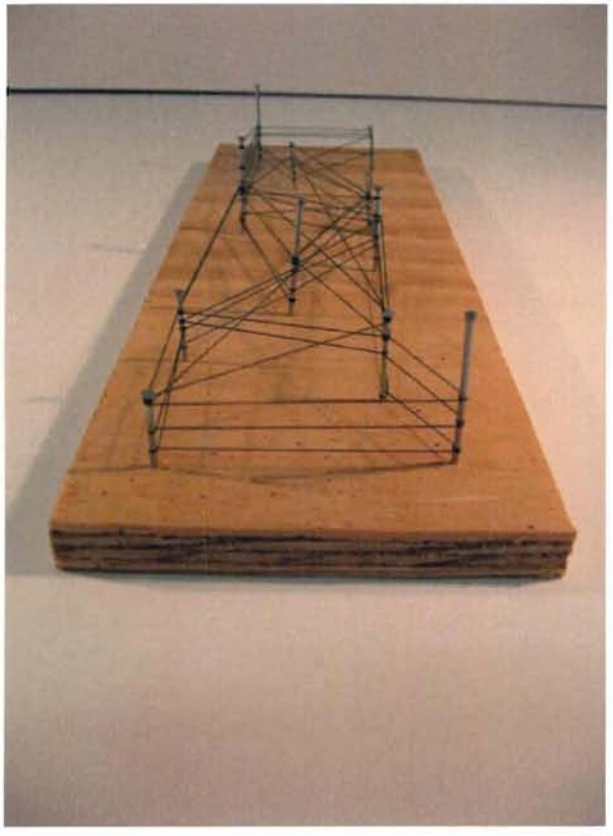
Rather than blurring interior and exterior space through thresholds and boundaries, this model looked to create space through the buckling and folding of the ground.

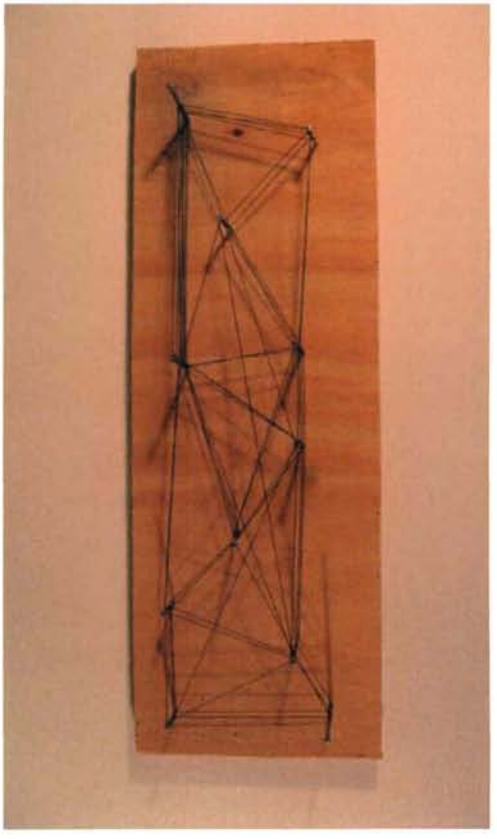


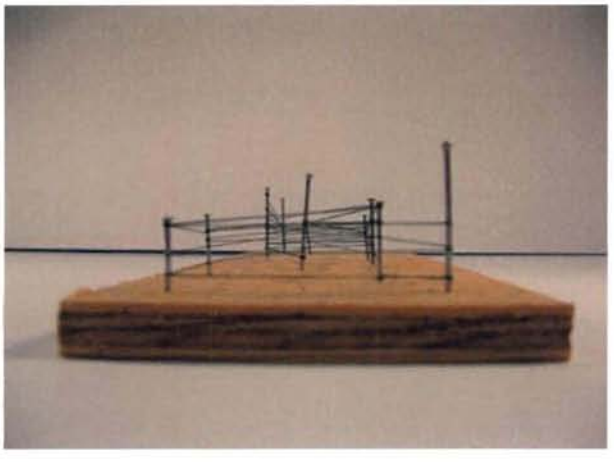




Springboard Design



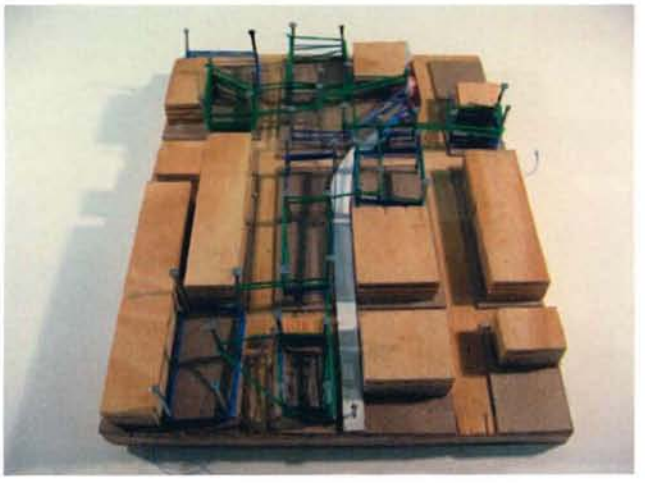


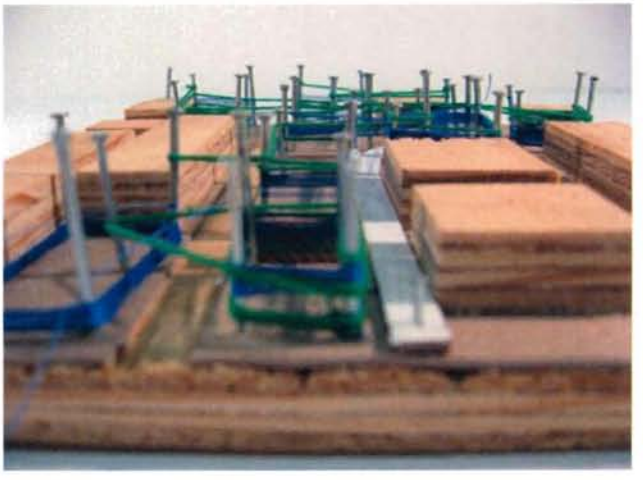


The use of string to find complex, overlapping spaces that could utilized in either an interior or exterior fashion was the driving force behind this model. Interior, functional space being woven with exterior green space become a focus that would inform the next string model as well as the series of massing models that would follow.

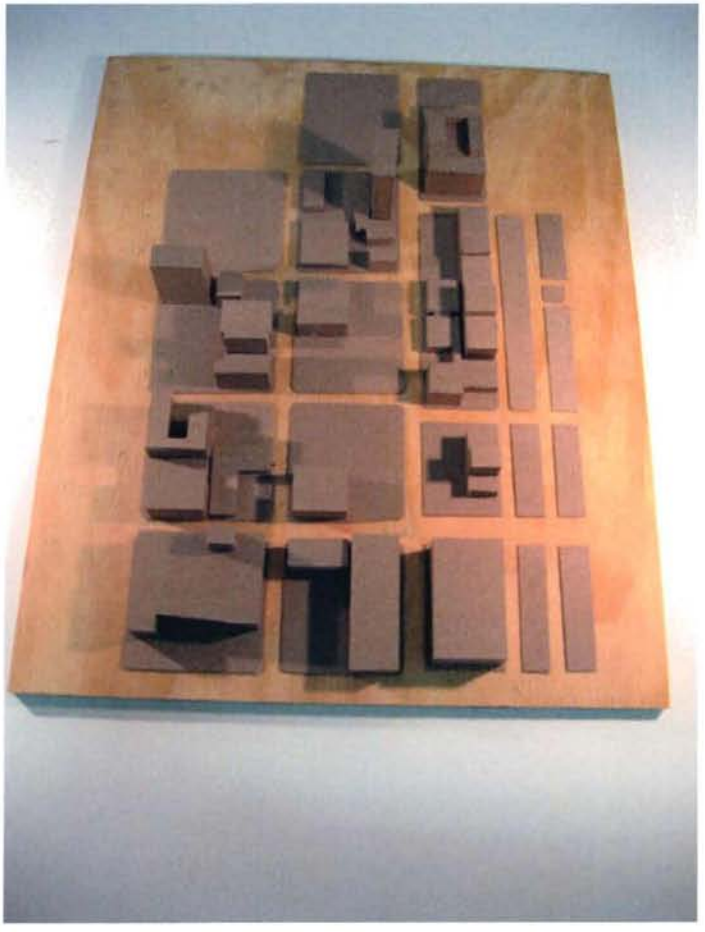
Springboard Design

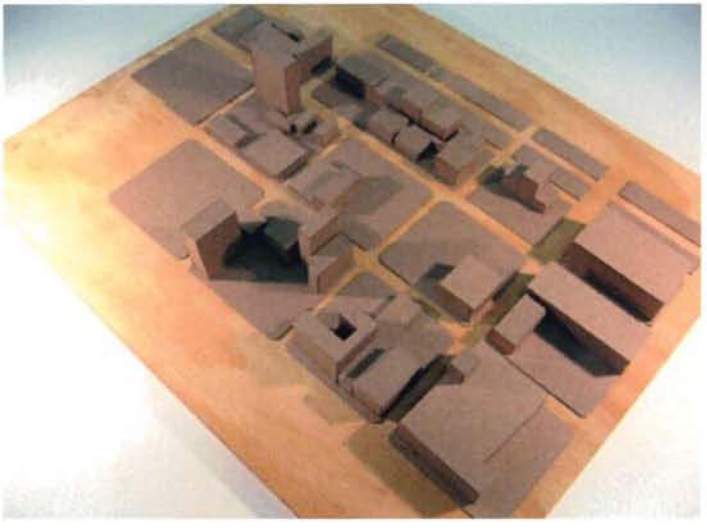
The first model to represent the actual site, this string study was a way of evaluating how interior space and green space would interact over several blocks. This particular model focused exclusively on how vegetation could be introduced within interior spaces, rather than having built space invading potentially green sites.





Springboard Design



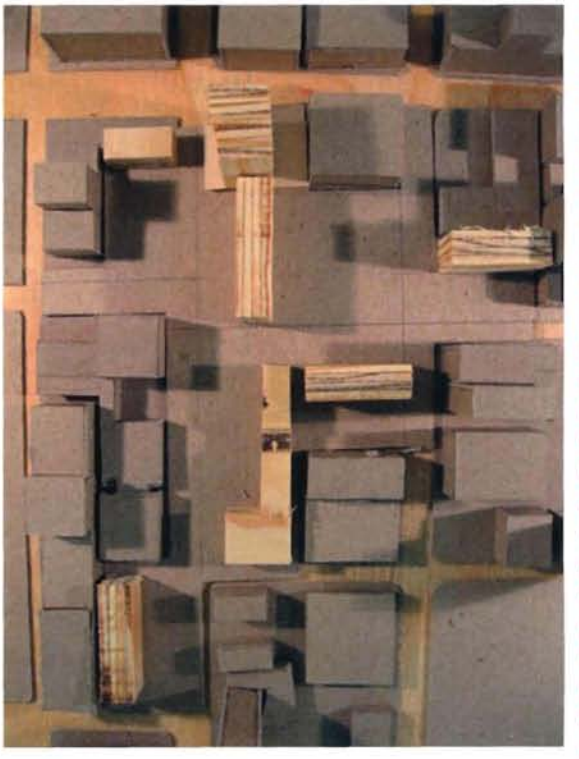


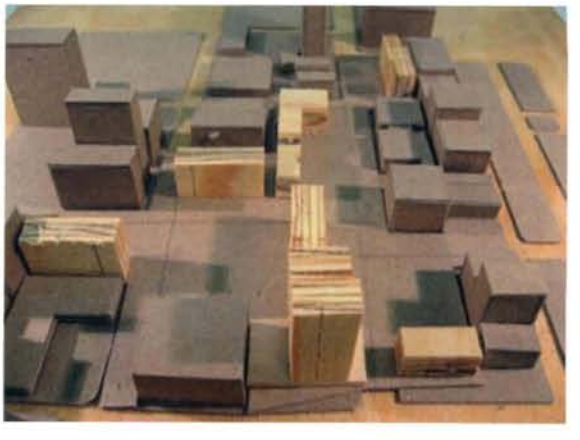
A 1/128" scale model was constructed after the string model in order to better study massing throughout the site in a more efficient manner. Working with a series of blocks, multiple building formations were quickly produced in order to find a scheme that balanced interior office space with exterior park space in such a way as to create a tension between the two.

Springboard Design - Massing Model 01

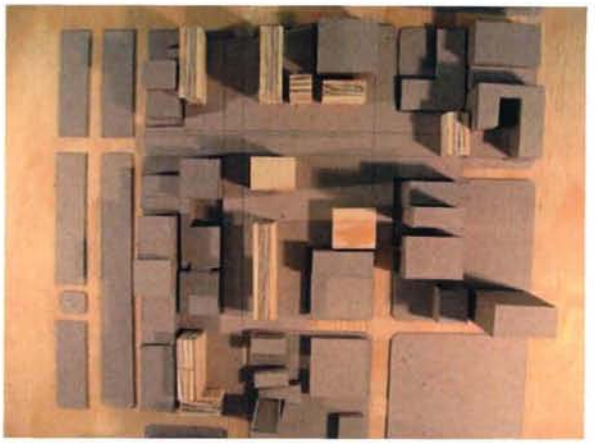
Massing Models 01-05

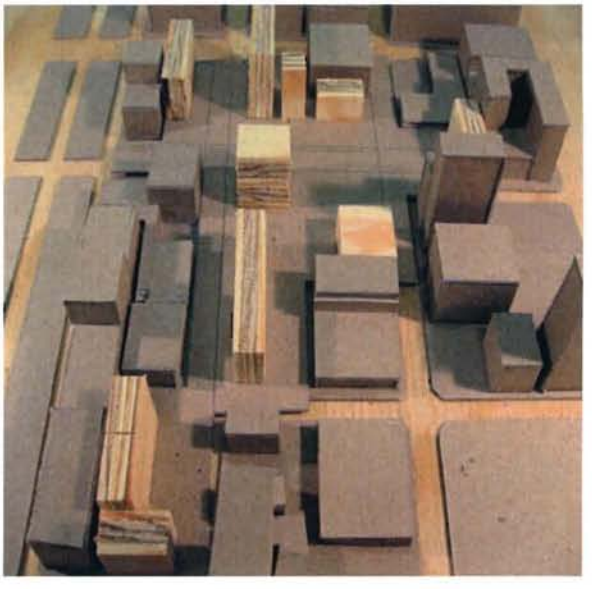
The following series of models were initial studies into how buildings would be oriented on the site in addition to the ratio of interior to exterior space. As the series progressed, the massing become more closely packed together as well as more inclined to frame large expanses of what was to become park space. This method of determining built and natural spaces would become important in later examinations of the project.

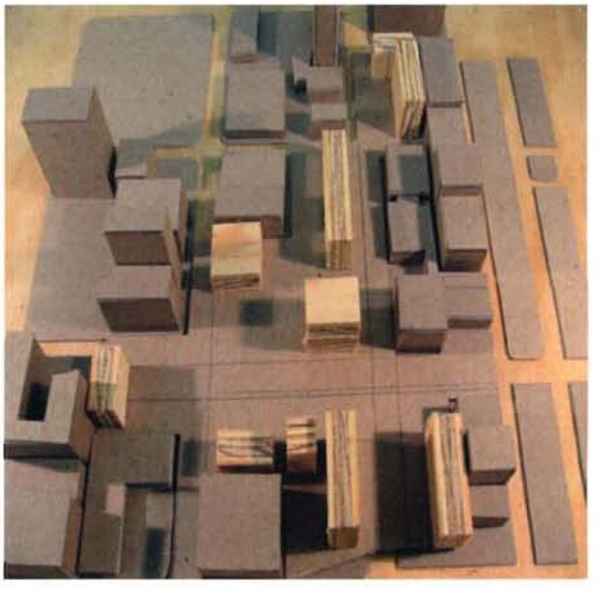




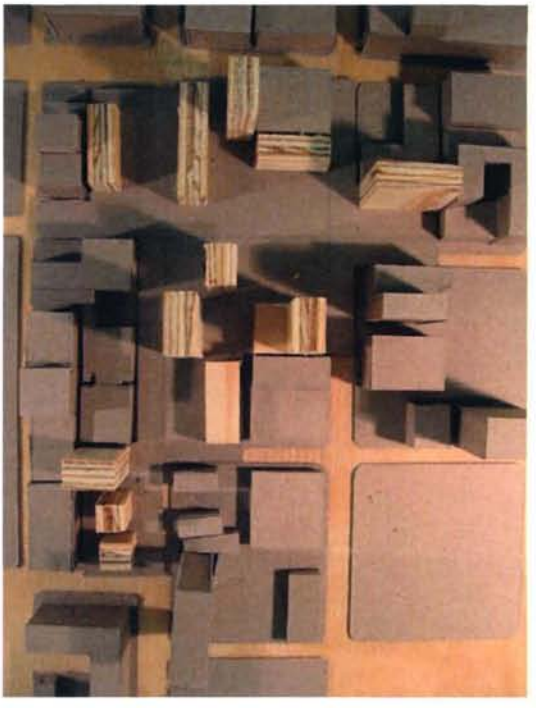
Springboard Design - Massing Model 02

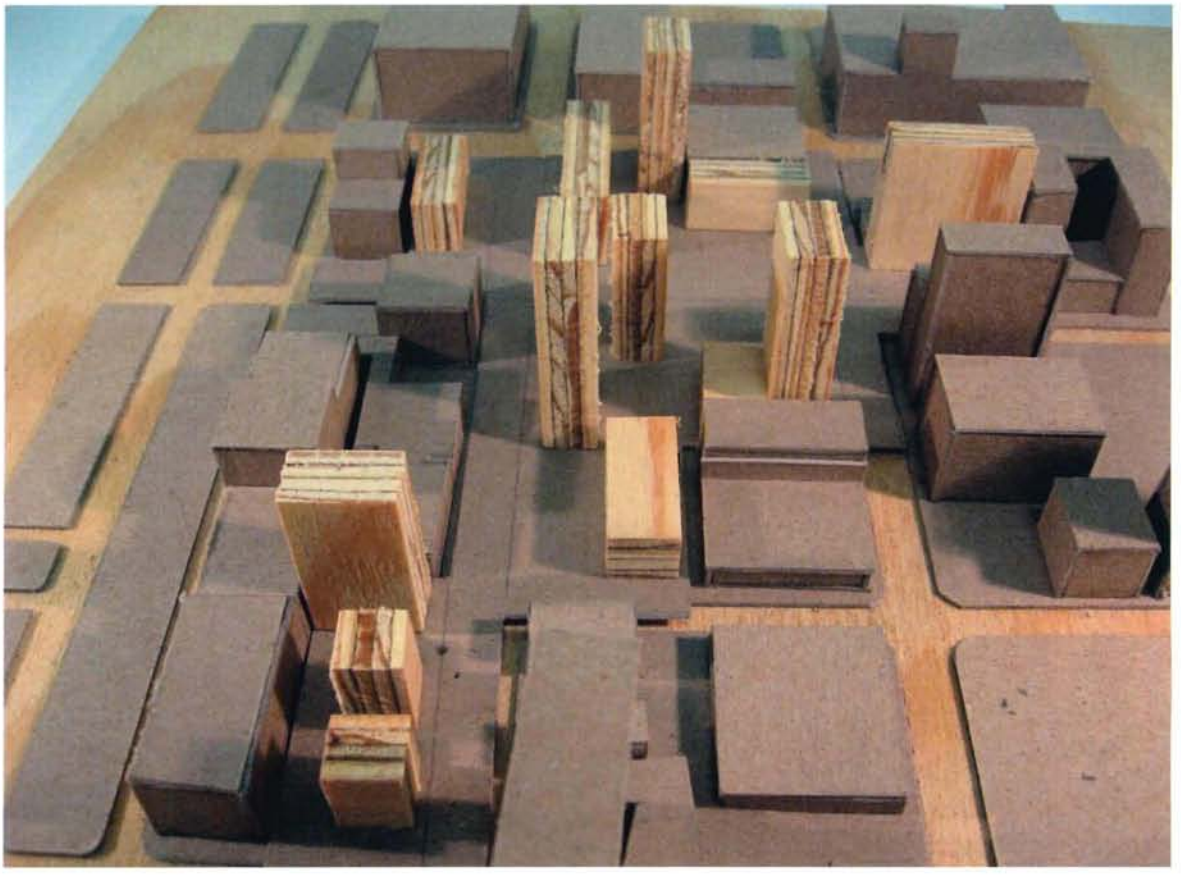




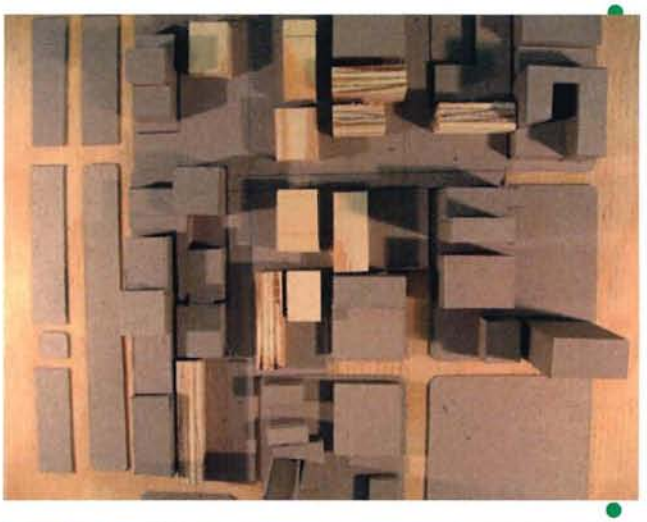


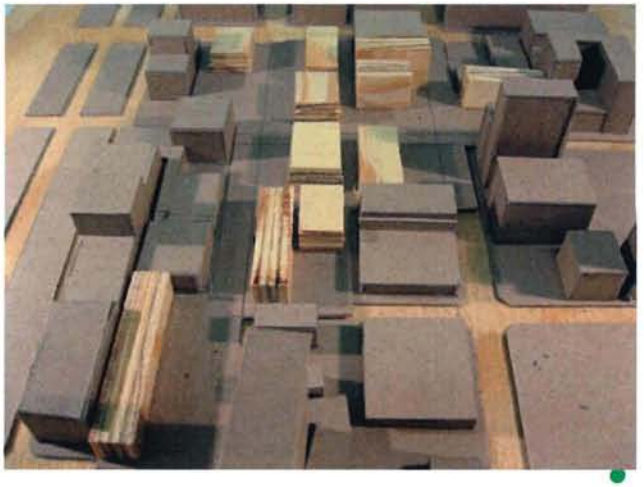
Springboard Design - Massing Model 03



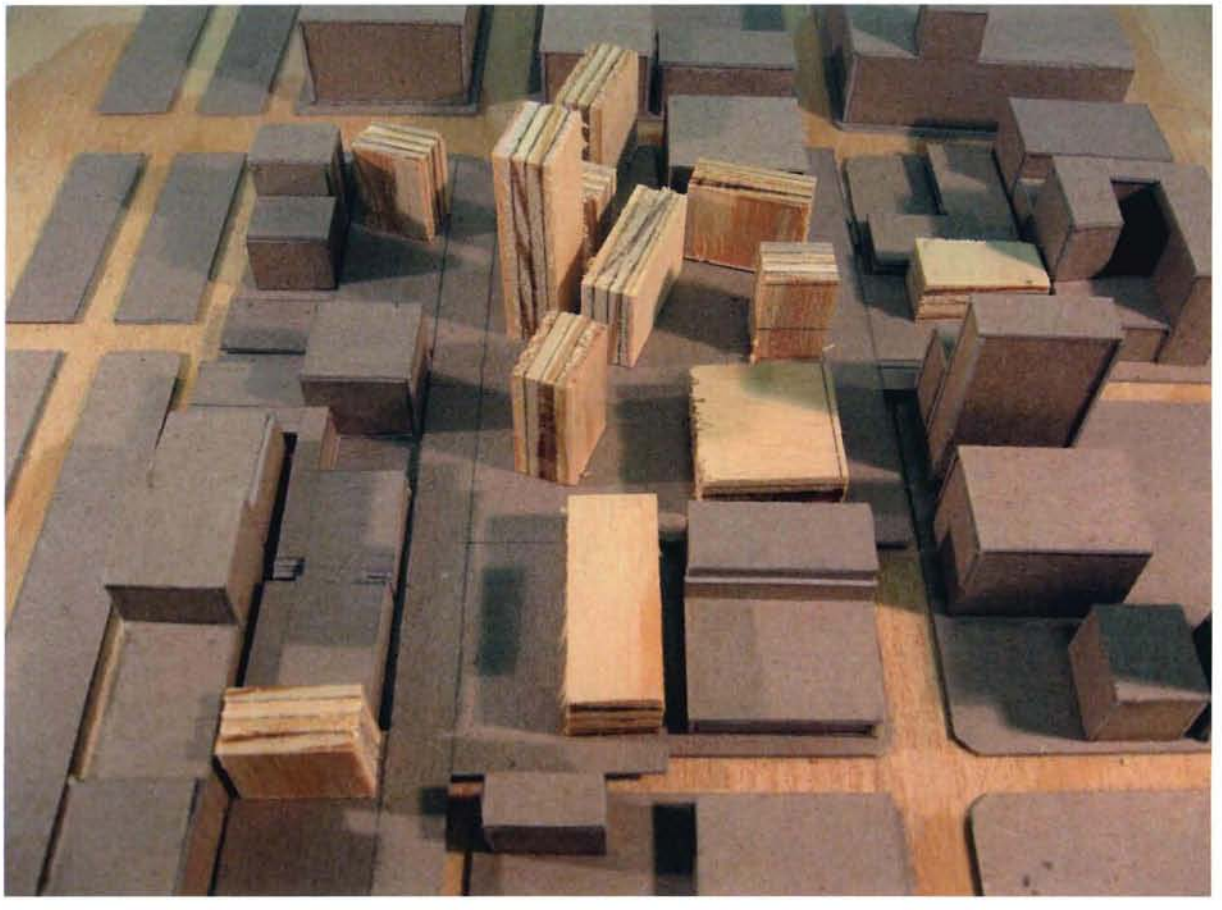


Springboard Design - Massing Model 04



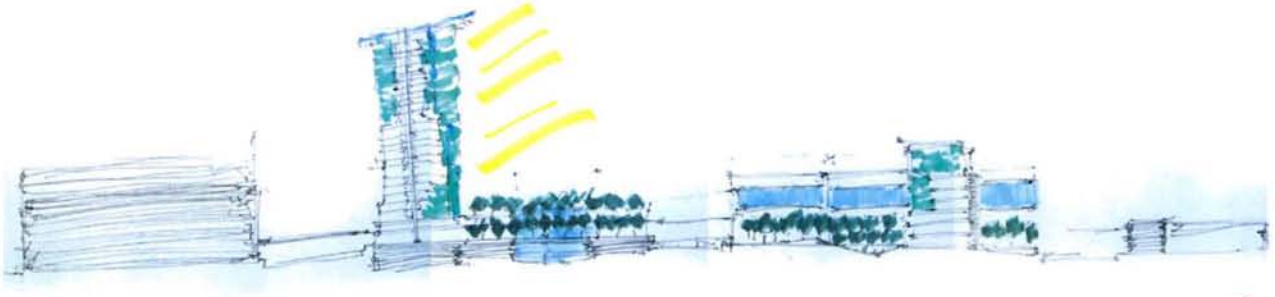


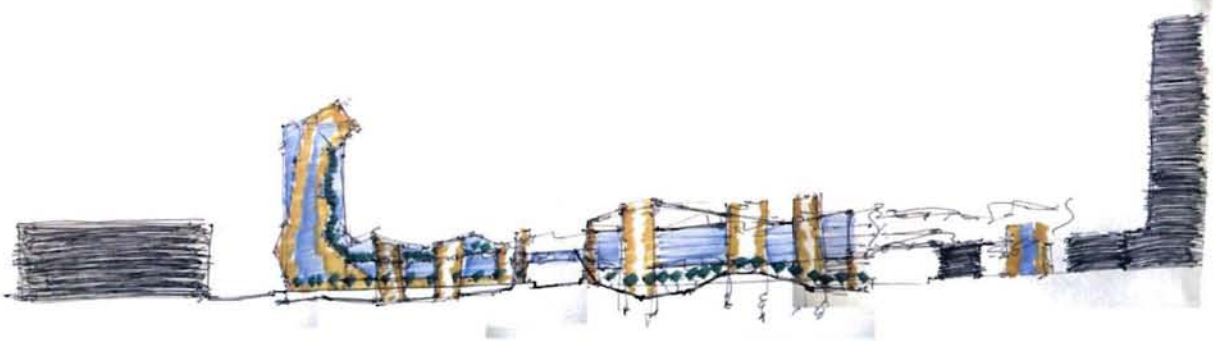
Springboard Design - Massing Model 05

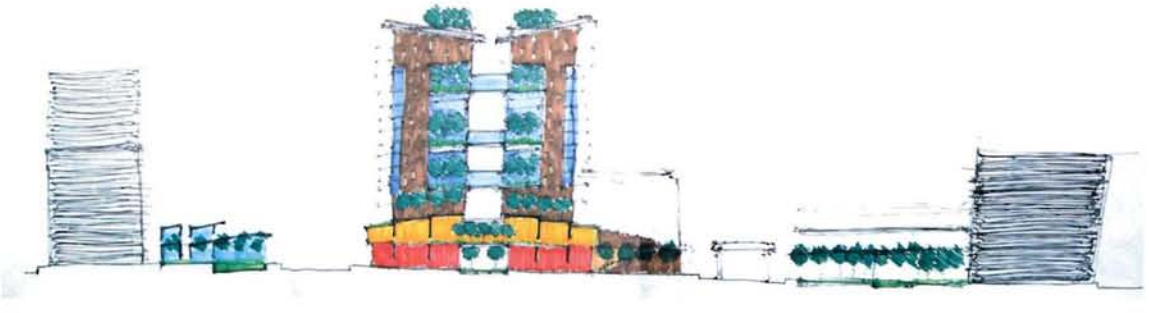


Springboard Design - Sections

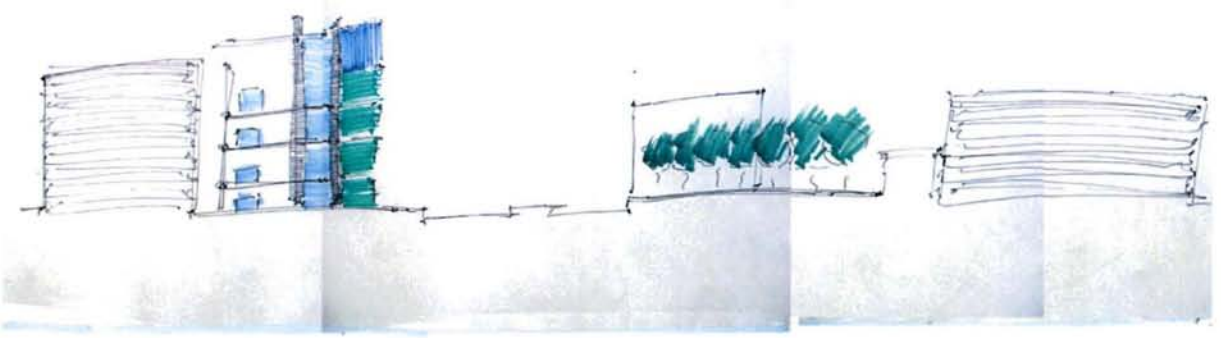
The forms and configurations generated by the previous series of mass models provided ideas as to possible interior space locations, but they did not address the question of how to blur the line between interior constructed space and exterior environment. In order to more fully experiment with these critical questions, a series of long sections was produced in order to get a better understanding of the surrounding buildings as well as to start generating more concrete ideas as to how natural and built space could begin to inform each other. Each section attempted to answer this question, with mixed results. An overreliance on the incorporation of vegetative growth to the interior of the building began to build up, causing a slow stagnation of ideas.

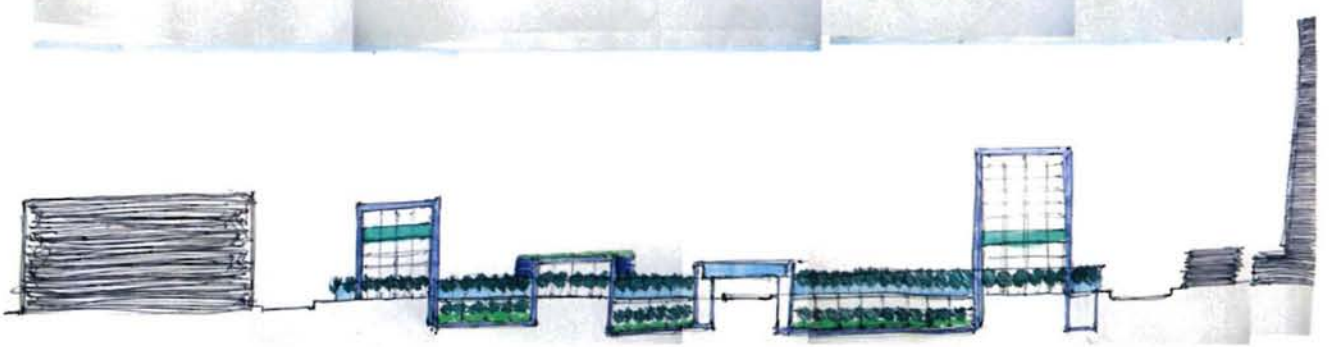


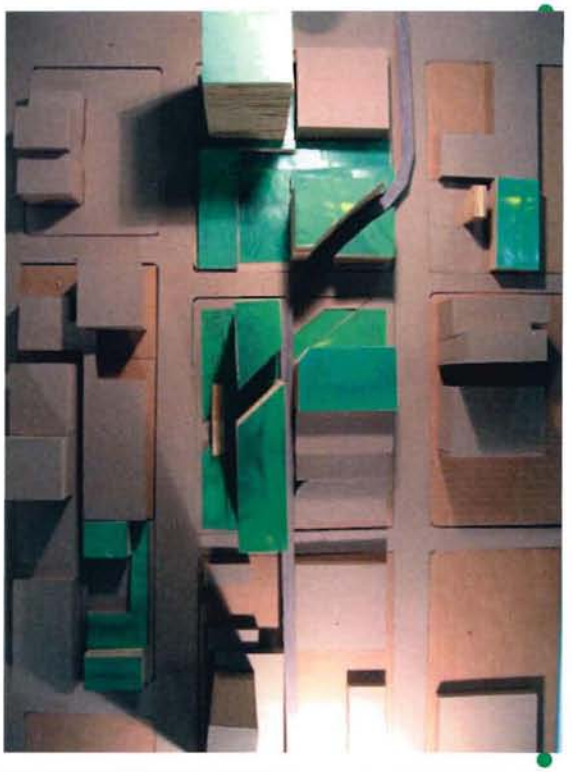




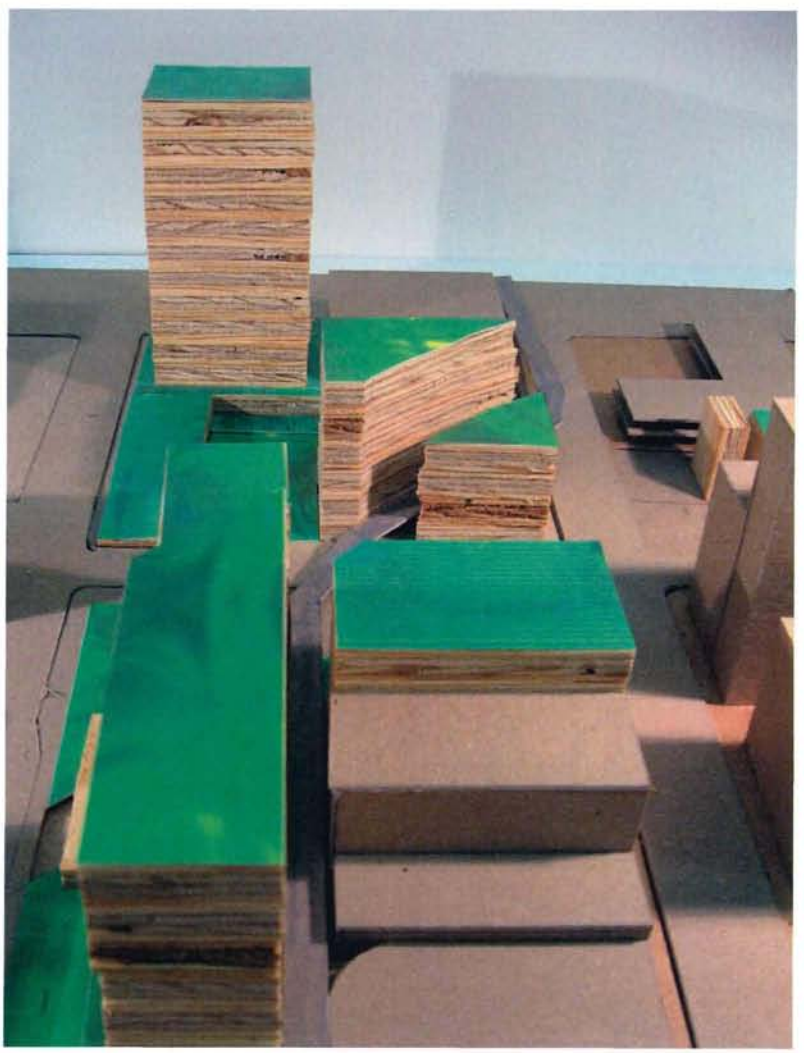
Springboard Design - Sections

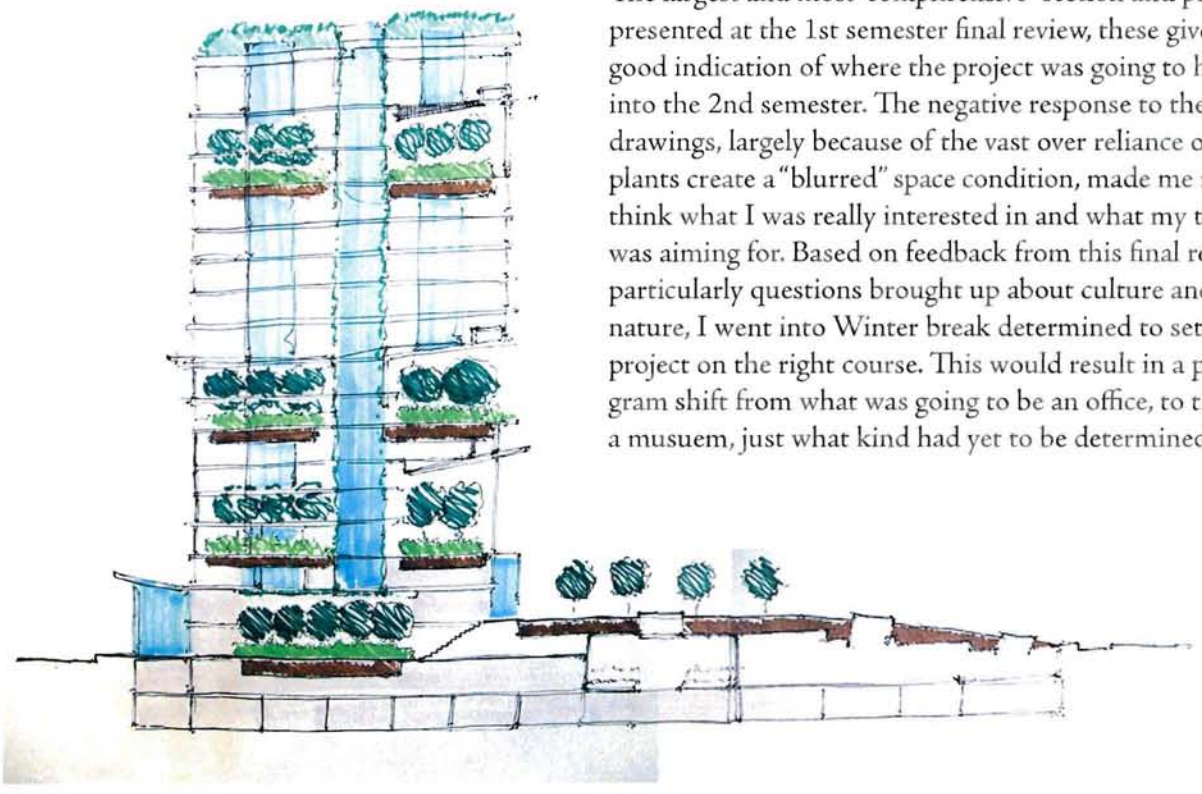




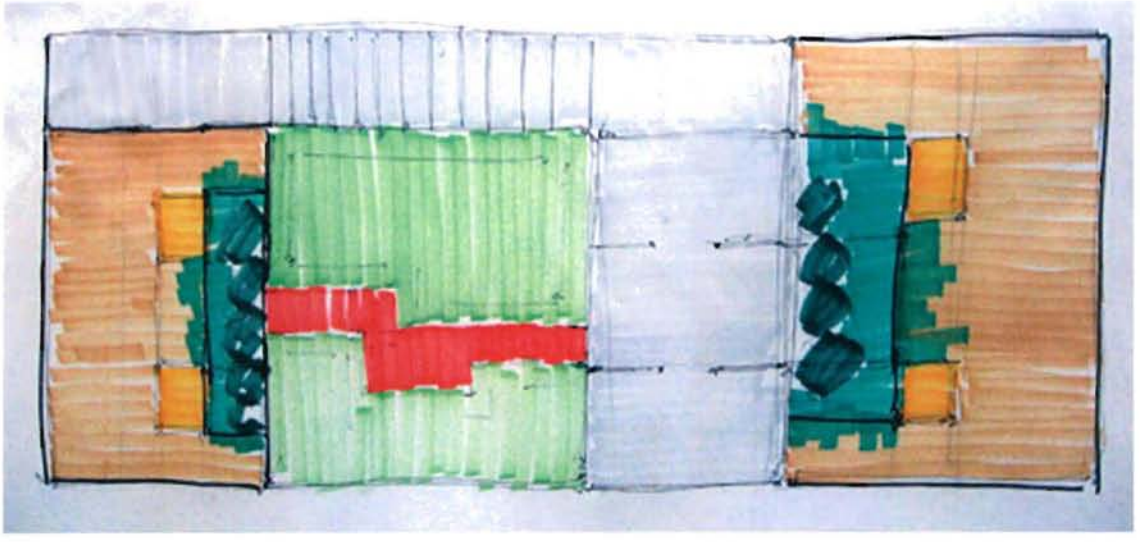


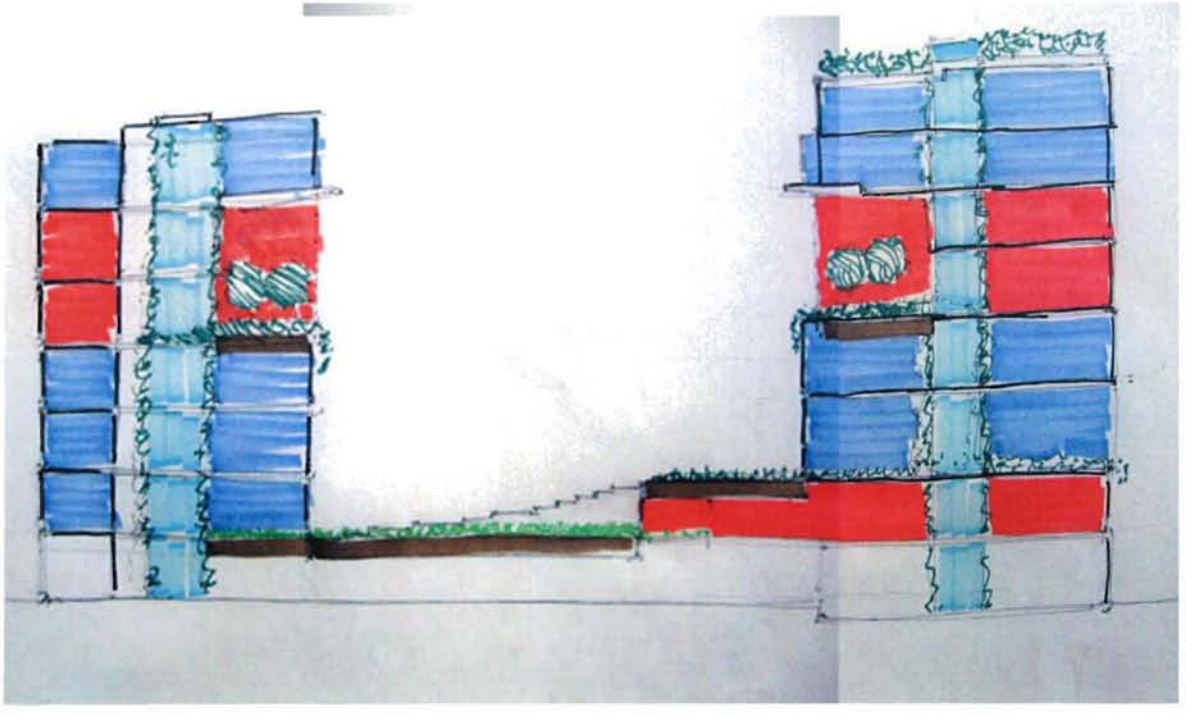
The combination of sectional sketches and three dimensional massing led to a concrete realization of how the office complex would be organized on the site. Anchored by an eighteen story office tower on the north end, the complex consisted of eight seperate office buildings, organized around the L train that cut directly through the site. Five of the proposed office buildings were affected by this cut, creating a arching curved form that carved directly the heart of the complex, giving the overall site plan a distinct layout that had an almost canyon like appearance.

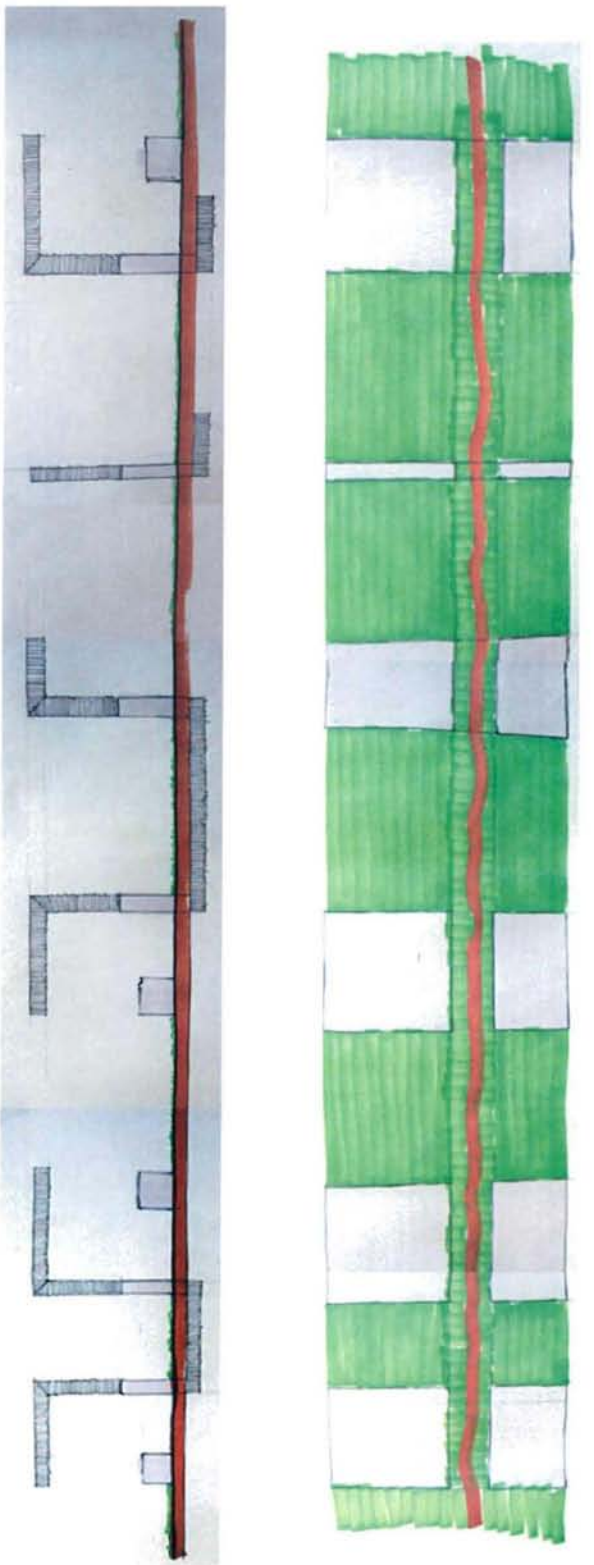




The largest and most "comphrensive" section and plan presented at the 1st semester final review, these give a good indication of where the project was going to head into the 2nd semester. The negative response to these drawings, largely because of the vast over reliance on plants create a "blurred" space condition, made me re-think what I was really interested in and what my thesis was aiming for. Based on feedback from this final review, particularly questions brought up about culture and nature, I went into Winter break determined to set my project on the right course. This would result in a program shift from what was going to be an office, to that of a musuem, just what kind had yet to be determined.



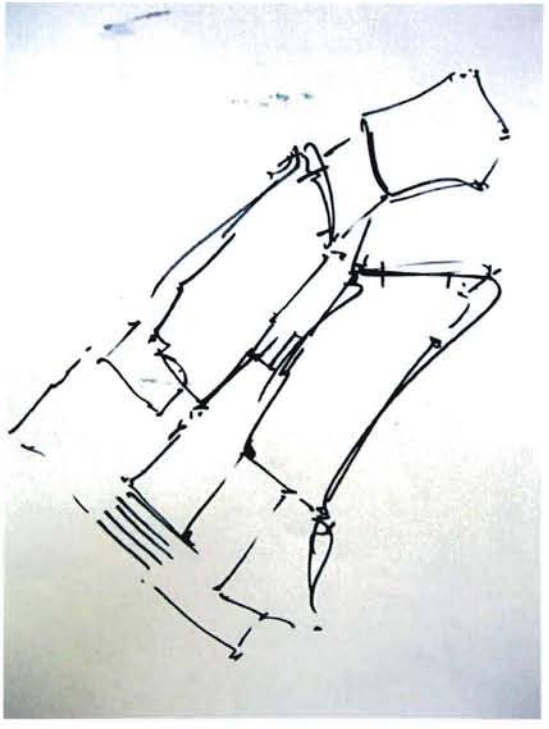


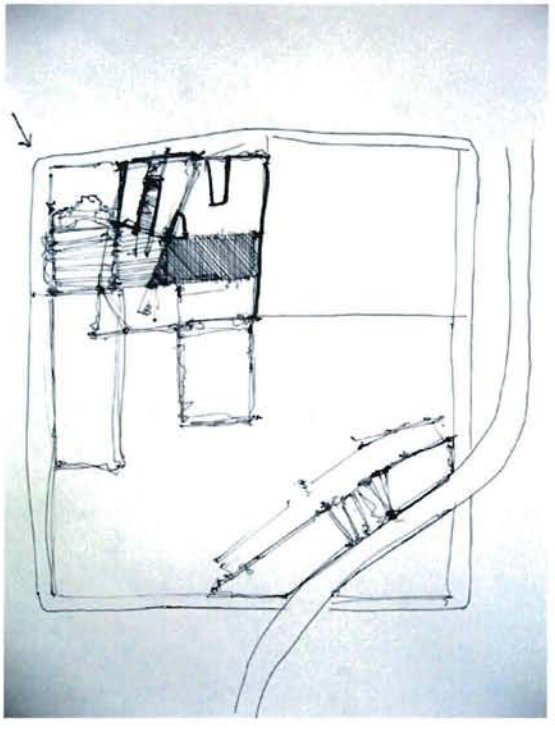


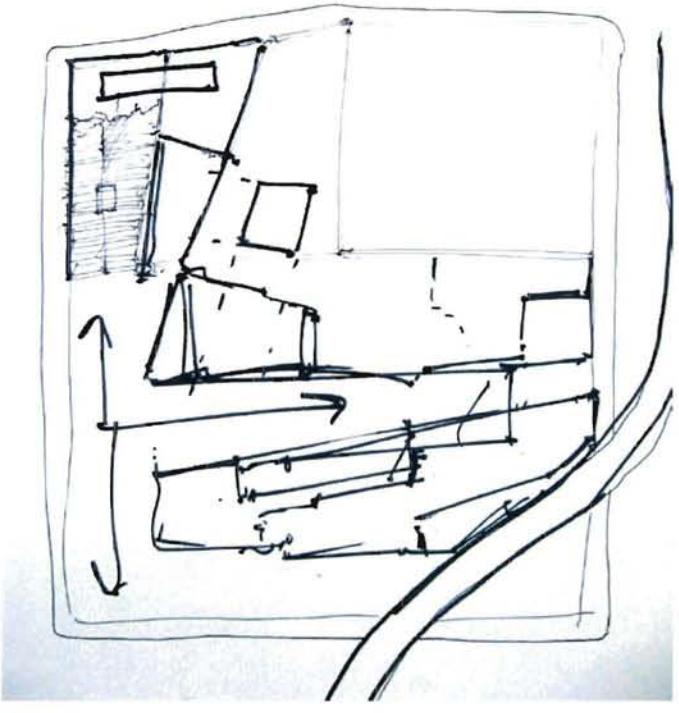
Building Design Phase

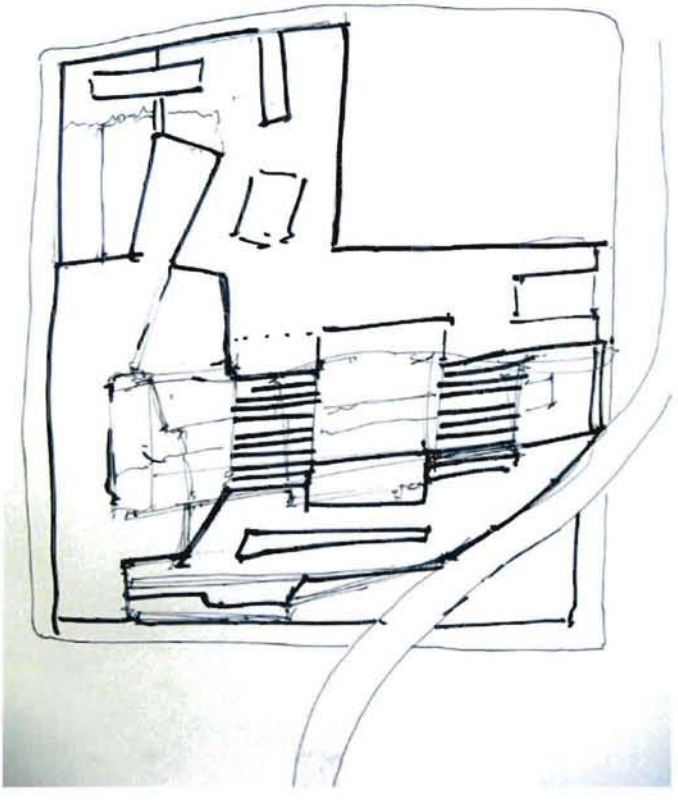
Fresh from Winter break, I started my building design completely from scratch. My thesis has been completely overhauled from what was going to be an examination between interior and exterior space and the built and natural environment, to that of the cultural significance of nature in the development of society and culture. What was going to be a generic office program turned into a a complex musuem program that focused on cultural representations of nature in art, architecture, agriculture and landscaping. To do so effectively, I broke the program into multiple buildings that necessitated movement between indoor and outdoor spaces and garden environments that exhibited different significant ways cultures have manipulated and represented nature throughout history. This all happened slowly, with the final boundaries of the site constantly changing the the forms of the buildings going through many different revisions before a final scheme was selected.

The first of many sketches that looked at fragmented building plans over the site. The initial plans revolved around what would become the north site of the final project, although in these schemes buildings that had been built on the site had been ignored to make the project more workable.

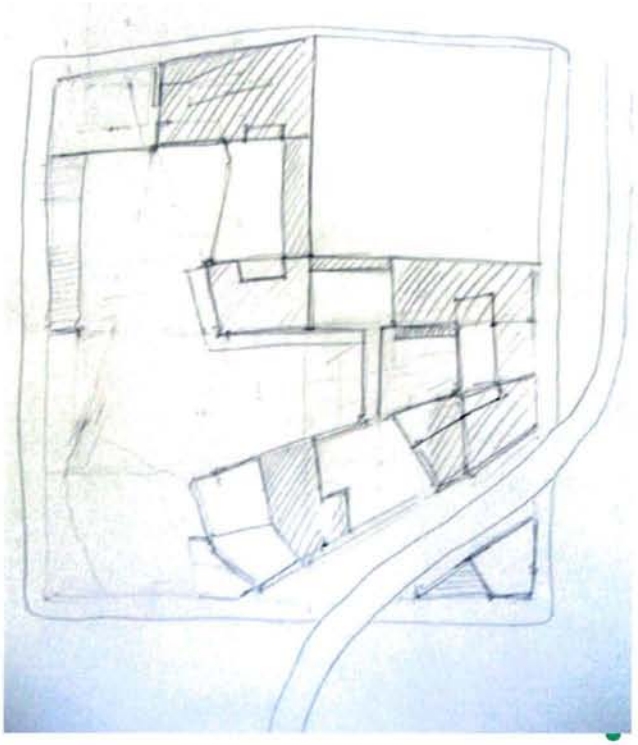


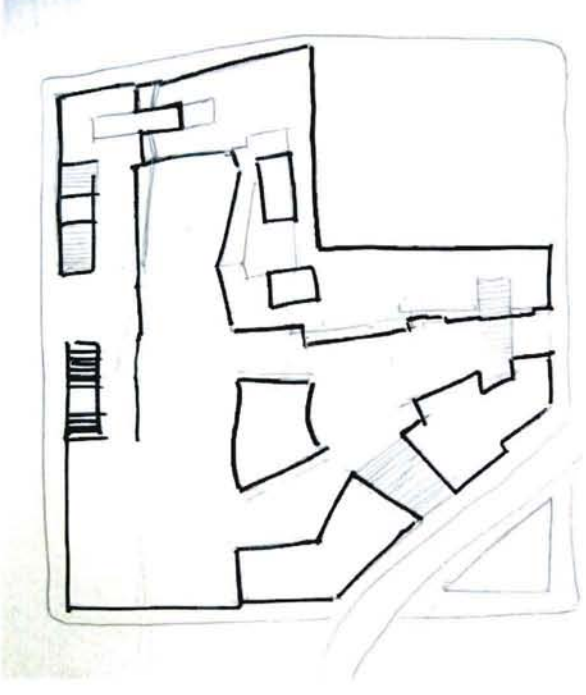


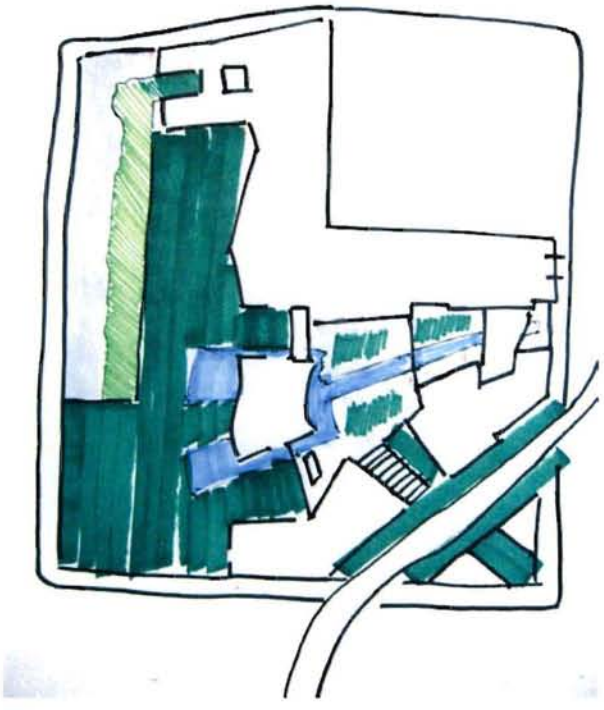




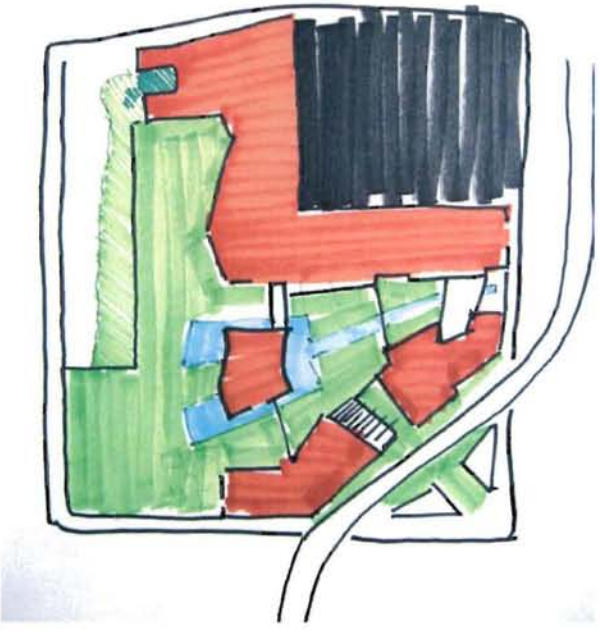
As the drawings became more refined, I became more and more convinced that I was on the right track with regards as to the new thesis direction. These drawings act as a good indicator of where the project would ultimately go, with many buildings situated along the perimeter of the site and interior spaces being designed as park areas to draw people into the site.



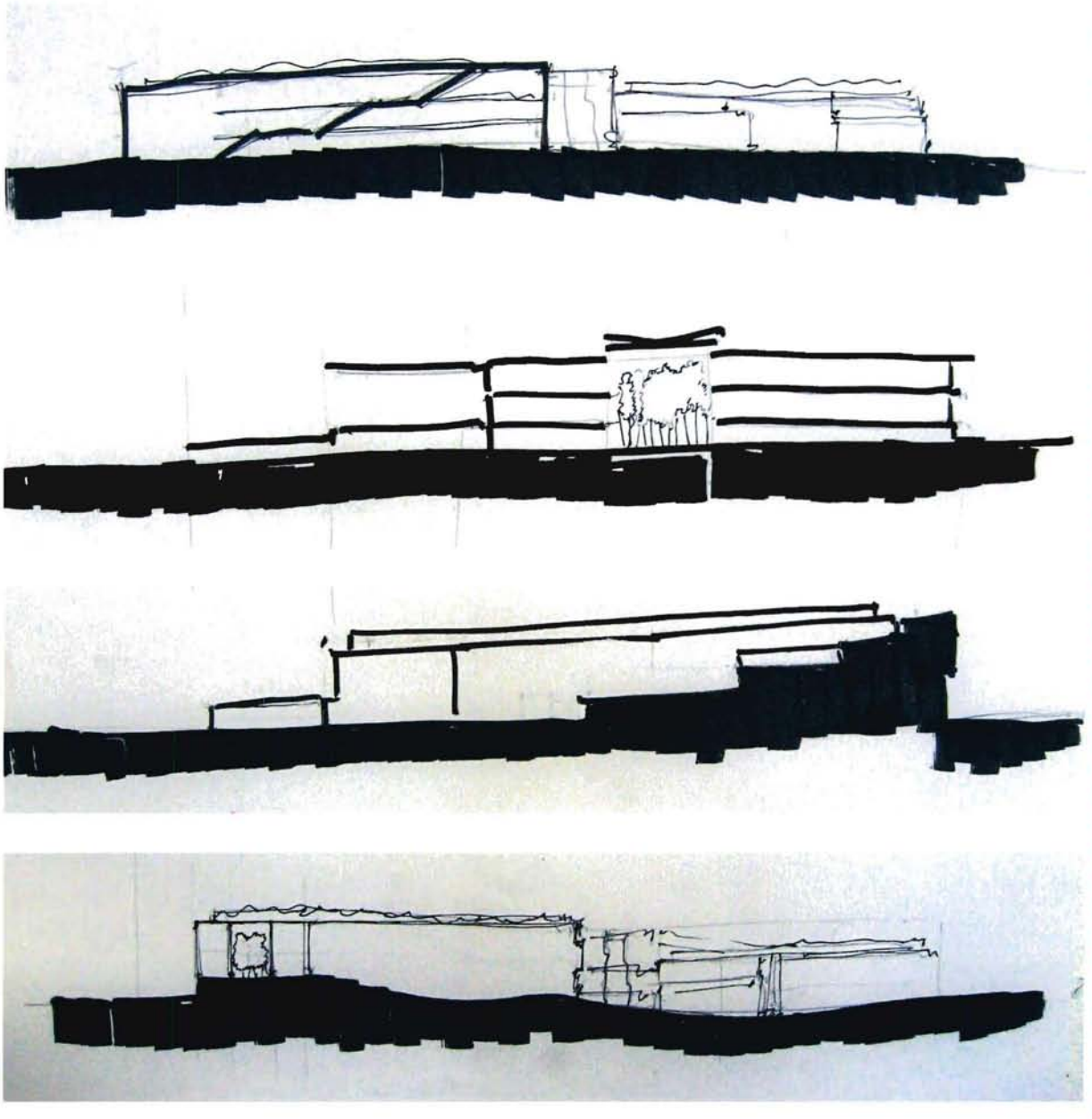


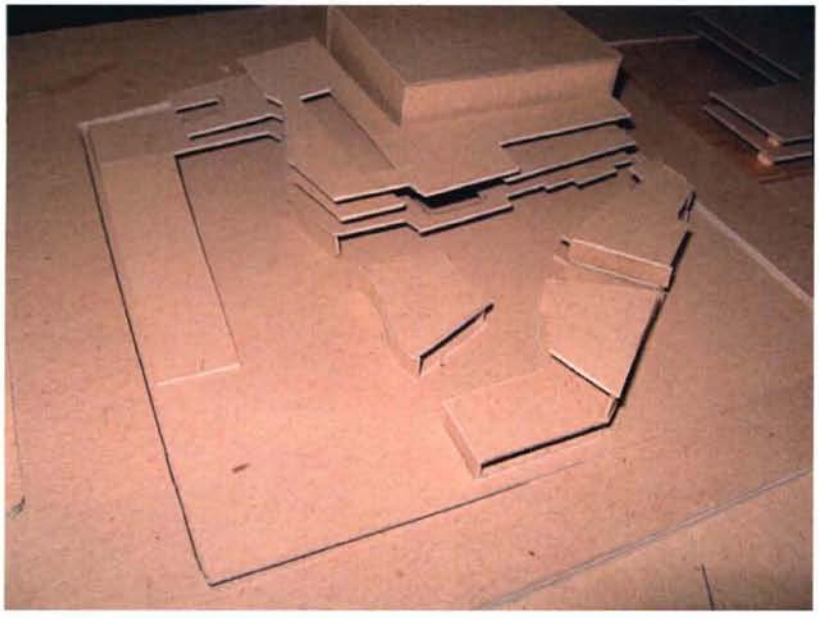


These sketches were the first to develop the interior green space into distinct areas that related to different schoold of landscaping thought. The plan at this point had terraced green space mixing formal and traditonal garden and park space with water features that cascaded downward toward the center of the site, where a small pond would form around an eatery to be enjoyed by musuem vistors that had proceeded through the entire complex.

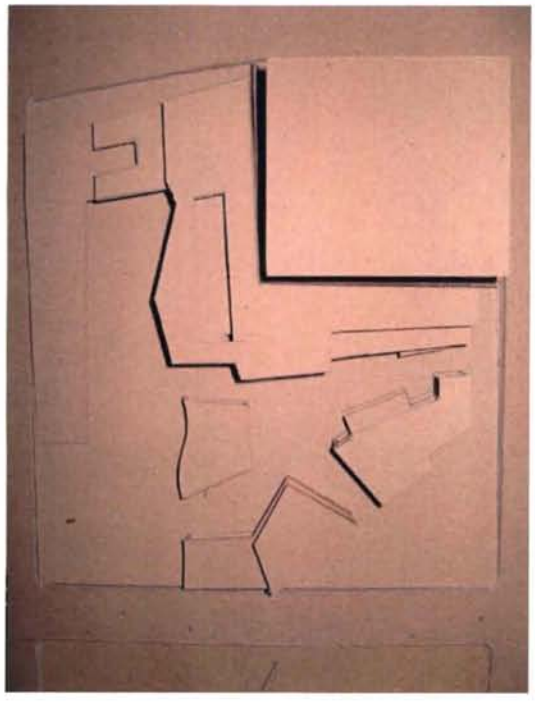


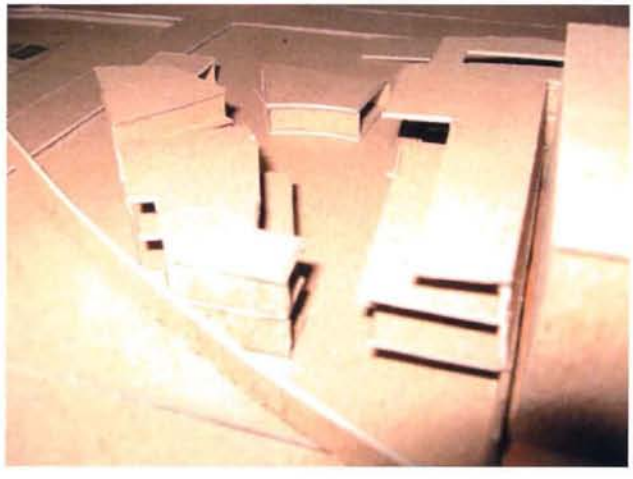
These sections correspond to the sketches found on the previous page, the third one down illustrating the idea of the terraced park space while the last section shows how the ground would risen to create a main entrance at the 2nd floor level.





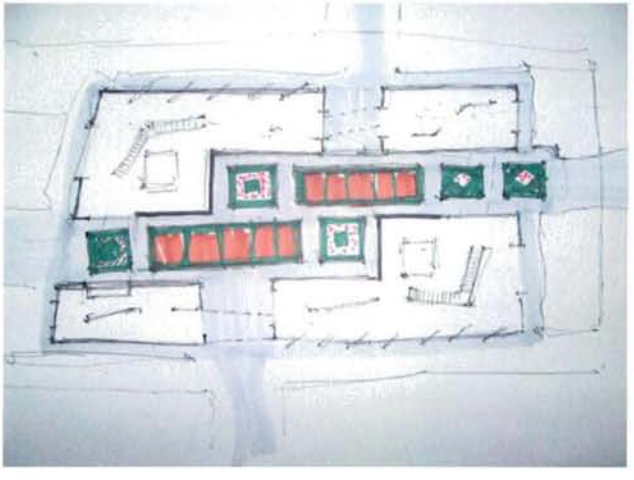
This was a quick sketch model of the previous drawings. Here it can be seen how the various drawings would slowly diminish in size as the user proceeds through the site, startingwith a four story building and ending with a single story cafe.

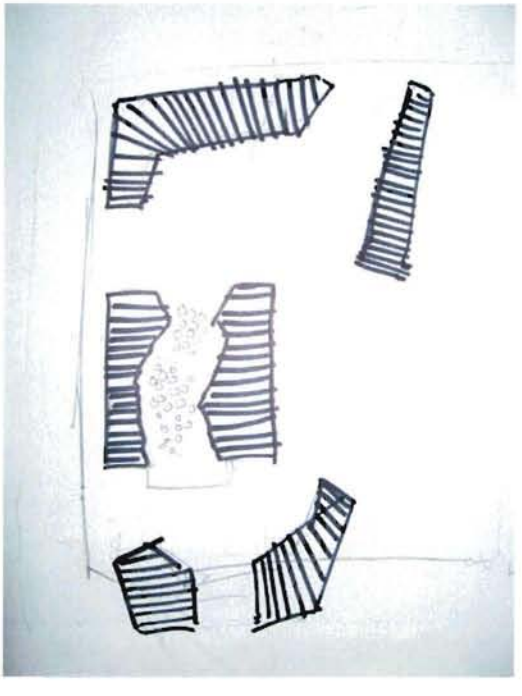




Building Design Phase

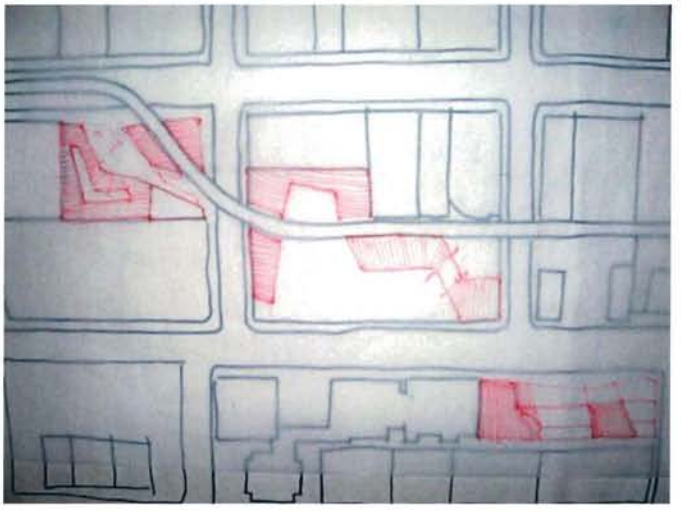
These sketches would have a huge impact on the further development of the project. Rather than designing several large gallery buildings with small garden spaces between and on top of them, I realized that having many smaller galleries spread over a larger site would allow the landscape to assert itself in the program of the museum as a whole, rather than the building largely consigning the garden spaces to secondary status. From here, I expanded the site include an additional block to south, finalizing the boundaries of the project. Additionally, these smaller gallery spaces could be used to frame interior gardens and plants on a much smaller scale, making me realize that the architecture istelf could be used as a framework to display nature as a cultural object.

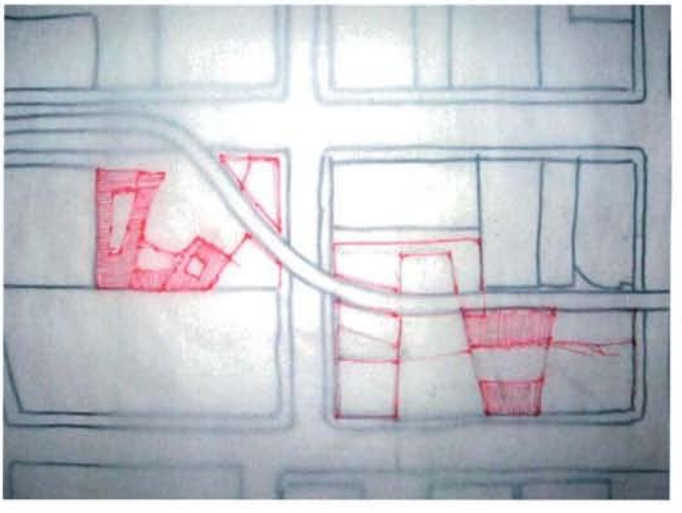


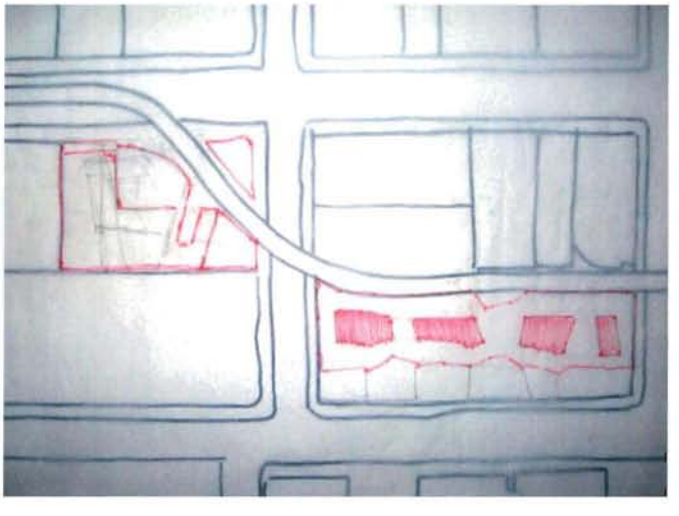


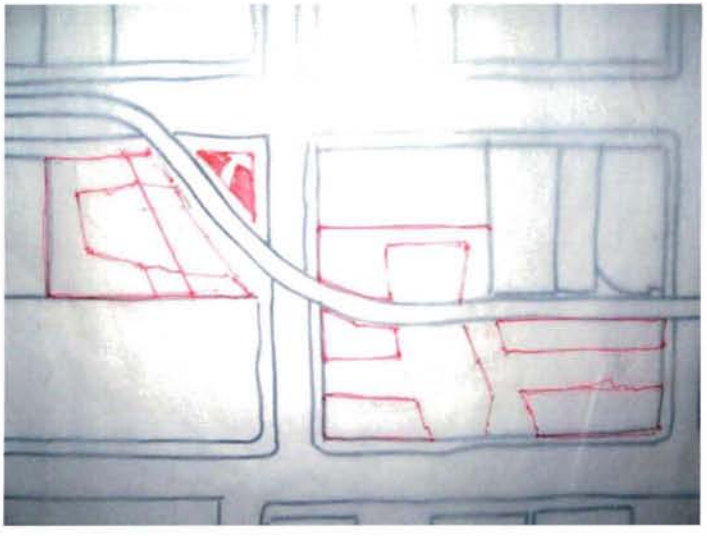
Building Design Phase

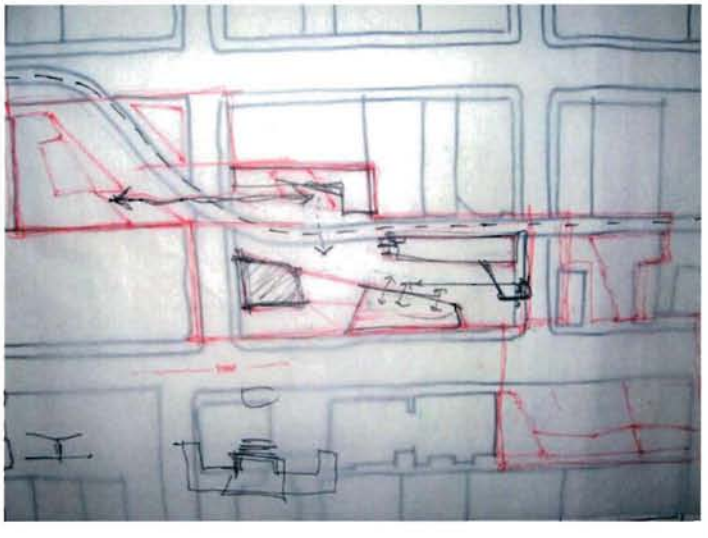
This phase of the building design had me finalizing what would become, for the most part, the final footprint of the musuem. I concentrated on using smaller gallery buildings to frame the perimeter of the site to allow for expansive interior space to house what I planned to be picturesque landscape park to the north and formal and abstract gardening space to the south. The process went through several different revisions and was heavily influenced by the elevated track that ran through the site. All of the work in this phase of the project revolved around finding a configuration that facilitated movement between indoor and outdoor space, responded directly to the track and allowed for larges amounts of interior landscaping space.

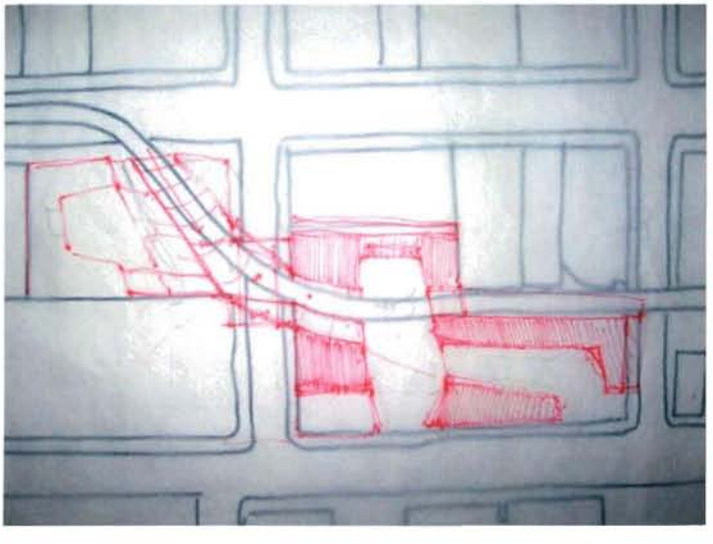




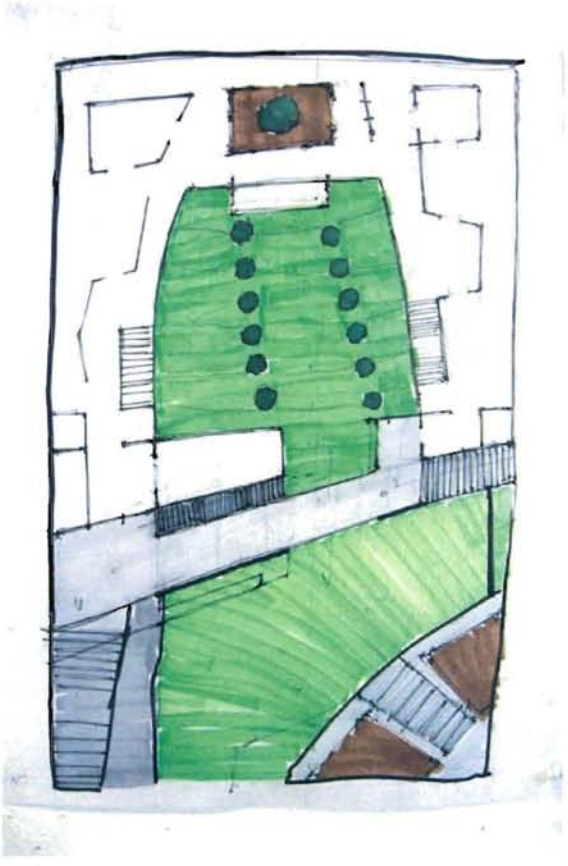


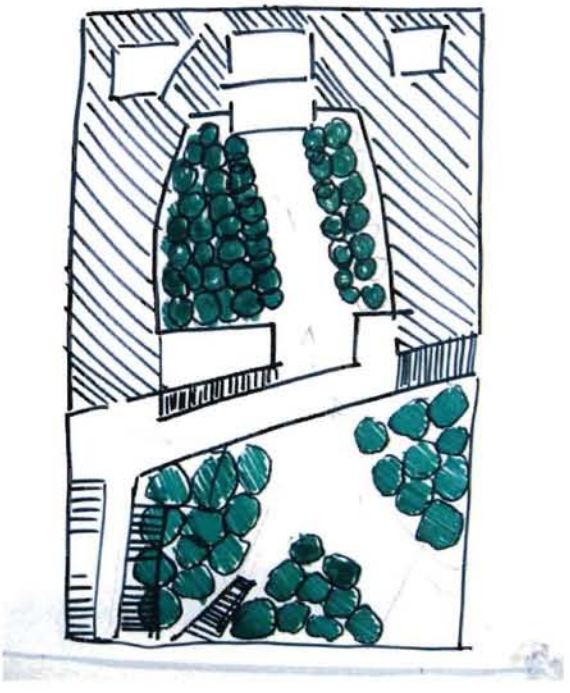


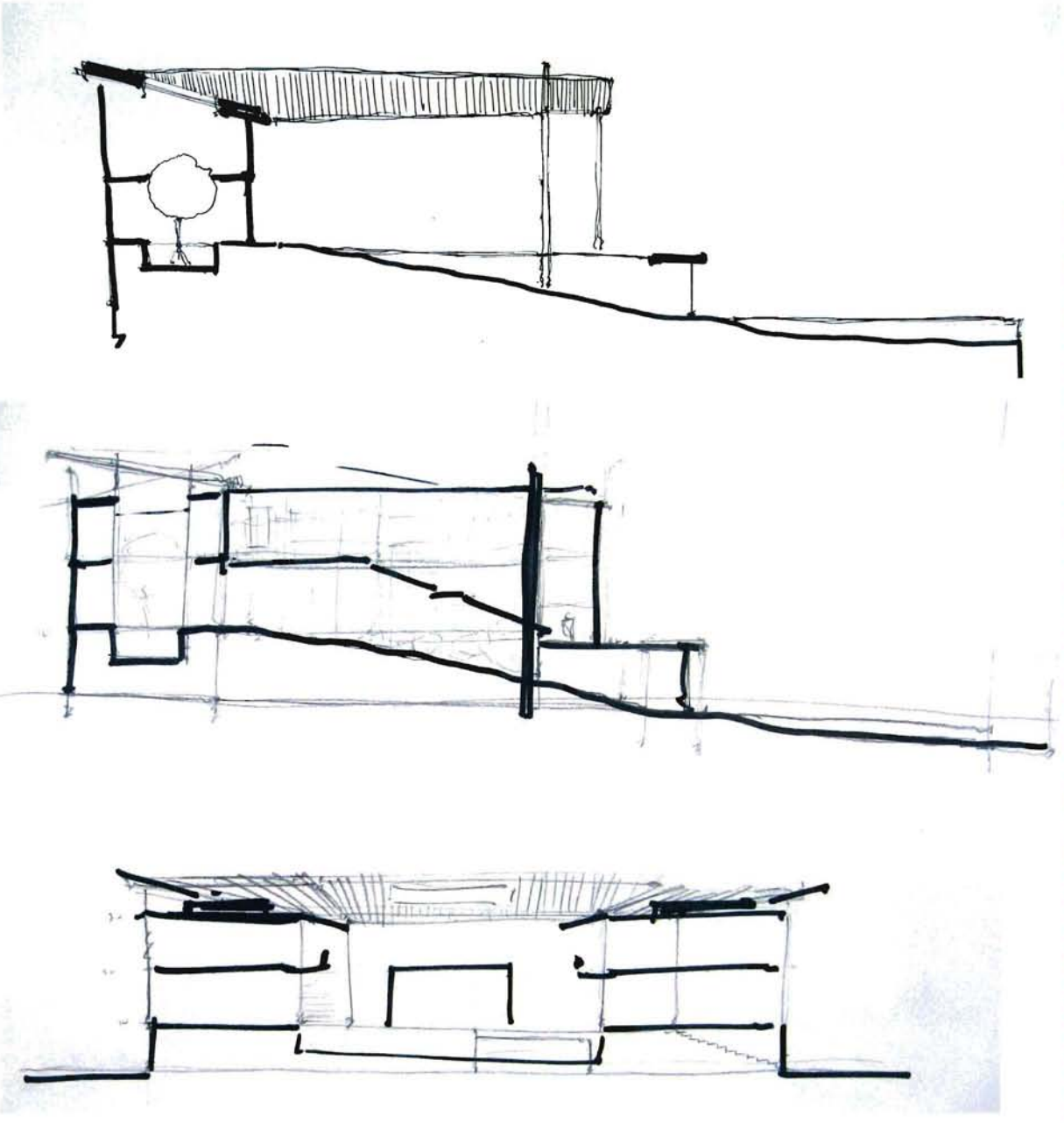


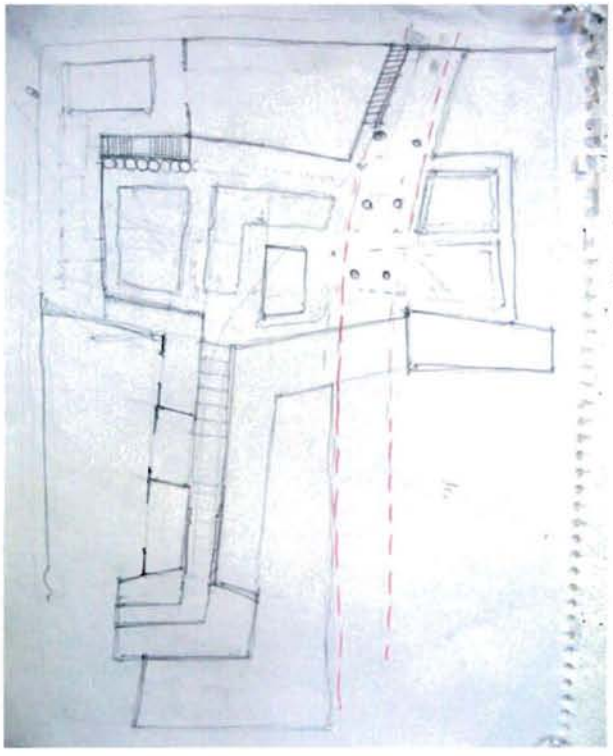


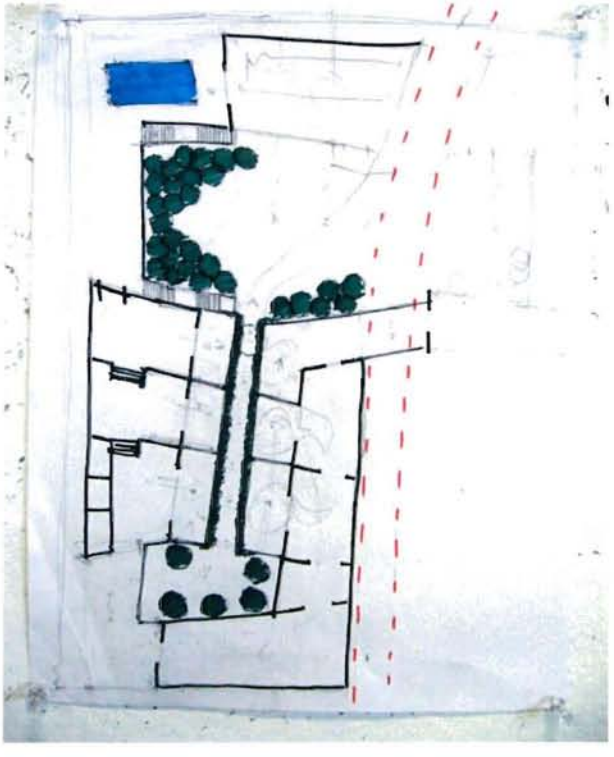
These sketches were the first serious attempts at building plans incorporating all of the new thesis ideas since the the end of the 1st semester. The north site was to consist of one main gallery building that framed a more heavily wooded landscape environment that slowly rose to a framed 2nd story oak tree. The realities of the site and the amount of sunlight that could reach this area were not yet serious taken into consideration. Although this design would ultimately be discarded, the ideas that it gave me about ground planes and theuse of architecture to frame an interior landscape would see their way into the final design of the musuem.





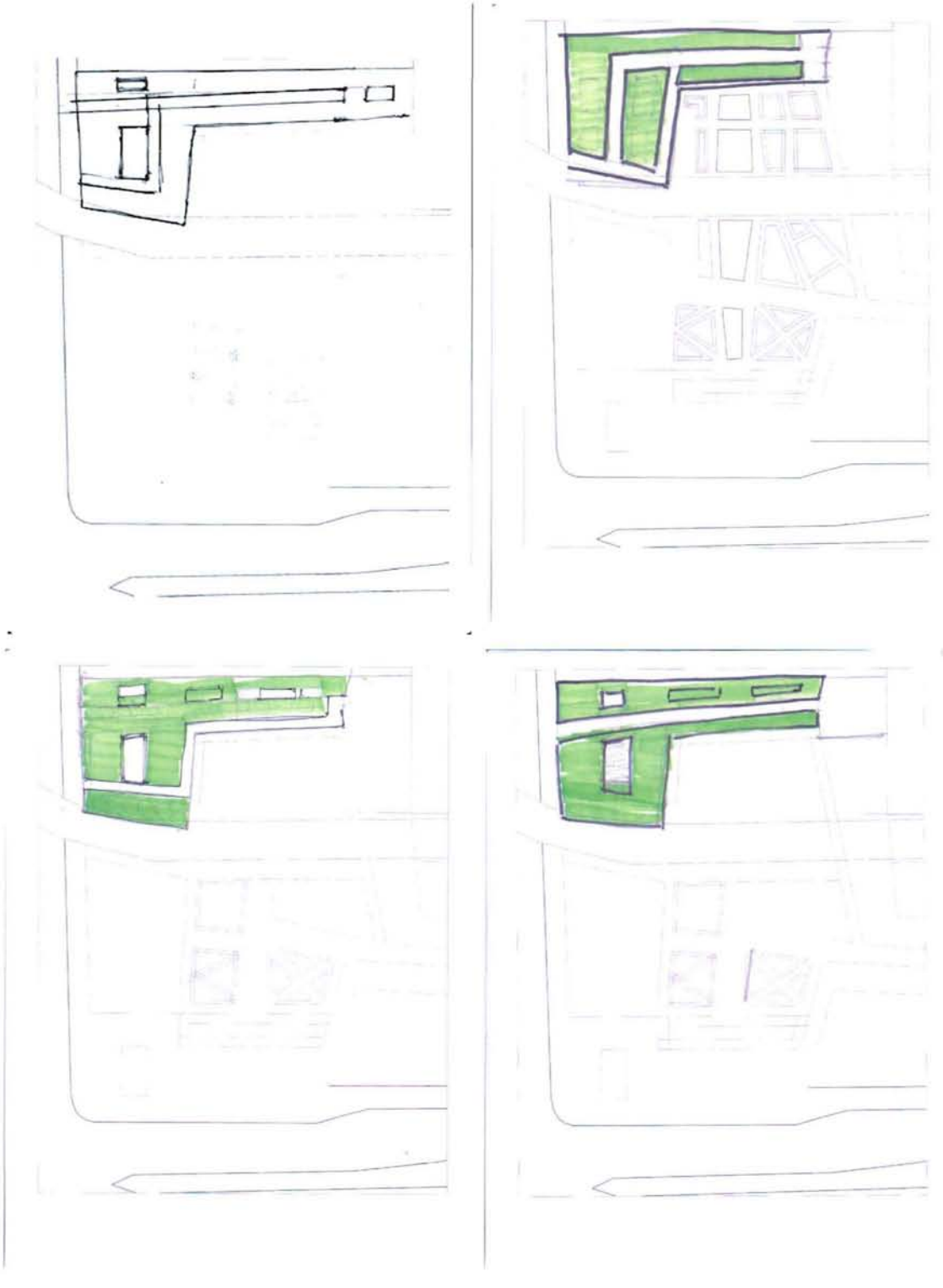


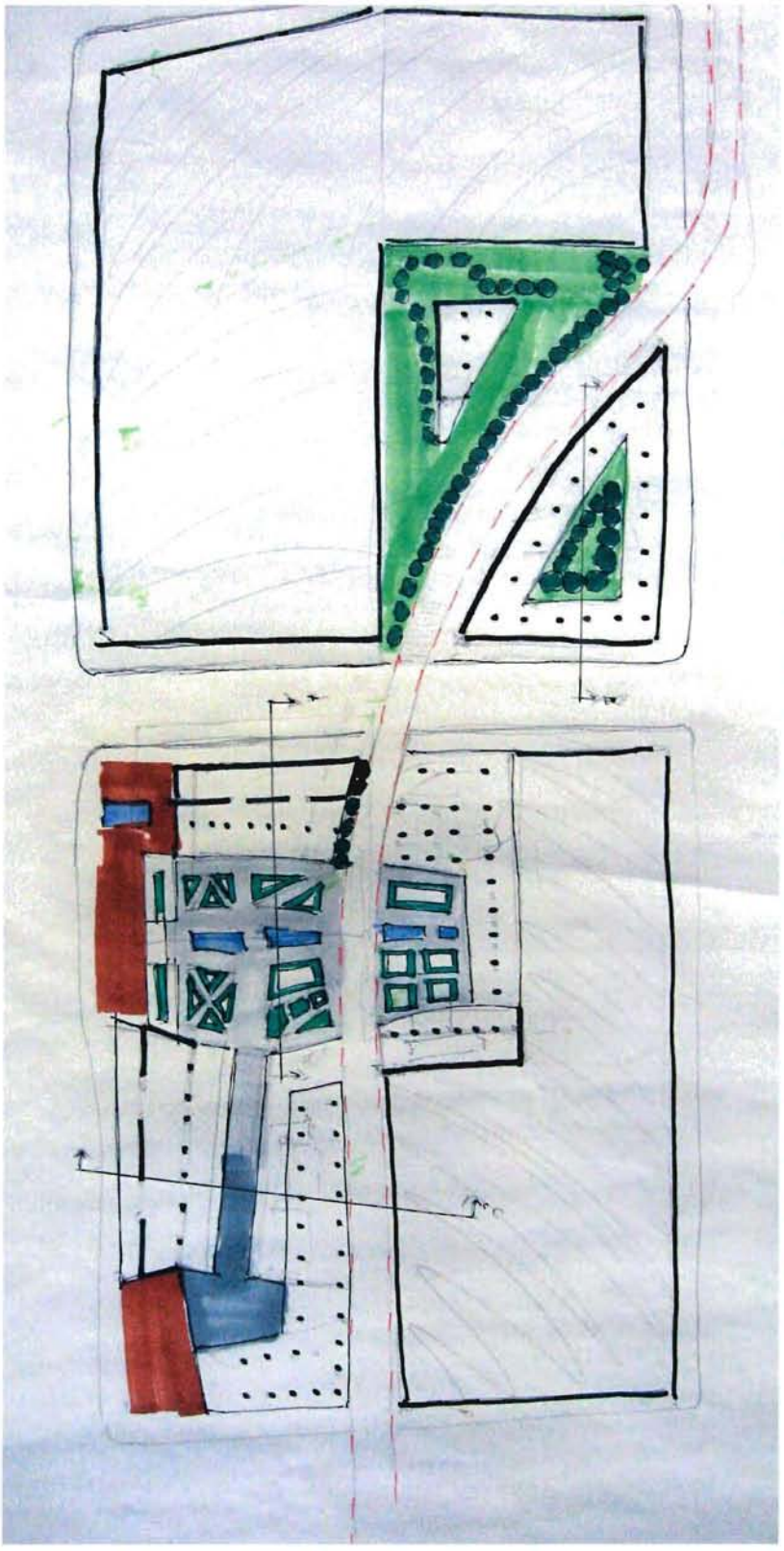




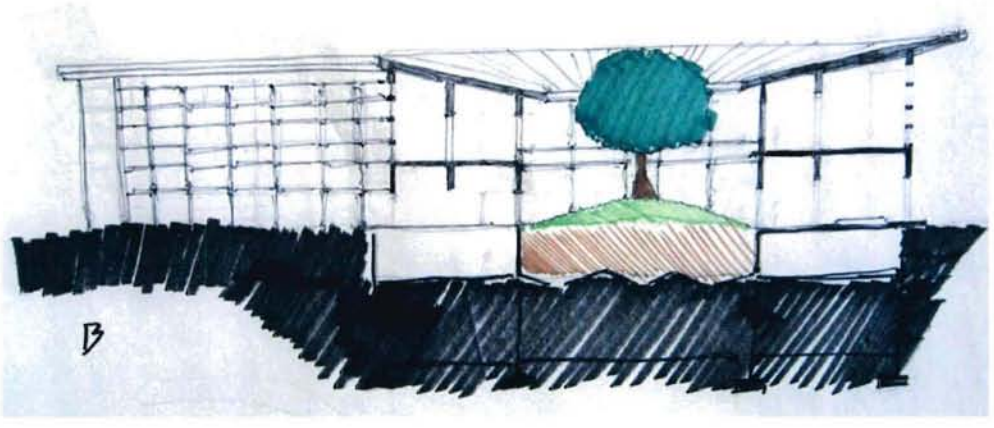
These sketches detail the development of the south site, which, although early, would still end up very similar to what is shown here in terms of building footprint and interior landscape installations. The top sketch shows a heavily abstracted landscape park, while the bottom sketch shows an attempt at picturesque landscaping principles.

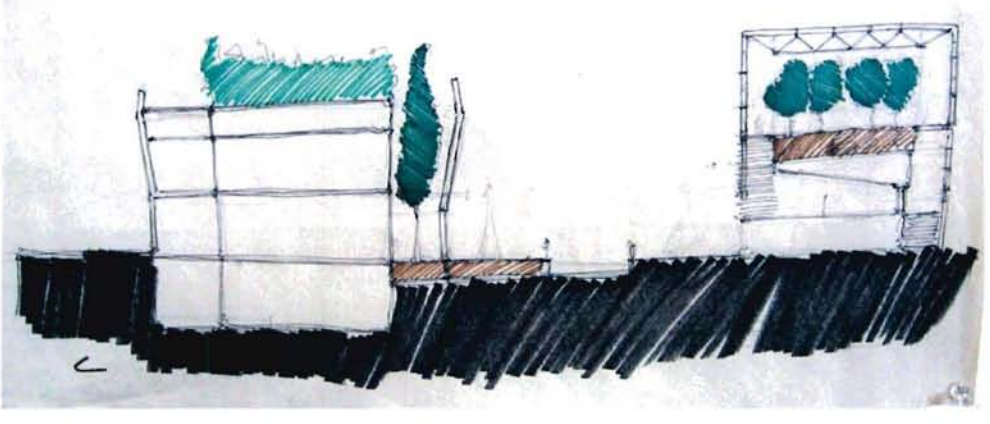
This sketch shows a more accurate representation of the site in terms of scale and plan. At this point, I decided that the interior of the site framed by the gallery buildings would be a French garden, abstracted in a contemporary fashion and sunk into the ground in a manner such that it could be viewed in its entirety from an elevated decision. The French garden was chosen as it is a perfect representation of nature as a cultural object, carefully planned and maintained to be enjoyed as a work of art. Additionally, this sketch introduced what would become a rooftop agricultural installation to highlight the importance of farming towards the establishment of civilization and the growth of what we would now identify as cultural pursuits.



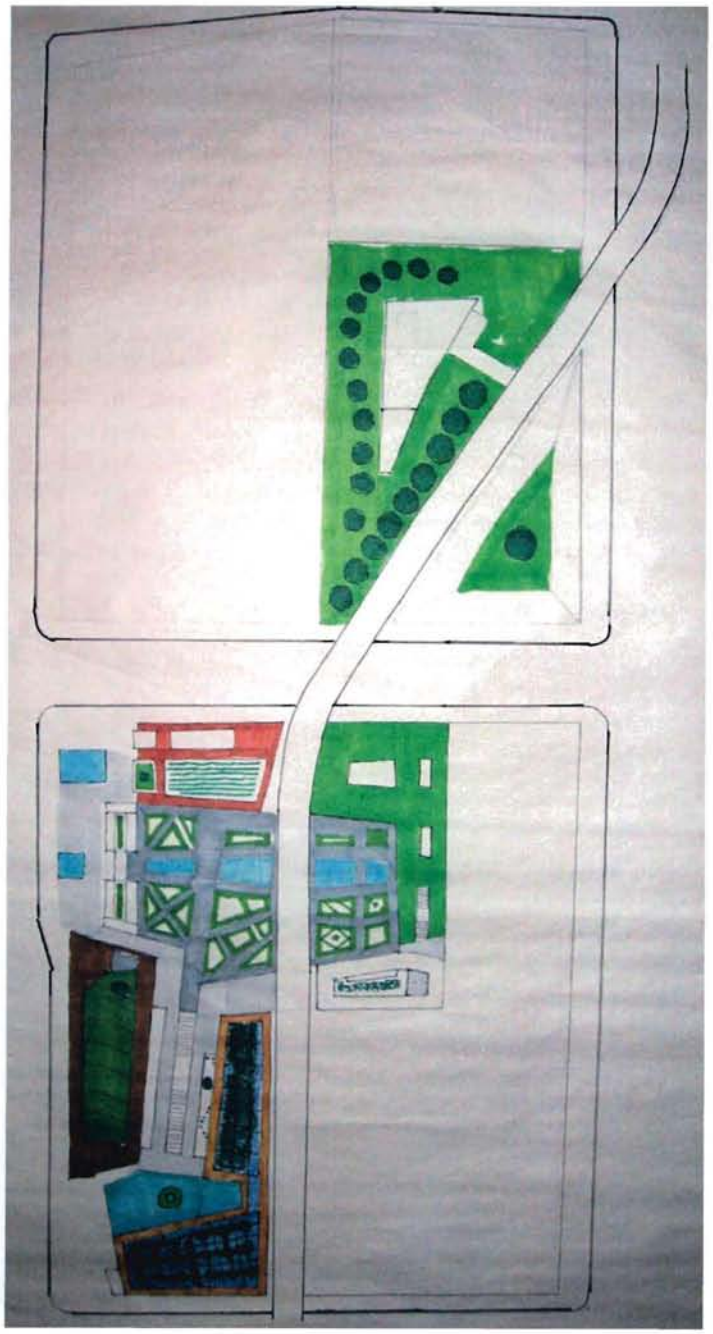


These sections and the previous site plan were the product of a studio charette in which quantity was stressed over quality. I used the opportunity to unify the north and south sites into a cohesive whole and start examining how building forms might actual begin to be developed that could directly respond to the surrounding landscape and how they could be used to present nature as a cultural object. It was during the creation of these sections that the idea for a rooftop greenhouse came to the forefont of my thought.





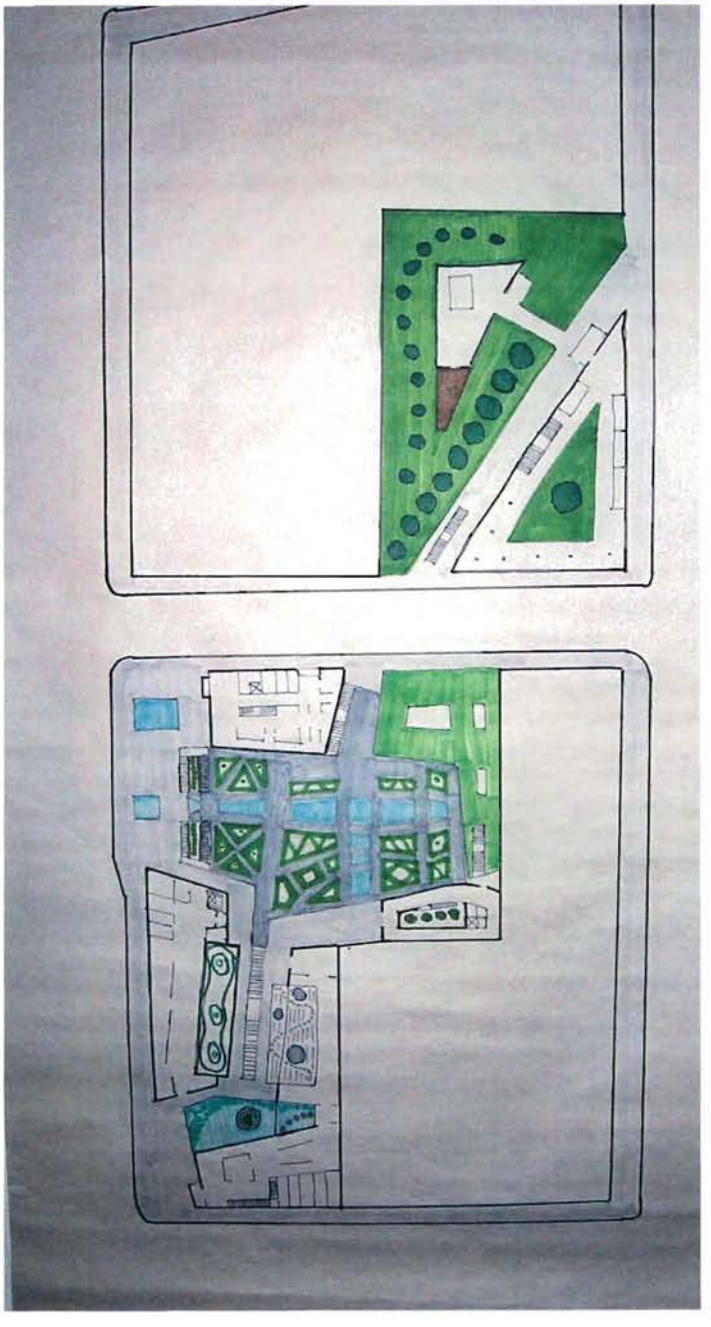
Building Design Phase

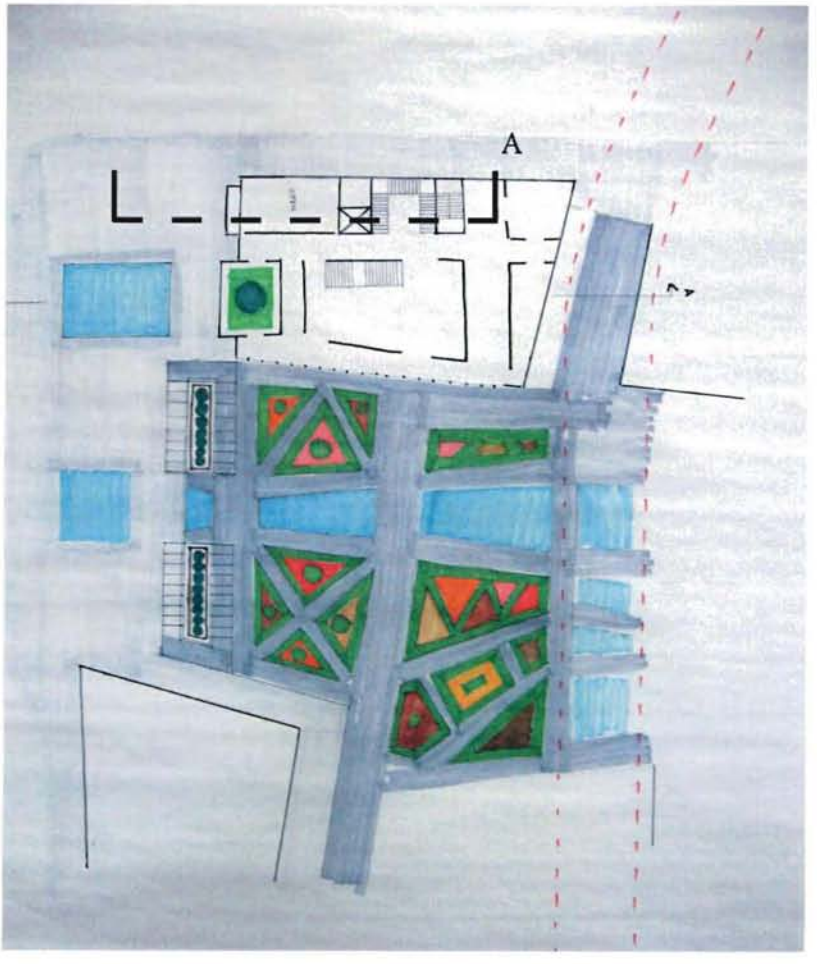


Building on the ideas from the charette, I created a more sophisticated plan of the site, which now included distinct series of buildings that would display particular types of artwork in correspondance with the planted installtions contained within, on top or near those gallery spaces. In addition, I decided that while each gallery space would be able to operate independently, there would be a certain order to the musuem that would allow patrons to experience the museum along a planned arc. To that effct, each gallery would have installations with a partiular focus, specifically agriculture, picturesque and formal landscaping, a zen rock garden, a water garden and an installation that had yet to be determined. The north site had a new foot print developed for it, although it was not nearly as well developed as the south site at this point, a problem that would continue to hamper the project. Finally, the main entrance was decided at this point and the inroduction of a single, elevated tree to represent the program of the musuem was incorporated into its facade.

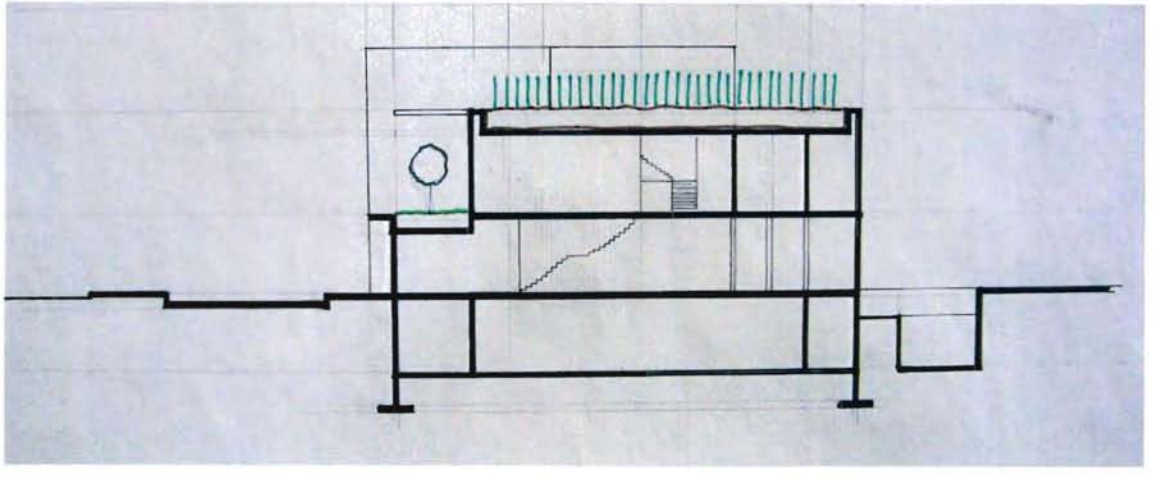
Building Design Phase - Building Review

This was the plan presented for the revised building review, the first presentation of the 2nd semester. By now the plan of the site was pretty well developed, although the actual form of the buildings was still undeveloped. While the plans were generally well received, changes were necessary to make the project more comprehensive, especially in the north site, which appeared like an entirely different project from the south site.

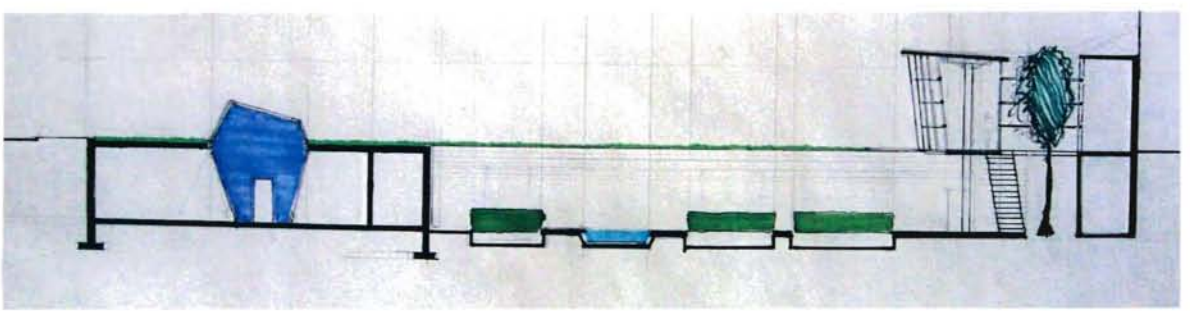


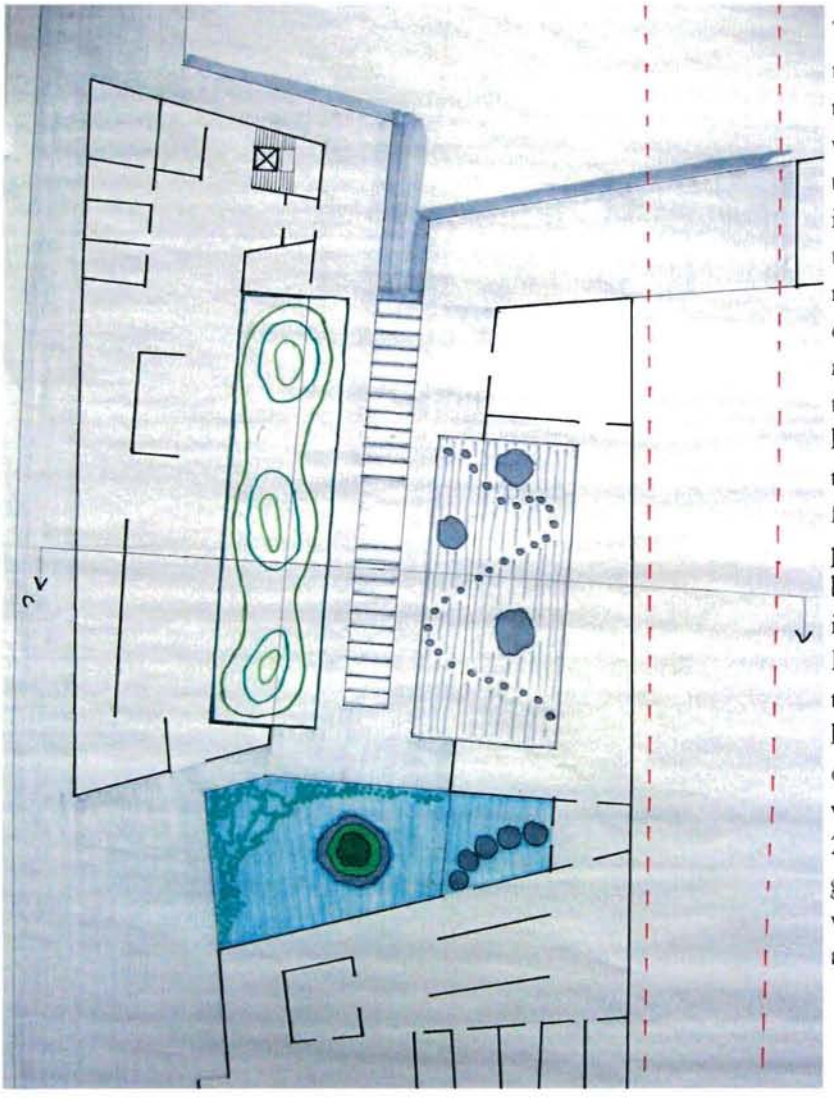


This was a close up sketch of the main entry building, which featured a rooftop agriculture installation and a singular, elevated tree along the main entry facade to convey the musuem's focus on the connections between nature and culture The relationship between the two and the building can be seen in the elevation.

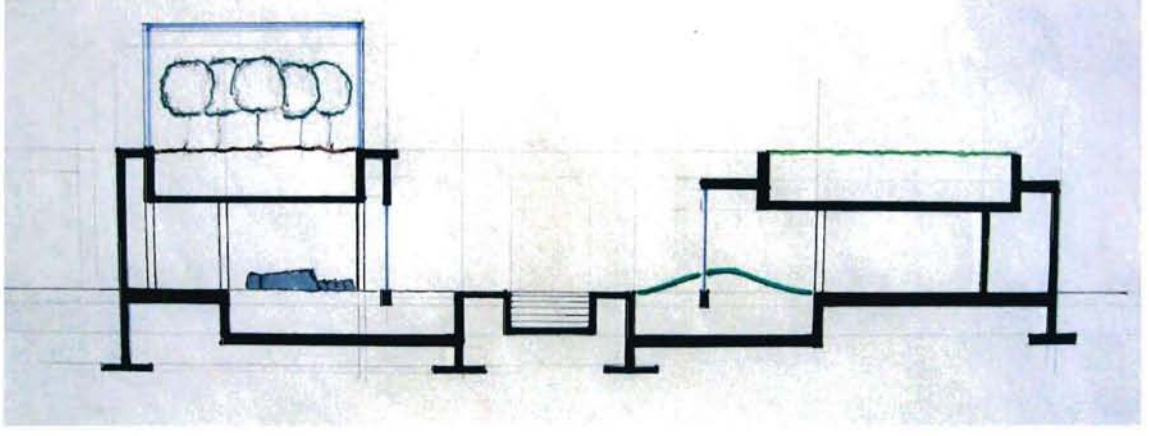


Another closeup and section, this time of the eastern edge of the south site. To the north I designed an underground gallery space with angular lightwells to both detail ancient cultural representations of nature as well as exhibit light as an elemental, abstract cultural phenomenon. To the south of this I placed a single story building with a forested courtyard that extended down the French formal garden level. This was to both allow that buildings galleries directly correspond to the vegetation in that courtyard as well as enable easy movement throughout the site.

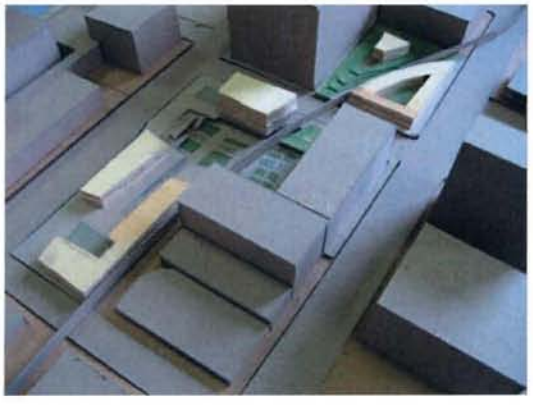


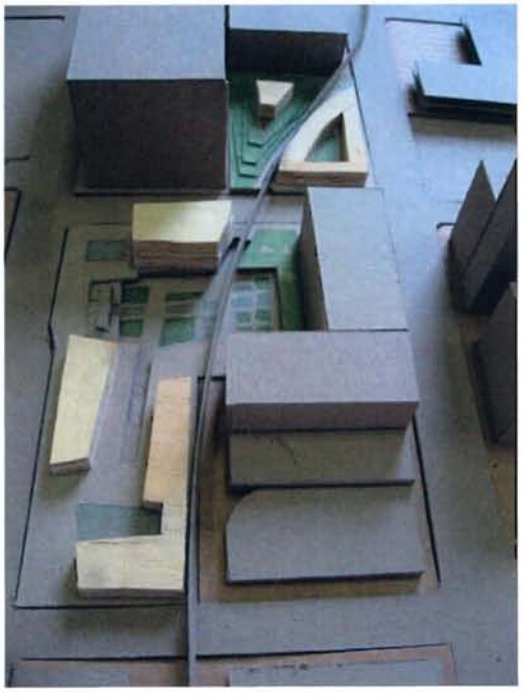


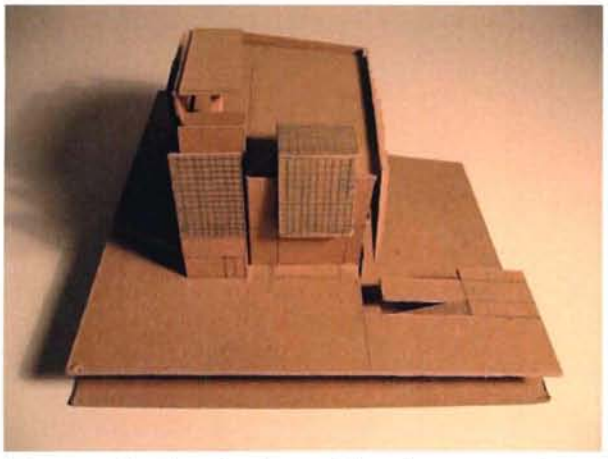
The last closeup and section of the design review, the south gallery buildings were especially difficult in that they had three distinct installations carved out of them that were to be directly related to the artifacts displayed within the interior of the building. While the zen and water gardens had already been decided, the third had proven difficult, especially since it was partially enclosed within the building and would receive insubstantial sunlight. Despite this, I had decided that the southernmost gallery building would have an elevated greenhouse that would take up the entire 2nd floor and that the the gallery building opposite would feature a more traditonal rooftop park.

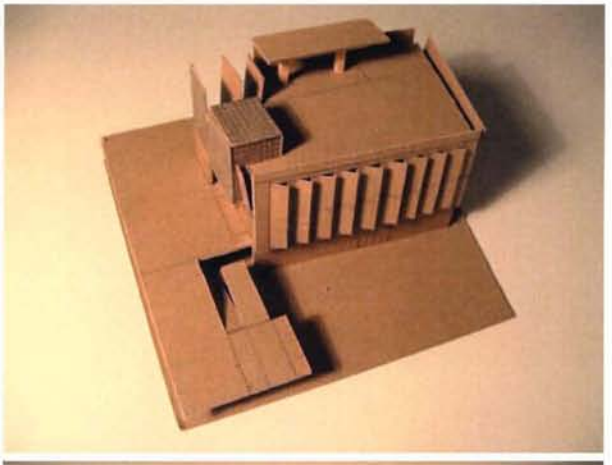


Building Design Phase - Building Review Massing Model

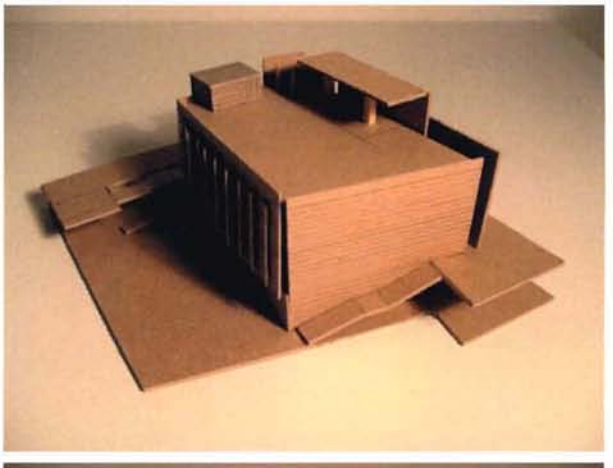


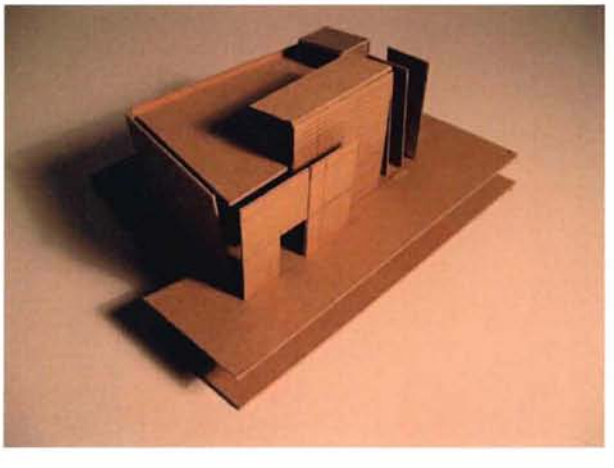






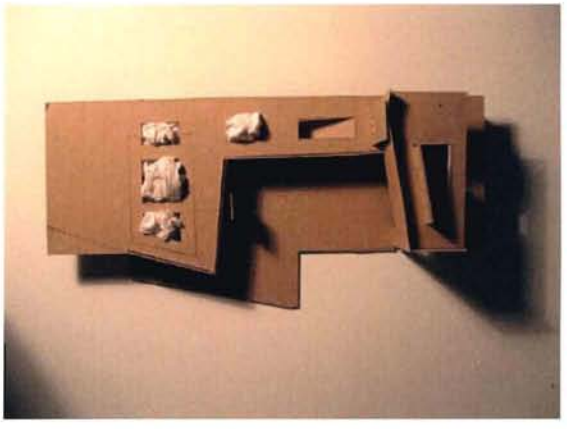
This was the first skech model to determine what would become the final design of the museum. The buildings form started with the elevated interior planting space and the main entrance. The single tree which was to go into the planting space had not yet been decided. At this point it had been decided that a formal garden or similar installation would form the interior of the site, and so the southern facade facing this space was worked on next. To define this corner, a cantilevered walkway and shuttered wall was designed to illuminate the interior gallery spaces without damaging them through direct sunlight. The East Harrison elevation was designed to let sunlight in though the main entrance, which was achieve by fragmenting the building into two pieces, one brick, the other concrete, with glass framing the difference between the seperated entry wall.

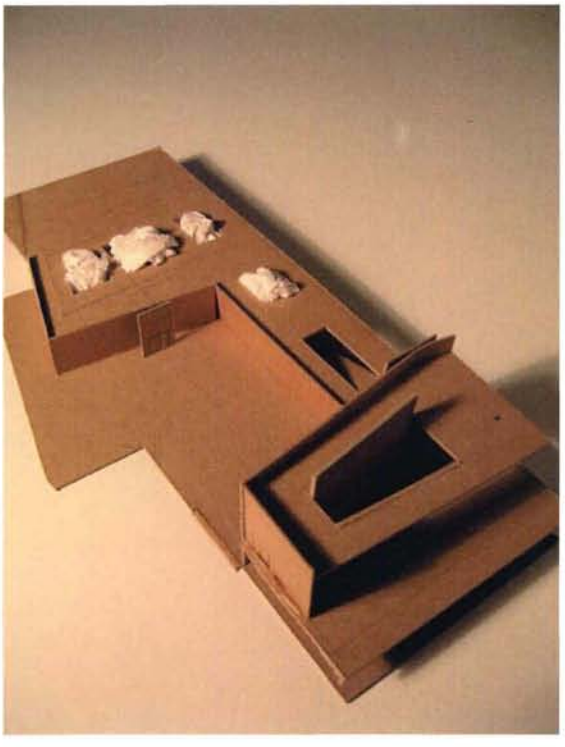




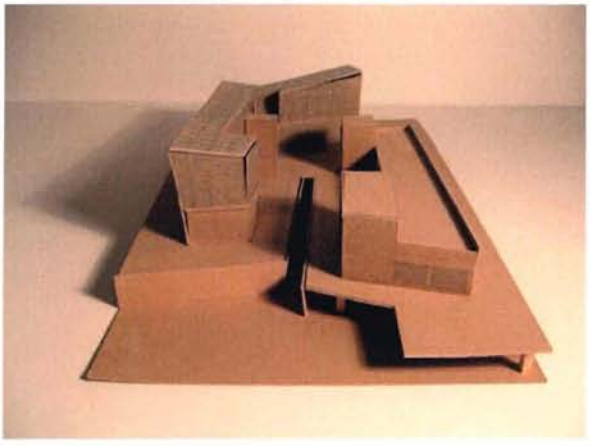
Building Design Phase - Form Skech Models

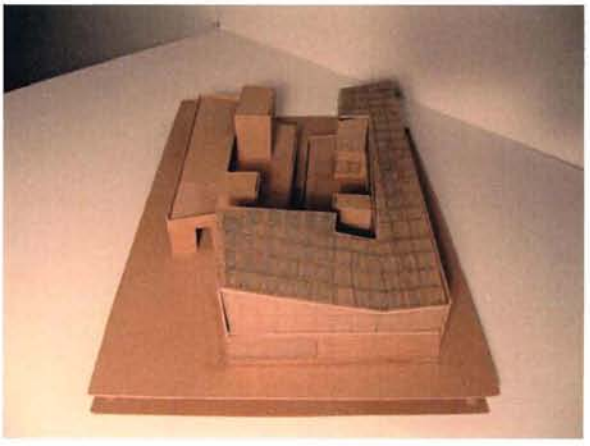
The 2nd building sketch model was of the Lightwell and Ivy buildings. The model was straightforward to make as the necessities of their programs made decision decisons easy. As the Lightwell buildings main feature is for what its named after, it was important to limit fenestration on the outside walls. As the Ivy building had an interior ivy courtyard, the fenestration was placed on the north facing walls to allow sunlight into the gallery spaces without the need of external shading devices.

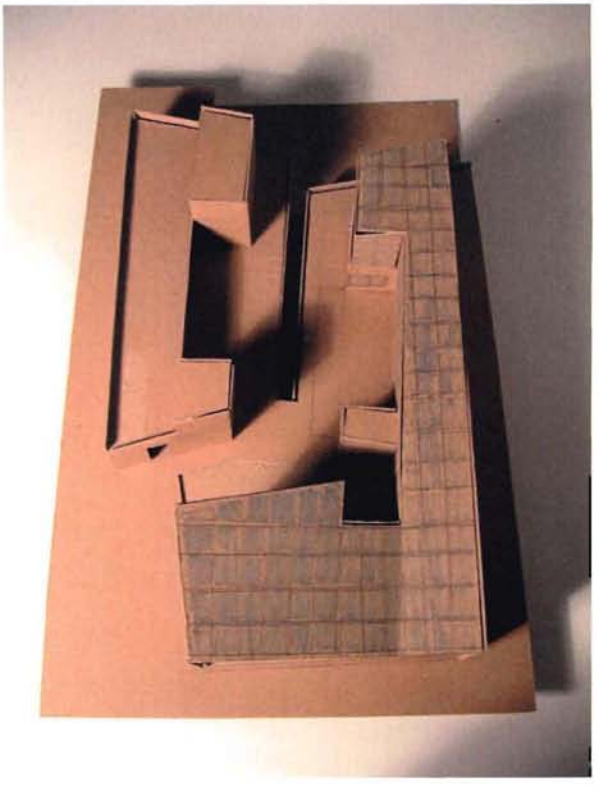




Building Design Phase - Form Skech Models







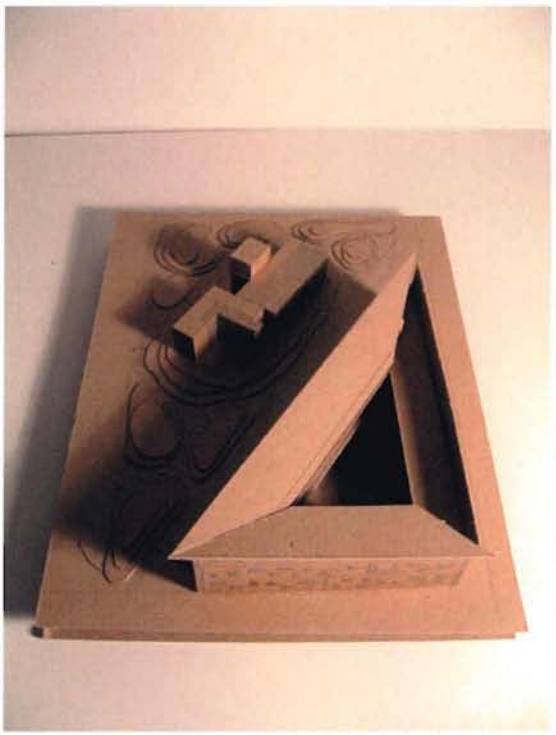
The sketch models for the Greenhouse and Park Buildings were made together both for convenience and necessity. As these two buildings development greatly influenced each other in plan, it was important to define their spatial relationship to each other at the same time as well. For the greenhouse, I created an irregular form based upon a v-type fold in the chipboard that ran along the narrow eastern corridor. This was done purposely to give the two ends of the greenhouse a distinct angular appearance that pointed outward as well as to make the greenhouse appear larger than first floor, an effort to make the greenhouse a more substantial presence on the corner.

The Park Building, on State Street, was made with the west wall being composed mainly of glass, to both open up the musuem to pedestrian interest as well as to prevent the building from appearing monolithic. The buildings feature mirrored notches that are intended to have garden features related to the inteior art works of both buildings. At this point, I know that the Greenhouse notch would be a zen rock garden, but I still didn't know about the Park Building.

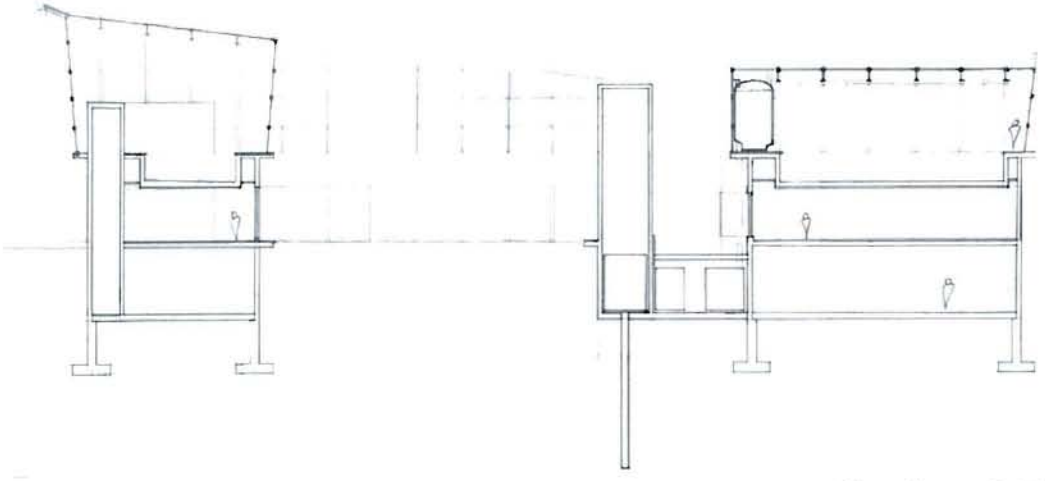
Building Design Phase - Form Skech Models

After completing this initial sketch model of the north site buildings, the shortcomings of the design became painfully obvious. The three story gallery building on the southeast corner was overpowering in size and completely out of character with not only the small cafe opposite of it, but the entire musuem as a whole. Rather than complimenting the cohesive southern galleries, the building appeared to be completely alien in terms of form and function.

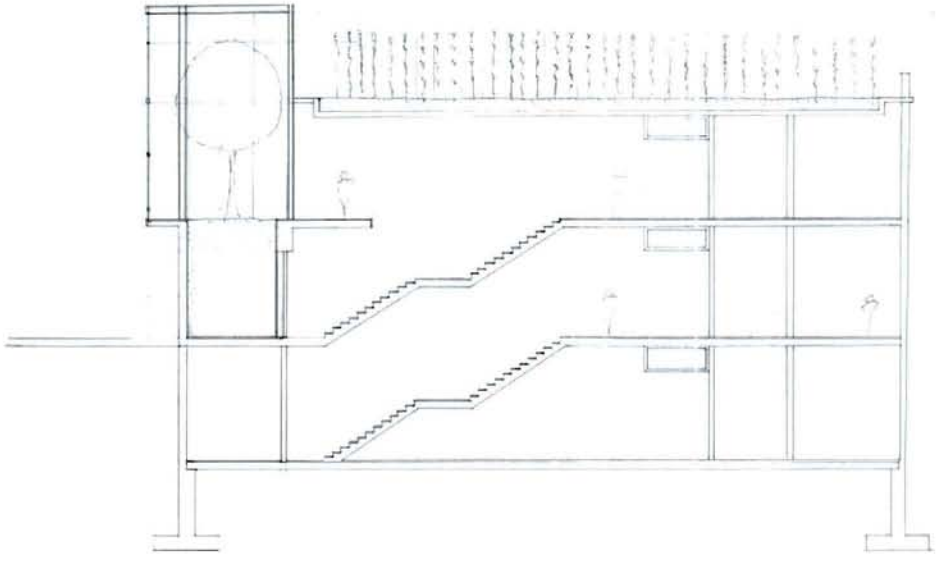
The cafe, the intended end destination of the entire project, appeared to have been simply placed into the site with no real thought as to the for or plan. Also, the haphazard attempt at landscaping, what was meant to evoke a picturesque landscape, appeared to be nothing more than a series of small hills that failed to related to to anything in the entire project in terms of planning and design. Once completed, it was clear than a new design would have to be made, one that acted as a logical extension of the project as it appeared to the south.



Building Design Phase - 2nd Series Sections



Greenhouse Building

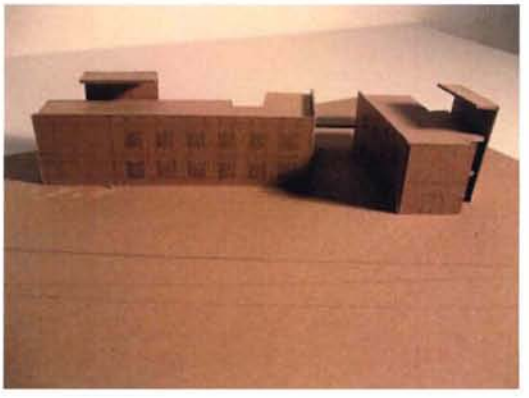


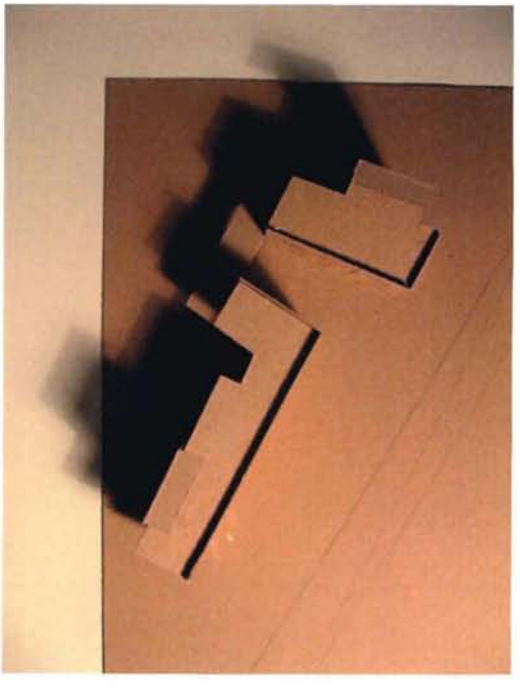
Main Entry Building

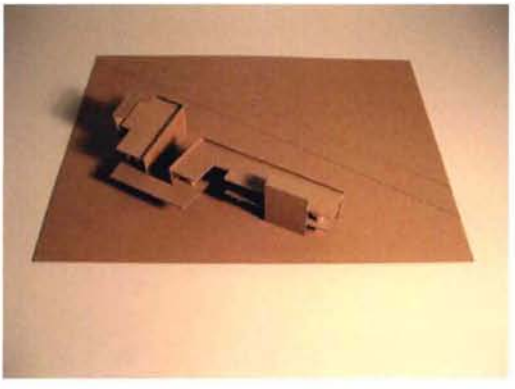
Building Design Review - North Site Evolution

North Site Sketch Model 02

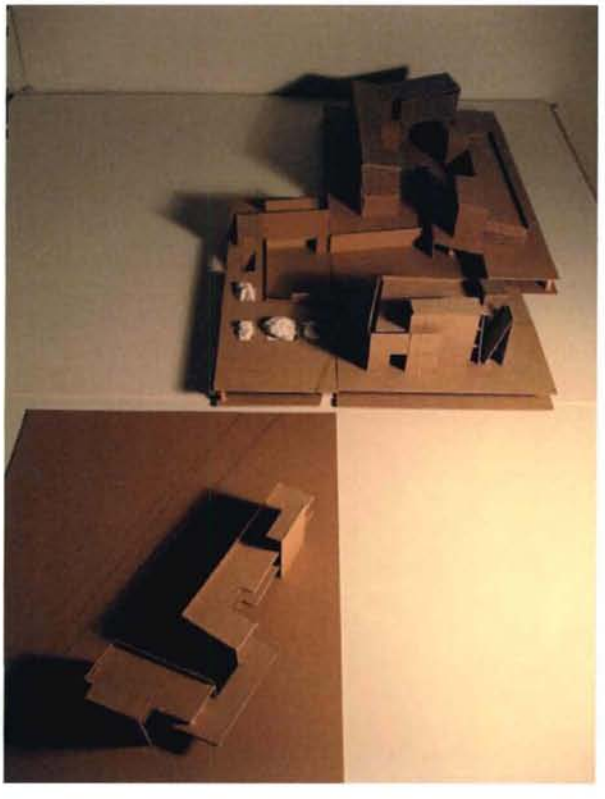
The 2nd North site model was the last sketch model to be completed before work on the final presentation model began. This model was made as a quick study to sort out the final form of the building based off of the earlier sketch drawings as well as what the facade and possible material conditions were going to be be. The small cafe planned for the southeast corner of the site was left out of the model, both because of time constraints andbecause its simple form didn't necessitate a sketch model

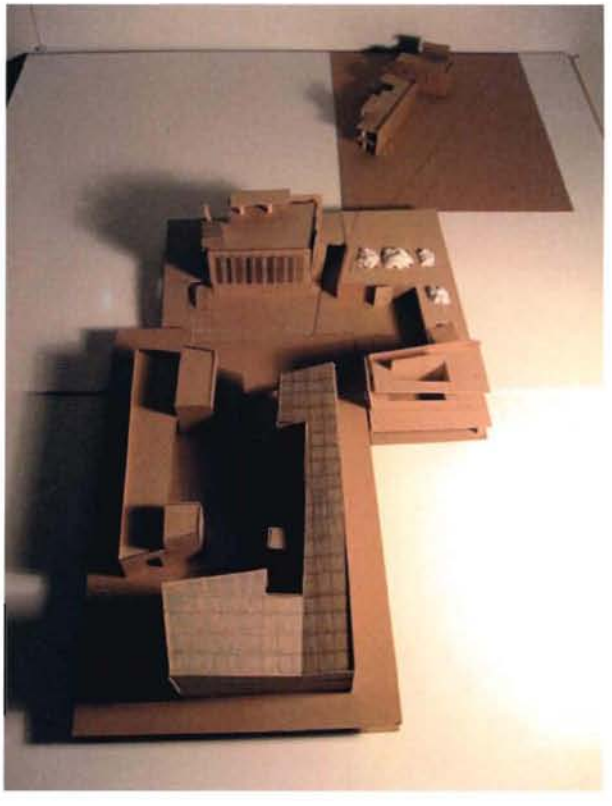


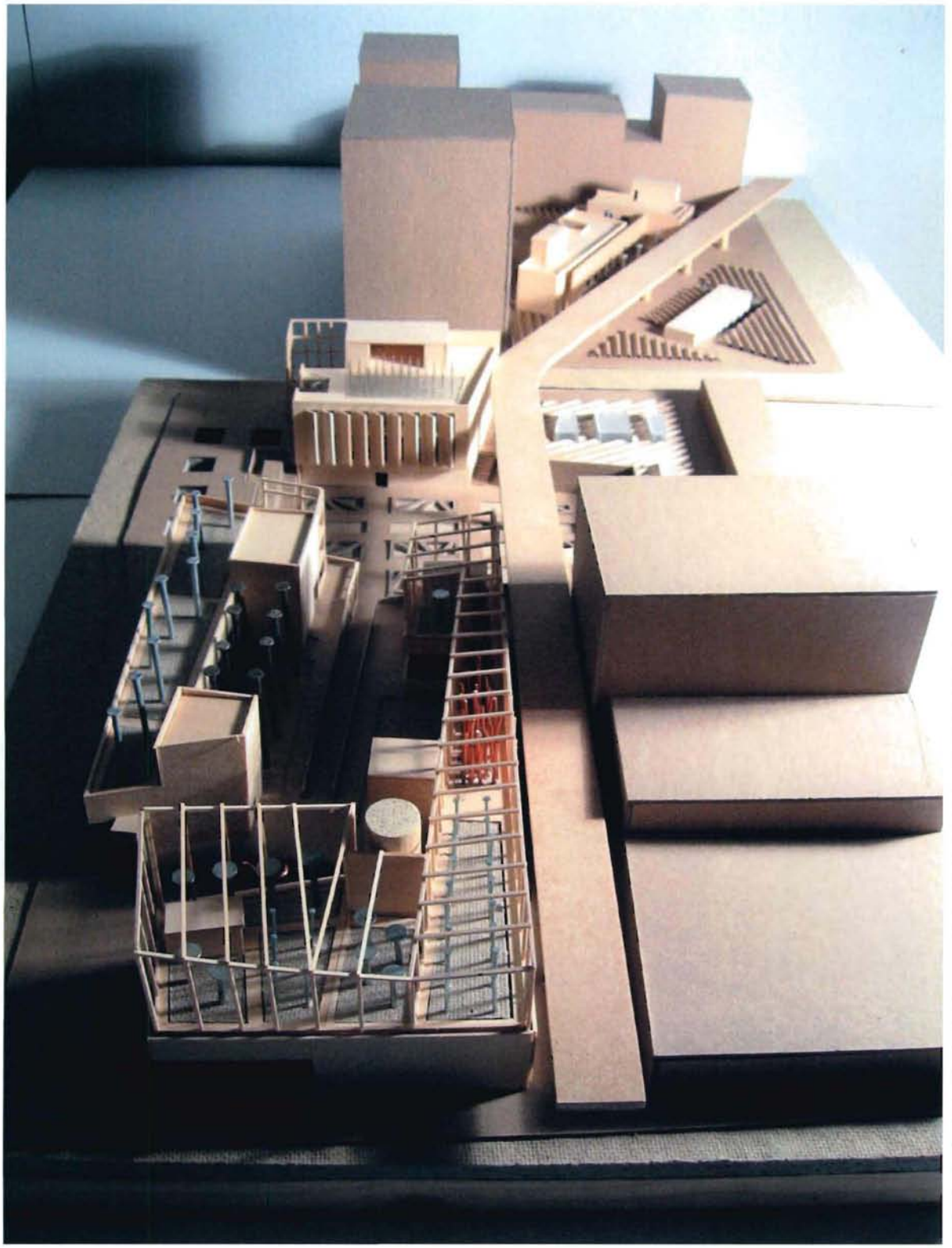




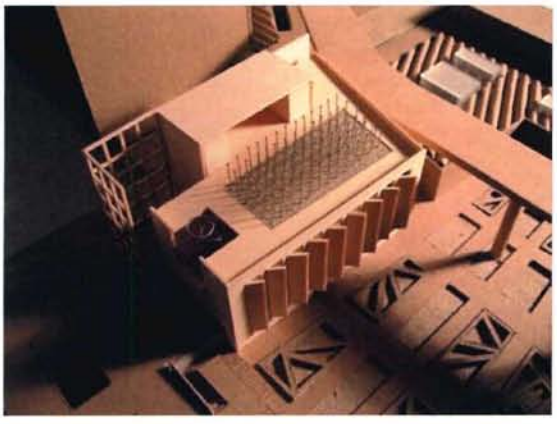
Combined Final Sketch Models

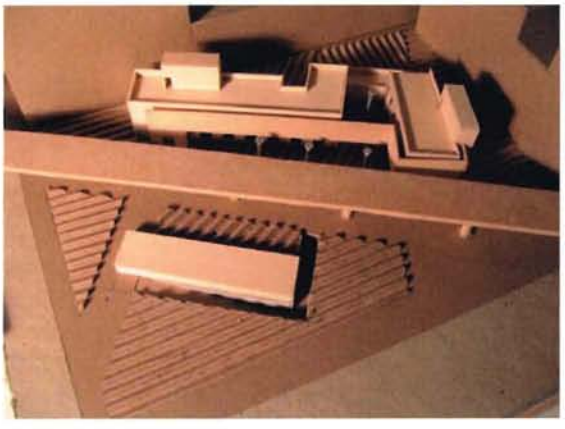


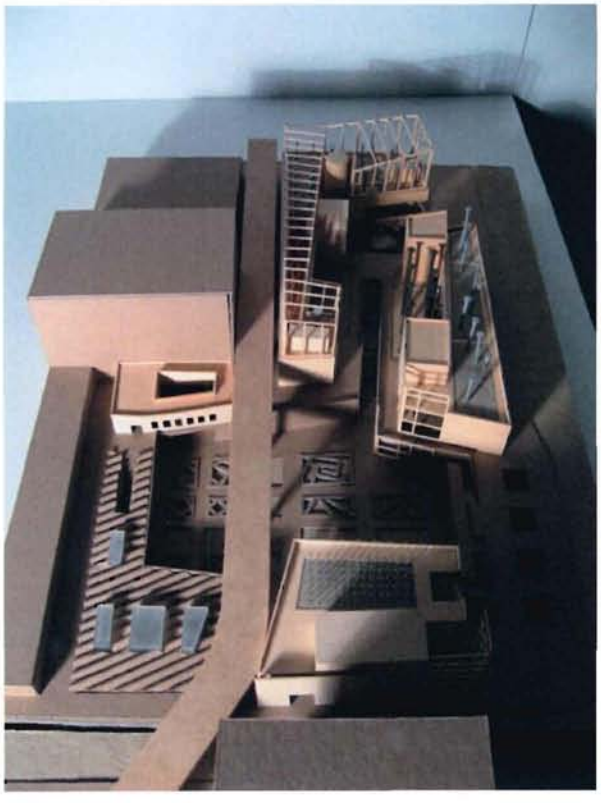


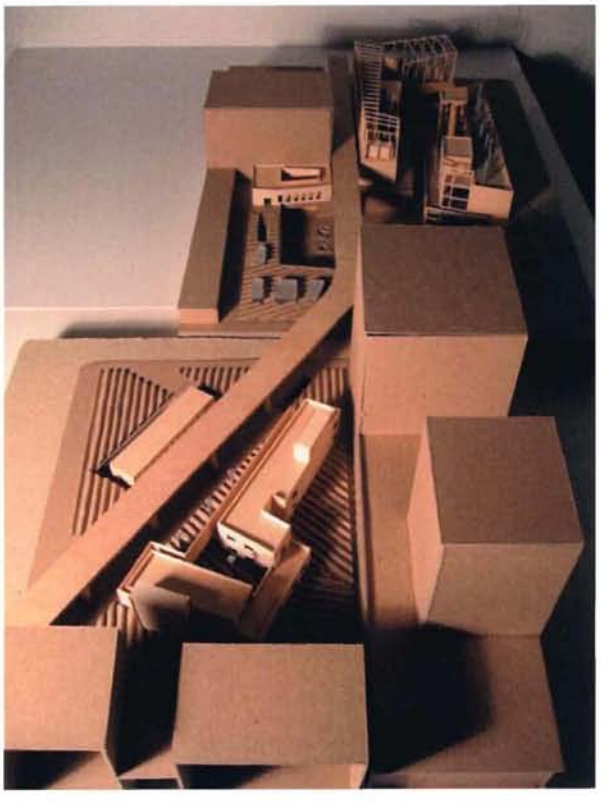


Final Model



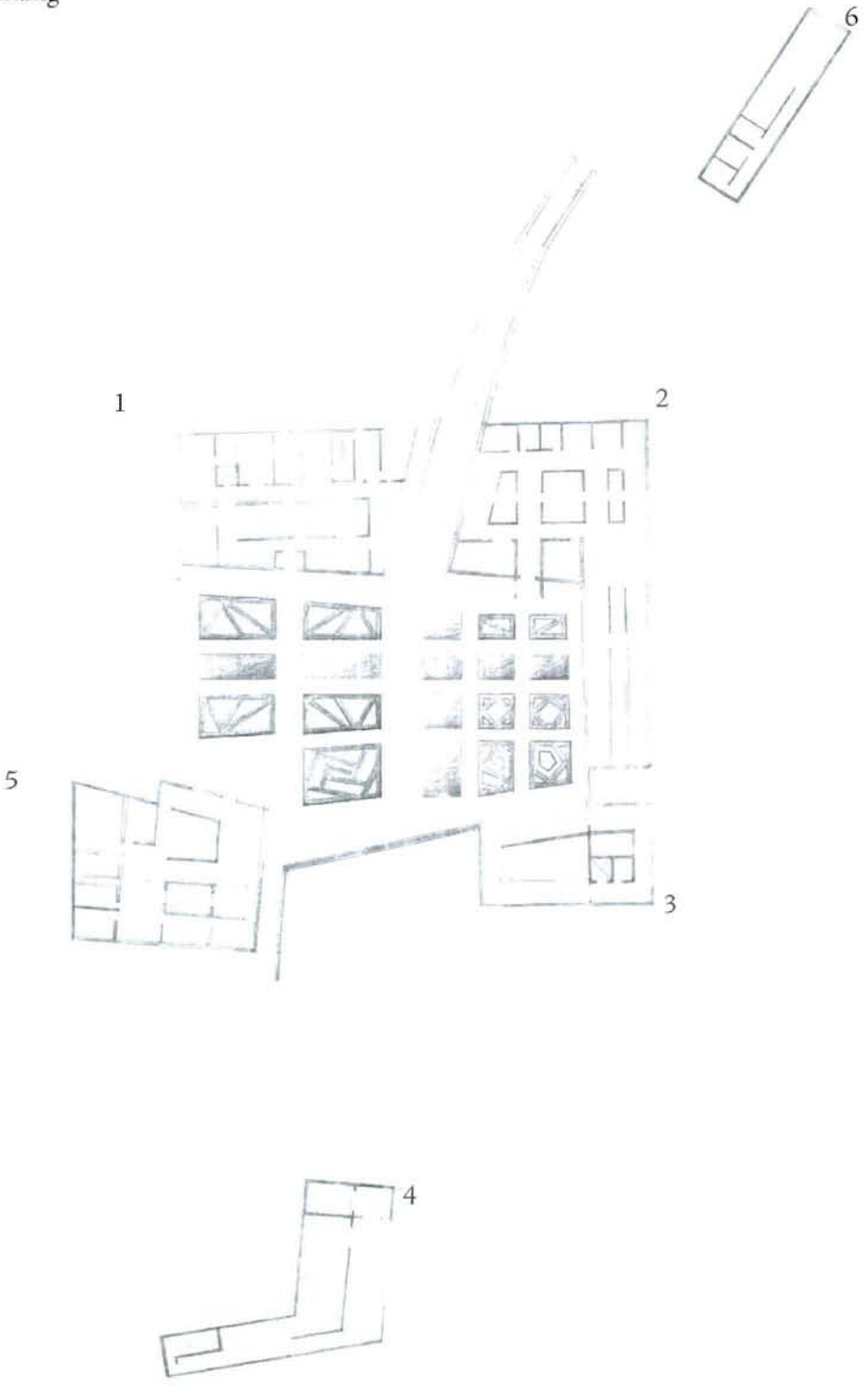




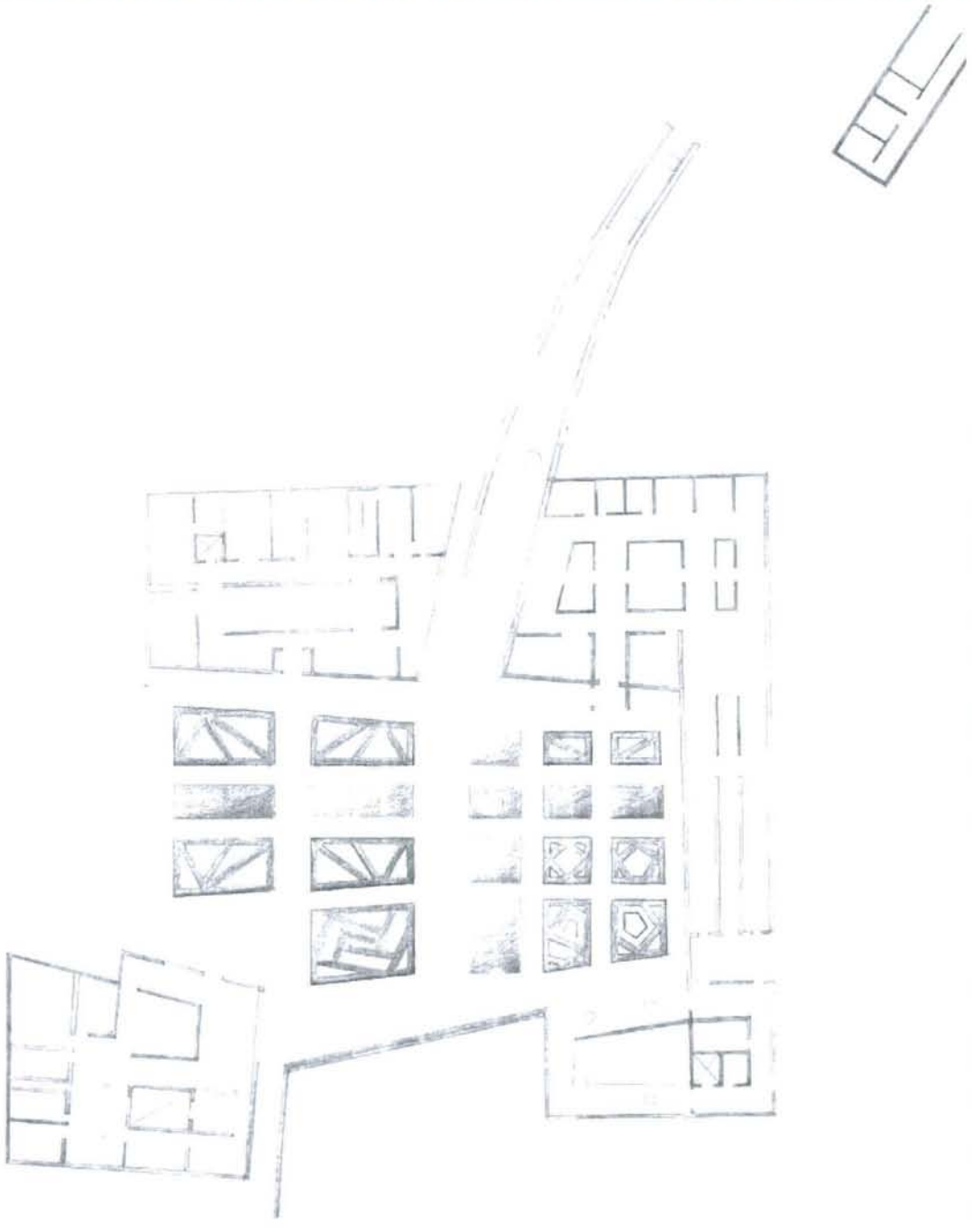


Frer

1. Main Entry / Agriculture
2. Lightwell Building
3. Ivy Building
4. Greenhouse Building
5. Park Building
6. Cafe

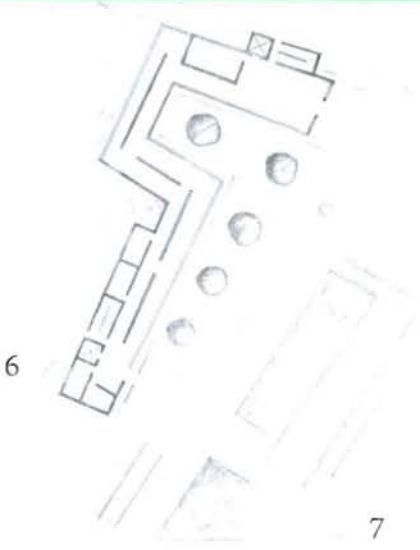


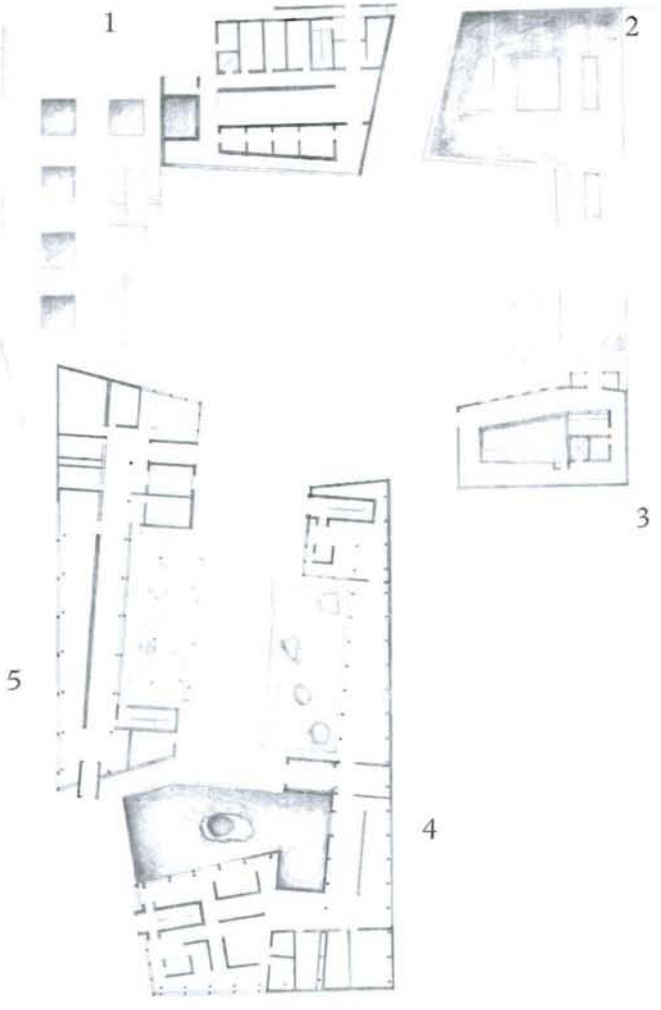
Enlarged Lower Level French Garden Plan / Floor Plans



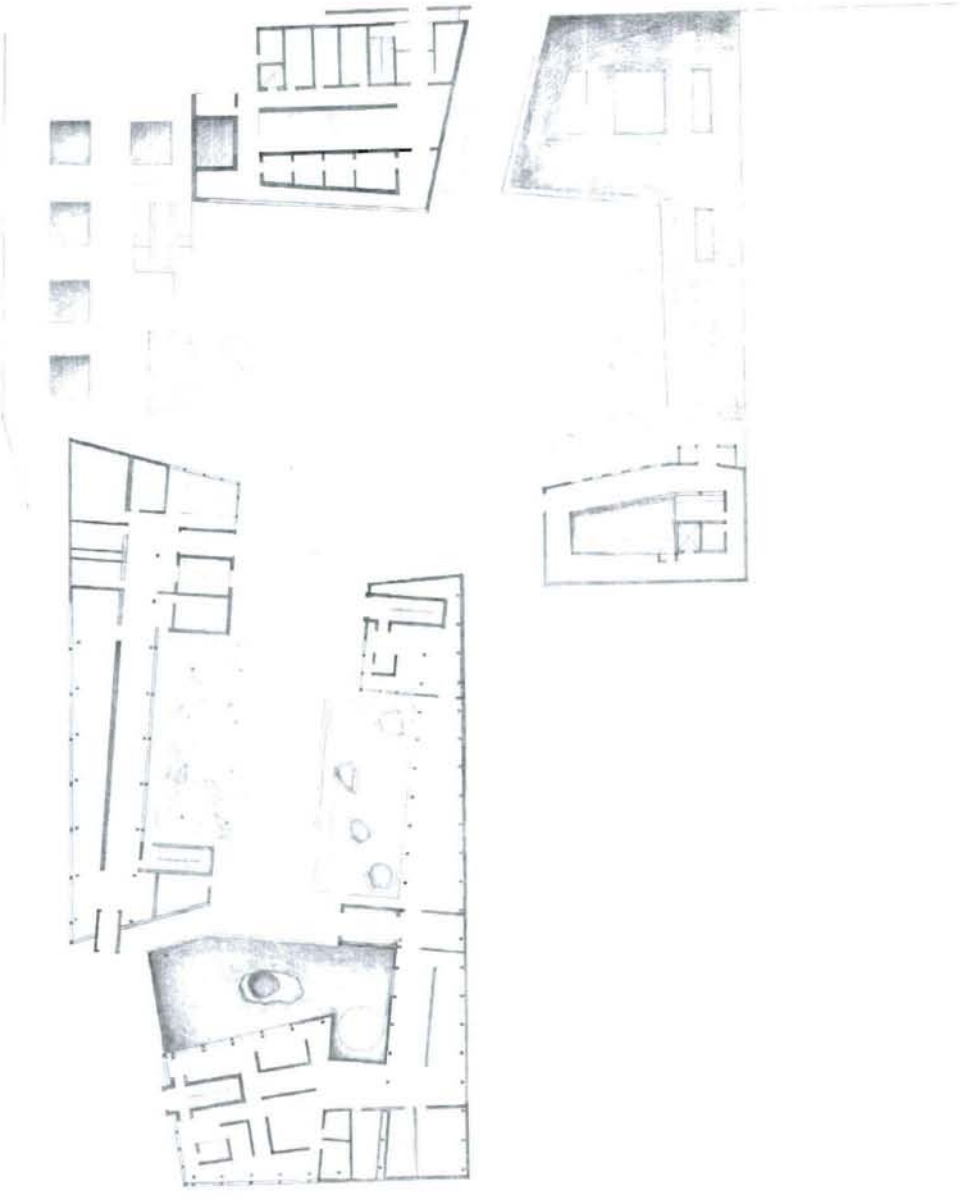
1st Floor Plans

1. Main Entry / Agriculture
2. Lightwell Building
3. Ivy Building
4. Greenhouse Building
5. Park Building
6. Great Plains Building
7. Cafe

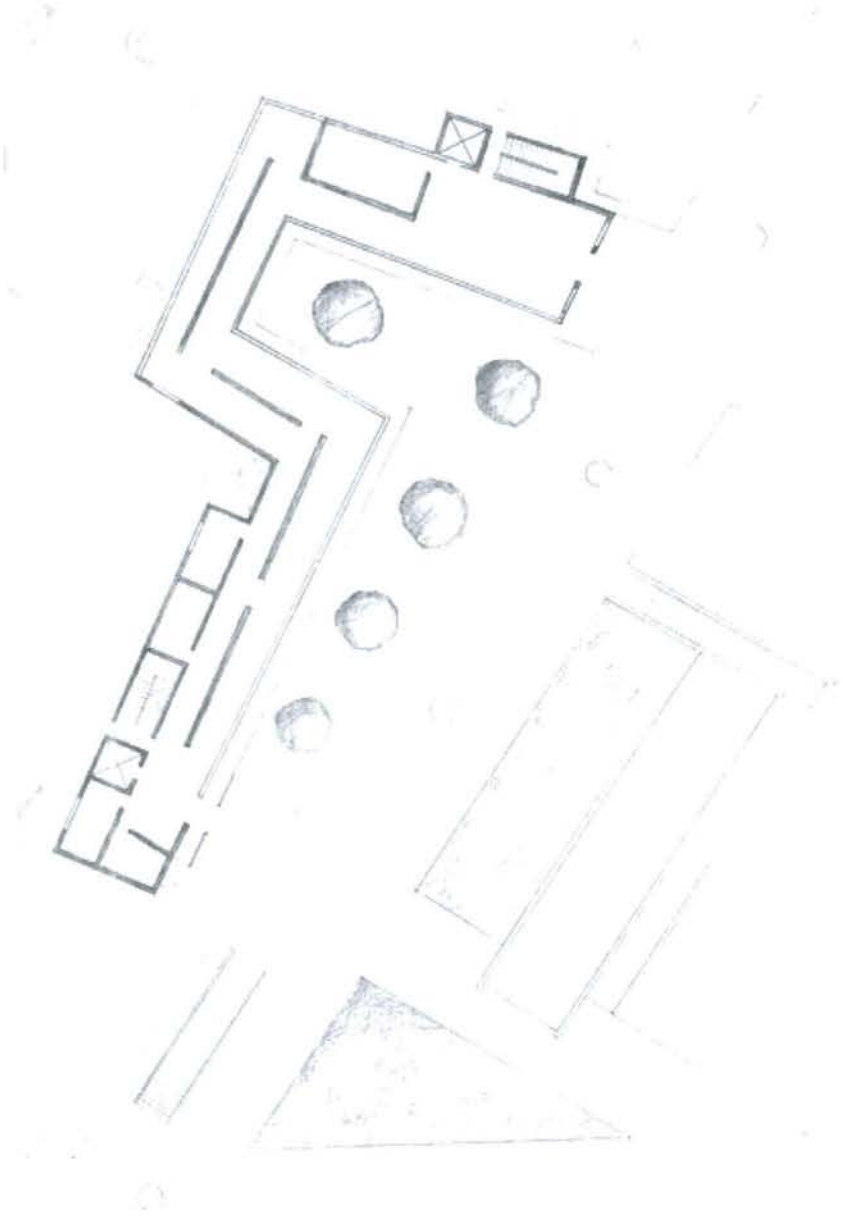




Enlarged South Site 1st Floor Plans

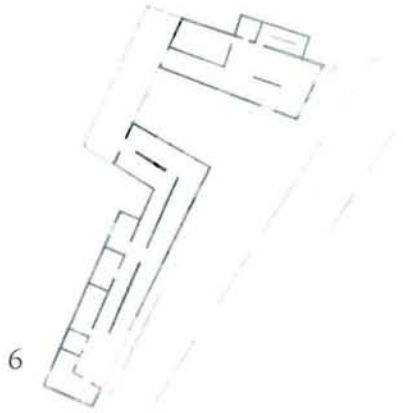


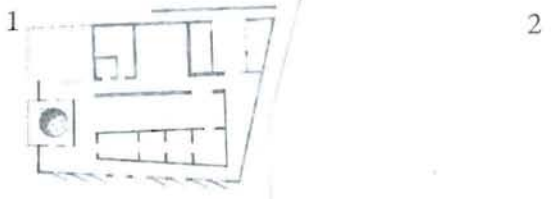
Enlarged North Site1st Floor Plans

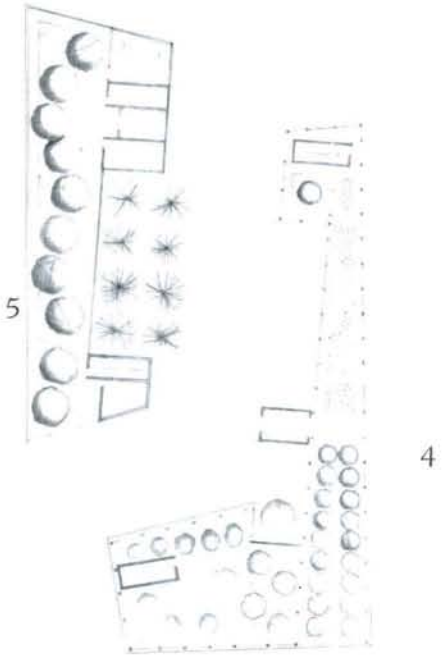


2nd Floor Plans

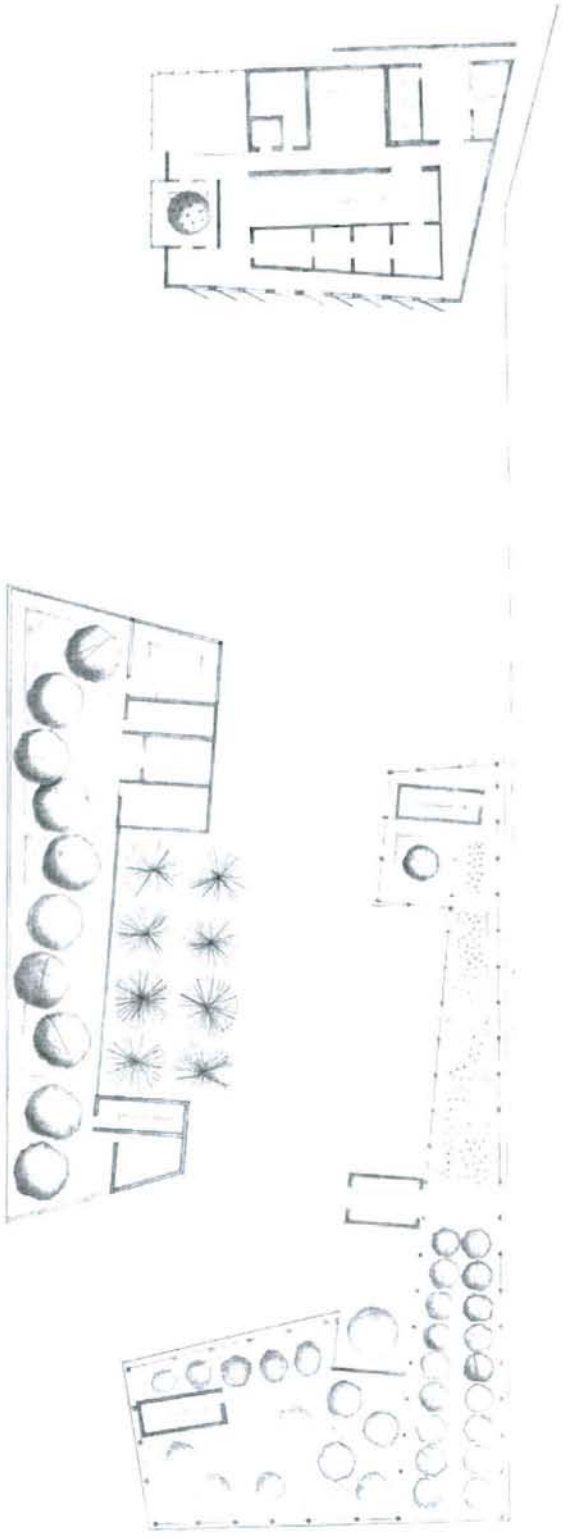
1. Main Entry / Agriculture
2. Lightwell Building
3. Ivy Building
4. Greenhouse Building
5. Park Building
6. Great Plains Building



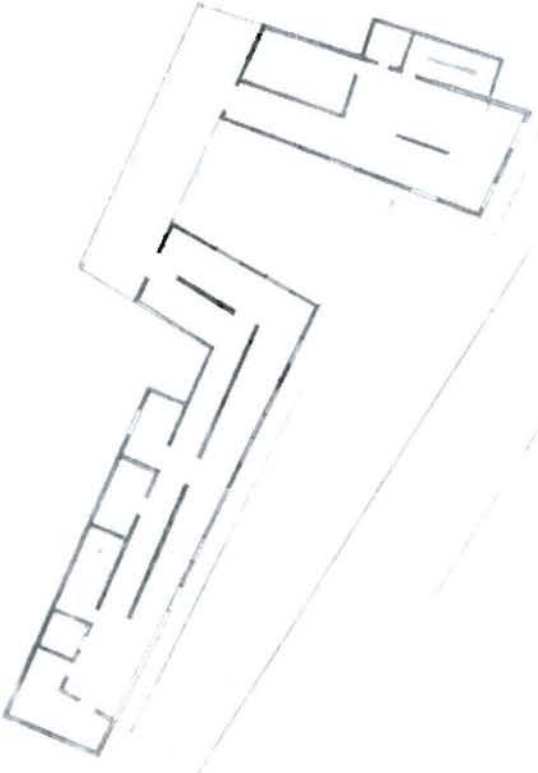


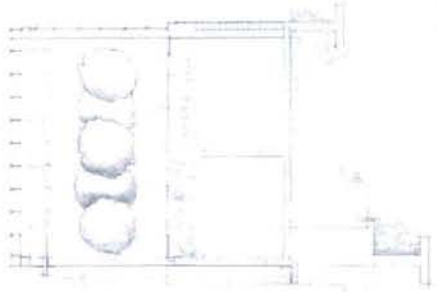


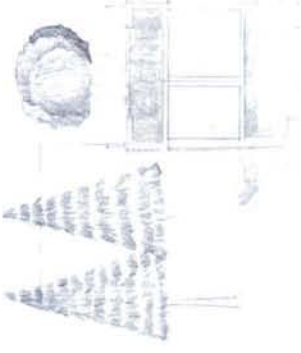
Enlarged South Site 2nd Floor Plans

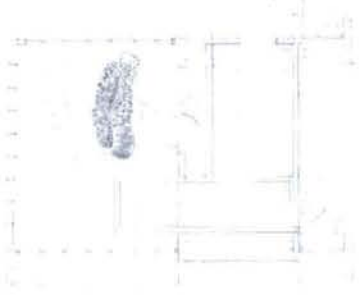


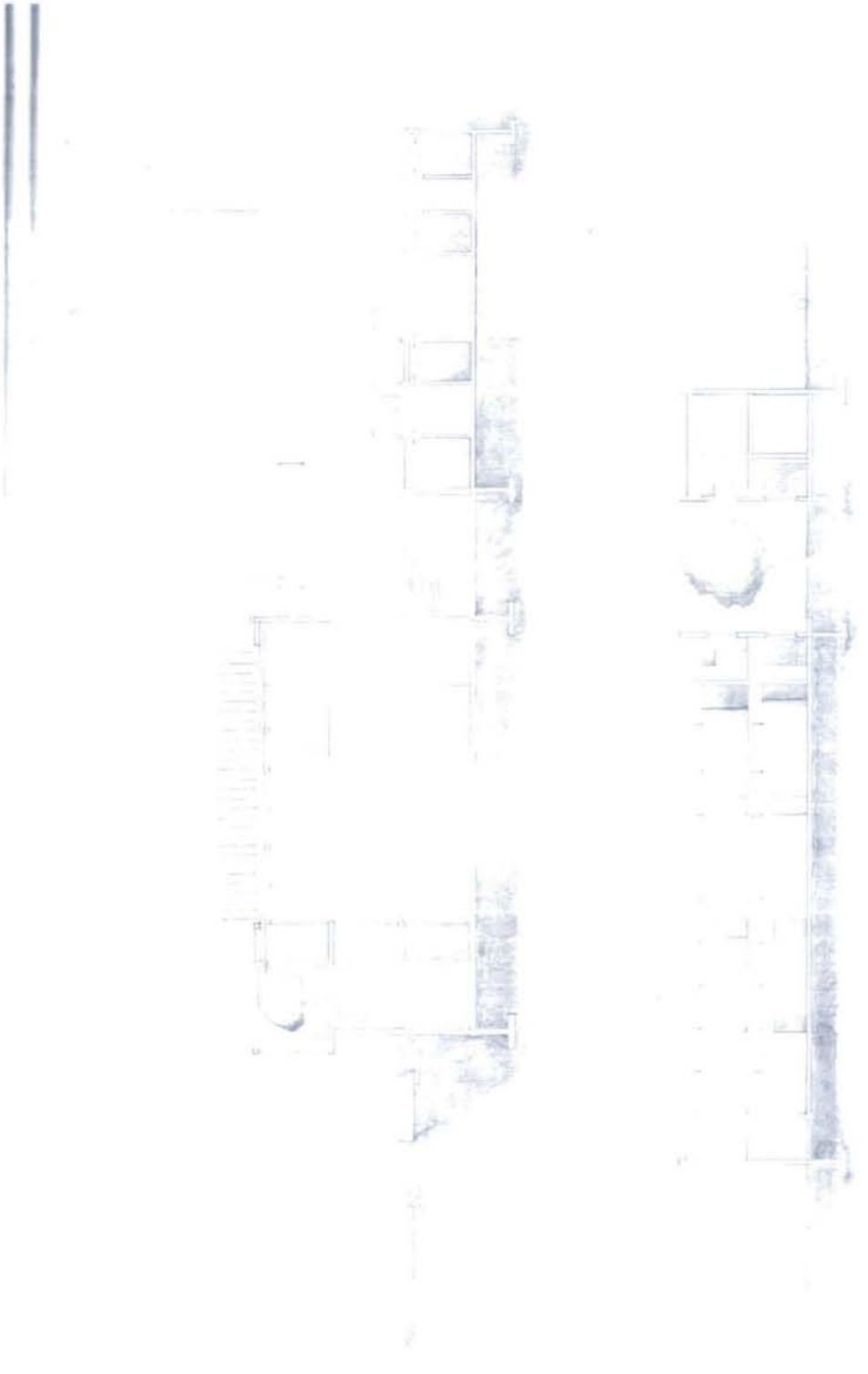
Enlarged North Site 2nd Story Floor Plans











Conclusion

The development of my thesis project came in very distinct phases, the first nearly a complete failure, the second a much more positive success. My initial thesis focus, an intention to blur the line between exterior "natural" space and interior "constructed" space turned into a very repetitive process which basically amounted to me placing plants and shrubs into the interior of a high rise building. Although my initial springboard artifacts seemed to be pointing me in the right direction, blurring interior and exterior space in my mind was almost universally held as being the indoor growth of vegetation. The end result of this line of thinking left me with a poor inital building design critique and an intense uneasiness that my project would amount to a mediocre office building, at best.

After the 1st semester was over, I decided to take a step back and really look at what I was trying to accomplish, both in the work I had already produced and what kind of emotions I really wanted my final design to elicit. Taking into consideration the feedback I recieved at the end of the 1st semester, I began to take a close look at the connections between nature and culture. I found that rather than wanting to really blur interior and exterior space, an idea I wasn't really understanding in any substantial way, I in fact wanted to understand and explore the idea of nature as it is related to architecture, how the two have influenced each other and how that influence changed as time passed. Suddenly, I was dealing with a very different, much more exciting thesis idea, one that could be examined through the ways different cultures have manipulated, represented and changed the landscape through cultural achievements such as agriculture, architecture, art and landscape design. thinking about this, it was clear that the program of my thesis would have to change dramatically and would have to be able to adequately explore these new ideas, something than a generic office just wouldnt be able to do effectively. A musuem program quickly formulated, not that of a natural history musuem, as was originally suggested, but one that focused explicitly on the cultural importance particular plants, landscaping practices, agricultural developments and

gardening techniques have had for diffent civilizations throughout history and today. Once this was decided, the components of the program quickly came into place: a mixture of traditional art gallery spaces combined with cultivated installations that highlighted and exhibited the cultural development of nature through history. To this end, I used several major schools of thought in the design and selection of the museum's installations: agricultural practice, picturesque landscape planning, French formal gardening, Eastern water and rock garden design, modern conservancy methods and the natural reclaimation of the environemt. The site that I had orginally selected in the first semester was actually better served by the change in my thesis, and I started to design a musuem that would not only document the slow evolution of nature as a cultural object, but would actively facilitate the movement and experience of indoor and outdoor space.

The design process itself was largely a matter of responding to the current site conditions and making decisions that would benefit the programs stated goals. To do so, I decided to create a series of smaller gallery buildings located on the perimeter of the site to both ensure multiple transitions between indoor and outdoor space and free up the interior of the site for the cultivated installations.

Towards the end of the design process, I had for the most part accomplished most of the goals that I had set out to do at the beginning of the 2nd semester. I created a building which focused on nature as a singular, culturally important artifact not unlike a work of art, and in the process of doing so, created some moments that I felt were quite successful. At the same time however, I realize that there were several shortcomings to the project, the largest of which was the lack of comprehensive, technical details that push a project such as this past the realm of simply being a good idea and into an area of believably excellent project. In the end however, I am proud the accomplishments I was able to acheive and, considering the way the project could have manifested self, can only be thankful that the project ended up where it did.

Thesis End Notes

1. Williams, R (1985). Keywords: A Vocabulary of Culture and Society. New York, NY: Oxford University Press.
2. (Williams, 1985)
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7. Dalley, Stephanie 'Nineveh, Babylon and the Hanging Gardens: cuneiform and classical sources reconciled' Iraq Vol LVI 1994 pp. 45-58
8. Dalley, Stephanie. Ancient Mesopotamian Gardens and the Identification of the Hanging Gardens of Babylon resolved' Garden History Summer 1993 Vol 21 No 1 pp 1-13
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10. ^ Philip Sohm, Style in the Art Theory of Early Modern Italy (Cambridge: Cambridge University Press, 2001)
11. (Sohm, 2001)
12. Herbert Butterfield, The Origins of Modern Science, 1300-1800.
13. (2007) Boboli Gardens. Encyclopædia Britannica.
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1. Buchanan, Peter. Ten Shades of Green. 1st. New York: The Architectural League of New York, 2005.

2. Betsky, Aaron. Landscrapers: Building With The Land. 1st. New York: Thames & Hudson Inc, 2002.

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4. Jones, Peter Blundell. "Forestry Commission - the new Dutch Institute for Forestry and Nature Research ." The Architectural Review 3-90(2001): 28-33.

5. www.millenniumpark.org, 2005

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Annotated Bibliography

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4. Amidon, Jane, and Aaron Betsky. Moving Horizons: The Landscape Architecture of Kathryn Gustafson and Partners. 1st. Basel, Switzerland: Birkhauser, 2005.

5. Jones, Peter Blundell. "Forestry Commission - the new Dutch Institute for Forestry and Na ture Research ." The Architectural Review 3-90(2001): 28-33.

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