

An Investigation of Sacred Space - The Grove

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Abstract:

It is a universal goal of mankind to seek or to create sacred spaces. What is a sacred space, and what are the qualities which describe that space? For thousands of years, the grove has possessed qualities which have made its space sacred. What defines a grove and the space it makes and how does this form relate to us today?

In September 2002 Congress passed legislation for the establishment of Living Memorials to honor and commemorate the losses of September 11th, 2001. Through a program developed by the United States Forest Service and American Forests, these Living Memorials are taking the form of memorial groves.

Washington, D.C. chose Kingman Island, located in the Anacostia River, as the location for their 9/11 Memorial Grove. Using the Kingman Island site, this thesis investigates the qualities of sacred space, and the qualities of the grove, to discover how a contemporary grove can create a sacred space that reflects the traditions of the Living Memorial, and honors the losses of September 11th.



This thesis is dedicated to my husband Louis Slade and my daughters Margaret and Anne.
In appreciation for their gifts of time, help, and encouragement.



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Introduction

Since the beginning of civilization, man has searched for special places where he felt part of some cosmic order. One of the places has been tree groves. Whether found in nature or constructed as a special place, groves have a long history as sacred and memorial space.

My interest in memorial groves began when I read an article in *Diados* by Judith Stein while researching the design of the Vietnam Veterans Memorial, in Washington, D.C. In her article “Maya Lin’s Vietnam Memorial” Stein refers to the Vietnam Memorial as “A singular architectural and sculptural space, it is also a place of pilgrimage and healing, functioning as a spiritual sanctuary.” “A conceptual grove- ... an artfully designed sanctuary that leads us into ourselves” (119). This thesis investigates the qualities of a grove to understand how it creates sacred space.

In September 2002, The United States Congress passed legislation designating funds to be awarded to communities to build Living Memorials to commemorate the losses of September 11, 2001. Through a program developed by the United States Forest Service and American Forests (the country’s oldest non-profit conservation organization) these Living Memorials are taking the form of memorial groves.

This thesis investigates the qualities of sacred space, the types and purpose of memorials, and the qualities of the grove to understand why this form is fitting today. Using Kingman Island located in the Anacostia River in Washington D.C., the future site of the Washington’s 9/11 Memorial Grove, this thesis will demonstrate how a contemporary grove can create a sacred memorial space.

Chapter 1- Sacred Space

Since the earliest time man has searched for places where he has felt closer to god and places where he felt connections to understanding universal truths. E.V. Walter in Placeways, defines sacred space as ... “a specific environment of phenomena that are expected to support the imagination, nourish religious experience, and convey religious truth” (Walter, 75).

Sacred places can be found in nature or they can be a constructed space. A sacred space found in nature is a place designated by individuals or groups as such a place. It is a distinct space, a place whose character sets it apart from its surroundings. It is a place where one can feel a connection to some cosmic force or truth. Sacred places have the quality of protection. They are distinct from typical or commonly found places. The designation of a place as sacred comes from the human need to establish a connection with some universal truth. A place that is sacred to one person or group of people may not be sacred to others. For example, Native American’s tribal traditions imbue many natural sites as sacred. Cultural clashes occur when others, who do not value them as sacred places, use these sites for profane purposes.

A sacred space can be constructed. The architectural expression of the cathedral creates spaces which differentiates it from the everyday and creates a space which supports a transcendent experience. To express the sacred space, the builders designed the experience of the sacred by creating a space very different

from people’s everyday experience. They used soaring vaults to connect the spirit to the heavens, they contrasted the solid mass of the stone with the jewel-like experience of the stained glass to create a sense of wonder, and they used the elements of light and shadow to create mystery and reverence.

Rana P.B. Singh in his article “Introduction: The Layout of Sacred Places” says that the need to understand the cosmic order is fundamental to all societies and has been investigated by their art, literature, and religion.

A sacred place is a place that symbolically represents the world; ultimately it reflects order and wholeness and is like a mystic web of the cosmos: its very own layout encloses a world and to man, it becomes, at a deeply sensual level, the cosmos. ... In the Hindu tradition, sacred places are called turthas (literally “crossings”), i.e. they are places where one crosses over to far shores or crosses up to the realm of heaven (Singh,162).

The quest for answers to man’s relationship to the cosmos is a universal search. We can look at Stonehenge or the Prehistoric Monuments of Avebury, in Wiltshire, England to see the remains of sites that were built to establish connections between man and a universal force. They were places set apart from the village, a ceremonial site, where ritual activities occurred.

Richard A. Etlin, in Symbolic Space, writes that our sense of space begins with body space. Who we allow into our personal space and to what extent we allow them intimacy varies and changes our personal comfort. This body sense of space extends outward to the community. Etlin refers to Mircea Eliade's and Joseph Rykwert's studies of sacred space saying,

We know that the need to delimit a zone of space from the undifferentiated void of the outer world was fundamental to the establishment of a community. These precincts were fashioned with the ritual that made the ceremony seem a recreation on a small scale of the universe, a cosmogonic act that joined the community to the gods (Etlin, XIX-XX).

The boundary or enclosure is an important condition of a sacred place. The boundary creates two realities, the privileged from the less privileged, and the sacred from the profane. Because sacred space is space set apart, the act of entering the space, or the threshold, is an integral part of the ritual experience.

It seems likely that the basic configuration of early settlements organized according to a cosmogonic ritual, which privileges the perimeter and the center, is grounded in the human psyche's need for orientation related to our body sense (Etlin, XX).

Because sacred spaces are separate from everyday places in a designated precinct, value is placed on the journey and arriving at the sacred place. The path and the ritual journey are part of the sacred experience. Pilgrimages to sacred places are one type of journey. The experience of the pilgrimage can be created by the design of the approach to the sacred site.



Figure 1.1 Charcoal sketch of grove enclosure.

Chapter 2- Memorials

The purpose of a memorial is to create a link between the present and the past. Memorials are built to commemorate a person, place or an event, they convey information, and remind us of something important. Memorials allow for reflection, healing, understanding, and meditation. They acknowledge sacrifice, and they honor specific concepts which society holds to be an ideal. J. B. Jackson in The Necessity of Ruins says, “The monument, in short, is the guide to the future: just as it confers a kind of immortality on the dead, it determines our actions for years to come” (93). Memorials and sacred spaces provide a place for community ritual, and link the individual to the event and the community. Judith Wasserman in her article “To Trace the Shifting Sands: Community, Ritual, and the Memorial Landscape,” says...

the memorial can reintroduce the sacred into open space. It provides traces and clues to cultural history that have become obscured within a culturally opaque society. In effect, they encode space, and enrich it with meaning (43).

Before World War I, the traditional forms for memorials were the column, the obelisk and the statue. After the war, in the 1920s, a new memorial type, the Living Memorial became popular. Community leaders supported memorials that enhanced the life of the city by adding to the cities infrastructure. These Living Memorials took the form of memorial stadiums, bridges, arts centers, parkways, libraries and other public places designed and dedicated to national events or heroes.

Living memorials also included memorial tree plantings. Often communities planted memorial groves. This was common in Europe and the United States after both World Wars. One such grove is the Grove of Heroes, which was dedicated in San Francisco, California’s Golden Gate Park, in 1919, to honor those lost in World War I. Memorial tree plantings to remember the war dead, called Roads of Remembrance occurred in many cities around the country, including Washington D.C. where three miles of memorial trees were planted on Sixteenth Street, Northwest. In Cleveland, Ohio thousands of oak trees were planted along a seven mile boulevard which ran from Lake Erie through neighboring towns (Robbins, 2003).

It is in this spirit, as well as the cultural associations of the grove, that the use of the grove to memorialize September 11th is embedded.

On September 9, 2002, Agriculture Secretary Ann M. Veneman announced \$933,000 in federal grants to be awarded to establish Living Memorials to remember those lost on September 11, 2001. These grants would be made through the Living Memorials Project (LMP).

This initiative invokes the resonating power of trees to bring people together and create lasting, living memorials to the victims of terrorism, their families, communities, and the nation. Cost-share grants provided by the Northeastern Area State and Private Forestry supported the design and development of

community projects in the New York City metropolitan area, southwest Pennsylvania, and the Washington, D.C. metropolitan area. In the Southern Area (Region 8), the Forest Service worked with officials from the Pentagon, American Forests and Arlington County on developing additional memorial sites (Living Memorial Project).

A grove is being included in the design for the World Trade Center Memorial in New York City. The award winning design *Reflecting Absence*, designed by Michael Arad, was modified to include a grove, designed by Peter Walker, FASLA. In a press statement they explained the inclusion of the maple grove by saying, “Through its annual cycle of rebirth, the living park extends and deepens the experience of the memorial” (Lower Manhattan Development Corporation).



Figure 2.1 Lyndon Banes Johnson Memorial Grove.

Chapter 3- The Grove

For thousands of years the grove has possessed qualities which have made it sacred space. The Oxford Companion to Gardens defines a grove as

a group of trees usually of a single species, either growing naturally or planted in formation. It is probably the oldest of all garden features, for it dates back to the time of primitive man in the forest. Tree cults arose from man's sensitivity to the growth and death of trees and thus their similarity to his own life (Jellicoe, 238).

Trees have been the mythological connection between the earth and the sky, the sacred and man.

The Egyptians, Greeks, and Romans all viewed groves as sacred places. The earliest groves were discovered, not planned. In Greece, where wood was scarce, the grove became a holy place. The Greek gods were symbolized by particular trees – Apollo, the Laurel tree, Zeus, the Oak, and Athena the Olive tree. Trees were the first temples in Greece. They were hung with sacrificial objects, fruit, flowers, and bones. They were the earliest holy places.



Figure 3.1 Tree Grove, The National Arboretum.

Even after temples came into being, a sacred tree was part of the temple landscape (Hersey, 11-13). The Romans depicted groves in fresco paintings on the walls of their homes. Groves were depicted as places of delight and as homes to the gods. Groves were also planted as part of tomb precincts, seen in the image of the Tomb of Augustus (Figure 3.2).

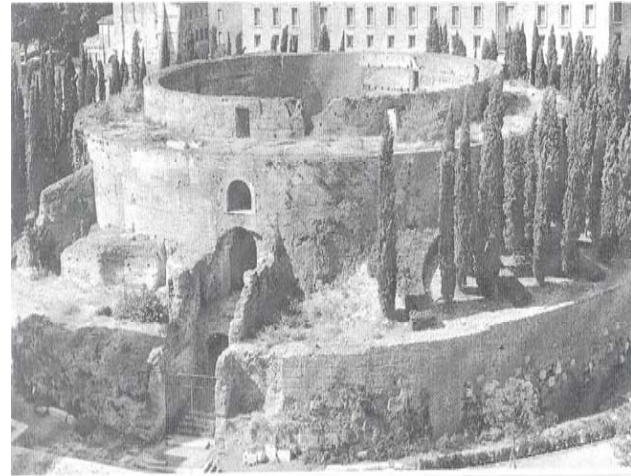


Figure 3.2 Tomb of Augustus.



Figure 3.3 Pencil study of tree grove.



Figure 3.4 The Lyndon Baines Johnson Memorial Grove, VA.

Thatcher in *The History of Gardens* says, we might define the ‘sacred grove’,

“ as a place apart, consecrated to a spirit or divinity, or to the memory of a hero; with trees and water, surrounding a shrine or an altar, in a temple or within a grotto or a cave. When man understood that places have different atmospheres and that “a remote locality might possess a ‘spirit’ of its own, a *genus loci*: at this moment man was close to creating a ‘sacred grove’” (Thatcher, 3).

Groves share similar traits to the earliest garden enclosure, the paradise garden. The grove, like the paradise garden is bounded, creating a spatial hierarchy of being inside or outside the boundary. The space carries the significance of being inside or outside the garden, delineating the sacred from the profane, or the privileged from the less privileged.



Figure 3.5 Three spatial studies of groves.

Groves have played an important place in literature and painting. The pastoral paintings of the Renaissance and the Romantic paintings of the seventeenth century expressed the fleeting beauty of nature and the transience of life. French artist Nicolas Poussin's, 1640, painting *Et in Arcadia Ego* represented the Arcadian ideal of nature as a place to experience the sublime and beautiful. These ideas were popularized by the 18th and 19th century American Hudson River School paintings. Romantic artists such as Thomas Cole, Ashur B. Durand, and Frederic Edwin Church painted images of nature as picturesque and sublime.

Similarly the Transcendental writers, Jean - Jacques Rousseau, Ralph Waldo Emerson, and Henry David Thoreau encouraged a return to nature for spiritual renewal. Frederick Law Olmsted, Andrew Jackson Downing, and other 19th early 20th century American landscape architects embraced the ideas of a picturesque and beautiful nature as a restorative force to balance the harshness of urban life. Rural and Lawn Cemeteries were established in cities around the country, to create such a space. Graceland Cemetery in Chicago, Illinois, designed by H.W.S. Cleveland, in 1860, is an example of this type of design. The popularity of the Rural Cemetery led to the development of large urban parks, such as Central Park and Prospect Park in New York.



Figure 3.6 Two views of Graceland Cemetery.

The grove is a symbolic space. Richard Etlin in his book Symbolic Space says that symbolic space begins with the body, the recognition of personal space and the acknowledgement of others coming into that space. The act of entering a space creates a sensation of protection, enclosure and knowledge (Etlin,XIV).

A key element in the experience of the grove is the act of entering the space. The grove provides shelter and allows for a sense of freedom within its enclosure. A contemporary grove evokes these historical, cultural and spatial ideas to create a place which can allow for reflection, regeneration and renewal.

In addition to the qualities of being in the grove is the experience of approaching the grove. Often groves are viewed from a distance, as they were in the romantic paintings and pastoral landscapes. The experience of the grove is heightened by anticipation. A circular or circuitous path may also be part of the approach to the central space. The experience of arrival is delayed. The journey takes on the quality of a pilgrimage to arrive at the center of the sacred space (Figure 3.7). This journey is part of a memory-encoding event.



Figure 3.7 Aerial view of the paths and central space, Lyndon Baines Johnson Memorial, VA.



Figure 3.8 Charcoal sketch of grove space.

Judith Wasserman in her article “To Trace the Shifting Sands: Community, Ritual and the Memorial Landscape” says,

Movement and ritual are major components of memory experience and as such are bound to the memorial landscape. In the past, the focus of memorials and monuments was to maximize visual impact. However, phenomenologists note the centrality of the body and movement in commemorative experience, indeed, claiming there is *no* memory without body memory (Wasserman, 45).

The Romantic associations and the spatial qualities of the grove still speak to people today as a place of renewal. Central Park was designed by Frederick Law Olmsted and Calvert Vaux (1858) is still an oasis in the city. Rachel and Steven Kaplan studied the benefits of natural environments. In their book, *The Experience of Nature*, they conclude that nature no matter how small has beneficial attributes.

Though it is certainly true that nature that is nearby can be used as a social setting, it can also be ‘a place set apart’ a setting where tranquility is possible even in the midst of the urban bustle (152).

The Kaplans conclude that the benefit of nearby nature can be gained by just knowing that it exists. “Such a conceptual form of involvement was one of the most important sources of satisfaction that participants expressed for a nearby vest pocket park” (R. Kaplan, (1980).



Figure 3.9 Birch Grove, Chicago Botanic Garden.

Two examples of contemporary urban memorial groves are the Lyndon Banes Johnson (LBJ) Memorial Grove, in Arlington, Virginia, and The National Aids Memorial Grove, in San Francisco, California. At both memorials the journey to the central grove space is integral to the overall experience of the memorial. In the aerial photograph of the Lyndon Banes Johnson Memorial Figure (Figure 3.10) the use of the central circular form and the spiraling path which leads the visitor to the sacred central space is evident. Similarly at The National Aids Memorial, San Francisco, California, the sacred center, the circular memorial plaza (Figure 3.11) is reached by a variety of walks through the columnar groves of trees.



Figure 3.10 Lyndon Banes Johnson Memorial detail of central space.



Figure 3.11 The National Aids Memorial detail of central space.

Chapter 4- The Site

Location

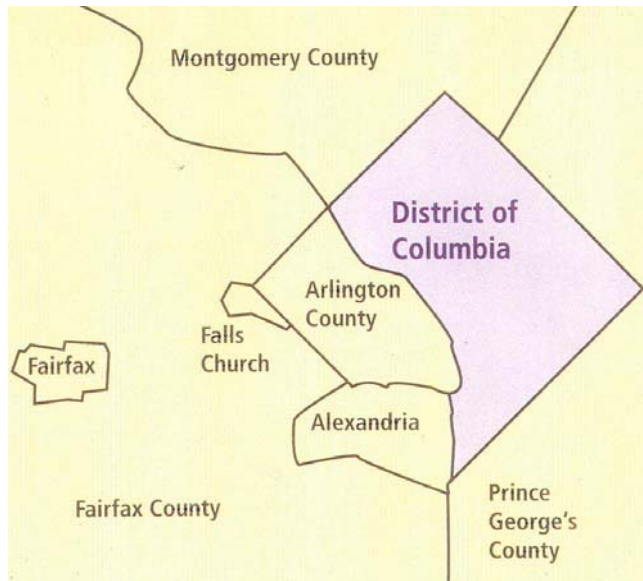


Figure 4. 1 Location Map.

The location of the thesis site is the Anacostia River, in Washington, D.C.; it includes the portion of the river which encompasses Kingman Lake, and Kingman and Heritage Islands. The site lies between Benning Road and East Capitol Street. (Figure 4.3) It will be the location of the Washington, D.C., September 11th Memorial Grove designed by Lee & Associates.

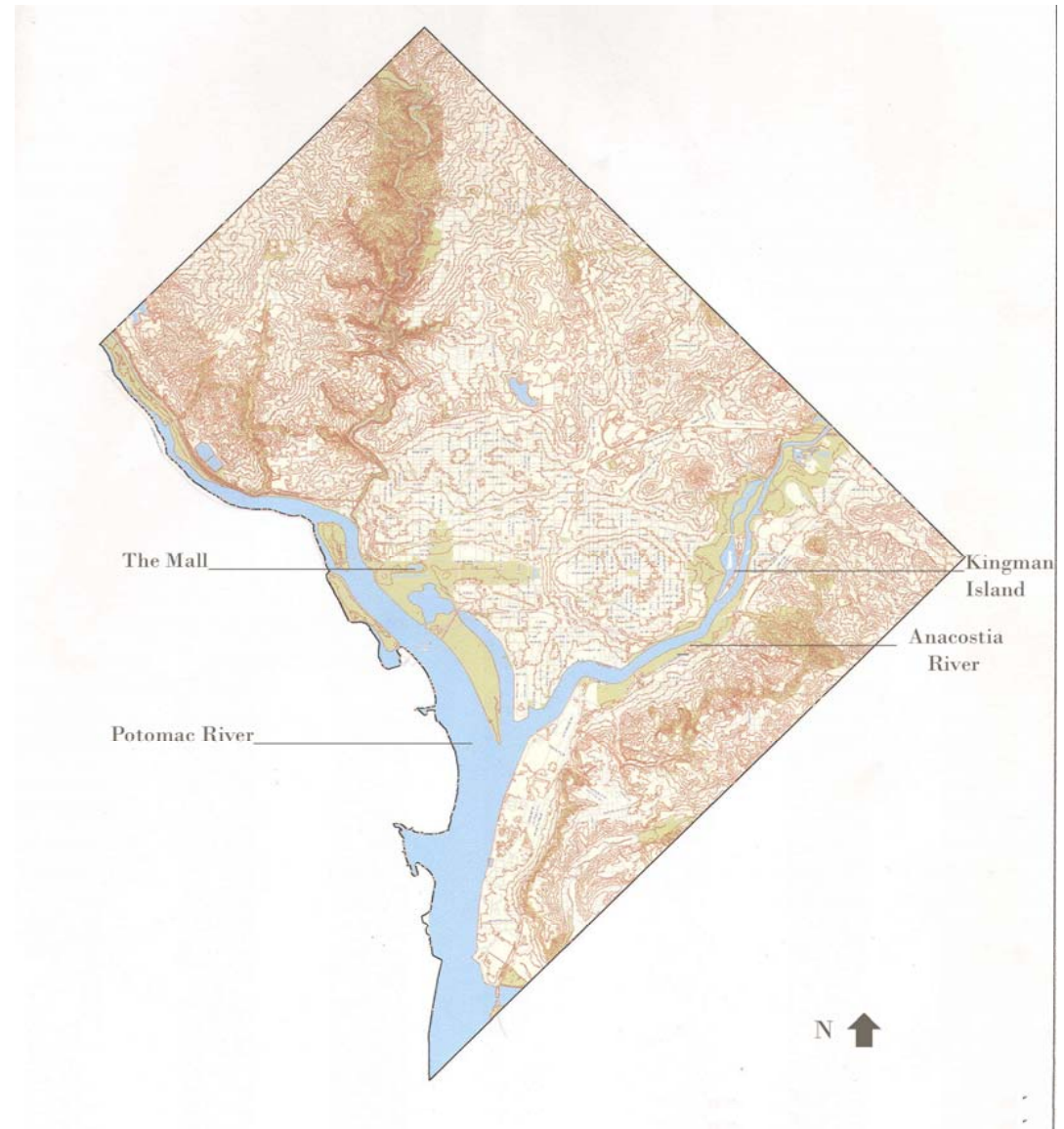


Figure 4.2 District of Columbia.

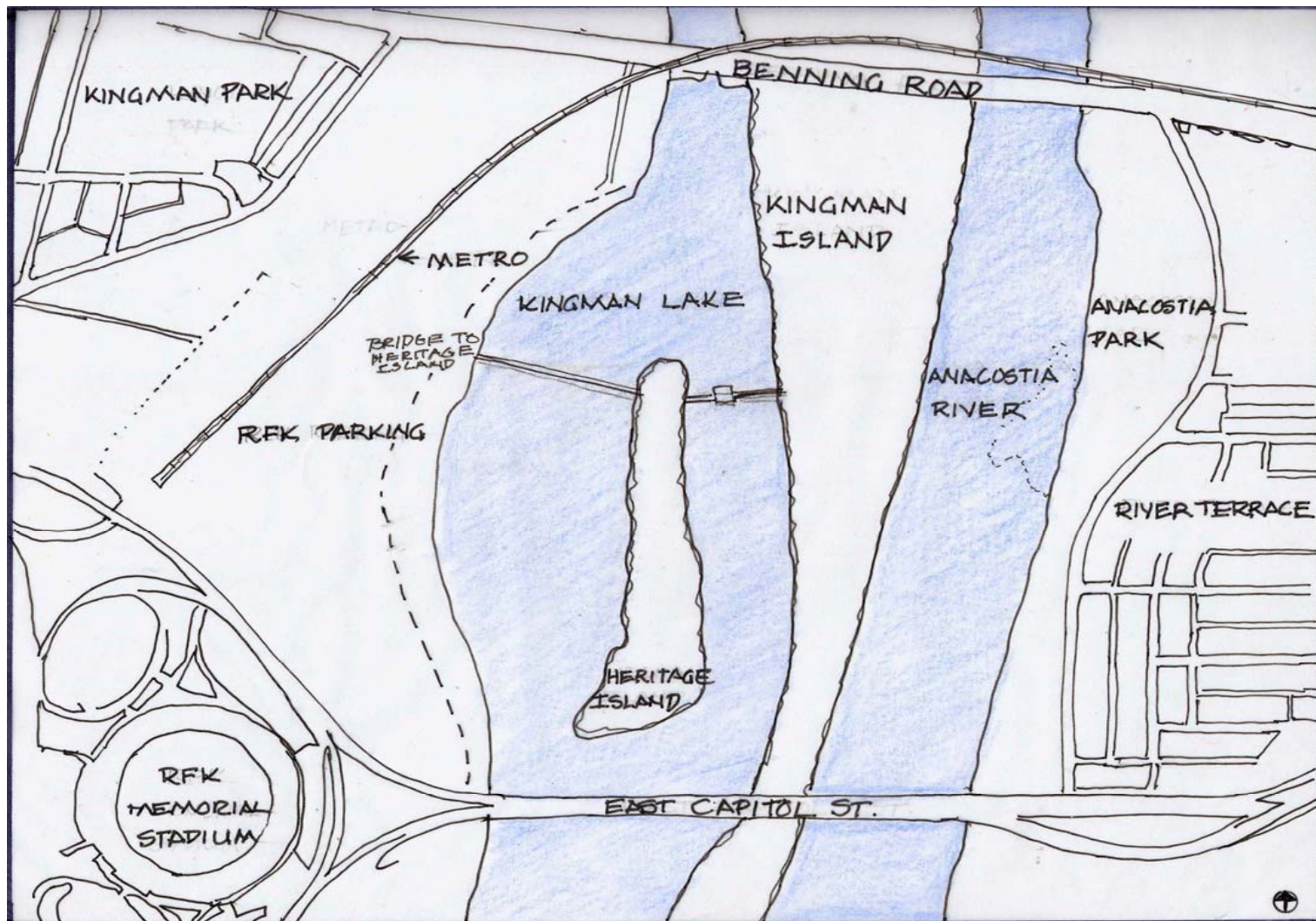


Figure 4.3 Thesis site.

The Anacostia River

The Anacostia River is part of a 170 square mile watershed located in Maryland and the District of Columbia. The Anacostia begins near Bladensburg, Maryland at the confluence of the Northeast and Northwest branches, and flows south towards Washington, D.C., where it joins the Potomac River at Hains Point. The original inhabitants of the Anacostia River watershed were the Nacotchtank Indians, who lived and farmed along its banks. It was a heavily forested area with extensive freshwater marshes and abundant marine life. As the city of Washington grew, the land was cleared for farming and settlement. Over the years the river was utilized for commercial, industrial, and military purposes. In the past 100 years, more than 1500 acres of freshwater tidal lands were drained and filled, and seventy-five percent of the wetlands were lost. The river became polluted. Pollution came from various sources; storm water run off from Washington, D.C.'s combined storm/sanitary sewer system; urban run off; and debris and silt deposits from Prince Georges County farms and residential and commercial developments. (United States Corps of Engineers)

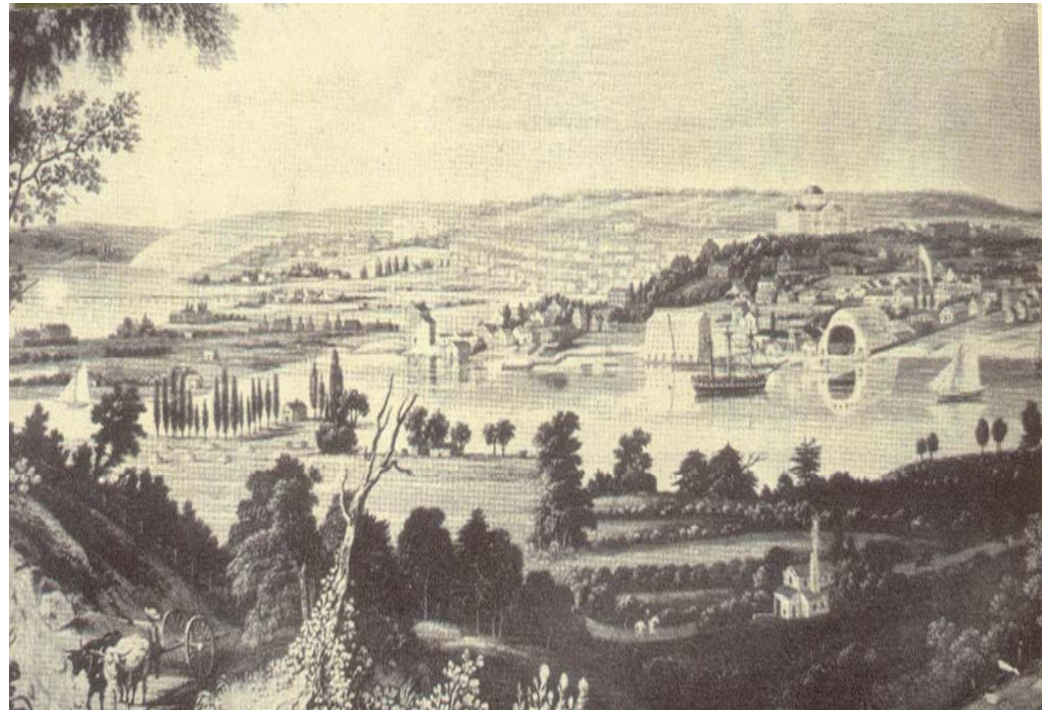


Figure 4.4 View of the Anacostia River, Washington, D.C.
1834, engraving.

Kingman and Heritage Islands

Heritage and Kingman Islands are located in the Anacostia River, near the Robert Fitzgerald Kennedy Stadium (RFK).

(Figure 4.5) The 94 acre Kingman Island covers an area from Kenilworth Aquatic Gardens, to a point just south of East Capitol Street. The six acre Heritage Island lies west of Kingman Island, at the RFK Stadium site. The islands and the tidal fresh water 110 acre Kingman Lake were created by the Army Corp of Engineers from 1916 to 1920. (Figure 4.6)

The islands are made from dredged and fill material. They were intended to be a community park for the adjoining neighborhoods of Ward 6 and Ward 7. The advent of World War II and the subsequent lack of funding hindered the implementation of those plans.



Figure 4.5 Aerial of thesis site, Kingman and Heritage Islands.



Figure 4.6 Kingman Island in Kingman Lake.

Kingman Island is divided in two by its use. The northern end of the island is The Langston Golf Course. It is part of the 1200 acre, Anacostia Park managed by the National Park Service. It's well tended and groomed landscape contrasts with the southern end of the island, the location of this thesis site. The southern 70 acres, which stretch from Benning Road to the end of the island, are under the jurisdiction of the District of Columbia. This part has been used for fishing and other passive recreation by the surrounding community, but it also has been used as a dump site by the neighbors, and the District of Columbia. (Figure 4.7) In the past, many plans have been proposed for this part of the island but none have been fully developed.



Figure 4.7 Trash dump on Kingman Island.



Figure 4.8 Kingman Island's vegetation.



Figure 4.9 A View of a Kingman Island path.

Kingman Island is a tangle of native and invasive volunteer trees and shrubs. It has a wild quality which contrasts greatly to the surrounding built urban spaces and the manicured Langston Golf Course.

Tree species observed on both islands include red maple, cottonwood, black cherry, black locust, red mulberry, Northern catalpa, princess tree, black walnut, and tree of heaven. Black raspberry dominated the under story of Kingman Island. Vines and herbaceous plant species observed on both Kingman and Heritage Islands include Virginia creeper, poison ivy, pokeweed, common ragweed, Queen Anne’s lace, purple loosestrife, jimsonweed, common morning glory, common reed grass, common sorrel, and Japanese knotweed (U.S. Army Corp Study, 2002). (Figures 4.8- 4.10)

Even though it is unkempt, its appeal is its unplanned nature. The plants and trees that live on this part of the island are those which have self seeded and survived. There is active bird life on the island and in the river; both small birds and wading birds have been observed.



Figure 4.10 Two views of Kingman Island vegetation.

A 100 foot wooden bridge connects Heritage and Kingman Islands to the western bank of the Anacostia Lake adjacent to the RFK

parking lot. (Figure 4.11) Kingman Island can also be accessed from Benning Road.



Figure 4.11 Foot bridge to Heritage Island.

The site is located between two very busy commuter corridors, Benning Road to the north, and East Capitol Street to the south. An elevated Metro structure is another dominate feature of the site. Metro comes above ground in the RFK Stadium parking lot and continues across the six lanes of Benning Road that bifurcates Kingman Island. (Figure 4.12) East Capitol Street is a heavily used traffic corridor which crosses the southern section of Kingman Island. Kingman and Heritage Islands are bounded on the west by acres of parking lots for the RFK Memorial Stadium, and to the east by Anacostia Park and the River Terrace neighborhood. It is an active community, whose residents live in attached two story row houses and duplexes. Some homes overlook Anacostia Park, the Anacostia River, and Kingman Island. (Figure 4.13) The general impression of the neighborhood is that it is a community of well kept, modest homes which are surrounded by dense urban traffic and infrastructure.



Figure 4.12 Benning Road looking east.



Figure 4.13 Homes in the River Terrace Community.

Marshes

Silt built up in the Anacostia River and Kingman Lake has degraded the remaining marsh, and has limited boating on the river. Only shallow draft boats such as canoes are able to navigate this portion of the Anacostia. Kingman Island lies low along the river, the highest point of land is fifteen feet above the mean high tide line. The diurnal tidal variation is approximately 2.9 feet. (Figure 4.14)



Figure 4.14 Kingman Lake marsh.

In 2000, the U.S. Army Corp of Engineers, the National Park Service, the District of Columbia, and Prince Georges County, as well as several non profit groups, formed a coalition to restore large sections of the tidal marshes along the banks of Kingman Lake, parts of the Kingman Island shoreline, and the eastern and western banks of the Anacostia River. To date 46 acres of marsh land in Kingman Lake and 30 acres in the Anacostia River on the River Terrace side have replanted. (Figure 4.15) Efforts are being made to clean up pollutants and trash in the river. At the same time, the District of Columbia, and the National Park Service have begun a clean up of Kingman Island, removing trash, hazardous waste, and invasive plants to prepare it to be the site of the Washington D.C. 9/11 Memorial Grove.



Figure 4.15 Anacostia River marsh

Chapter 5 - The Design

Design Concept

The premise of this thesis is that the grove will frame a sacred space. The space and objects within the grove will have special value because of their location and the shelter and protection that the grove imparts. The memorial will relate to the events of September 11, 2001. It will create a place for reflection and renewal for the entire city, and be a asset to the communities in which it is placed.



Figure 5.1 Concept drawing of memorial location.

Studies were conducted for the location of the grove, and of ways to connect the grove to the neighborhoods, and the neighborhoods to each other.

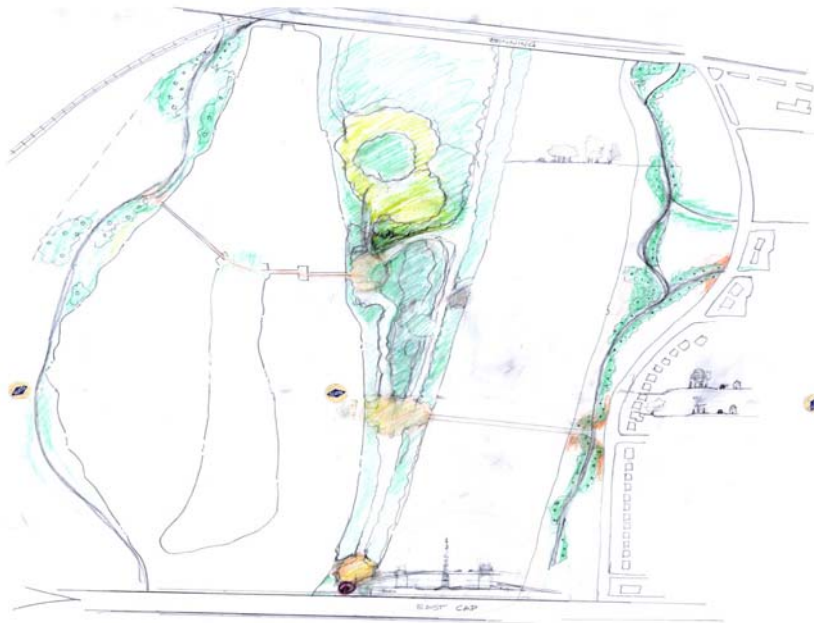


Figure 5.4 Connection and memorial location drawing.



Figure 5.5 Connections study.

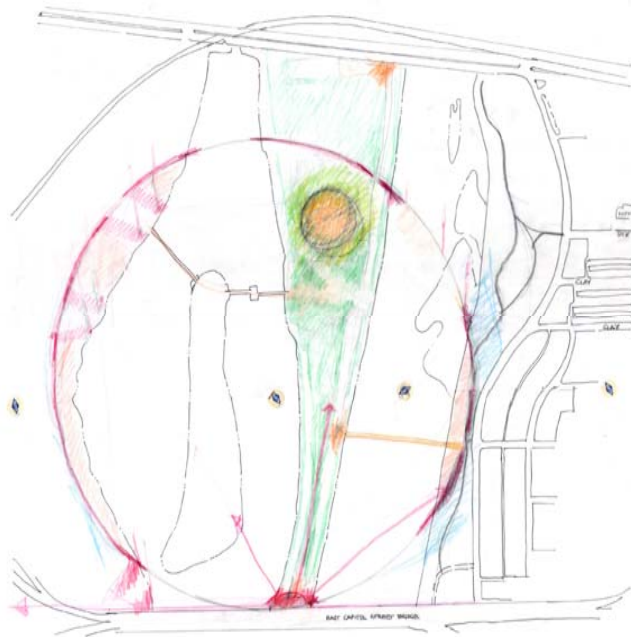


Figure 5.6. Study of memorial on Kingman Island.

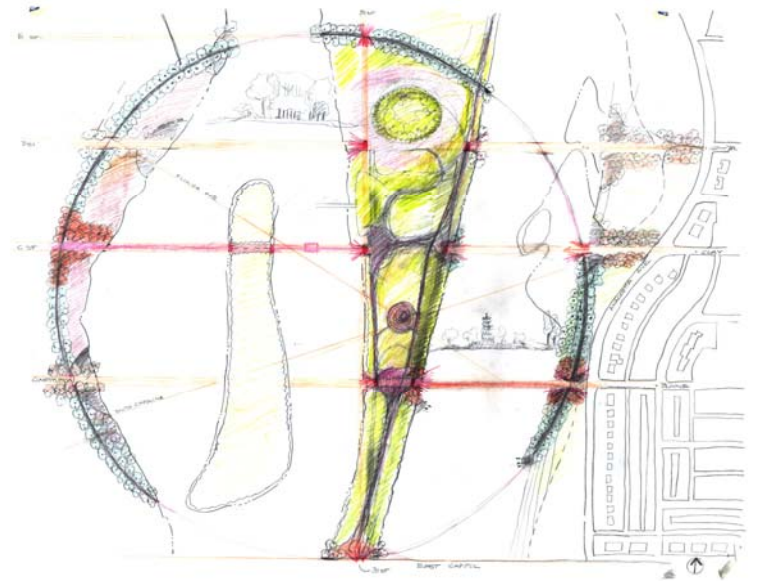


Figure 5.7. Study of Memorial location and connections.

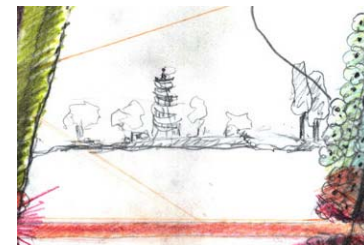


Figure 5.7 .Detail

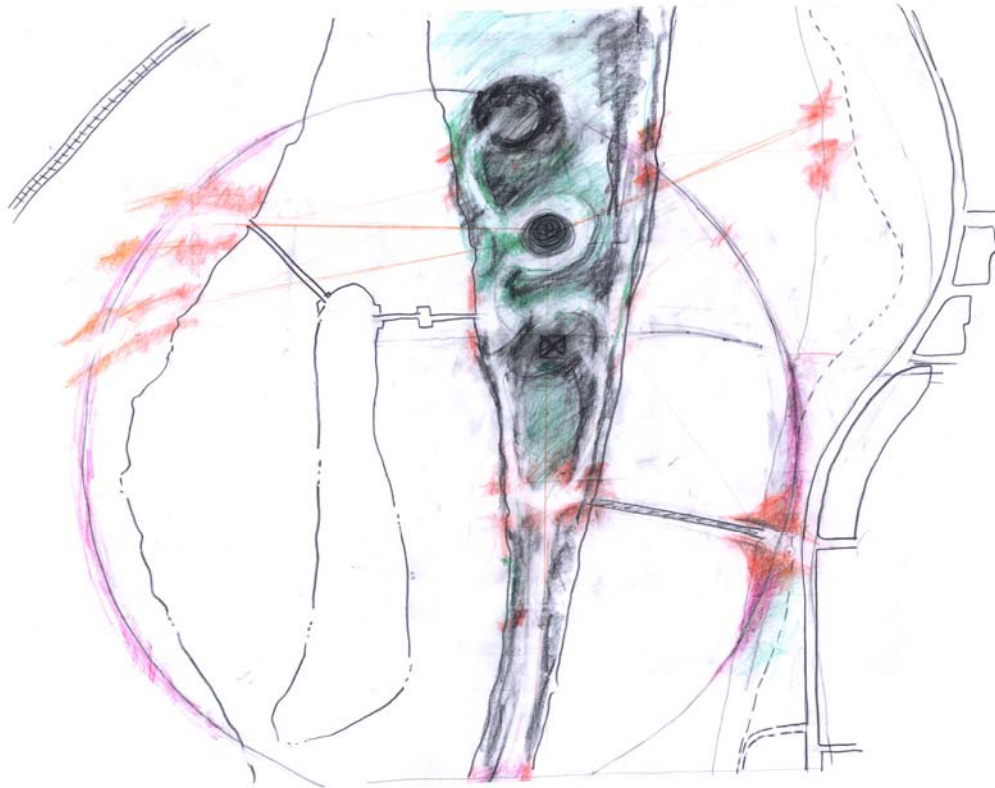


Figure 5.8 Study of grove location on Kingman Island.

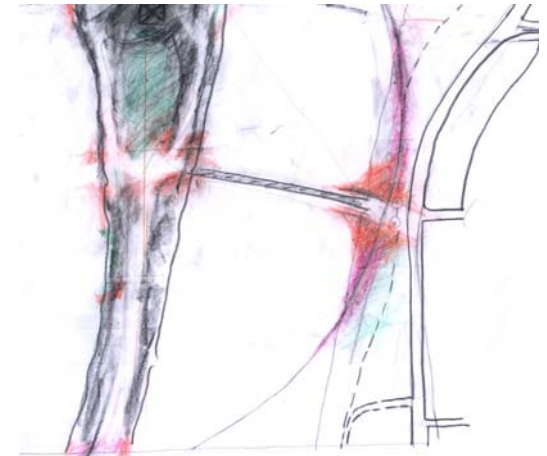


Figure 5.8 detail- A possible new connection to Kingman Island from River Terrace Community.

Placement of the Grove

In considering the qualities of the grove and the unique aspects of this site, it became apparent that the grove should not be located on Kingman Island, but should surround it. By placing the grove around the islands, the memorial creates a space which unites the surrounding neighborhoods, and is visible and accessible to more people. These islands are unique places in the city and this neighborhood. Placing a memorial grove on the Kingman or Heritage Islands would alter their wild character.

The final design scheme proposes a grove which creates a visible sacred space at an urban scale. Its large size acknowledges the enormity of the events of September 11. Its design creates a place for reflection and renewal. The plan connects the neighborhoods on both sides of the river to each other and to recreational areas along the Anacostia River. Its design honors the restoration of the river, and acknowledges a shift in attitudes toward a more ecological appreciation and treatment of our rivers. (Figure 5.11)

The placement of the grove on the shores of the Anacostia River makes the grove visible in the adjoining neighborhoods and to commuters and others passing through the neighborhood on Benning Road and East Capitol Street. By bracketing the Anacostia, it places the sacred center of the grove at a point in

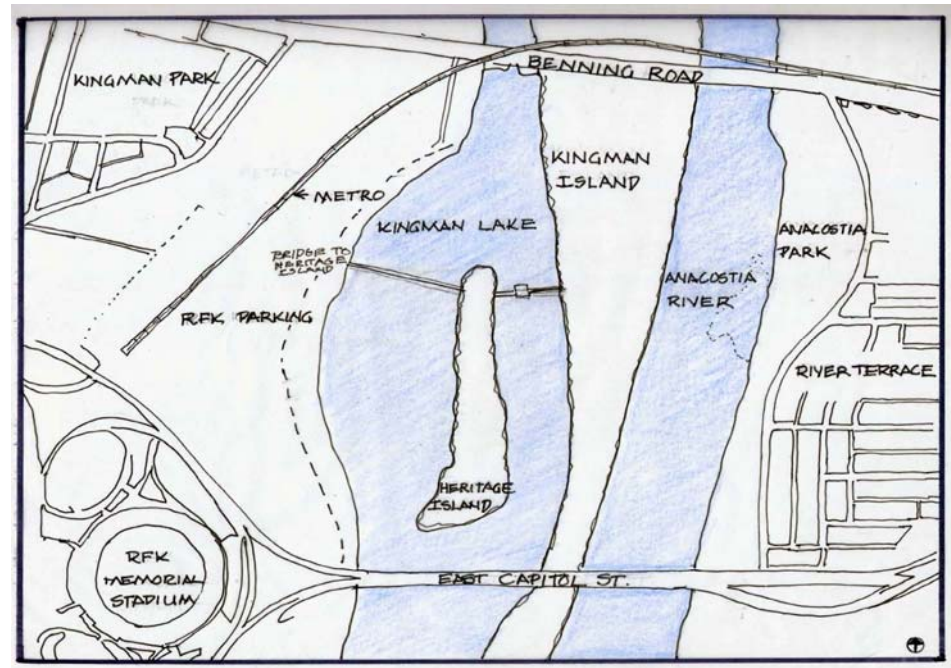


Figure 5.10 Site map.

Kingman Lake, and makes the Anacostia River, Heritage, and Kingman Islands the sacred spaces within the grove. The design of the grove signifies a paradigm shift in society's attitudes about the use of rivers and the environment. It reflects an environmental awareness which aims to reveal and reclaim degraded sites, and rebuild natural systems.

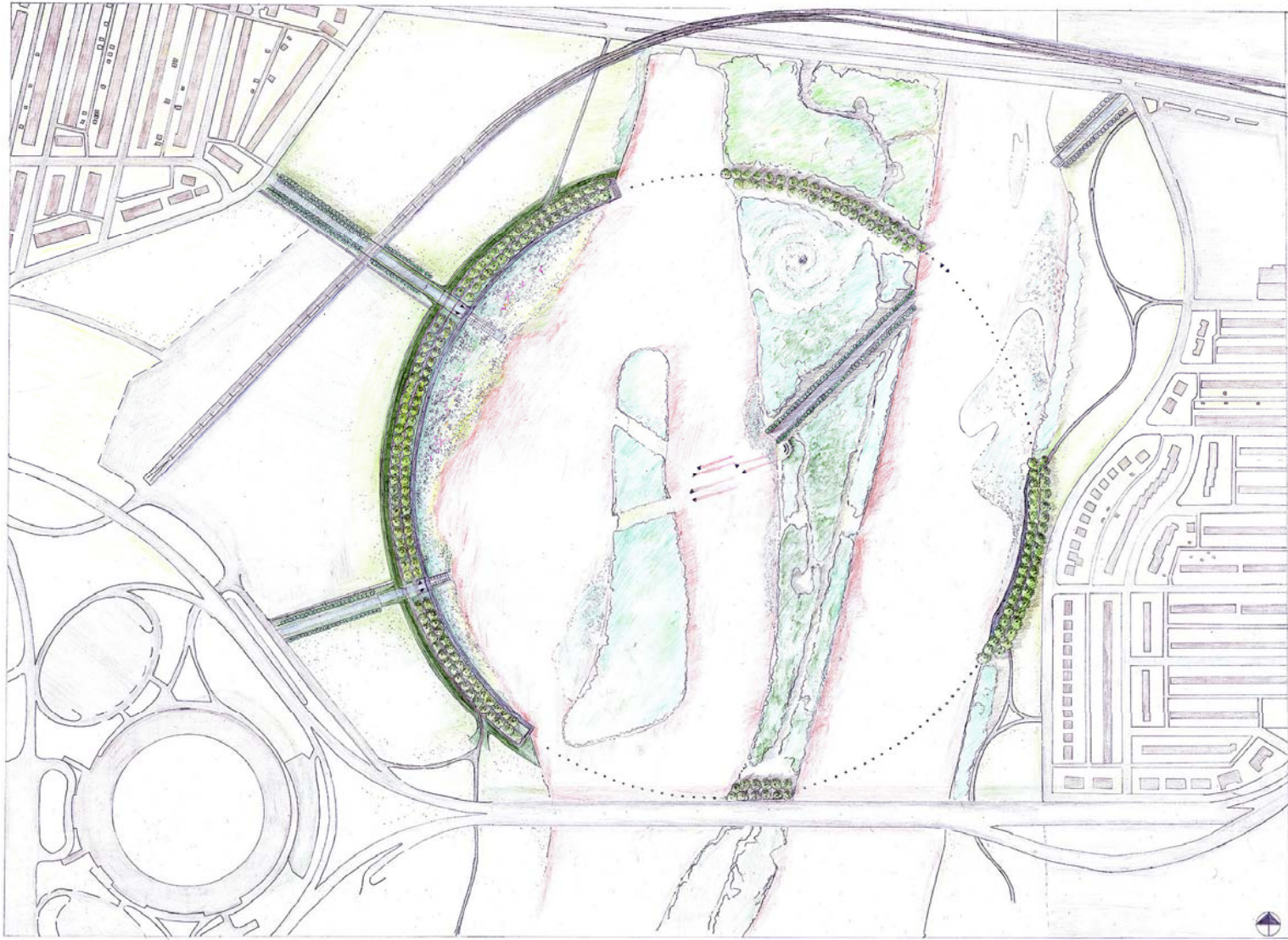


Figure 5.11 Final Memorial Plan.

The memorial grove is formed by a double row of American Sycamore trees (*Platanus occidentalis*) planted 25 feet on center. The sycamores shade new paths for walking and biking located on the east bank of the Anacostia River, and west bank of Kingman Lake. The grove continues through Kingman Island at a point just north of East Capitol Street and at a point just south of Benning Road.

The sycamore tree was chosen because it is a hardy tree that adapts well to urban environments. It is naturally found along rivers and streams, where the soil is moist and rich. The sycamore's large size, 60 feet to 100 feet, makes it a tree that is easily recognized, even at a distance. Their wide branching habit, muscular form, and interesting white, green and gray mottled bark, will provide year round interest. Its canopy will provide dappled shade, that will offer respite from the concrete parking lots, highways, and bridges which surround the site. The double row of sycamores will create a space where one could feel the protection of being inside a grove. (Figure 5.13)

On the RFK side of the site, the sycamore grove is planted on a mound. The mound and the grove of sycamore trees provide separation from the activities of the parking lot and the neighborhood. From this higher elevation one is able to have a better view of Heritage Island, the river marshes, and Kingman Lake. The long and gradual rise of the walk to the grove enhances the threshold experience. It reinforces the feeling of separation from the city, and the arrival at a place that is away from day to day urban experiences. The long approach, and the act of viewing the grove from a distance, is an important part of experiencing a grove.

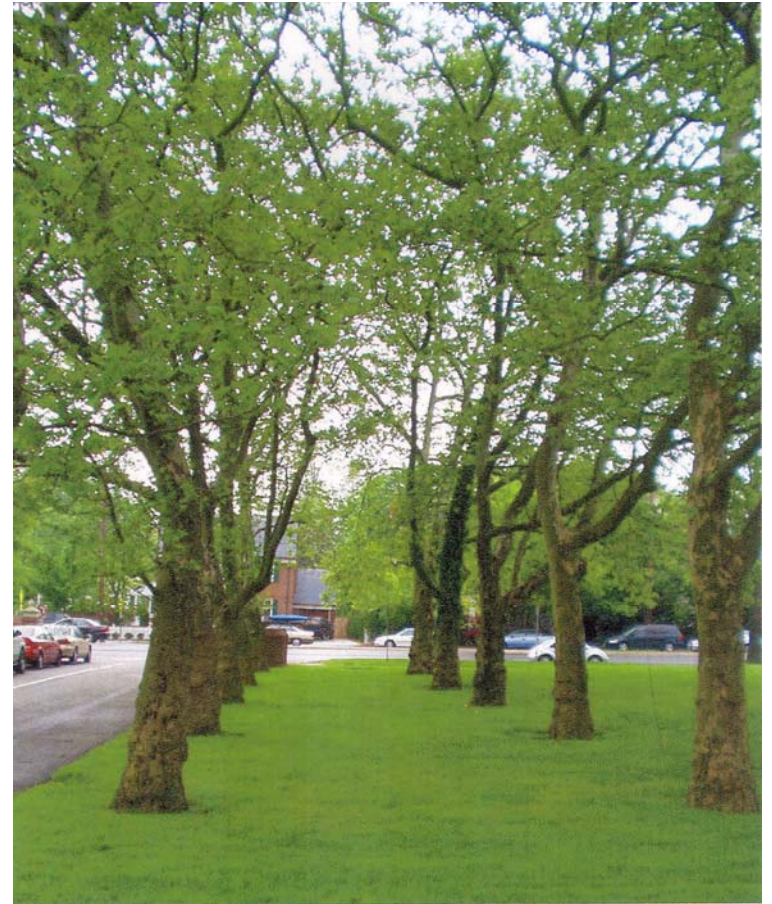


Figure 5.12 A double row of sycamore trees.

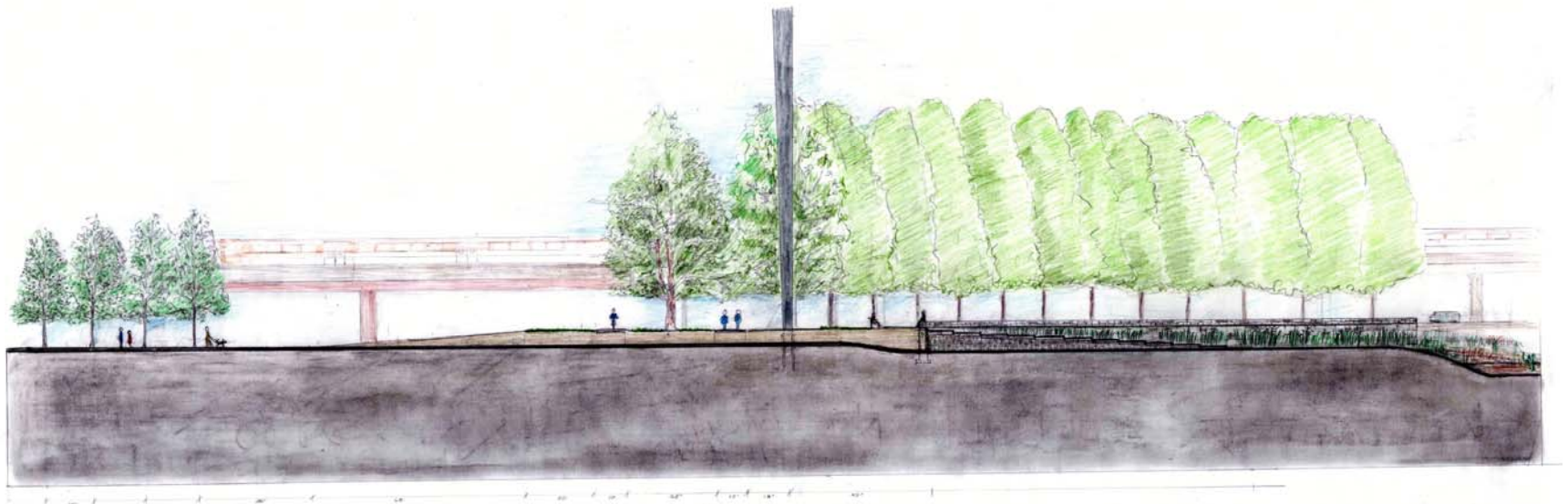


Figure 5.13 Section of grove and approach.

Walks and Paths

Paths of crushed granite provide access and intersect the grove from northeast, northwest and southwest of the memorial site. These paths follow radial vectors. (Figure 5.14) The vectors are described in the following section. As the walks enter the sector of the sycamore grove, the path material changes to Pennsylvania bluestone and granite cobbles. The pavement change signifies the arrival at the threshold of the grove. Separate crushed granite walking paths and asphalt biking paths are accommodated within the grove; they connect to paths which run north and south along the Anacostia River. (Figure 5.16) These radial walks continue as beaten earth paths, and cut through Heritage and Kingman Islands, towards the grove's center. (Figure 5.15) Piers and ramps faced with local gneiss stone extend out into the river and allow the visitor to have a more intimate experience of the river and the tidal marsh. Potomac gneiss stone is used throughout the capital region by the National Park Service. Its rustic and informal quality reveals the geological history of the Potomac Valley area.



Figure 5.14 Detail of walk to grove.

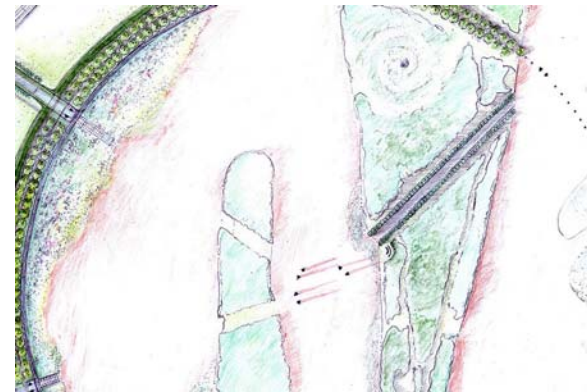


Figure 5.15 Detail of paths on islands.

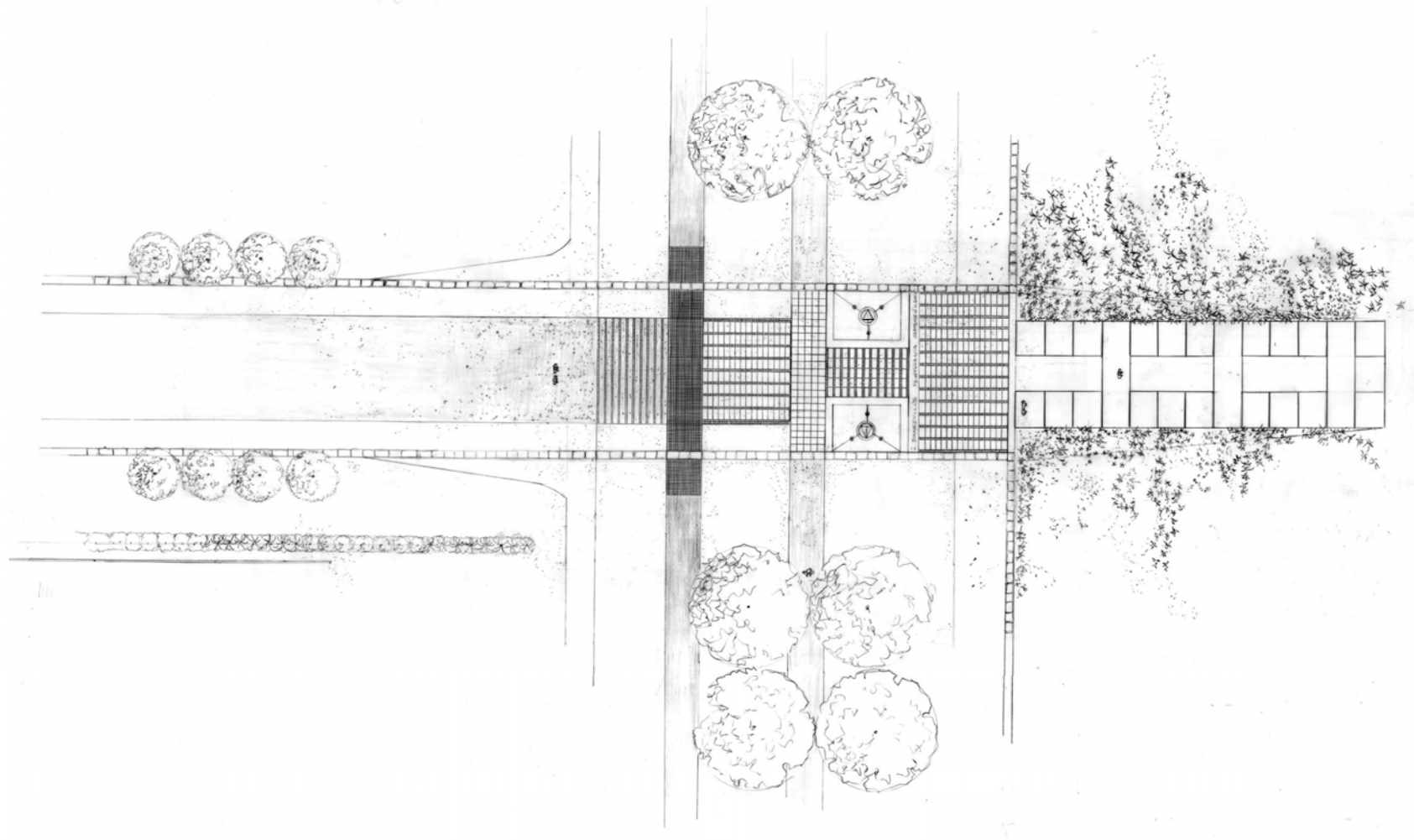


Figure 5.16 Plan of path and paving intersecting the grove.

River Terrace

The eastern part of the sycamore grove edges the Anacostia River in the River Terrace neighborhood. Here the grove functions as a sheltered place from which to view Kingman Island and the vector markers rising above the tree line. Hiking and biking trails in Anacostia Park thread through the grove and continue along the shore line. (Figure 5.17) The shelter of the grove allows visitors to feel removed from the neighborhood and to make a connection to the Memorial and the islands. (Figure 5.18)



Figure 5.17 Detail of Grove and trails in Anacostia Park.



Figure 5.18 Plan and Section of grove at River Terrace.

The Vector Markers

The events of 9/11 are referenced by vectors that converge at the Memorials center and create the most sacred space. The vectors link the Memorial to the three 9/11 sites: the World Trade Center Towers in New York City, the Pentagon, in Arlington, Virginia, and the crash site in Shanksville, Pennsylvania. (Figures 5.19 and 5.20)

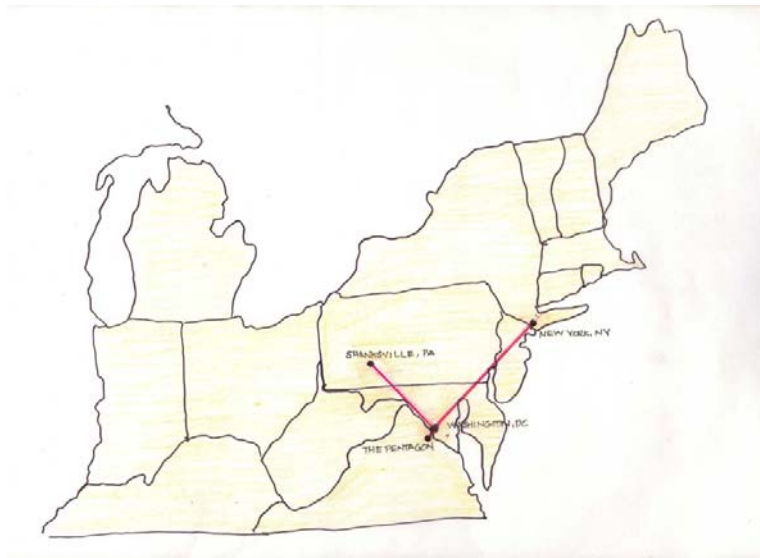


Figure 5.19 Vector Map of 9/11 crash sites.

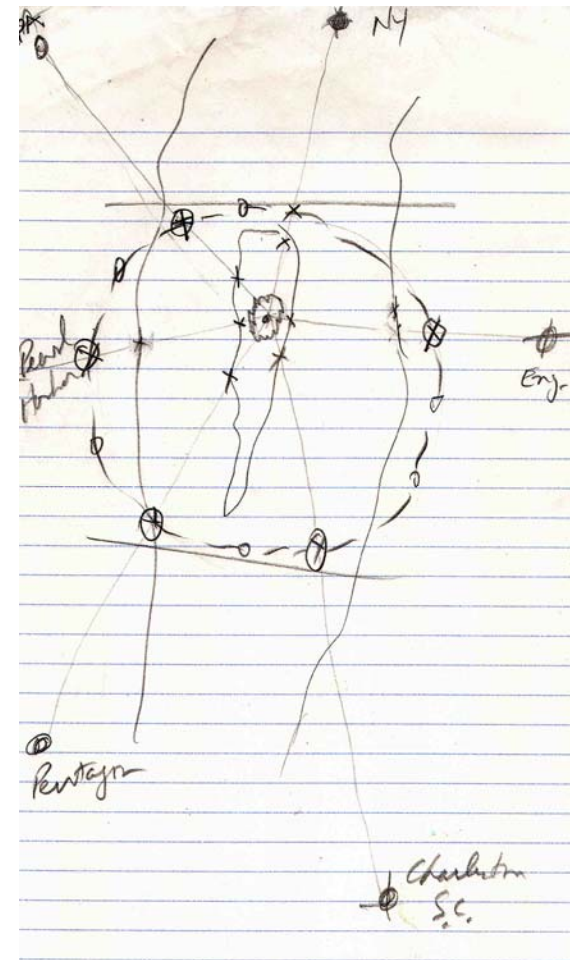


Figure 5.20 Concept sketch of vector connections.

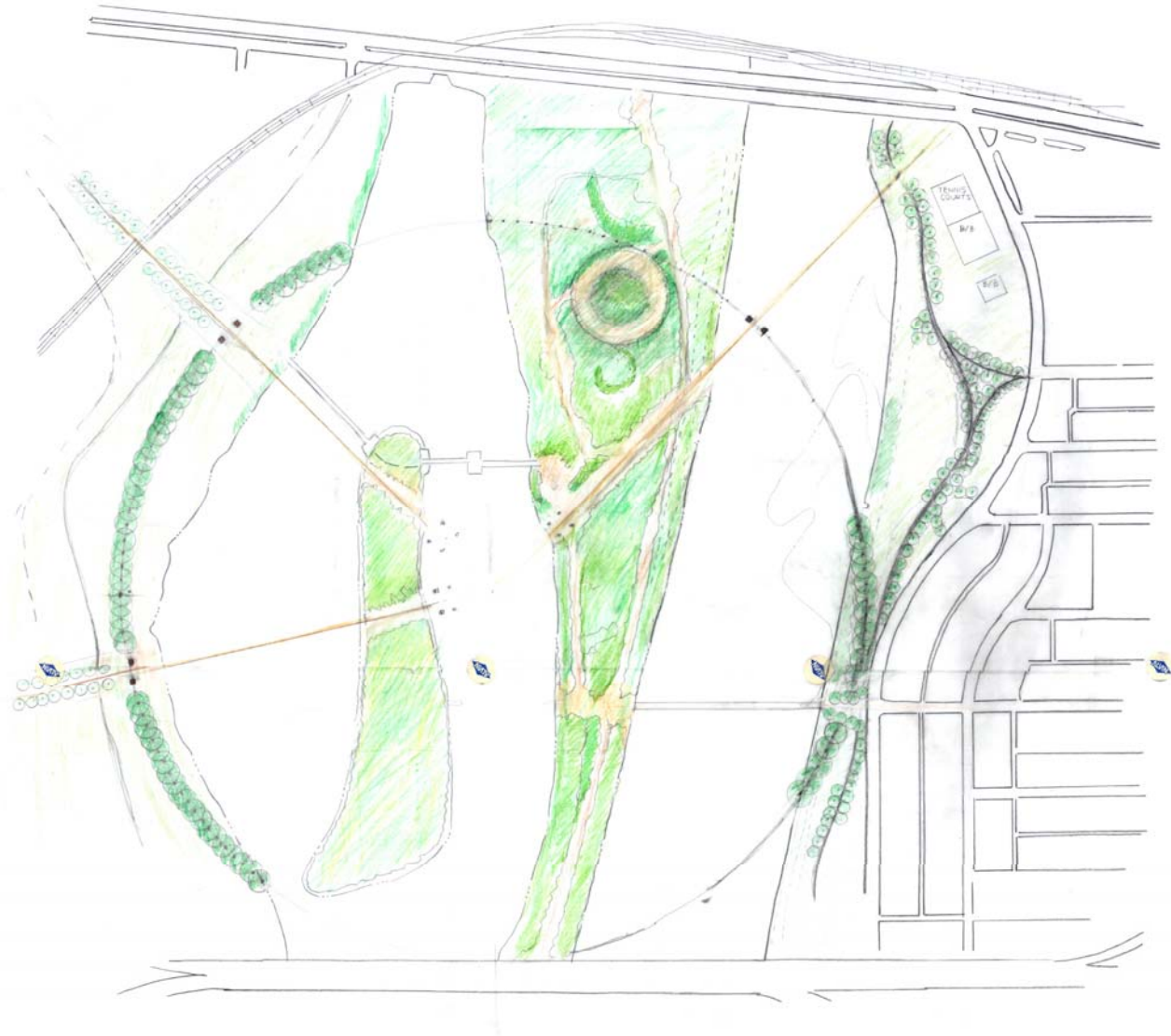


Figure 5.21 Concept drawing for vectors intersecting the grove.

Marking each vector are two pairs of gates formed by a pair of one hundred foot tall stainless steel towers. Pairs of towers marking the vectors to Shanksville, Pennsylvania and to the Pentagon are located within the sycamore grove on the western shore of Kingman Lake. The third pair, marking the vector to New York City rises from the Anacostia River on the eastern portion of the grove ring. The outer ring of gates is echoed by a second ring of gates located in Kingman Lake. The markers in Kingman Lake delineate the most sacred space, the center of the grove. (Figure 5.22)

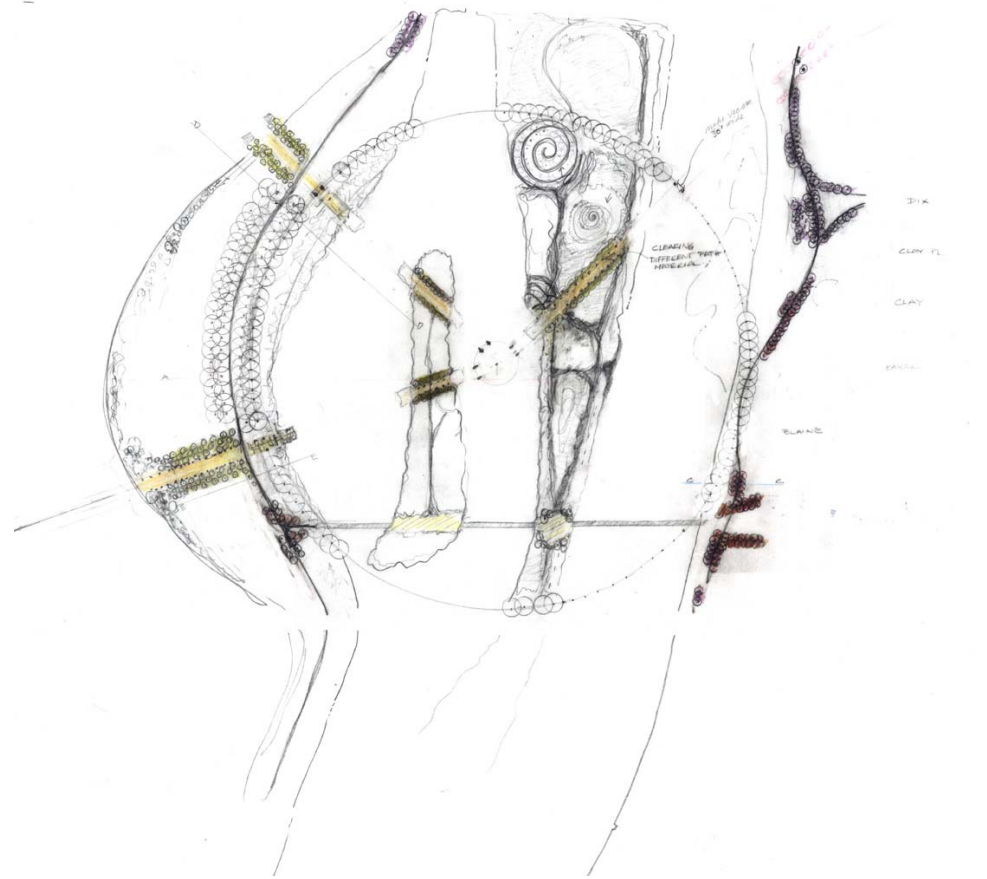


Figure 5.22 Process drawing of vectors and gates forming the central space.



Figure 5.23 Section of gate towers in Kingman Lake.



Figure 5.24 Section of grove, northwest vector.

The gate markers are constructed from Super Duplex stainless steel alloy. This material was chosen because of its superior resistance to pitting and corrosion. It is used to construct off shore drilling rigs, and is the material that will be used to fabricate the memorial benches for the September 11th Pentagon Memorial in Arlington, Virginia. The gate marker's reflective surfaces and great height will make them a dominate element in the landscape. (Figure 5.23 & 5.24) Long shadows from the gates will travel across the river's surface and reach out to the islands and bridges. (Figure 5.25)

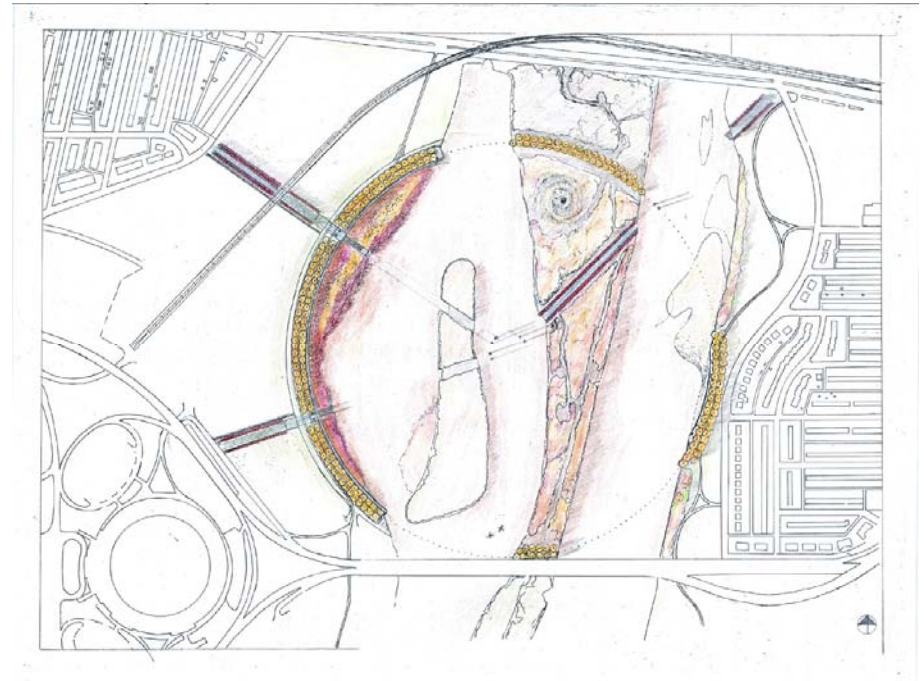


Figure 5.25 Plan of memorial grove in autumn.

The use of the shaft form as a memorial marker has its roots in ancient times. As early as 2000 BC the Egyptians used the obelisk as a memorial. Later uses of the obelisk as a memorial can be seen at La Place de Concorde, in Paris, where a single stone was relocated from Egypt and erected in 1836. In the United States, the Washington Monument, which is the world's tallest masonry structure, was built over thirty six years, from 1848-1884. A contemporary use of this form is seen in the design of James Ingo Fried's United States Air Force Memorial, in Arlington, Virginia. (Figure 5.26) In Germany a shaft form is used to mark a heritage trail in the Ruhr Valley. (Figure 5.27) Here giant markers referred to as "Map Pins" are used as way finders to indicate the location of historic and modern industrial sites. These "Pins" are linked to form the Industrial Heritage Trail, (Industriekultur im Ruhrgebiet). A more ephemeral use of this form was seen on March 11, 2002, the six-month anniversary of September 11th. A temporary memorial installation in New York City called *The Tribute in Light Memorial* was created by powerful spot lights, which projected a pair of light columns, above the Manhattan skyline. They were evocative of the missing World Trade Center buildings.



Figure 5.26 Air Force Memorial Model
Arlington, VA



Figure 5.27 Map Pin, Ruhr Valley Heritage Trail.

Marsh Plantings

The memorial design will continue in the restoration of the fresh water marshes along the Anacostia River, and new marsh plantings will be incorporated along the western bank of Kingman Lake. These plantings will include: High marsh or Meadow grasses, *Andropogon gerardi*, (BigBluestem), *Schizachyrium scoparium*(Little Bluestem),*Panicum virgatum* (Swicthgrass), *Sorghastrum nutans* (Indiangrass).In the low

marsh, plantings of *Scripus americanus* (Bulrush), *Iris Versicolor* (Iris or Blue Flag), *Pelandra Virginia* (Arrow Arum) and *Pontederia Cordata* (Pickerel Weed) will be added. These grasses will provide food and cover for birds and aquatic marine life and will help stabilize and filter pollutants in the lake and river. (Figure 5.28)



Figure 5.28 Marsh in Anacostia River.

Lighting

Lighted buoy markers are placed in the Anacostia River and Kingman Lake; they continue the arc and connect both sides of the grove. These buoys mark the path of the grove every day and draw attention to the grove at night. Each year, on September 11th, the memorial gate towers will be lit by vertical laser beams to commemorate the events of that day. Because this lighting occurs only once a year it will provide a special opportunity to reflect on the events of September 11, 2001. (Figure 5.29



Figure 5.29 Night lighting plan.

Design Strategy

In thinking about how to remember the events of 9/11, I thought about the Vietnam Memorial where Maya Lin's walls created vectors with the Lincoln Memorial and the Washington Monument. In doing so she tied the three monuments together in space and time, and connected the Vietnam Memorial to the early history of this country. Like the death of President Kennedy or Martin Luther King, the events of 9/11 are one of those occurrences that separate time in a profound way. Because of that day, life in this country and around the world will never be the same. No matter where a person is, they are connected to the events of 9/11 geographically by three vectors to the sites of the plane crashes.

In this design, the central gate markers form their own small grove. They can be seen from the East Capitol Bridge, Benning Road, and from Kingman Island. Because the river is shallow, the only way to physically experience the central space of the grove is in a shallow draft boat, such as a canoe. By making the most sacred part of the grove a point in the lake, it is only accessible visually to most. Because the center is only reached in the mind, it allows each one of us to reflect on the events of 9/11 privately. A decision was made to leave the central sacred space empty, a place where one can not stand, because it should be a place that no one occupies, and yet be a place that we can all equally share. Other memorials signify events in history which are closed and finished. The consequences of 9/11 are an ongoing process. We don't know what should occupy the center. The legacy of 9/11 should be life; the grove reaffirms this ideal.

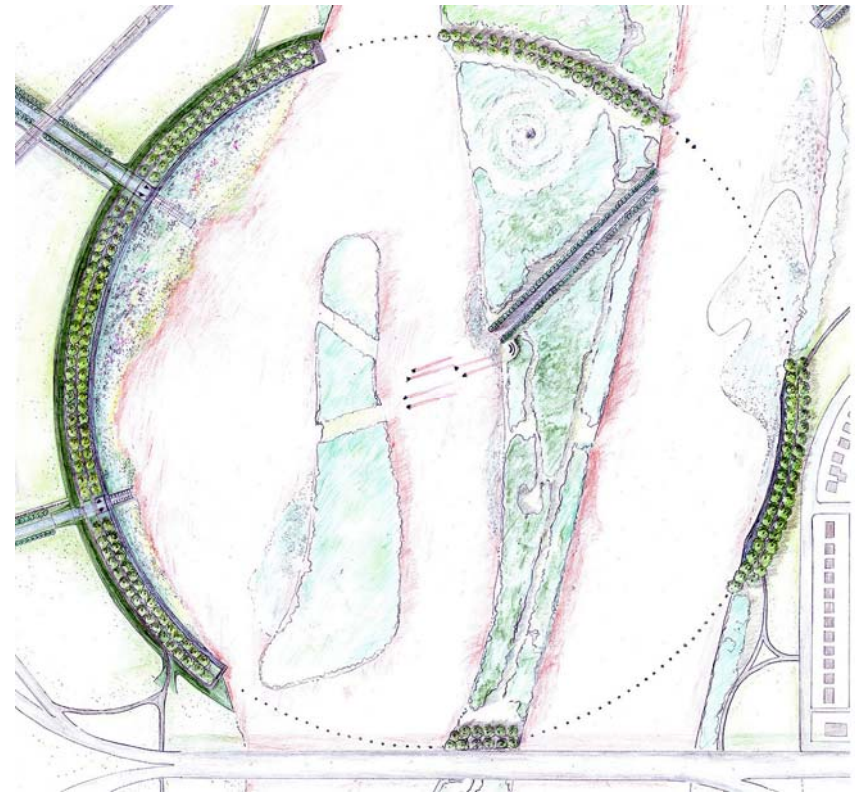


Figure 5.30 Memorial Grove plan.

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