

## ABSTRACT

Title of Thesis: REGIONALISM AND UNIVERSALITY ON THE BIG MUDDY: A NETWORK OF PAVILIONS ALONG THE MISSISSIPPI RIVER

Degree Candidate: Matthew Evan Herzberg

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Thesis Director: Associate Professor Brian Kelly

For over 2,500 miles, the Mississippi passes through distinct regions, each with unique climatic, cultural, geologic, and ecological traits. This thesis proposes a trail of pavilions along the full length of the Mississippi to encourage exploration of the river's diverse settings and cultures. A concept of regional and universal design will govern the form of each pavilion, the degree to which the pavilions resemble one another, and their environmental sustainability.

The Mississippi River plays an important role in American notions of Manifest Destiny. Its landscape and river towns are representative of American, rather than Eurocentric, typologies. However, as populations continue to migrate towards Sun Belt and Western cities and suburbs, and as commerce and shipping on the river face increasing competition from other modes, these towns face the prospect of becoming irrelevant. This network of pavilions proposes one way to reconnect these towns to the river and each other.

**REGIONALISM AND UNIVERSALITY ON THE BIG MUDDY:**  
A TRAIL OF PAVILIONS ALONG THE MISSISSIPPI RIVER

By

Matthew Evan Herzberg

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Advisory Committee:  
Associate Professor Brian Kelly, Chair  
Visiting Associate Professor Ronit Eisenbach  
Assistant Professor Angel David Nieves



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For my parents,  
without whose support  
this project would not have been possible.

## Introduction

For many Americans the idea of traveling the Mississippi River has a romantic appeal that is irresistible. It invokes images of a simpler America, the idea of “frontier,” of freedom, of adventure, of living by your wits, of what it means to be an American. In a sense it implies a voyage of self-discovery. On the other hand, for those of us who have a natural skepticism about our American myths, it suggests an escape into nostalgia and a yearning for things that are no longer relevant to the problems we currently face.

Harrison Fraker in The Fourth Coast

The sea is all about us...The river is within us...

T.S. Eliot

The name Mississippi comes from the Ojibwa word "Messipi," meaning big river and the Algonquin term “Missi Sepe,” meaning "father of waters." Throughout history, other names have been attached to the river. The Big Muddy, Old Man River, and The Mighty Mississippi are but a few of these monikers that describe the river and its role in the American landscape.

Whatever its name, the Mississippi River is a place of confluence. Blending diverse cultures, economies, and landscapes, the river plays a pivotal role in the historical and physical context through which we interpret the United States. The river’s 2600 miles weave through physical landscapes of surprising diversity: northern pine forests, steep bluffs, sun bleached cotton fields, and lowland bayous. The Mississippi watershed is the

literary landscape of Tom Sawyer and Huck Finn, the legendary landscape of Paul Bunyan, and the historical landscape of the Underground Railroad and of a nation split in two. This is where America becomes America as a state of mind.

In the culture of the river, it is often impossible to distinguish where one physical, literary, legendary, or historical landscape ends and another begins. Myth and reality mix freely, from the exploits of the soul-selling bluesman Robert Johnson to the half-truths of Mark Twain's Small-Town USA. However, the Mississippi's straddling of fact and fiction is both a blessing and a curse. While the river remains relevant as a cultural idea, it is sometimes a difficult objective to form rational judgments about the river and its surrounding towns. In actuality, the Mississippi in many places has become polluted and neglected. While river towns seek to preserve historic mainstreets and houses, they continue to turn their backs on the river itself.

To help people rediscover and explore their connections to the river, I propose a network of interpretive pavilions that will serve research, educational, and advocacy goals relating to the Mississippi and its towns. Because of their size, small towns have great potential to forge meaningful and tangible relationships with the river and surrounding natural environment. Furthermore, many river towns in the 21<sup>st</sup> Century are struggling to define their existences. Their bucolic settings and downtowns are threatened by urban sprawl, and the forces of globalization threaten their diverse cultures. The urban form they exhibit reveals ambivalence or even hostility towards the river. Undoubtedly some of this is out of necessity, as the floods of 1993 proved that the Mississippi is still an active and

temperamental neighbor. This has led many towns to construct levees and revetments along the river. Beyond the physical barriers, however, the lack of quality public space and edge definition reveals that towns have yet to define how the river will contribute to their future.

Addressing these issues is no small task. This project seeks only to propose one way that river towns may reconnect physically and theoretically with the Mississippi, their original reason for being. The work contained herein is based on the assumption that a tangible connection to the water is mutually beneficial for both the towns and the river. Such a connection is one way for the environmental issues facing the river to be made known and to provide a framework for turning the riverfront into a positive edge. The urban interventions at each site are not intended to be wholesale waterfront redevelopment master plans but will focus on a specific goal: the connection of the built environment to the natural environment.

The vehicles for this undertaking, the pavilions, highlight a theory of regionalist design in search of an architectural language rooted in the *genius loci* or “spirit of the place.” By drawing on local geography, climate, culture, and custom, the pavilions affirm these towns as special and unique, relevant not only in the context of American myth but also in the reality of the contemporary world.

# Chapter 1: The Mississippi River as Site

## 1.1 Geography of the Mississippi River

The Mississippi river runs over 2,500 miles from its headwaters in Itasca State Park in Northern Minnesota to its mouth south of Venice, La.

Along the way, it is joined by countless tributaries, most notably the St. Croix at Hastings, MN, the Missouri above St. Louis, MO, and the Ohio at Cairo, IL. It flows through or borders ten states: Minnesota, Wisconsin, Iowa, Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana (figure 2).

The Upper Mississippi, generally defined as the stretch of river above Cairo, IL, is compact and moves quickly. It is bounded by high bluffs that lead down to narrow flats. In some places, the river seems quite remote, as the steepness of the land makes getting to the river a deliberate task. Towns line the river's edge in places where the flats are wide enough to accommodate them. Although they remain rail and barge hubs,

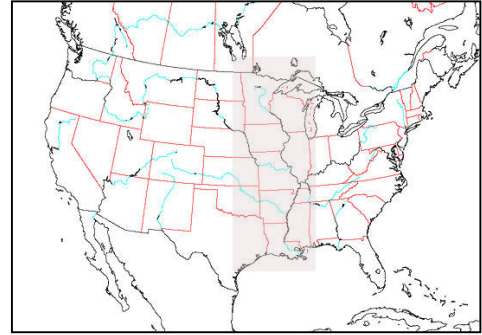


Figure 1. United States

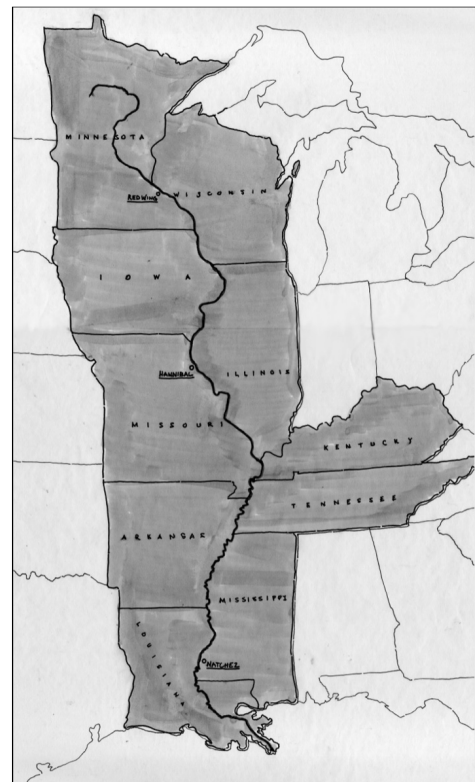


Figure 2. Mississippi River States

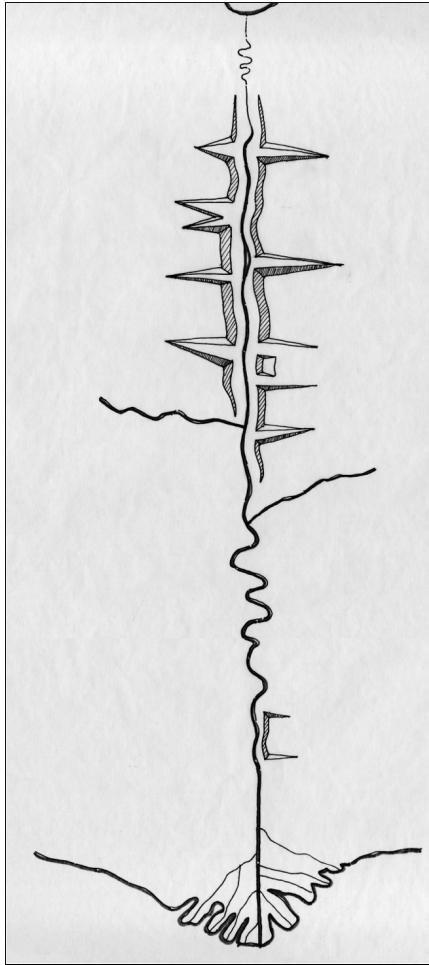


Figure 3. Geology of the river

many of these places have remained small and geographically distinct, as highways and sprawl bypass them on the bluffs above. However, these towns exist “not in isolation, but as part of a network of culture, commerce, and myth that is symbolized by the river itself” (Gass 64)

Below Cairo, the river passes over a geological embayment and begins to meander dramatically. Its pace becomes listless, and it frequently overflows the banks of the alluvial valley that runs the last 600 miles of the river to the Gulf. Through a series of concrete revetments, the Army Corps of Engineers has harnessed, shortened, and straightened the river to some degree. However, despite this definition of its banks, the Mississippi ambles and weaves through the

South and over the years has reclaimed lost miles by breaking through levees and eroding revetments. Towns and cities have grown up here only where there has been enough money and will to continuously fortify them against the forces of the river through the use of levees. The landscape is characterized by earth furrows, drainage channels, catfish farms and cotton, rice, and soybean fields.

## 1.2 Photo Tour of the Mississippi River



Figure 4. Key to photos



Figure 5. Headwaters at Itasca State Park, MN



Figure 6. River outside of Bemidji, MN



Figure 7. River near Little Falls, MN



Figure 8. The Weisman Museum at the University of Minnesota



Figure 9. Lake Pepin, Mississippi River, near Lake City, MN



Figure 10. Lock at Alma, WI





Figure 11. Main Street and bluff, McGregor, IA



Figure 12. Perrot State Park, WI, in the Driftless Region



Figure 13. Dam at Guttenberg, IA



Figure 14. Lock at Guttenberg, IA



Figure 15. River above Hannibal, MO



Figure 16. Riverfront, St. Louis, MO



Figure 17. Confluence of the Mississippi and Ohio rivers at Cairo, IL



Figure 18. Riverfront, Memphis, TN



Figure 19. Sandbar, Great River Road State Park, MS



Figure 20. Loading a barge on the Helena, AR waterfront



Figure 21. River outside of Vicksburg, MS



Figure 22. The end of the road at Venice, LA



### **1.3 Significant Dates in Mississippi River History**

#### **900-1400 AD – Height of Mississippian Mound Builders**

Native American settlements along river the date as far back as 600 BC, but an urban civilization prospered here between 900 and 1400 AD. The remainders of this civilization exist today in the form of earthwork town sites and effigy mounds. Cahokia, on the Mississippi river in present-day Illinois, was the largest Mississippian city. The civilization went into decline and vanished before the arrival of Europeans to the area, and the reasons for this are not fully understood.

#### **1541 – Explorations of Hernando DeSoto**

The first European to reach the river was Hernando de Soto, who did so on May 8<sup>th</sup> 1541. De Soto at the time was wandering the Southeast in a futile search for gold. He was notorious for his ruthless and duplicitous dealings with Native Americans, and he died on the river's banks one year later, hopelessly lost after having been intentionally misled by Native



Figure 23. Hernando DeSoto  
(Young Peoples' Cyclopedia of  
Persons and Places)

Americans. Having told the local population that Christians were immortal, his men concealed his body, wrapped it in blankets weighted with sand, and sunk it in the river.

### **1682 – Claiming of the River**

In 1682, French explorer Rene Robert Cavelier, Sieur de la Salle, reached the mouth of the Mississippi at the Gulf of Mexico and claimed the surrounding land for France. He named the territory Louisiana, after Louis XIV. The colony he established was a failure, but by the end of the Seventeenth Century, stories about Louisiana were spreading across France and other parts of Europe, and Europeans began settling the Mississippi Valley.

### **1803 – Louisiana Purchase**

On April 30, 1803, France agreed to sell over 800,000 square miles of land to the United states for \$15 million. Included in this purchase was the entire flow of the Mississippi River. In seeking a deal, Thomas Jefferson faced significant opposition from Federalists, who believed that the proposed sale was unconstitutional. In fact, Jefferson initially sought only the city of New Orleans, but when Napoleon offered the entire territory of Louisiana at a cost of three cents per acre, Jefferson pushed the deal through congress, more than doubling the size of the United States.

### **1804 – Lewis and Clark Expedition Departs St. Louis**

On May 14, 1804, the Corps of Discovery began their journey in St. Louis to find a water route to the Pacific, ushering in the idea of Manifest Destiny. Among the many milestone achievements of the voyage was one in particular that echoed the greatest social aspirations of the



Figure 24. Lewis and Clark on the Lower Columbia, Charles Marion Russell, 1905

United States. At Fort Clatsop in the winter of 1805, a vote took place in which, for the first time in American history, an African American and a woman were allowed to participate.

### **1811 – New Madrid Earthquake**

The New Madrid Earthquake, which occurred on December 16, 1811, remains the largest recorded earthquake in United States history. The epicenter of the quake was near the small river town of New Madrid, Missouri, named for the fault line that crosses the region. The quake, which was large enough to ring church bells in Boston, caused widespread upheaval of the landscape. Legend has it that at one point the Mississippi even reversed its flow. While the loss of life was minimal, the earth swallowed up whole tracts of land. One result of the quake was the New Madrid Relief act, which deeded land upriver to farmers who had lost theirs to the earthquake.

This facilitated the development of river towns such as Red Wing, Minnesota.

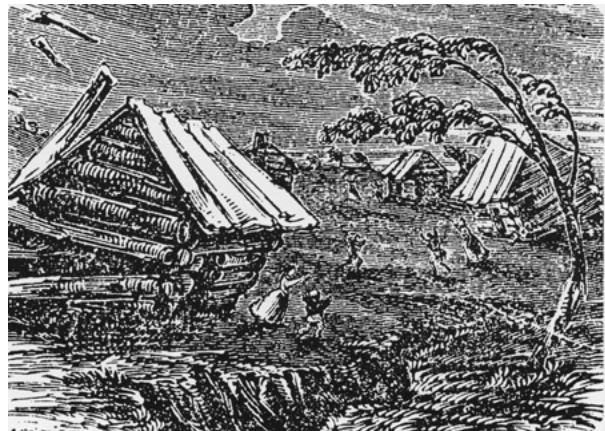


Figure 25. The New Madrid Earthquake, unaccredited

### **1832 – Discovery of the Headwaters**

Despite being plagued by “voracious, long billed, and dyspeptic musketoes,” Henry Rowe Schoolcraft, aided by an Ojibwa chief, was finally successful in locating the source

of the Mississippi River. He named the lake “Itasca,” from a combination of the Latin words for “truth” and “head,” *veritas caput*.

### **1812 – First Run of the Steamer *New Orleans***

The world’s first steamboat, the *Clermont*, was designed and built in 1807 by Robert Fulton on the Hudson River in New York. Only five years later, the steamer *New Orleans* traveled downriver from Natchez to New Orleans, and the age of steam power was under way. For the next fifty years, Mississippi river steamboats would be the principal mover of people and goods

through the middle United States. This travel was not without its risks.

Steamboat boilers were notoriously volatile and the river they traversed was still dangerous, especially at night. As

Ambrose and Brinkley write, “The

average life of a steamboat was reckoned at five years; after that it could be fairly sure of coming to a violent end” (158). Images of the steamboat era have inspired countless literary, theatrical, and cinematic endeavors, not the least of which, *Steamboat Willie*, introduced steamboat pilot Mickey Mouse to America.

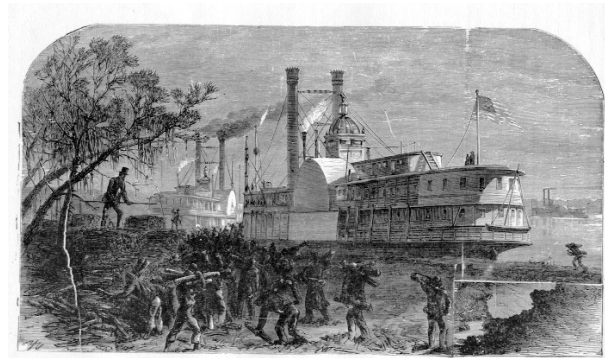


Figure 26. Steamboat (*America Illustrated*, 1882)

### **1863 – Battle of Vicksburg**

As the last Confederate stronghold on the Mississippi, Vicksburg was of significant importance to both the North and the South. Beginning in the spring of 1863, several

bloody skirmishes took place in the countryside around Vicksburg in a Union effort to cut off supply lines. After two efforts failed, General Ulysses Grant began a siege of the town, which led to a Confederate surrender on July 4. By taking Vicksburg, the Union accomplished two goals. First, Union armies could now travel freely up and down the full length of the river. Second, the capture of Vicksburg and the river isolated Texas, Arkansas, and Louisiana from key supply lines, effectively splitting the South in two and turning the tide of the war irrevocably to the North. After receiving news of the successful campaign, President Lincoln remarked that “the Father of Waters again goes unvexed to the sea.”

### **1927 – The First Great Flood**

Beginning in the early 1830s, the Army Corps of Engineers was charged with building revetments and levees along the river to control its flow and prevent flooding. However, between 1926 and 1927, rain and snow fell at a rate ten times above average. The Corps remained confident that the levees would hold and refused to plan for any alternative means of relieving the rising waters. Still the rains fell. African American plantation workers were enlisted to build up the levees

Memphis and Vicksburg, the low-laying Mississippi Delta. Despite their tireless efforts, on April 21, the levee broke. Within ten days, 26,000 square miles were flooded by water 10 feet deep, and the river was 70 miles across at its widest. Efforts were undertaken



Figure 27. Overrun levee, 1927. (US. Army Corps of Engineers)

to rescue the 15,000 African American workers trapped on the levees. Plantation owners protested the evacuation, knowing that if African American's found a way out of the Delta, they would never return. The political clout of the plantation owners was great, and in a sad display of racist inaction, evacuation efforts were abandoned and refugee camps were instead set up on the levees. However, the flood, along with the development of mechanical picking machines, is considered to be one of the significant events that led to the Great Migration of rural southern African Americans to northern cities.

### **1930 – Rivers and Harbors Act**

The first navigational lock on the Mississippi was completed in Minneapolis in 1917, allowing boats to travel past cataracts in the river that had previously made travel difficult. However, following the flood of 1927, the U.S. government began to take the control of the river more seriously. The Rivers and Harbors Act of 1930 authorized the creation of a continuous 9-foot deep channel between St. Paul, MN, and the Gulf. This was achieved by a series of locks and dams and by dredging. Twenty-three new locks and dams were built on the upper Mississippi, bringing the total to twenty-six by the mid-1930s.

### **1993 – The Second Great Flood**

Despite the work of the Army Corps of Engineers, the Mississippi today is still an active force capable of reshaping the physical landscape. The Corps has often been accused of overestimating itself and underestimating the river, and this was proved true once again



in 1993. Following a spring of extreme rainfall on the Upper Mississippi, water levels rose to record heights. Throughout the summer, levees up and down the Illinois and Missouri shores would break or be crested by the swollen river, inundating towns and farmland. In some cases, it would be two hundred days before the floodwaters finally receded. Though the area of land flooded in 1993 was less than in 1927, the economic impact was far greater. For example, the Mississippi was closed to navigation throughout the summer, resulting in an estimated loss of \$2 million a day in commerce. [footnote]



Figure 28. Burlington, IA during the Flood of 1993. (Louis J. Maher, Jr.)

## 1.4 Significant Figures in Mississippi River History

### Louis Armstrong

Born in 1901 to a poor New Orleans family, Armstrong is credited with turning jazz from unrefined regional dance music to a major international art form. In his early years, Armstrong often performed on Mississippi River boats.

### Jacob Burkle

Burkle immigrated to Memphis from Germany in 1850 to avoid military conscription. Soon after his arrival, he established the first stockyard in Memphis and was embraced by the Southern aristocracy. However, after witnessing the shocking treatment of African American slaves, he became a major figure in the Underground Railway and helped thousands of slaves to escape up the Mississippi River.

### T.S. Eliot

Though he never returned to his hometown of St. Louis, the Mississippi influenced the poet's work. Eliot once wrote "that there is something in having passed one's childhood beside the big river which is incommunicable to those who have not." The protagonist in his epic poem *The Love Song of J. Alfred Prufrock* was named for a St. Louis warehouse that still stands along the levee.



Figure 29. T.S. Eliot, unaccredited

### **Mike Fink**

Before the steamboat era, keelboats plied the water under the power of teams of polemen, the most famous of which was Mike Fink. Notorious for his hard drinking and hard fighting ways, Fink once claimed that he could “out-run, out-jump, throw down, drag out, and lick any man in the country.” No doubt due in part to his self-promotion, a significant amount of legend is attached to his name. These stories represent a more lawless and wild period of the history of the Mississippi that vanished with the advent of steamboats.

### **F. Scott Fitzgerald**

Born in St. Paul, Fitzgerald featured the Mississippi features in several of his stories. However, Fitzgerald’s river was not one of adventure and romance but rather one of dilapidated misfortune. Indeed, by the time Fitzgerald was writing in the 1920s, railroads had replaced the river as the chosen means of transport, causing many cities, including St. Paul, to abandon their waterfronts. As he wrote in *The Popular Girl*, “Crest Avenue ran along the bluff, but neither faced it nor seemed aware of it, for all the houses fronted inward toward the street.”

### **W.C. Handy**

This bluesman, who grew up on the Delta, is credited with turning the music of poor disenfranchised African American southerners into a nationally recognized style. From his office on Beale Street in Memphis, he published sheet music that helped to turn the blues into a well-known musical genre.

### **Robert Johnson**

Though he only recorded 29 songs in his lifetime Robert Johnson is credited with popularizing and refining what would become known as the blues. Like keelboater Mike Fink, a considerable amount of legend surrounds Johnson's short life. It was said that he met the Devil at the crossroads of Highways 61 and 49, and sold his soul for in exchange for his formidable guitar skills. This story has played a large role in the subsequent development of blues iconography. Johnson died in 1938, after allegedly having been poisoned by a jealous husband.



Figure 30. Robert Johnson, unaccredited

### **John Murrell**

From the late 1700's through the mid Nineteenth century, the river was plagued with bandits, murders, and thieves. Most famous of them all was John Murrell – horse, cattle and slave stealer, steamboat hijacker, and murderer. He maintained several hideouts along the Mississippi and would often approach unsuspecting victims dressed as a traveling preacher. Today, the Tennessee State Historical Society maintains an exhibition about Murrell, which includes, among other artifacts, the bandit's severed thumb.

## Joseph Smith

After a series of bloody skirmishes with local residents that led to the Mormons being expelled from Missouri, Smith, the founder of the Mormon church, bought a large plot of land on the Mississippi River in Illinois in 1839. He founded the settlement of Nauvoo, which he intended to become the seat of a great inland empire. Though the town would at one point be the largest in Illinois, the local economy soon slowed. Several of his political moves angered local non-Mormons and alienated some followers. After being ordered to return to Missouri to face charges that he destroyed the offices of an opposition newspaper, he was imprisoned. While in jail, a mob broke in and shot him dead. Following Smith's death, growing anti-Mormon sentiment led Brigham Young to bring most of the residents of Nauvoo west to Utah.

## Mark Twain

Describing in detail Mark Twain's relationship to the river is well beyond the scope of this project, but it is hard to overestimate the influence that he had in bringing the Mississippi River and small town America to the forefront of popular consciousness. The river was the setting of his two most famous novels, as well as the semi-autobiographical, semi-mythological *Life on the Mississippi*. In describing the river itself, Twain once remarked that "every

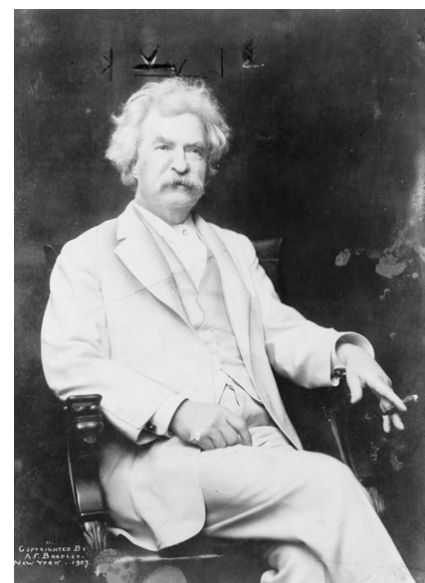


Figure 31. Mark Twain. (1907, A.F. Bradley)

tumblerful of it holds nearly an acre of land in solution...the land is very nourishing, the water is thoroughly wholesome...but the natives do not take them separately, but together, as nature mixed them.” In essence, Twain’s Mississippi was intermixed, interdependent, and indistinguishable from the cultural landscape of America and, after being consumed, inseparable as well from the people who lived along its banks.

### **Richard Wright**

Writer Richard Wright was born in a sharecropper shack in the Delta. He left Mississippi in 1927 during the Great Flood. The destruction made a large impression on him though, and in later years he wrote three short stories revolving around the flood. The City of Natchez, where Wright once lived, features prominently in his most famous novel, *Black Boy*. Of the river, Wright wrote “There was a vague sense of the infinite as I looked down upon the yellow, dreaming waters of the Mississippi.”

## **1.5 Attractions on the Mississippi**

### **Cities**

There are four major metropolitan areas along the river:

Twin Cities (population 2,968,806)

St. Louis (population 2,603,607)

Memphis (population 1,135,614)

New Orleans (population 1,337,726)

### **Museums**

The Mississippi River area is filled with a variety of different museums relating to the river's history and culture. As expected, the relative quality of these museums varies widely. However, this does not diminish their significance as cultural artifacts. Two museums, one in Dubuque, IA and one in Memphis, TN, bill themselves as National Mississippi River Museums. A third is planned for New Orleans, LA. Other attractions on the river are devoted to such arcane topics as pearl buttons (Muscatine, IA) and the grave of Norma Jean the Elephant (Oquawka, IL).

### **Towns**

Historic towns such as Galena, IL and Hannibal, MO, are popular tourist destinations. Many include restored historic homes, most notably from the Victorian era, that are open to the public.

## **State Parks and Wildlife Areas**

There are countless state parks along the river, including the National Mississippi River Recreation Area in Minnesota and the Great River Road State Park in Mississippi.

## **Great River Road**

The Great River Road (GRR) is a network of signposted roads and attractions along the river. Each state administers its own part of the system, so the quality of signage varies greatly from state to state.

## **Mississippi River Trail**

A 2000 mile bike trail is currently under construction that will eventually make it possible to bike from the Headwaters of the river to Venice, LA, the last municipality on the river accessible by land. Route markers will assist riders in traveling the river.

## **Riverboats**

Currently, three cruise lines operate trips on the river on newly designed paddlewheel riverboats. The boats stop at big cities, as well as small towns of interest and other points of interest.



## Chapter 2: Regionalism

### 2.1 A Framework for Regionalist Design

The term *Regional*, when used in describing architecture, concerns buildings and constructive methods that are indigenous to a particular region. This vernacular architecture responds to cultural and climatic needs for a given time and place. It is by nature culturally and environmentally sustainable because the vernacular depends on locally available materials, labor, and expertise. And since the vernacular generally originates before the widespread use of mechanical climatic responses such as air conditioning, it uses other methods to mitigate the natural environment. In addressing the unique cultural and environmental needs of a place, a unique architectural language develops. The resulting forms contribute to what theorist Christian Norberg-Schulz terms the *genius loci*, or spirit of the place. For example, the heavy adobe-walled structures of the American Southwest and the high-ceilinged and open mansions of the American Southeast both derive their formal characteristics from a diverse set of requirements. And by doing so, they contribute to the character of each particular place.



Figure 32. Shotgun houses, Belle Chasse, LA

*Regionalist* architecture, on the other hand, refers not to the vernacular but to a contemporary response to the vernacular. There are many possible interpretations of what regionalist architecture is and should be. Theorist Kenneth Frampton in his essay, “Prospects for a Critical Regionalism,” advanced one of the most influential concepts of regionalism to date. Frampton states that the Modern movement passed over two essential elements of traditional architecture: tectonics and a site-specific response to place. Frampton does not advocate the incorporation of traditional stylistic elements but, rather, the concepts behind them. Tectonics matters because it represents an awareness of local building methods and materials, both of which contribute to an architecture that is environmentally and culturally sustainable. Furthermore, Frampton does not believe that regionalist architecture should necessarily reject outside influence. Rather, he believes that designers need to be conscious in their decision to adopt or not adopt a particular innovation or design method. And when they do adopt, they must do so in a way that gracefully incorporates the new with the old, so that each may benefit and inform the other.

This idea about regionalism is based on the experiential qualities of the vernacular. Thus, the way human users interact with the building, and the way the building interacts with the site are of supreme importance. This notion serves two goals: To minimize the environmental impact of the structure and to connect, in a tangible way, with the building and site.

As Juhani Pallasmaa writes, “the artistic dimension of a work does not lie in the actual physical thing; it exists in the consciousness of the person using it” (Nesbitt 499). This idea hints at a theory of phenomenology that can contribute to a meaningful conception of regionalist design. Essentially, phenomenology is a method of inquiry into experience, and it is concerned with how experience is represented in consciousness. In other words, it is not the window that is important but what we see when we look out the window. For Pallasmaa, the most important architectural experience is the sense of being in a unique place, and the visual appearance of a building is considered only as one part of the experience. Sensations of touch, smell, and hearing are equally important. Architectural character is thus derived first from the interactions between building and user and building and site. A building composed of flexible and manipulable spaces encourages this interaction and therefore an awareness and analysis of the external environment. Furthermore, the more flexible a building is, the longer its lifespan will be.



Figure 33. Visitor Center. Itasca State Park MN

The goal of this thesis is to tangibly illustrate these ideas and, in doing so, also illustrate the similarities and differences among the regions of the Mississippi River. As such, the following seven points will govern the design of the pavilions:

1. The architecture must be an expression of the time and place in which it is constructed.
2. The designer must consciously choose which aspects of the vernacular and which aspects of the universal that the architecture adopts.
3. The architecture must glean from the local vernacular appropriate responses to climate site and culture.
4. The architecture must only borrow design principles, not stylistic elements, from the vernacular.
5. The visual appearance of the building will be derived either from the direct expression of design principles or the expression of their image.
6. The arrangement of architectural space must be flexible and promote the interaction of users with the building and the site.
7. The architecture must appeal to four of the five senses: touch, smell, sight, and hearing.

## 2.2 The Case for Regionalism on the Fourth Coast

Shortly before his death in 1986, the great Argentine novelist Jorge Luis Borges made a literary pilgrimage to Hannibal, Missouri, to pay homage to Samuel Clemens, whose nom de plume was Mark Twain. Meticulously dressed in a three-piece suit, the blind octogenarian arrived in town and was immediately escorted to the Mississippi River levee. Suddenly, to the surprise of all present, he began walking trancelike into the muddy waters until the river rushed up to his chest. “Now,” Borges declared, “I understand the essence of America.”

– Stephen Ambrose and David Brinkley

Both in the United States and abroad, there is an increasing awareness of an American Monoculture. This notion, made tangible by cultural icons such as McDonalds, CNN, and the National Basketball Association is seen by many as a destructive force that subverts regional cultures in other countries for monetary gain. The validity of these claims of aggressive American globalization and cultural destruction are debatable, and any attempt to prove or disprove them is outside the scope of this thesis. However, while there are attributes of American culture, both positive and negative, which apply to all of us as Americans, regional variations in cultural values, geography, history, and demographics abound.



Figure 34. Development north of Atlanta, GA, the nation's most sprawled city.

It is a difficult if not a dangerous proposition to classify and group people based on geographic background. Every American region is diverse within itself and is home to a wide range of cultural values. However, there are still variations among regions that deserve to be highlighted and celebrated and doing so is one way to reframe the argument about American culture and its place in the world.

The Mississippi River is an ideal entity around which to base an exploration of American regionalism. The river may be thought of as the divider between “Back East” and “Out West,” the place where America separates itself from the sphere of European influence and assumes its own identity. This conception of the river is one of boundary, but the river also may be conceived of as a unifier, the spine of the country along which people

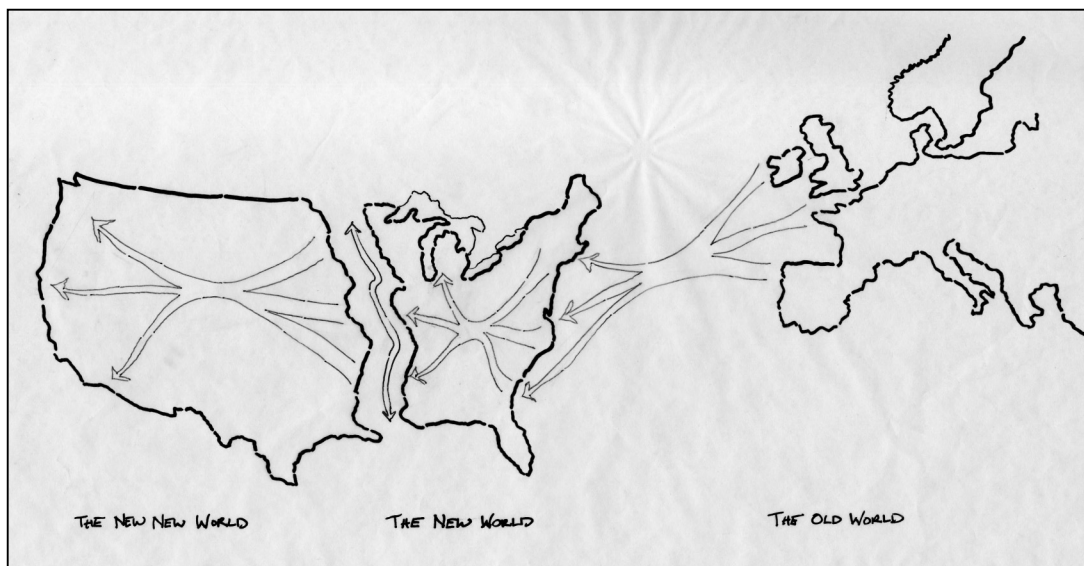


Figure 35. The Mississippi as boundary and artery

and goods circulate. Not only has the Mississippi come to symbolize on a theoretical level the spirit and character of the nation, the quintessence of what makes America a unique place, but it also passes through parts of America that could not be more different

from one another geographically and culturally. Both regions of the Mississippi, the Midwest and the South, as well as the myriad subregions within them, are culturally and geographically distinct. Yet both seem to need an affirmation of their regionality, albeit for different reasons. The Midwesterners, the anti-region inhabitants, lack a cohesive idea about what exactly makes their home a place. Many in the South, on the other hand, see their region as under attack by cultural values bred in the North. While this thesis doesn't pretend to be a cure all for these problems, the pavilions provide the physical and theoretical framework for visitors and locals to experience the regions of America for themselves and to formulate their own opinions on what binds us together as American and what makes us distinctive as Iowans, Missourians, or Tennesseans.

Finally, this thesis presents an opportunity to facilitate the exploration of large areas of the country that are not on the usual tourist circuit. During the height of travel and commerce on the Mississippi, the busy river corridor literally and figuratively linked small river towns to one another. However, as highway, rail, and air travel and commerce gradually usurped the importance of the river, these towns were left in relative isolation. The network of pavilions is one way to reconnect them.

### **Chapter 3: Regions of the Mississippi**

The Mississippi River passes through places of great diversity. The two primary regions of the Mississippi River Valley, the Midwest and the South, are each composed of sub regions that may have some of the cultural or geographic qualities of the larger region but also exhibit more localized landforms and cultural idiosyncrasies (figure 36). Though each area may be described by both geographical and cultural characteristics, it is important to note that some regions are better defined than others. Furthermore, there are no finite or universally recognized borders between regions. For example, a quick survey of residents of the Mississippi Delta, for example, yields a variety of opinions on where the region begins and ends. What follows is simply an attempt to characterize and classify the areas through which the river flows. Some of these regions are well known in the cultural landscape of America, while others are based more on an interpretation of geographical, cultural, and anecdotal evidence.



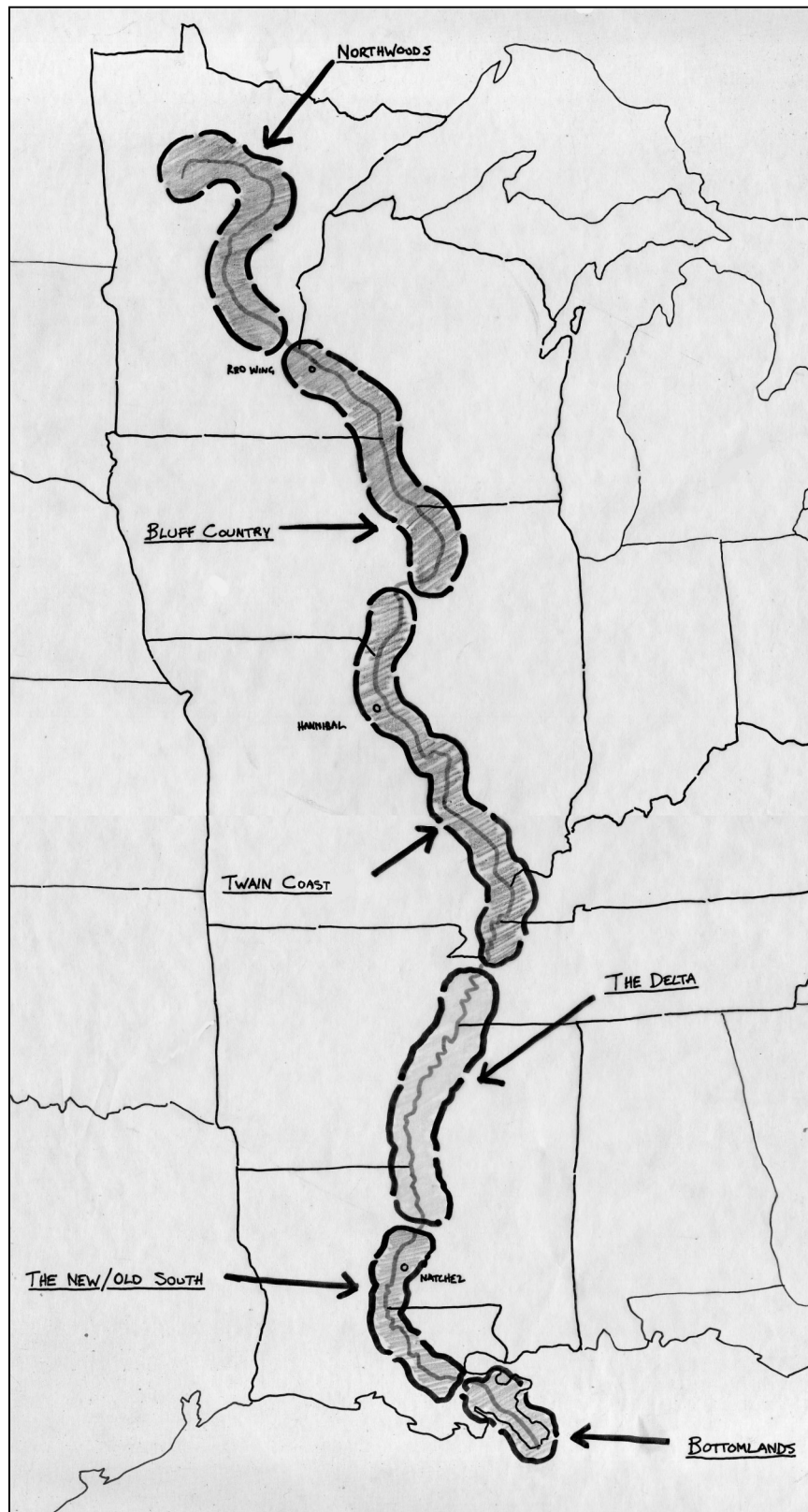


Figure 36. Sub-regions of the Mississippi River

### 3.1 The Midwest

Perhaps no American area is in as much need of this affirmation of regionality as the Midwest. For many, the term Midwest congers images of vacant farmland, fading main streets, and dour inhabitants. While regions such as the Pacific Northwest and New England are easy to identify, geographers have trouble agreeing on where the Midwest starts and ends. While other regions are associated with specific geographical landforms such as the Rocky Mountains and the Atlantic coast, the Midwest is associated with “flyover country” by inhabitants of the East and West coasts more than it is with the Mississippi River and the Great Lakes.

Others still have trouble associating the Midwest with any distinct traits at all. As Andrew Cayton writes in *The Anti-Region: Place and Identity in the History of the American Midwest*, “there is no there, there. While the South is indelibly linked with racial slavery and the West with conquest, the Midwest’s reputation has to do with empty normalcy” (Cayton 143) It is this lack of distinctiveness that he believes the region *is* distinct.

The portrayal of the Midwest and Midwesterners in popular culture has often fostered this image. The characters and the landscape of Joel and Ethan Coen’s *Fargo* are remarkable only in their utter lack of distinctiveness. Cayton writes that “Midwesterners as a collective are, more often than not, presented as being as flat and featureless as the prairie landscape they supposedly inhabit” (Cayton 141). As we see in *Fargo*, emotion is expressed only when seeking to fulfill the basest of desires, most notably greed.



Figure 37. "Spoonbridge and Cherry," Claes Oldenburg, 1988, Minneapolis, MN

However, there are significant, if not well-known, exceptions to this characterization, and this is part of what makes the Midwest so difficult to characterize as a region. Minneapolis/St. Paul MN, (the Coen Brothers dismal portrayal of their hometown notwithstanding), is a vibrant and

progressive metropolis which has more theater seats per capita than any urban area in the world outside of New York City. Omaha, Nebraska, which locals like to joke is "known internationally for nothing at all," actually could be known as a Mecca for drag queens (Gregg). These are not not isolated incidents, nor are they examples of islands of progressiveness in an otherwise undifferentiated sea of dour flatlanders. Rather, they are indicative of a culture that not only places a high value on hard work, stoicism, and modesty but also on fine arts, education, and cultural diversity.

In *The Nine Nations of North America*, author Joel Garreau writes about the American Midwest as part of "The Breadbasket," a larger region stretching from central Texas to Manitoba. He characterizes The Breadbasket as "that North American Nation most at peace with itself. It is the nation that works best" (Garreau 331). Like Cayton, he admits that the Breadbasket, among all nine regions he details, is the least easy to characterize. But, unlike Cayton, Garreau describes a surprising lack of provincialism among

Midwesterners. Economic prosperity and social convictions have allowed for the development of “an excellent and enormous system of land grant colleges [that] make superior educational opportunities here universal” (Garreau 338). He theorizes that the reason that this region remains unknown on the coasts is that news of continental concern normally concerns tears in the social fabric and that “social calm [is] the most identifiable characteristic of The Breadbasket” (Garreau 332). While this may mean that the Midwest is a nice place to live, it may also reflect a population that, while changing, is still less culturally and racially diverse than that of other regions.

### *3.1.1 Sub-regions of the Upper Mississippi*

Three sub-regions are identified as making up the Midwest of the Mississippi River. The first, the “Northwoods” is geographically defined as the area from the Headwaters to the Twin Cities. The river here is narrow and winds through the landscape. The land is essentially flat and is a mix of pine forests, farmland, and lakes. Culturally, this area consists of small and somewhat isolated small towns. Excluding the Twin Cities, the



Figure 38. Paul Bunyan and Babe, Bemidji, MN



Figure 39. Lake Itasca, source of the Mississippi River

majority of residents here are Caucasian of Scandinavian decent, with the notable exception of a large Native American population in northern Minnesota. There is some industry here, but the economy is still agricultural to a large degree.

The second sub-region of the Midwest, “Bluff Country,” stretches from Minneapolis south into Iowa and Wisconsin. From a physical standpoint, exposed limestone cliffs and steeply wooded slopes define this area. Geologists have labeled much of this area the Driftless because glaciers never covered it. The result is a more varied and hilly topography than other parts of the Midwest. The towns of this region are larger



Figure 40. Alma, WI

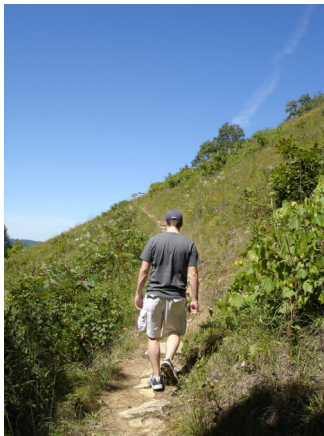


Figure 41. Hiking the bluff, Perrot State Park, WI

than those of the Northwoods and show a higher level of prosperity. As in the Northwoods, the majority of residents are Caucasian. However, the majority of the population here is of German descent. In more recent years,

the area has also become home to many wealthy newcomers, drawn to the area by the beauty of the natural environment and the close proximity to the Twin Cities. Many of their homes are built overlooking Lake Pepin, the widest point on the river and a popular place for sailing.

The “Mark Twain Coast,” the area stretching roughly from Burlington, Iowa, to Memphis, Tennessee, represents the literal and figural landscape of Mark Twain’s work.

This stretch of river is less industrial than many points south. Though not as steep and high as the hills farther north, river bluffs often drop dramatically into the river and define the river's path. Nooks and caves in the slopes are common, and these landscape features are tangible reminders of Twain's lyrical description of the landscape in *Huck Finn* and *Tom Sawyer*. While still largely Caucasian, there is a sizable African American population in this region as well.



Figure 42. Rotating bridge south of Hannibal, MO



Figure 43. Abandoned farmhouse near Louisiana, MO



### 3.2 The South

The South, more than any other region, is a place of distinctive culture and history in the American consciousness. Unlike the Midwest and other American regions, much of its tumultuous history is relatively recent. The fallout from slavery and the civil rights movement is still very much alive, as evidenced by vitriolic debates over the use of the Confederate flag motif in the state flag of Mississippi.

The people of the South are often categorized, fairly or not, by recognizable stereotypes: Southern Belle, Good Old Boy, Redneck (figure 44), among other less printable monikers. Whereas newscasters seek to emulate the flat Midwestern accent because of its lack of character, the Southern accent is immediately identifiable. Its connotations are not often positive.

The South has always been among the poorest of regions, and the areas bordering the Mississippi are the poorest of the poor. Recently, however, the South has experienced massive economic growth.

Bolstered in particular by foreign automobile manufacturers attracted to the South's inexpensive land, favorable tax climate, and ready supply of labor, the economic boom

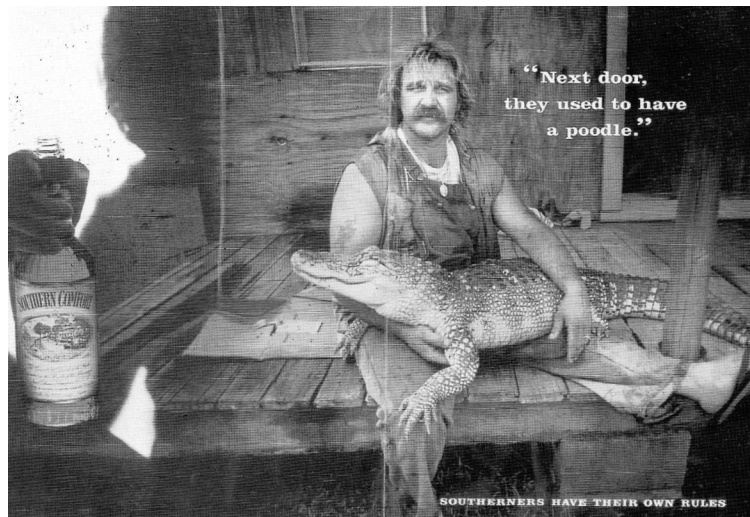


Figure 44. A caricature of southern culture from a Southern Comfort Liquor advertisement in a British Newspaper, 1990s

has raised the quality of education and social services. That, in turn, has prompted an influx of immigration, as Northerners flee the flagging economies and chilly weather of rust belt cities for the sunbelt.

With this economic growth, some fear that a subversion of Southern culture. In *The Americanization of Dixie*, John Egerton writes:

The South as a land of grace and violence, as beauty and the beast, had an irresistible fascination about it. It was evil and decadent, but it also bred heroes and dreamers, and it yielded a tenacious sense of hopefulness that kept the world from going home. It still has qualities that could make the world come back for another look. But it is well on its way to a surrender of its distinctiveness, to amalgamation in the nation, at a time when the nation is still groping, after two hundred years, for a society in harmony with the principles on which it was founded.

### *3.2.1 Sub-regions of the Lower Mississippi*

Three distinct regions border the southern portion of the Mississippi River. The first, the Mississippi Delta, according to local tradition begins in the lobby of the Peabody Hotel in Memphis and ends on Catfish Row in Vicksburg. The area is defined physically by low-lying flat land on both the Mississippi and Arkansas sides of the river, ideally suited to the planting of cotton. Because of this, the Delta has always been characterized by a large income gap between rich and poor and, more specifically, between black and white. One of the outgrowths of this economic disparity is a rich musical heritage, and the region is often referred to as “The Fertile Crescent of American Music.” Based in the





Figure 45. Cotton field near Beulah, MS



Figure 46. Shotgun house near Helena, AR

call and response rhythms of West Africa, the Delta blues represent the origin of the electric blues of Memphis and Chicago and of rock and roll itself. Cotton and to a lesser extent catfish farming, are still the major industries of the Delta. Today, however, casinos define the Delta as much as anything else. Tunica, Mississippi, 40 miles south of Memphis, is beginning to rival Atlantic City for East Coast gaming supremacy. The resulting wealth has fostered a general rise in the quality of social services. However, this economic development has brought with it a vocabulary of urban sprawl as bad as anywhere in the country.

This tension between tradition and growth is also evidenced in the second sub-region of the lower Mississippi, the “New/Old South,” which encompasses the area between Vicksburg and New Orleans. Depicting the struggle that the South is facing, this stretch of the Mississippi River goes by two different names: Plantation Alley and the Cancer Corridor. Nowhere is the juxtaposition between history and growth as overt as it is here. Plantation Alley refers specifically to the wealth of both ruined and immaculately restored and maintained antebellum mansions between Baton Rouge and New Orleans.



Figure 47. Ruins of Windsor, near Natchez, MS



Figure 48. Oil refineries above New Orleans, LA. BBC News

What is called the Cancer Corridor is, in actuality, the same stretch of river. It refers to one of the world's largest and most important petrochemical centers that have grown up, literally, in the backyards of plantation homes. A population of 1.6 million people, mostly low-income African Americans, lives adjacent to this land, and faces a cancer risk far higher than the national average.

The final sub-region of the southern river, the “Bottomlands,” encompasses the land and river south of New Orleans. Though a shipping channel is maintained by the Army Corps of Engineers, numerous offshoots of the Mississippi blur the distinction between land and water. A major industry here is the servicing of offshore oilrigs, but fishing tourism also plays a large role in the local economy. As much of the land here is on or below sea level, many homes and buildings are built on stilts (figure 50). This typology does not occur anywhere else in the country. The small communities that dot this part of the river feel isolated in much the same way as do the small communities in northern Minnesota. The racial makeup of the Bottomlands is mostly white, and while this is not

really Cajun country, many residents are of French heritage. The speaking accent is more pronounced here than along other parts of the river, due both to isolation and cultural background.



Figure 49. Crypts, Venice, LA



Figure 50. Stilt home, Port Sulphur, LA

## Chapter 4: Town Site Analysis

### 4.1 Red Wing, MN



Figure 51. Panoramic view of Red Wing, MN

#### ***Background***

Red Wing is a town of 16,000 residents on the west side of the Mississippi River, forty-five miles south of the Twin Cities. The town takes its name from the name for Dakota chiefs who once inhabited the area. A Dakota village once existed on the site, but in 1851, an essentially criminal treaty deeded the land to the United States as part of the Minnesota Territory. This opened the door to full-fledged immigration. White settlers valued the site because of its relatively wide and fertile alluvial plain with easy river access. As with many other Western settlements, immigrants brought disease, and beginning in 1852, a cholera epidemic wiped out a large portion of the native population of Red Wing.



Though Red Wing was home to an active wheat market, the town grew significantly after 1872 with the building of the first of many pottery factories. Taking advantage of numerous clay deposits in the area, pots, crocks, churns, and pipe were manufactured here. Red Wing received another economic boost in 1905 with the founding of the Red Wing Shoe Company. While the last major pottery company closed in 1967, The Red Wing Shoe Company today is a major employer in the region. Other local industries include tourism, medical care, and agriculture.

### *Architecture*



Figure 52. Historic fabric along Main Street



Figure 53. St. James Hotel

The City of Red Wing includes three distinct historical districts: The Historic Mall district, Historic Downtown district, and the West Residential Historic District. The Historic Downtown district in particular has many restored turn of the century buildings. Of particular note are the St. James Hotel, dating from 1875 (figure XX), and the ornate Sheldon Theater, dating from 1906. The City of Red Wing has taken an active role in the preservation of historic buildings and has designated four historical districts.

As expected due to the easy availability of clay, brick is the most common building material for vernacular buildings. Wood is used for cornices and other ornamental trim. As Red Wing has a cold climate, buildings generally have compact massing. Fireplaces feature prominently in the organization of interior spaces.

*Natural Setting and Relationship to River*

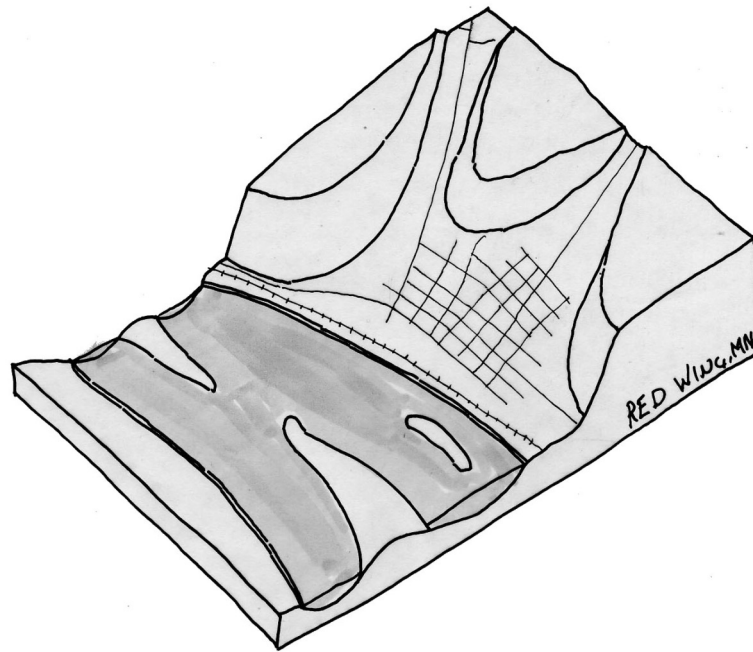


Figure 54. Topographic diagram

Geographically, the town is pinched between the river and steep bluffs, with the bluffs afford sweeping views of the town and river. The waterfront is primarily industrial. Most of the town rests on an alluvial plain between 10'-15' above water level, while the bluffs rise to a height of over 600'. To a large degree, these bluffs have insulated the town from sprawl, as the main roads in and out of town often run through gaps between bluffs that are too narrow to accommodate large retail development. Sprawl in the

county is becoming a problem, however, with the expansion of the Twin Cities metro area.

The fabric of downtown Red Wing is somewhat isolated from the river by the industrial and train tracks. Additionally, buildings along Main Street turn their backs to the river. While a riverfront park does claim some of the town's frontage, there is a lack of definition at the waterfront as well as a poor transition between the downtown area and the river.



Figure 55 Red Wing waterfront



Figure 56. River/town disjuncture

*Town Site Analysis Diagrams*



Figure 57. Red Wing downtown and riverfront

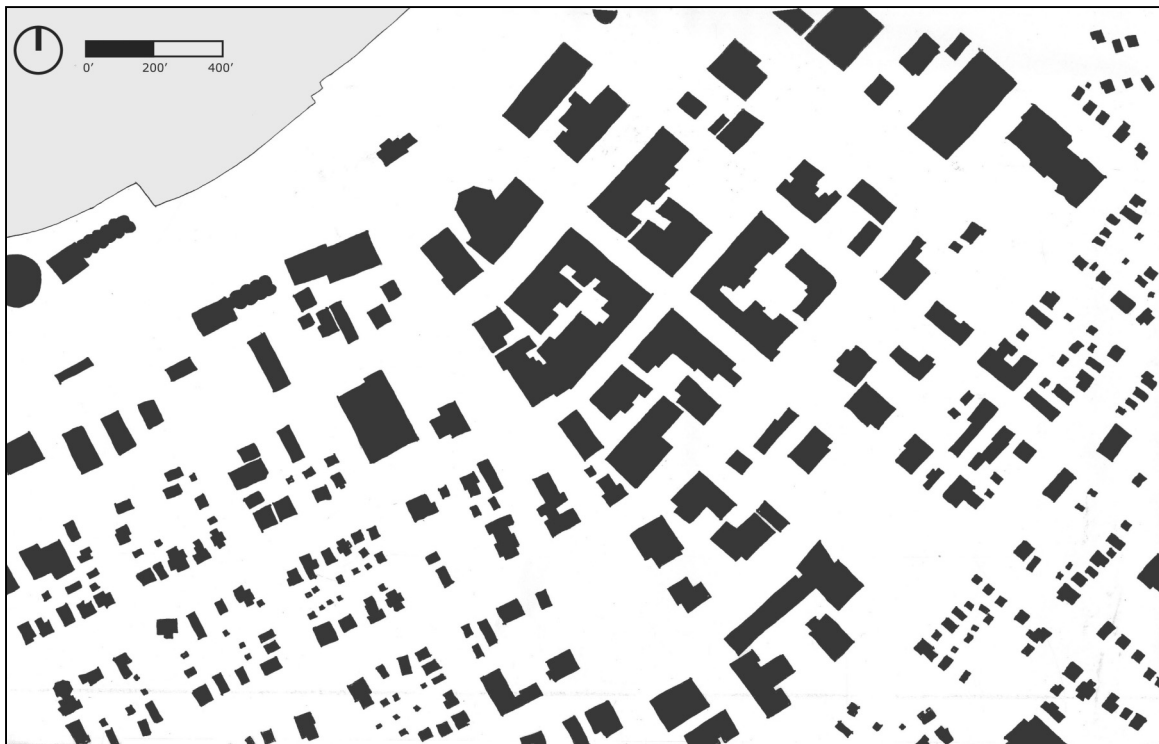


Figure 58. Figure ground





Figure 59. Building use



Figure 60. Traffic flow



Figure 61. Historic preservation districts



Figure 62. Public open space

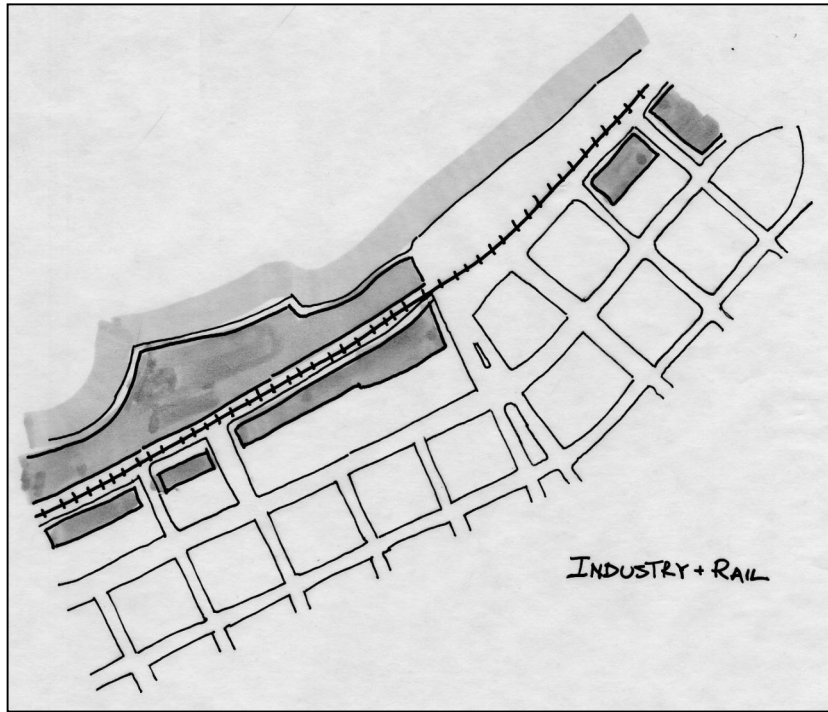


Figure 63. Edge condition

## 4.2 Hannibal, MO



Figure 64. Aerial photo, George Wiley

### *Background*

Hannibal, Missouri (population 17,600) is located on the west bank of the Mississippi River about 100 miles north of St. Louis. The site of present-day Hannibal has been continuously occupied for over 3000 years, as evidenced by Native American mounds in the vicinity. The first recorded exploration of the area by Europeans was by French missionary Father Hennepin in 1680. The first permanent European settlement of the site occurred in the 1795, following the discovery of salt in streambeds. However, Native American uprisings a few years later and the growing availability of salt from other sources caused the settlement to be abandoned. In 1811, as part of the New Madrid Relief Act, most of present-day Hannibal was deeded to a farmer who had lost his land as a result of the earthquake.

In 1819 Moses Bates, a surveyor and land speculator from St. Louis, purchased the land. He platted the town, which he named for a nearby creek, and began selling lots to settlers. Most early industry in the town revolved around farming. However, in 1859 the railroad arrived and made viable such activities as pork packing, milling, rope making, and tanning. In 1860, Hannibal was Missouri's third largest city with over 20,000 residents. During the Civil War, Union forces briefly occupied the town, though most local residents were said to sympathize with the Confederacy. In the early 20<sup>th</sup> century, the town was home to concrete manufacturers as well as what was then the largest shoe factory in the United States. Today, the town owes much of its economic livelihood to Mark Twain-related tourism. Several attractions of both real and dubious historical value are located in the town, most notably Twain's boyhood home and a museum devoted to his life and work.

### *Architecture*

Hannibal's historic buildings are preserved in three historic districts. The Downtown Historic District includes Mark Twain's boyhood home, dating from 1844, as well as his



Figure 65. Mark Twain Historic Area

father's law office and a drug store. Of particular interest is a three story gabled warehouse dating to the 1830s. One of the last of its type, these buildings once made up the bulk of Hannibal's commercial infrastructure. Also included here are many turn of the century brick buildings as well as



the farthest inland lighthouse in the world. The Central Park Historic District and the newly created Maple Avenue Historic District are primarily residential. Many fine examples of Greek Revival, Italianate, and Queen-Anne architecture are preserved here.

Brick is the most common building material for both commercial and residential buildings. However, Hannibal's oldest buildings are post and beam structures built almost exclusively of wood. One of these, Grant's Drug Store, was prefabricated in Pittsburgh and shipped by boat to Hannibal. Also of note is the Dry Goods Store (1897), which shows a pressed metal front.



Figure 66. Historic fabric of downtown Hannibal.

Though Hannibal can be cold in winter, the residential typologies show a response to a warm-humid climate, including both operable transoms and sidelights, as well as large exterior windows. Several homes also utilize covered cupolas, which may be used for stack-ventilation.

#### *Natural Setting and Relationship to River*

Most of Hannibal is flat, rising less than 5' above the Mississippi. Bluffs on either side of the town are approximately 300' above water level. Hannibal has been the site of frequent floods throughout its history, and the levee was constructed in 1993. While the

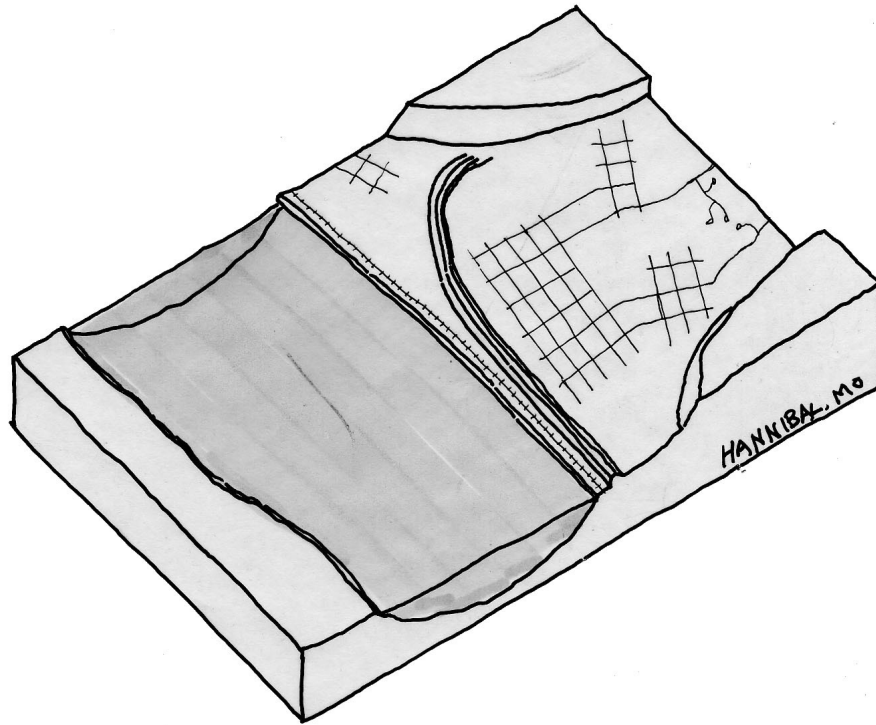


Figure 67. Topographic diagram

levee is a hard edge that defines a junction between town and river, the fabric of Hannibal is amorphous and ill defined at this edge. In most cases, downtown buildings face away from the levee, with the left over spaces in between used for parking. Additionally, the levee creates a significant visual barrier between the town and the river.



Figure 68. Lack of edge definition at the levee.

There is not a high degree of growth in the Hannibal area, but what there is sprawls out along US 36 West of town. This is unfortunate because there are many underdeveloped and underutilized sites in the downtown area.

*Town Site Analysis Diagrams*



Figure 69. Downtown Hannibal and waterfront



Figure 70. Figure ground





Figure 71. Hannibal preservation districts



Figure 72. Building use



Figure 73. Traffic flow

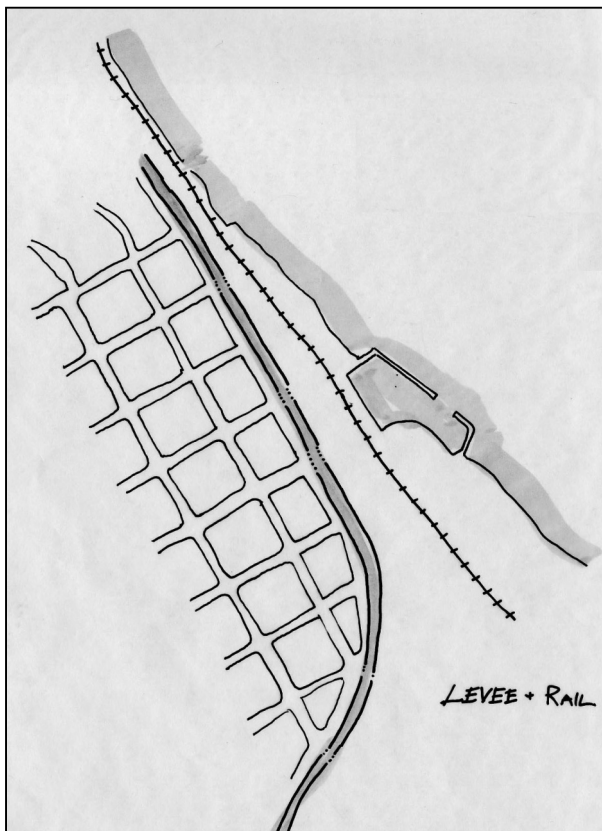


Figure 74. Edge condition. The Levee and rail lines separate the town fabric from the river.

### **4.3 Natchez, MS**

#### *Background*

Natchez (population 18,500) is located in southwest Mississippi on the east side of the Mississippi River, 90 miles north of Baton Rouge, LA. The town was founded in 1716 as an outpost of French-controlled Louisiana and is the oldest European settlement on the Mississippi, beating out New Orleans by two years. The site was chosen because it occupies a bluff 200' above the river. Taking its name from a local Native American tribe, Natchez changed nationality multiple times throughout its history, from the French to the British in 1763, to the Spanish in 1779, and finally to the American's in 1798.

Between 1798 and 1860, Natchez would rise to become the wealthiest city in the United States. The development of the cotton gin, new strains of cotton better suited to the climate, and the steamboat made Natchez home to more millionaires than any other American city outside of New York. As Natchez was the principal steamboat port for cotton, many planters chose to live in and around the town, spawning an upper-class aristocratic culture.

Though the Southern economy was ruined by the Civil War, Natchez itself was spared from destruction. Due to its isolation from the major population centers of the Confederacy, Natchez was not of strategic importance to Union armies. After the Civil War and the Emancipation Proclamation, Natchez did rebound somewhat under a reformed plantation system. However, the decline of steamboat commerce in favor of rail transport, coupled with the 1908 boll weevil epidemic, sent the economy into decline.

The discovery of oil in 1943 and the construction of a paper mill in 1948 brought jobs



Figure 75. Natchez-Under-The-Hill  
(National Trust for Historic  
Preservation)

back to the area, as did the burgeoning tourist trade. One area of interest is Natchez-Under-The-Hill, a collection of buildings built into the bluff. Constructed in the early 1800s to serve the port of Natchez, Natchez-Under-The-Hill was once home to many of the less savory characters associated with Mississippi River commerce.

### *Architecture*

Natchez claims more antebellum mansions than any other US city. Of particular interest is Longwood, which is the largest octagonal house in the United States. In a style best described as Oriental, a Byzantine onion-shaped dome crowns the home. Construction



Figure 76. Dunleith, (Steven Brooke)

of the home was halted by the Civil War and never resumed; the building is preserved in this state. There are several Greek Revival houses of note, including Dunleith (figure XX), which claims 26 two-story Tuscan columns and 15” thick walls.

The Greek Revival style, ubiquitous with Antebellum Southern culture, shows many climatic adaptations. Several adaptations are designed specifically to increase ventilation. In addition to operable transoms and sidelights, floor to ceiling windows and

shutters allow for maximum cross-ventilation. Exterior colonnades both shade these large openings and facilitate the movement of air around the house. In a move perhaps derived from vernacular shotgun houses, this cross-ventilation is augmented by the arrangement of rooms along a lateral hallway running the full length of the house. Many historic homes are also designed to stack-ventilate. Clerestories with operable windows situated above large open stair halls allow cooler air from below to be sucked up through the house.



Figures 77, 78. Historic homes, Natchez

Many of these homes are also elevated off the ground on brick foundations. This serves many functions. Elevating the main floor above the damp earth can make living spaces less humid while allowing for the capture of higher altitude breezes. Additionally, cooler air in the resultant cellar space can be sucked up into the home via stack ventilation

Commercial buildings in Natchez show some of the same features as the mansions, with floor to ceiling windows and exterior balconies. As in New Orleans, many buildings are also arranged around courtyards. This serves two purposes: first, to provide a shaded

exterior sitting space that is cooler than the interior; and second, to thin out the mass of a structure, making cross ventilation more effective.



Figures 79, 80. Historic fabric of downtown Natchez

### *Natural Setting and Relationship to River*

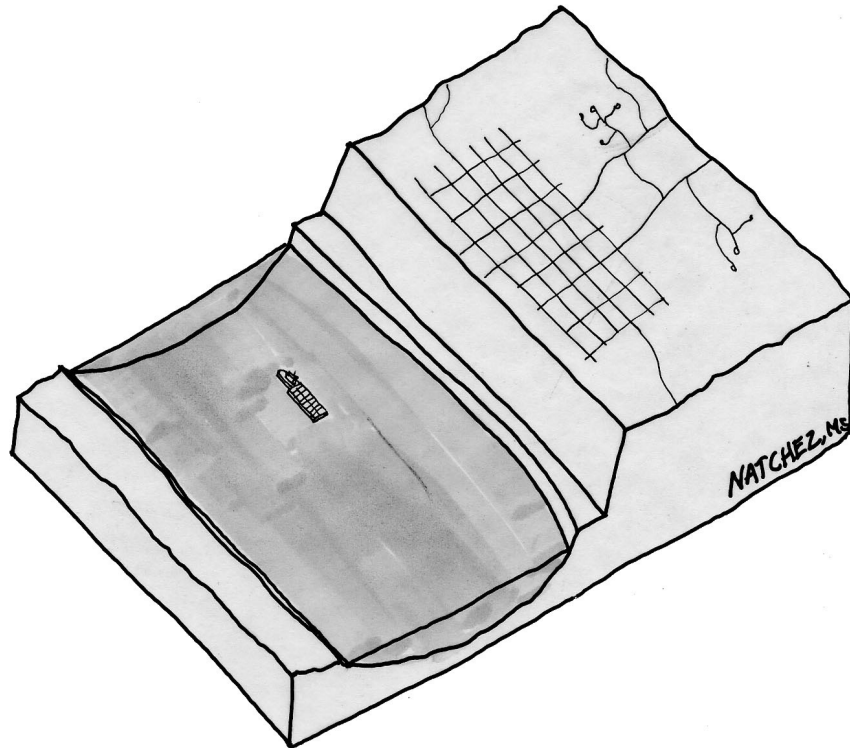


Figure 81. Topographic diagram



Most of Natchez sits between 150' and 200' above the Mississippi. Dividing the town from the river is a steep and densely wooded bluff. The urban edge is better defined here than in other river towns. As opposed to Red Wing and Hannibal, buildings in Natchez face the river. However, due to the geographic setting, Natchez is significantly distanced from the water. Two roads traverse the slope, one of which, Silver Street, leads to Natchez-Under-The-Hill, a floating casino, and a large parking area. In order to stimulate riverfront development, Natchez has created a strip of landfill shoreline along the water. However, this land remains detached visually and physically from the rest of the town. As with many parts of the Sunbelt, Natchez is beginning to sprawl significantly, especially along Highway 61, the main thoroughfare into town.

### *Town Site Diagrams*



Figure 82. Section of downtown Natchez and Natchez-Under-The-Hill.



Figure 83. Building use

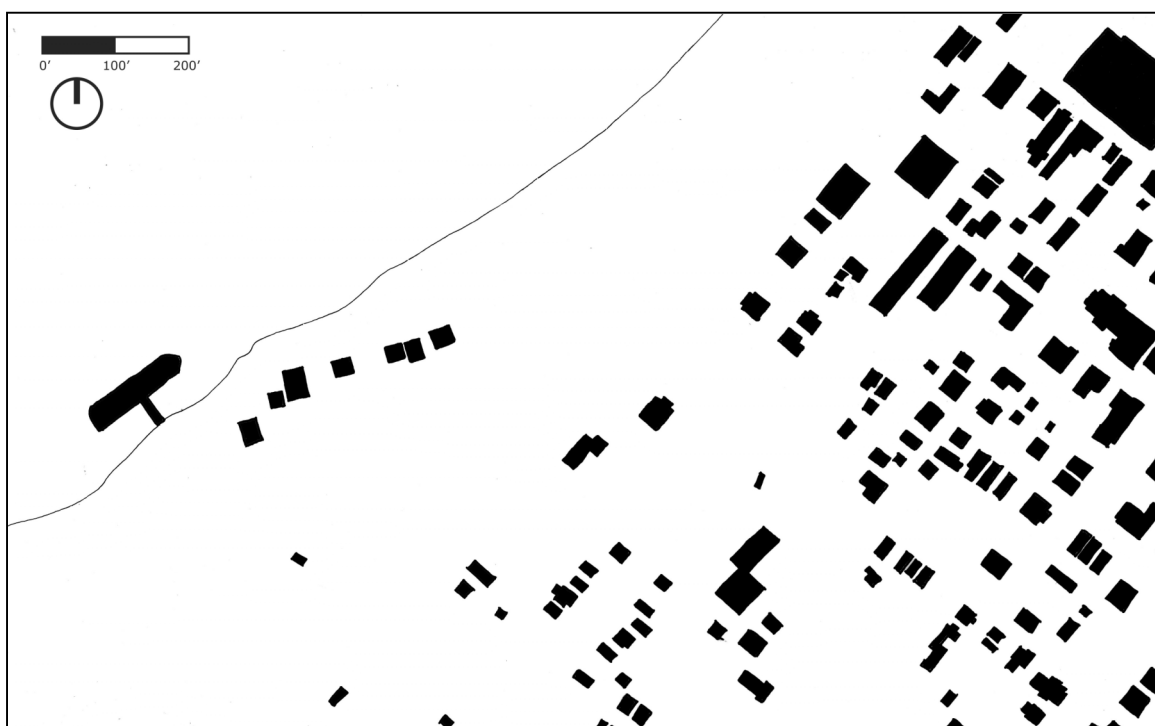


Figure 84. Figure ground. Density decreases away from downtown.



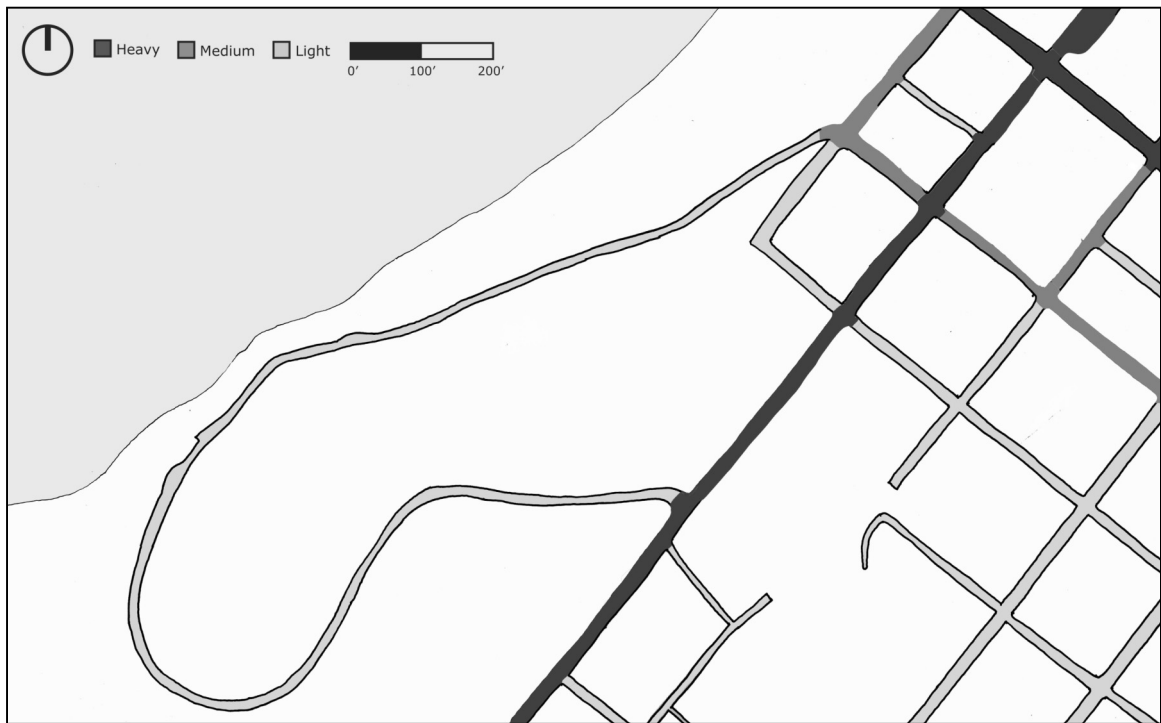


Figure 85. Traffic flow

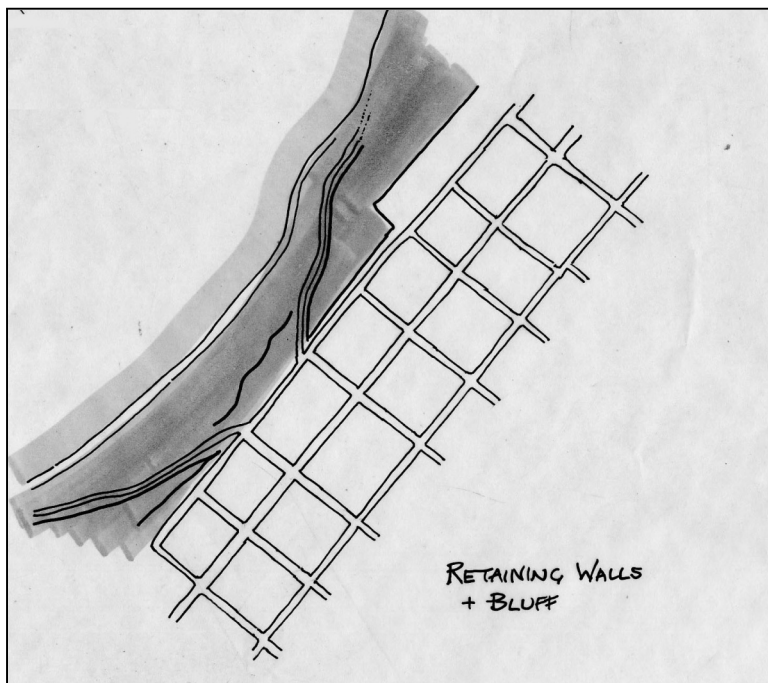


Figure 86. Natchez edge condition, and disjuncture between town and river.

## Chapter 5: Building Site Analysis

### 5.1 Red Wing Building Site Analysis

The site is currently used as a dumping ground for construction materials from the adjacent industrial area. The site is important because it lies at the juncture of three distinct parts of town, the Historic Mall district, a riverfront park, and an industrial area. Also, there is an abandoned industrial building on site that could be incorporated into the design of the pavilion.



Figure 87. The abandoned industrial building on the site



Figure 88. Grain elevators adjacent to the site



Figure 89. Relationship of site to river



Figure 90. Site as seen from street

*Site Diagrams*



Figure 91. Site map

## 5.2 Hannibal Building Site Analysis

The chosen site is located on land currently occupied by a car dealership and a dilapidated dining pavilion. The site includes a portion of the levee and riverfront property. The site is important because of its proximity to the river, the Mark Twain home, and historic downtown Hannibal. The challenge of this site is to bridge the levee in such a way as to connect the fabric of the town to the river without compromising its functionality.



Figure 93. Looking town Hill Street towards the levee



Figure 94. The crossing of Hill Street through the levee



Figure 95. A public gathering space on the site in poor condition



Figure 96. The waterfront, as seen from over the levee. The floodwall is in the upper right hand corner of the photo and must be moved into place with a bulldozer.



## Site Diagrams

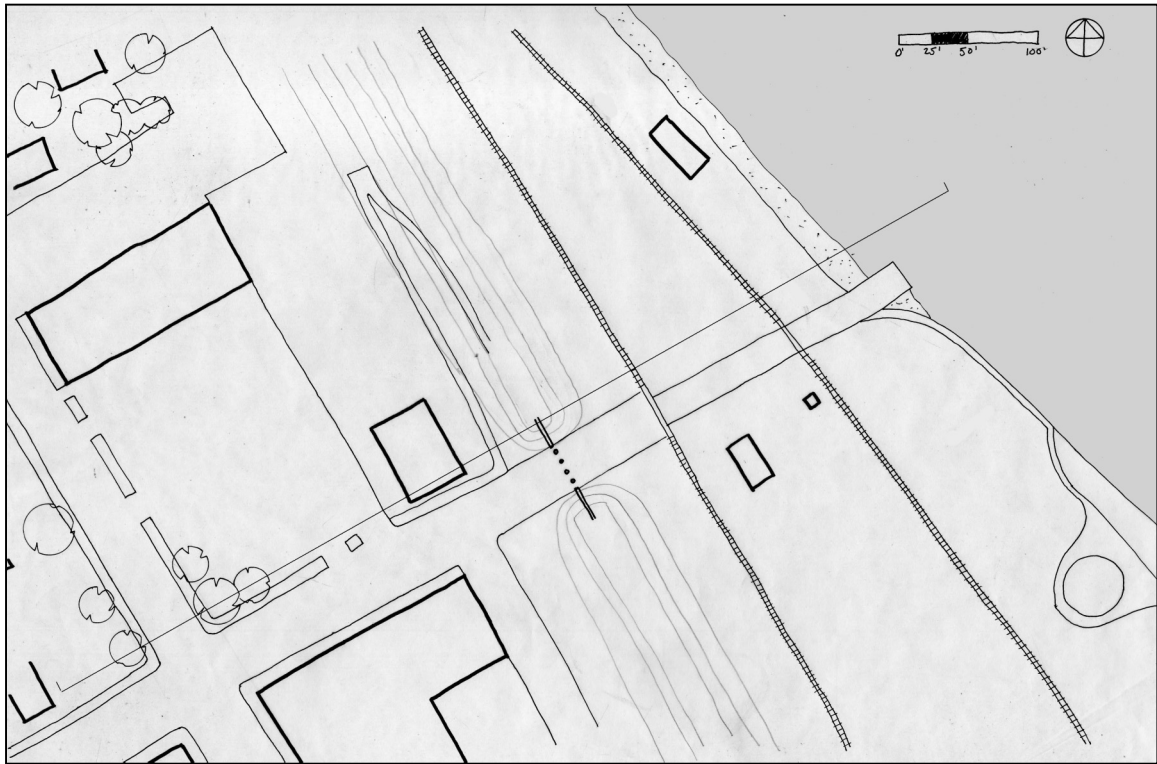


Figure 97. Site plan

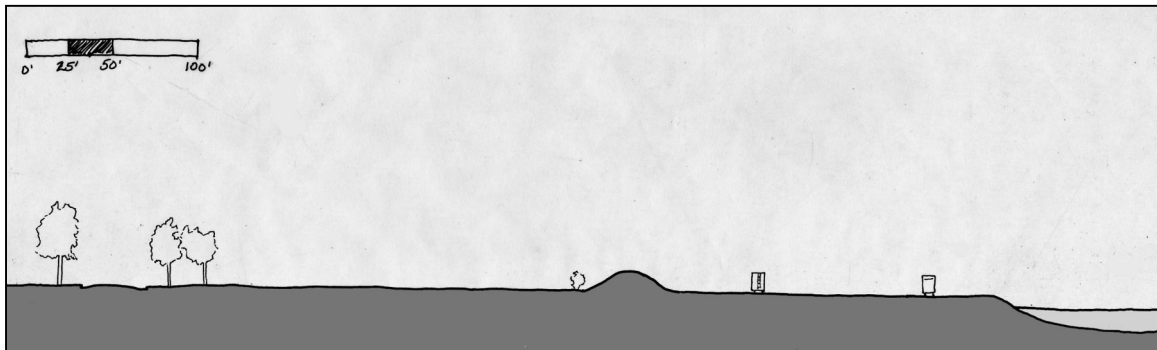


Figure 98. Site section. The levee is rises 13' above ground level.

### 5.3 Natchez Building Site Analysis

The site occupies a flat area at the edge of Natchez grid, a steep and wooded bluff, and a strip of infill coastline roughly 10' above the surface of the Mississippi at the time of the site visit. The site is important because it provides the opportunity to bridge the gap between downtown and residential Natchez and the river. Additionally, the site is in close proximity to Natchez-Under-The-Hill. The system of retaining walls was built in 1990 and has reduced the risk of landslides. Per local building code, structures on the floodplain must be elevated 8'.



Figure 99. The relationship of the site to the river



Figure 100. The riverfront



Figure 101. The site with Natchez-Under-The-Hill in the distance



Figure 102. The intersection of the site with Silver Street

## Ste Diagrams

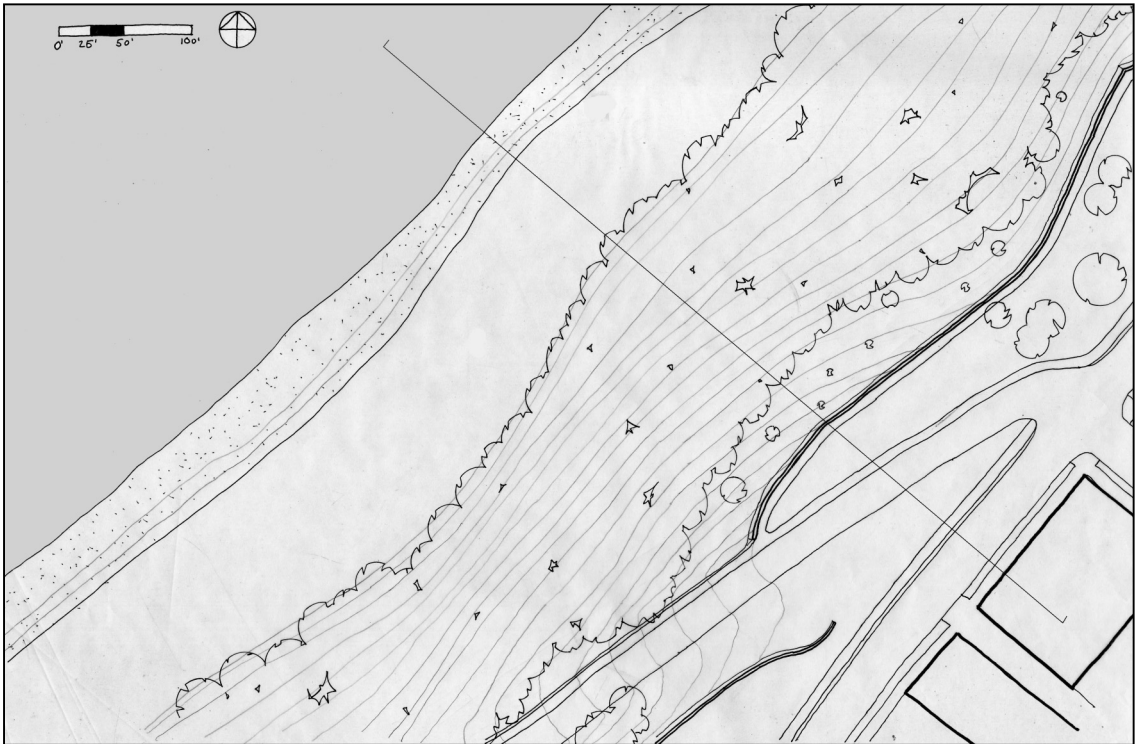


Figure 103. Site plan.

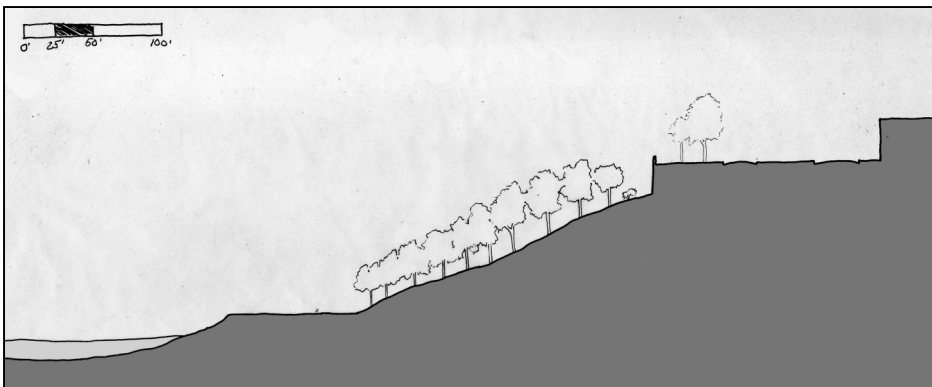


Figure 104. Site Section. The change in elevation on the site is 115'.

## **Chapter 6: Precedent Analysis**

Programmatically, these pavilions have characteristics in common with National Park visitor centers, community park buildings, boathouses, ferry terminals, and interpretive centers.

### **6.1 Brackett Park Community Center, Minneapolis, MN**

Designed by Frederick Bentz in 1999, this building is relevant for programmatic reasons (figure 105). The plan is driven by a large central space that is accessible from three directions. A multi-purpose room, a kitchen, large restroom facilities, and administrative spaces for the park surround this figural space. As this building serves a large outdoor space geared towards children, the bathrooms express themselves prominently in the formal composition of the structure. They are accessible directly from the park as well as from inside the building. While it is perhaps counterintuitive for the bathrooms to be celebrated as they are in the building massing, it makes sense from a functionalist standpoint. The stylistic language of Brackett Park Community Center is essentially neo-traditional. The strongly horizontal datum created by the eave is reminiscent of a prairie style home. However, the steeply pitched roof seems more derived from a scaled down, gothic revival aesthetic.



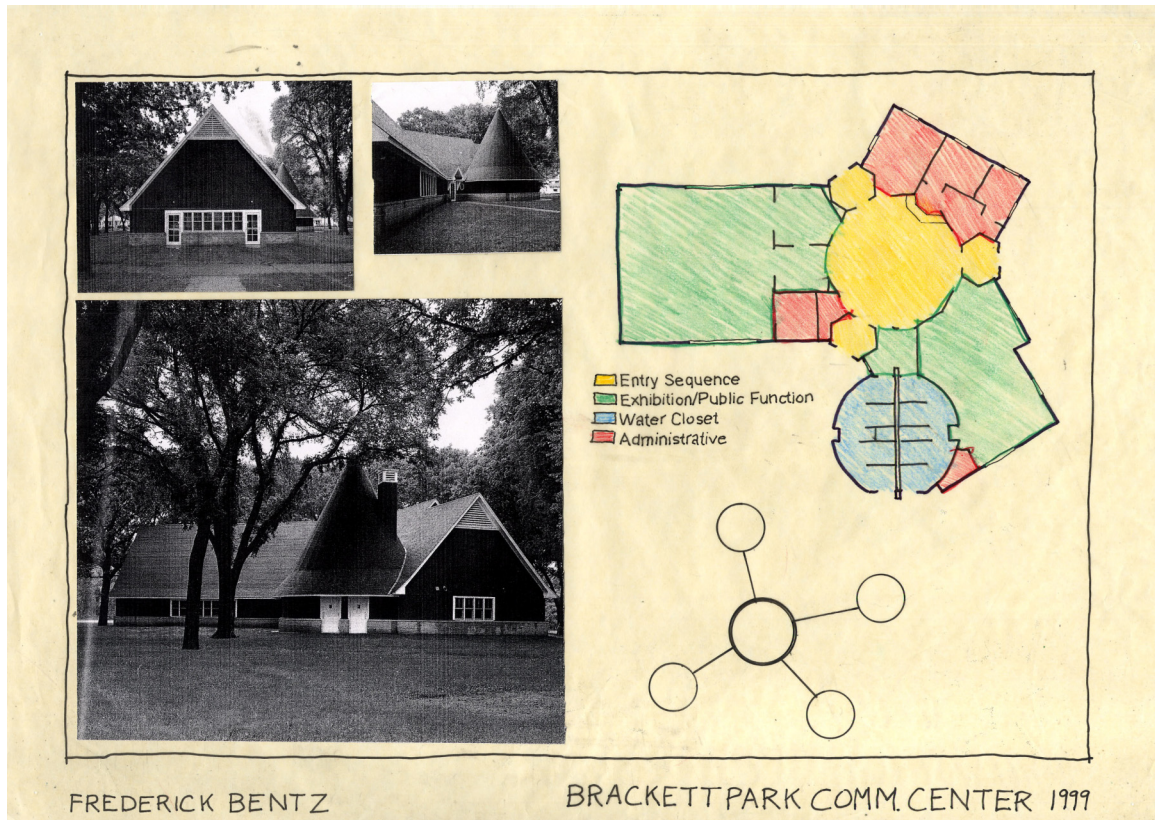


Figure 105. The parti of Brackett Park Community Center is the “fried egg.” The central exhibition space is arranged with ancillary spaces flanking it. However, it is not this space but the bathrooms, which are called out in the massing composition of the building.

## **6.2 Staten Island Ferry Terminal, New York, New York**

Designed by Fredric Schwartz Architects, the Staten Island Ferry terminal project (figures 106, 107) for the southern tip of Manhattan island is relevant to this project because it accommodates three separate modes of travel: boat, foot, and car/bus. The terminal sits above South Street, so vehicular access is by way of an esplanade under the building. People arriving at the building on foot enter into a double height entry hall and ascend to the waiting room via banks of escalators. Disembarking ferry passengers arrive on the opposite side of the building on grade with the waiting room. Interspersed within the waiting area are islands of retail storefronts and bathrooms.



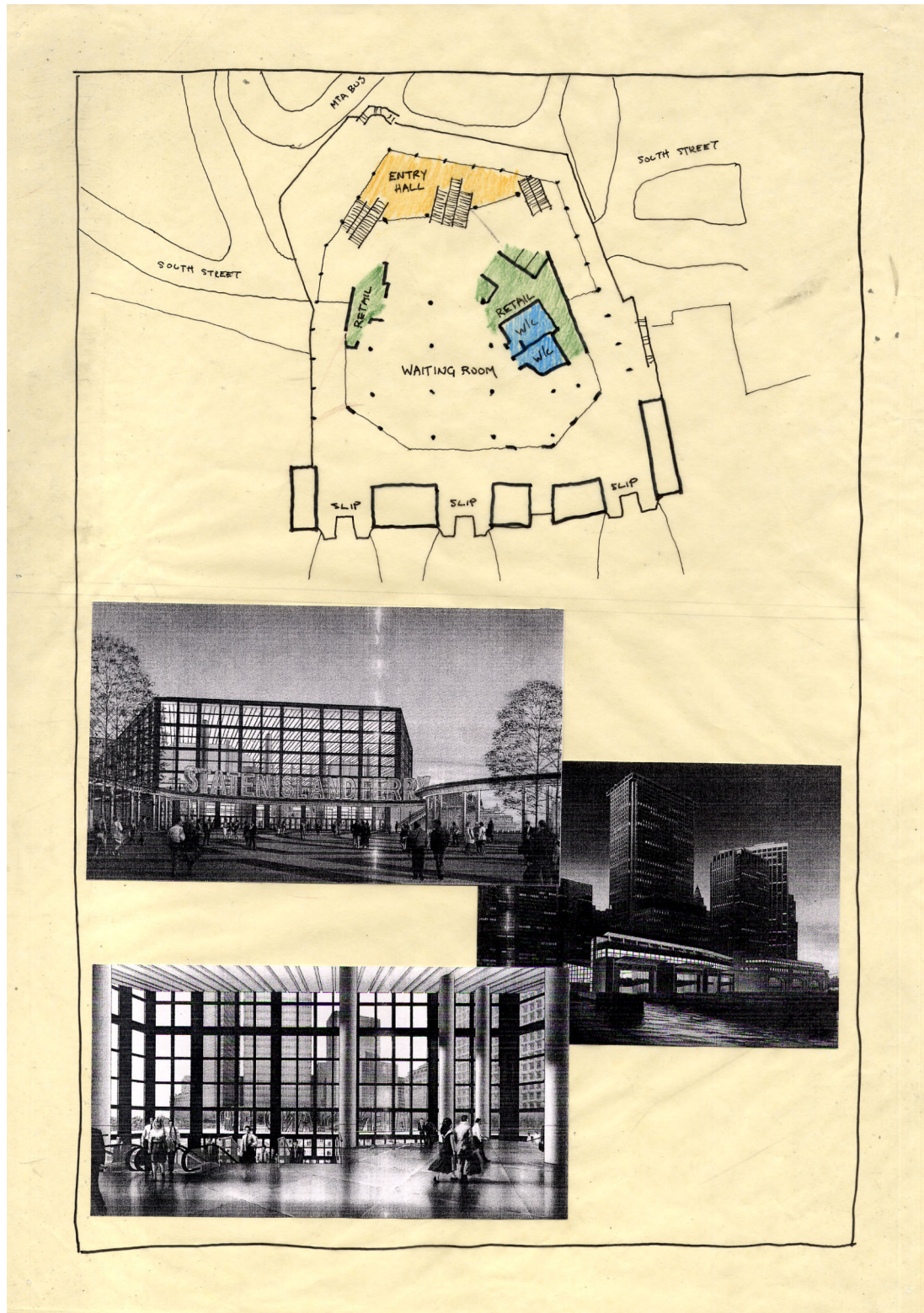


Figure 106. The Staten Island Ferry Terminal by Fredric Schwartz Architects. The building is elevated above the street, allowing thru traffic to pass below it. Retail spaces are placed along the promenade between modes of travel.



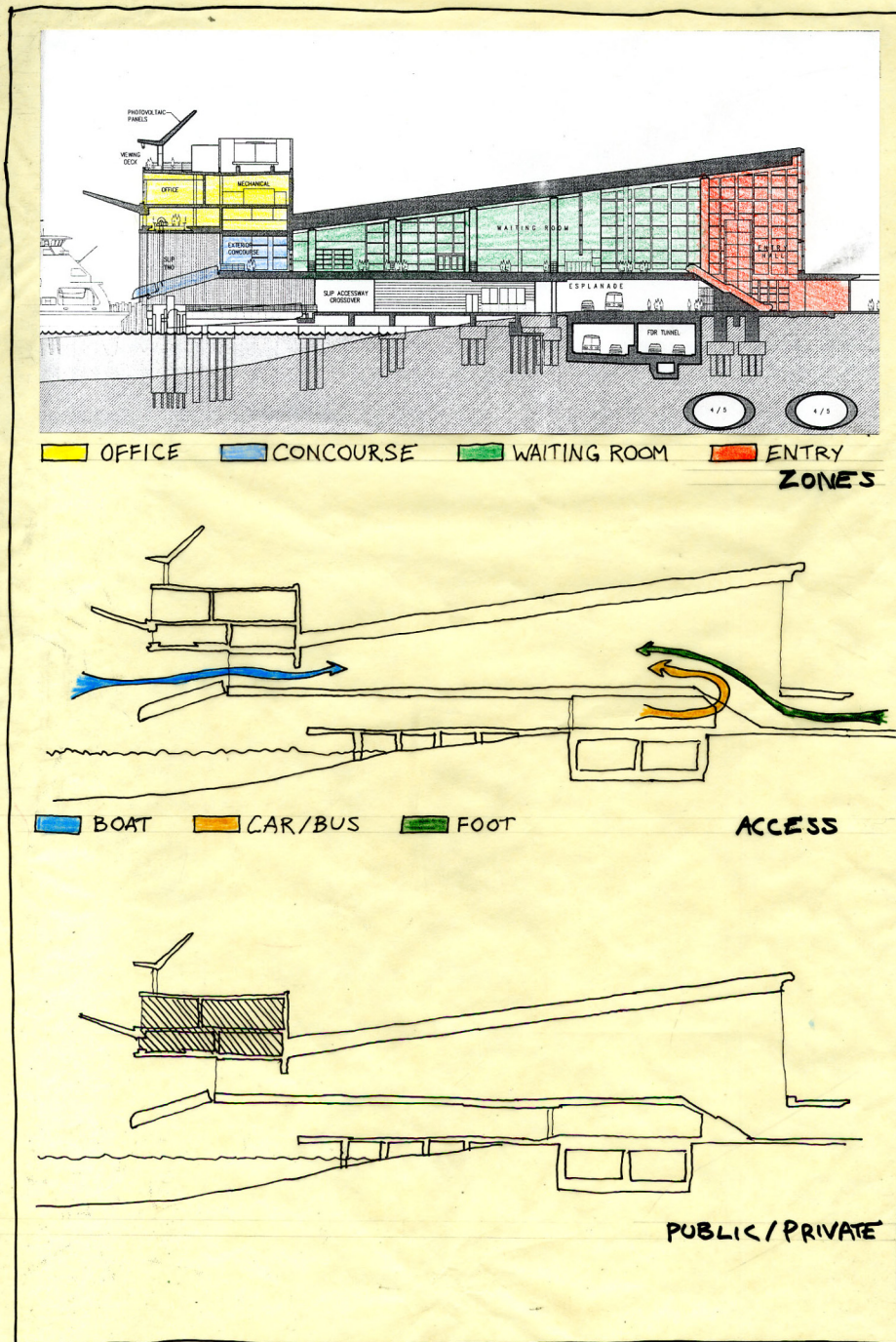


Figure 107. The Staten Island Ferry Terminal by Fredric Schwartz Architects. Three distinct modes of travel meet in the central waiting room. Private administrative spaces are grouped together on the building's upper levels.

### **6.3 Rock Art Center, Sonoran Desert, Arizona**

Designed in 1996 by Will Bruder, the building is a visitor and interpretive center for prehistoric rock art (figure 108). The part of the building is linear and acts as a sort of headpiece for the trails that weave through the site. Coming from the parking lot, visitors first enter the building, which contains historical information about the rock art. After progressing linearly through the exhibits, visitors continue outside to the path, which eventually returns them to the front of the building.

What makes Rock Art Center relevant is the way it is conceived as a visitors' center. As opposed to other buildings of this type, Rock Art Center is not a destination, but rather a segment of a larger system. This is not a place to dwell but rather a portal to be passed through.

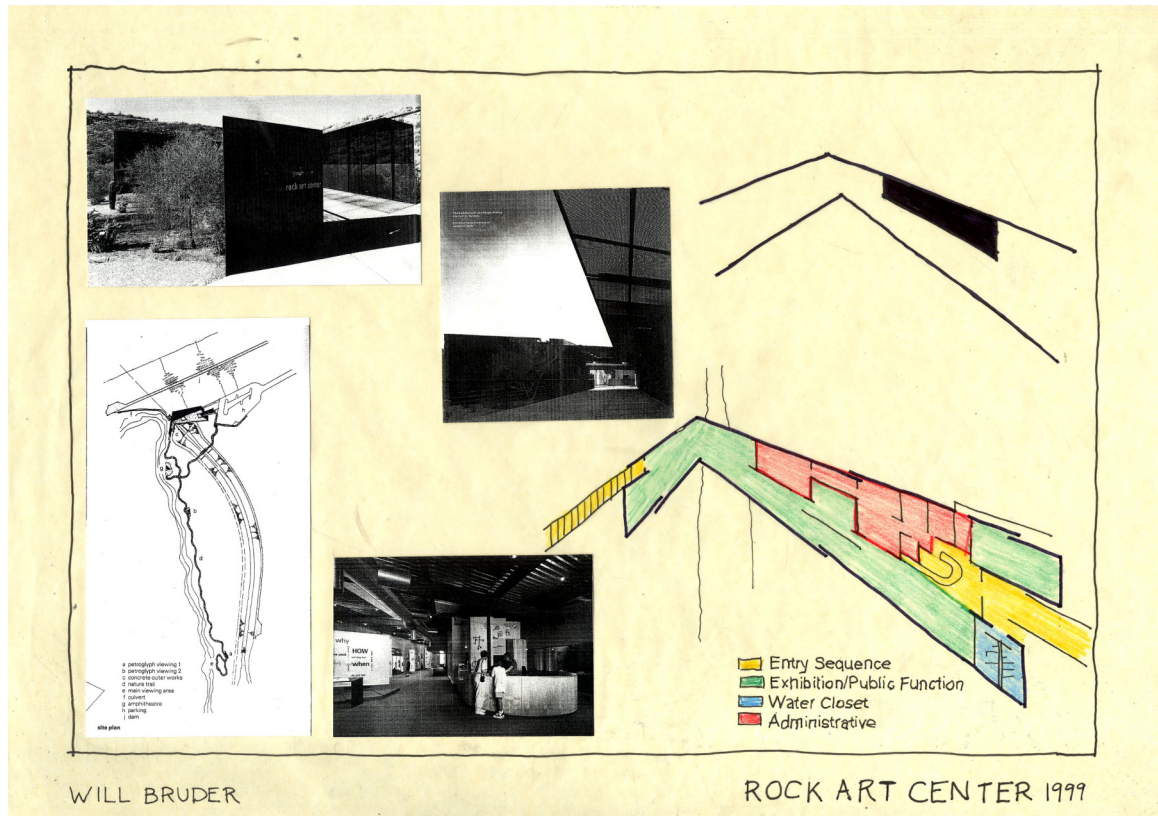


Figure 108. Rock Art Center is a linear parti with private space arranged along one wall of the building. The circulation through the building is part of the circuitous path through the site.

#### **6.4 Minneapolis Rowing Club Boathouse, Minneapolis, Minnesota**

#### **6.5 Pinecote Pavilion, Picayune, Mississippi**

The final two precedents are significant both in the way they relate to the water and their site geography. The Minneapolis Rowing Club Boathouse (figure 109), designed by Vincent James and completed in 2002, has a very casual relationship with the Mississippi River along which it sits. There is no dock, as rowers simply carry their shells back and forth between the building. The structure responds more to the topography of the site itself, which is a narrow tract of flat land at the base of a steep bluff. This topography is typical along much of the upper Mississippi.

Pinecote Pavilion (figure 110), designed by Fay Jones, is not on the Mississippi, but the topography of the site is somewhat typical of the Mississippi below Memphis. The land on the site is perfectly flat, and the shoreline weaves underneath the structure and through the site forming inlets and peninsulas. Pinecote Pavilion's roof, porous and skeletal at its edges, blurs the distinction between inside and out. Similarly, the floor of the pavilion is at once an extension of the land and a disassociated platform hovering just above the surface of the water.



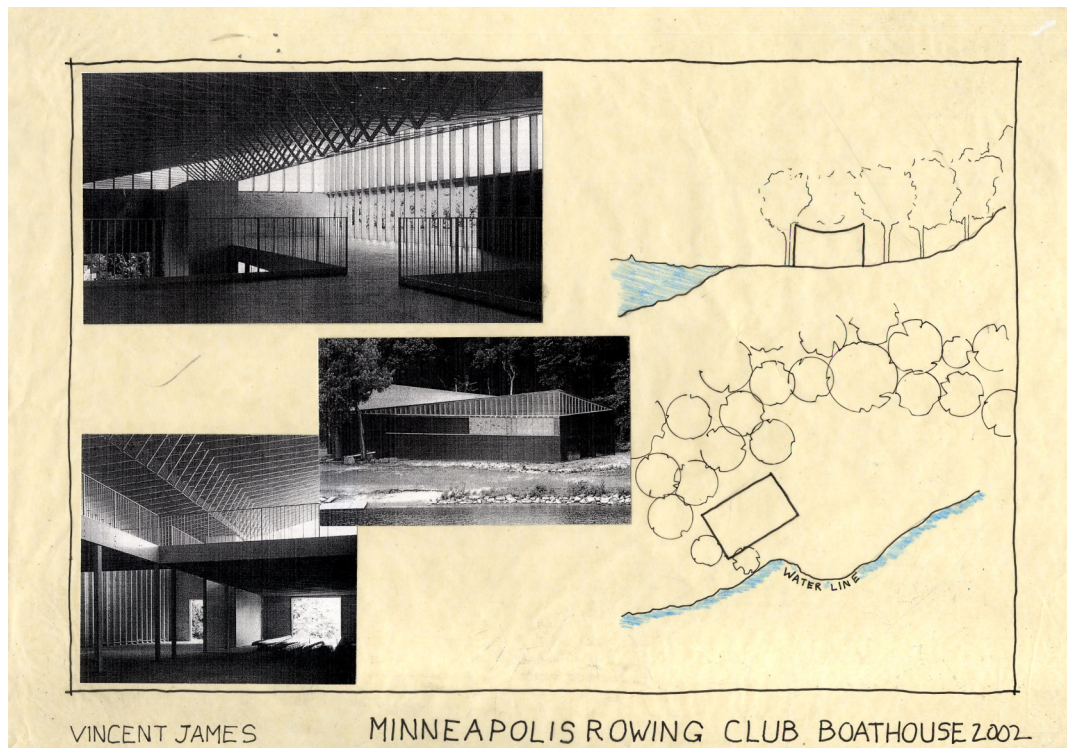


Figure 109. The Minneapolis Rowing Club Boathouse sits off the water's edge. The roof is dynamic, but the building is a silent and introverted object within the landscape.

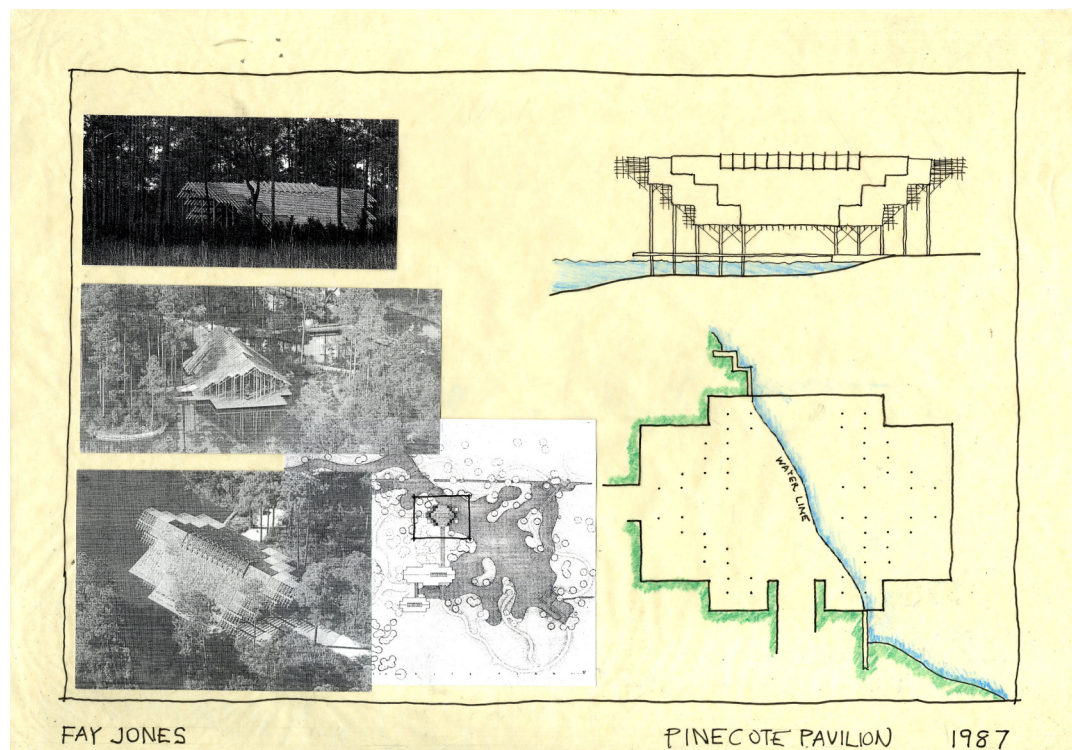


Figure 110. Pinecote Pavilion sits halfway over the water. Unlike Minneapolis Rowing Club Boathouse, the natural environment envelops and flows through the structure.



## Chapter 7: Functional Considerations and Program

### 7.1 Design Goals and Approach

#### 7.1.1 *The Network*

The concept of the network of pavilions serves two purposes. Visiting pavilions in succession is a tangible jumping off point for understanding the regional differences among the areas that the Mississippi flows through, and visiting these pavilions is one way to gain an understanding of the scope of the Mississippi River. As each pavilion is a node in the larger network, there must be one or more common design elements, symbolic or functional, that show up on every pavilion, regardless of location. The network is accessed by pre-existing modes of travel, including tour buses, private automobiles, private boats, riverboats, trains, and bicycles, though each pavilion may not be accessible by every mode.

As this thesis is dedicated to providing the framework for an individual exploration of the central United States, each pavilion serves a specific place within the larger context of the Mississippi River. While the network illustrates the idea of the Mississippi River as representative of the essence of America, it also must highlight the unique regions and places along the way. Thus the architecture of each pavilion should be firmly rooted in the *genius loci* of its town.

### *7.1.2 The Pavilions*

In addition to being links in the narrative chain of traveling the river, each pavilion has the following programmatic functions:

**A large educational space** – Each pavilion contains a flexible multi use space that can be configured in a variety of ways for different educational programming. At southern pavilions, it may be an outdoor space covered by a roof structure of some kind. The educational programming is designed to be of interest to residents as well as travelers. For example, in a given summer there could be one lecture series on ecology, one on music, and one on river commerce. It is imperative that the pavilions serve both the local community and tourists. As such, themed educational programs can travel from pavilion to pavilion. For example, a tourist could travel down river following a lecture series, while a local resident could attend the one lecture in each series at the local pavilion.

**Lab space** – As faculty from local universities would staff these pavilions, lab space is provided for the testing and analysis of water samples and other specimens would be provided. In the spirit of the educational goals of the project, these labs could be open to the public in an effort to show visitors the type of environmental research that is being practiced.

**Classrooms** – Potentially, these pavilions could be home to educational programs similar to those of the Living Classroom Foundation in Baltimore. Programs could serve both tourists and residents.

**Office of Extension** – As University faculty would be on staff, the pavilions could serve as a sort of “field office” for extension services that relate to Environmental Studies, Urban Planning, Preservation, and History. Faculty potentially could operate a kind of residency program for visiting professors to do research pertaining to the river.

**Visitor center/gallery** – This space would host exhibitions, student work, and research findings.

### 7.1.3 Program Tabulation

#### **Education/Community outreach**

|                         |          |
|-------------------------|----------|
| Visitor center/gallery  | 1,000 sf |
| Assembly flex space     | 5,000 sf |
| Classrooms (2 @ 400 sf) | 800 sf   |

#### **Research**

|                              |          |
|------------------------------|----------|
| Lab                          | 2,500 sf |
| Faculty offices (4 @ 120 sf) | 480 sf   |

#### **Administration**

|                                    |        |
|------------------------------------|--------|
| Reception                          | 200 sf |
| Conference room                    | 300 sf |
| Administrator offices (4 @ 120 sf) | 480 sf |

|                     |                  |
|---------------------|------------------|
| <b>Building Net</b> | <b>10,760 sf</b> |
|---------------------|------------------|

|                             |                  |
|-----------------------------|------------------|
| <b>Building Gross (1.4)</b> | <b>15,064 sf</b> |
|-----------------------------|------------------|

#### 7.1.4. Design Issues

- How can a program of educational and lab space be made compatible with the narrative of traveling the river?
- How will the use of the network and the pavilions change from season to season?  
How can the program be designed to ensure that these structures are used and enjoyed during the winter and summer months?
- How will the pavilions, which are relatively small, connect the town to the water when the physical distance may be large?
- What elements will be consistent from pavilion to pavilion so that there is a common thread between all of them? Must this element be functional, or can it be merely symbolic?

#### 7.1.5 Ecotourism

According to The International Ecotourism Society (TIES), ecotourism is defined as "responsible travel to natural areas that conserves the environment and improves the well-being of local people." Ecotourism is concerned both with environmental and cultural sustainability. According to TIES, those who implement and participate in ecotourism activities should have the following goals:

- Minimization of impact
- Building of environmental and cultural awareness and respect
- Providing positive experiences for both visitors and hosts
- Providing direct financial benefits for conservation
- Providing financial benefits and empowerment for local people
- Raising sensitivity to host locations political, environmental, and social climate
- Supporting international human rights and labor agreements

While this definition applies most directly to travel in developing countries, several of these principles have the potential to guide the development of this thesis. As mentioned in preceding chapters, the Mississippi passes through several regions that are economically and socially depressed for various reasons. By reconnecting the towns, cities, and rural areas in a pattern based on their historical relationships, but not nostalgia, the system will serve both tourists and those living on or near the river.

## Chapter 8: Design Approach

### 8.1 The Network

#### 8.1.1 Mississippi RiverLab

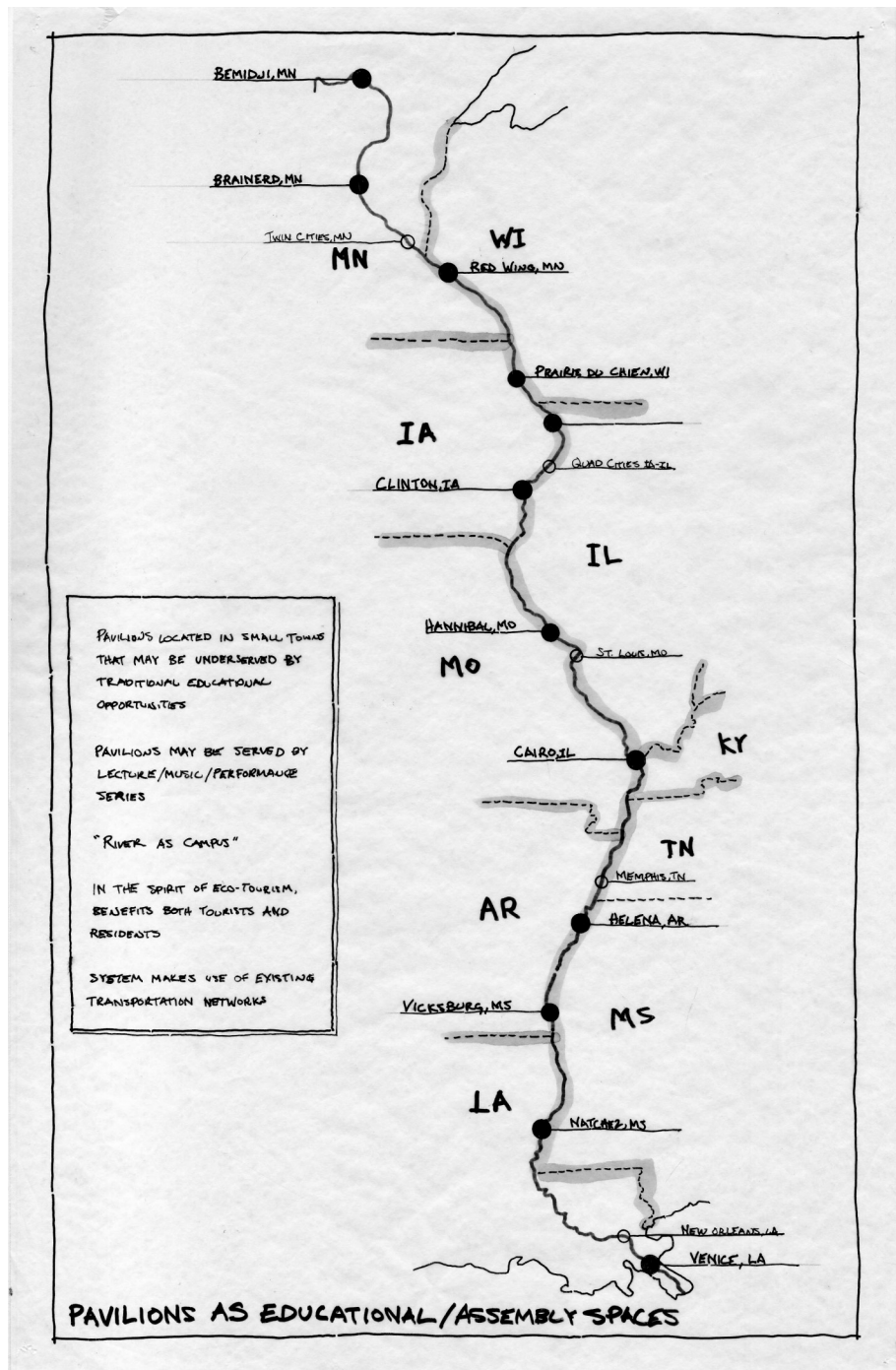


Figure 111. Network of educational, assembly, and research spaces

### 8.1.2 Network Alternative 1

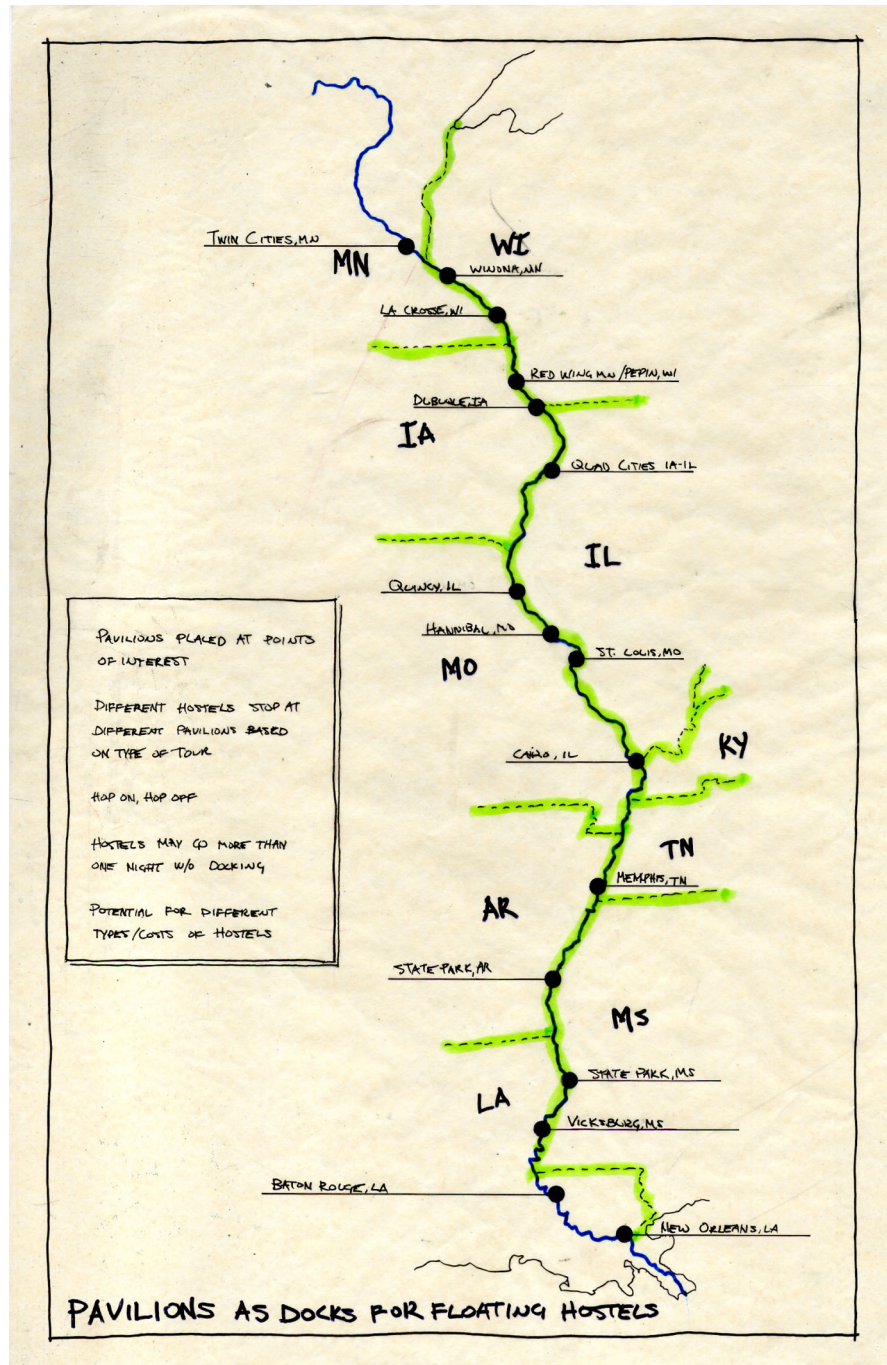


Figure 112. Network of docks for floating hostels



## 8.1.2 Network Alternative 2

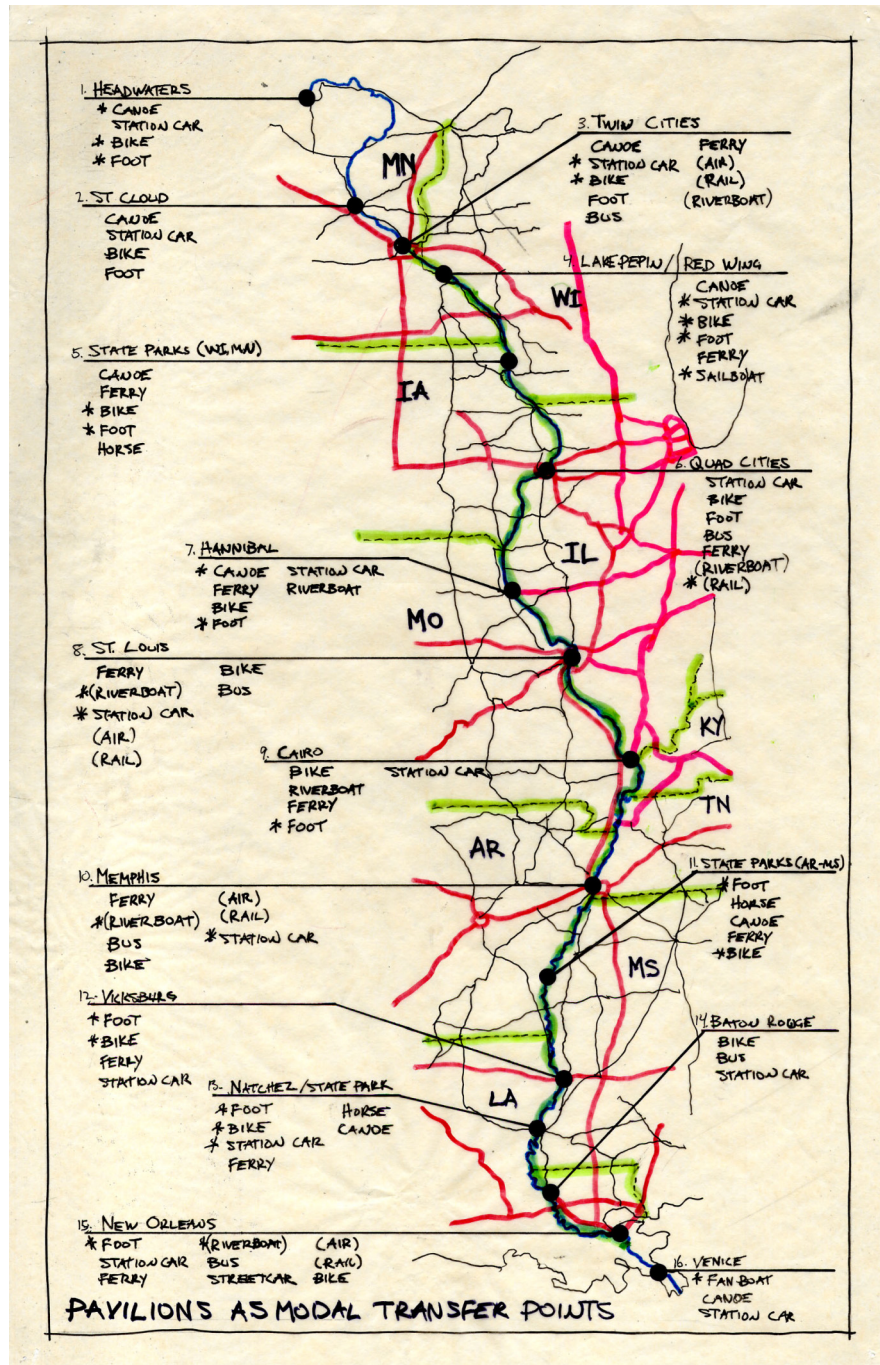


Figure 113. Network of modal transfer points

### 8.1.2 Network Alternative

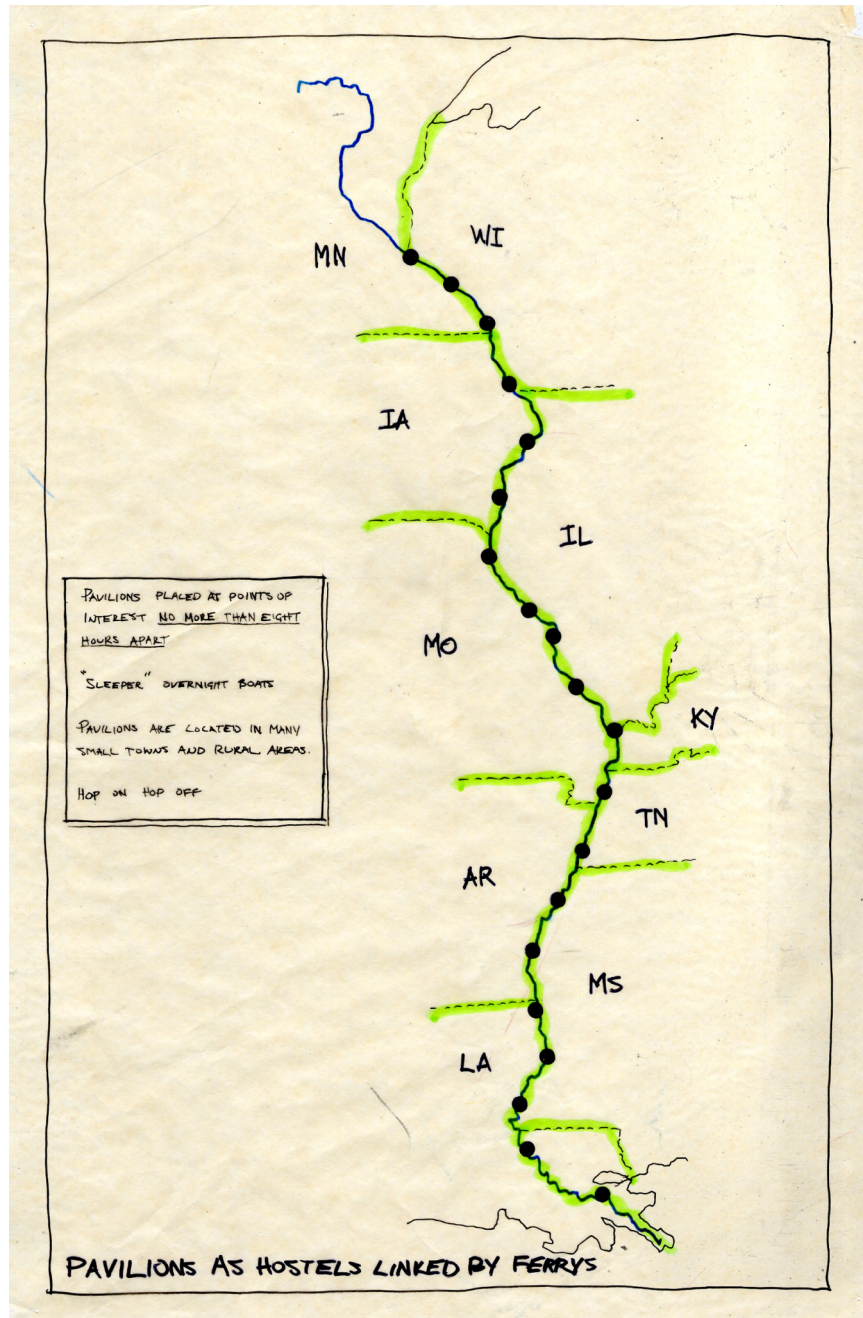
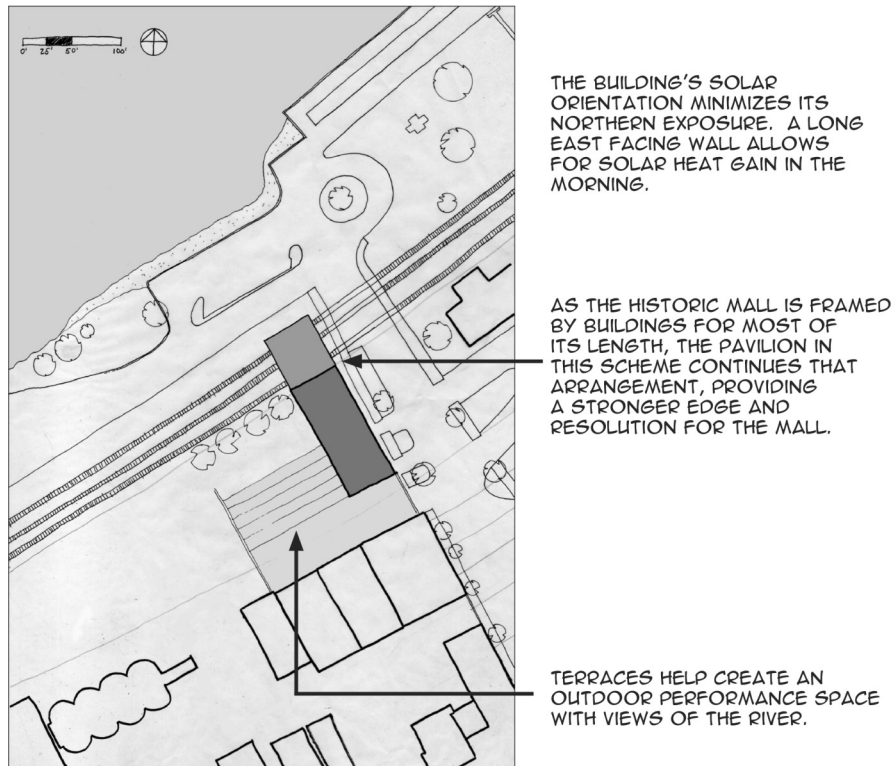


Figure 114. Pavilions as hostels linked by ferries

## 8.2 Pavilion and Site Partis

### 8.2.1 Red Wing, MN

Figure 115. Scheme 1



THE STRUCTURE BRIDGES OVER THE TRAIN TRACKS AND INDUSTRIAL ACCESS ROAD, PROVIDING EASY ACCESS TO THE WATER FROM INSIDE THE BUILDING.

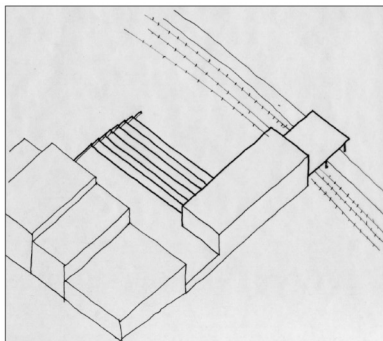
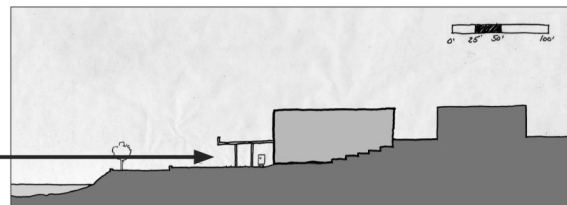
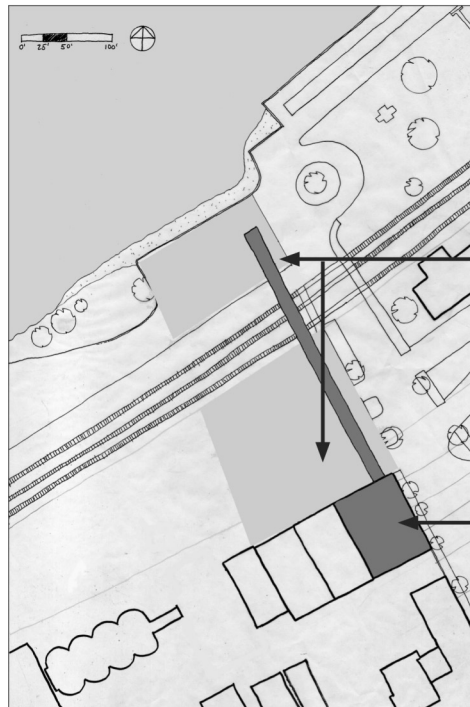


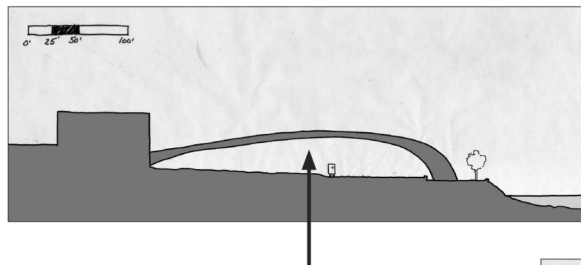


Figure 116. Scheme 2



THE BRIDGE DEFINES TWO EXTERIOR SPACIAL ZONES. THE BRIDGE ALSO CREATES A SWEEPING AND DYNAMIC EDGE TO THE HISTORIC MALL DISTRICT.

IN THIS ADAPTIVE REUSE PROPOSAL, AN EXISTING VACANT INDUSTRIAL BUILDING RENOVATED TO HOUSE THE PROGRAMMATIC SPACES OF THE PAVILION.



RED WING HAS A LOT OF LINEAR PUBLIC OPEN SPACE, SUCH AS THE RIVERFRONT PARK AND THE HISTORIC MALL. THE TWO NEW SPACES THAT ARE CREATED HERE TIE INTO THESE LINEAR SYSTEMS BUT ALLOW FOR OTHER PROGRAMMATIC POSSIBILITIES.

CONTRASTING THE HISTORIC BUILDING, A CONTEMPORARY BRIDGE PIECE CONNECTS THE BUILDING TO THE RIVER.

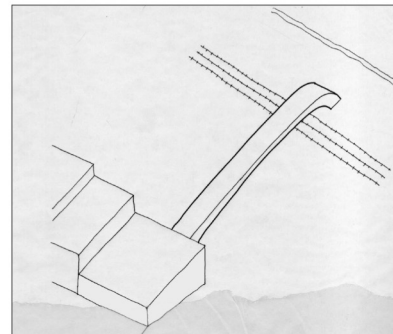
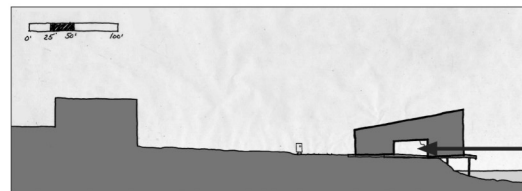


Figure 117. Scheme 3

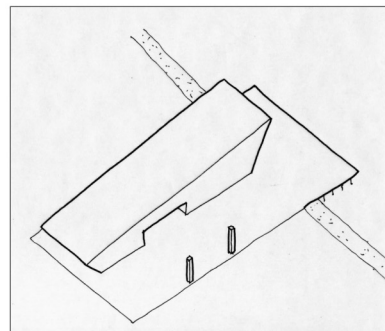


THE PAVILION IN THIS SCHEME SITS PARTIALLY OVER THE WATER, CREATING A TANGIBLE LINK BETWEEN THE BUILT ENVIRONMENT AND THE RIVER. THIS ARRANGENT ALSO ALLOWS FOR THE CHANGES IN WATER LEVEL TO BE OBSERVED.

THE BUILDING OCCUPIES A NODE BETWEEN FOUR DISTINCT ZONES, THE COMMERCIAL, INDUSTRIAL, RECREATIONAL, AND RIVER. THE BUILDING MAKES A FORMAL "PLACE" AT THIS POINT WHILE ALLOWING FOR VISUAL AND CIRCULATORY CONTINUITY IN ALL DIRECTIONS.



THE PAVILION'S PASS THROUGH FRAMES A LARGE GRAIN ELEVATOR IN THE DISTANCE.



THE ORIENTATION OF THIS BUILDING MINIMIZES NORTHERN EXPOSURE. THE SOUTHERLY SLOPING ROOF ALLOWS FOR GREATER HEAT GAIN AND THE PLACEMENT OF SOLAR CELLS.

THE PAVILION FORM MAY BE ADOPTED FOR USE IN HANNIBAL AND NATCHEZ, CREATING A SET OF RECOGNIZABLE BUILDINGS AS ONE TRAVELS THE RIVER.

### 8.2.2. Hannibal, MO

Figure 118. Scheme 1

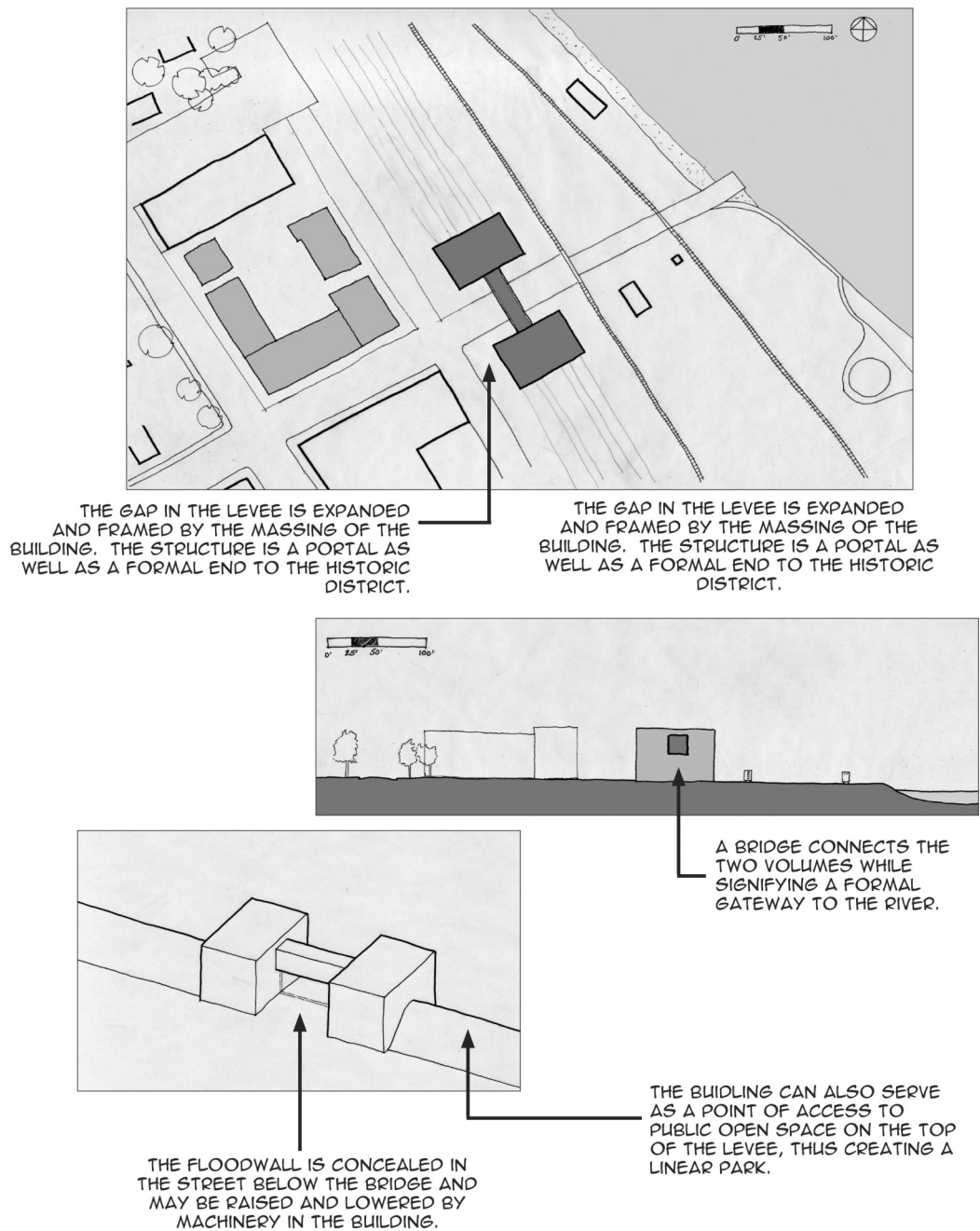
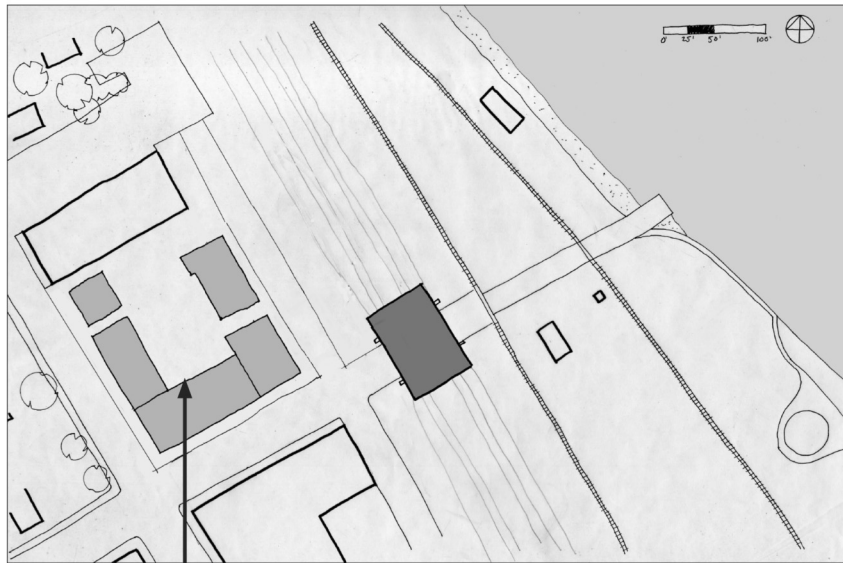
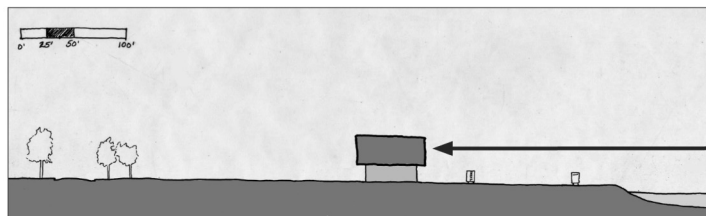


Figure 119. Scheme 2



ON THE BLOCK FORMERLY OCCUPIED BY A CAR DEALERSHIP, NEW INFILL BUILDINGS EXTEND THE FABRIC OF THE TOWN AND CREATE A DEFINED EDGE ALONG THE LEVEE.

IN THIS SCHEME THE BUILDING SITS OVER A BREAK IN THE LEVEE.



THE RAISED BUILDING IS A VISUAL MARKER OF A JUNCTURE IN THE LEVEE THROUGH WHICH TO CROSS FROM THE TOWN TO THE RIVER.

THE ELEVATED BUILDING IS ALSO A RESPONSE TO THE FLOOD-PRONE LAND ON THE OTHER SIDE OF THE LEVEE.

A FLOODWALL IS OPEN AND CLOSED BY MACHINERY WITHIN THE BUILDING. WHEN OPEN, THE WALL IS CONCEALED WITHIN THE LEVEE.

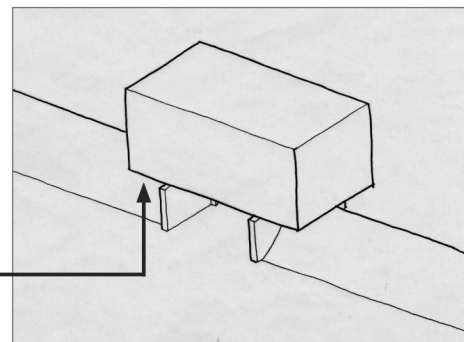
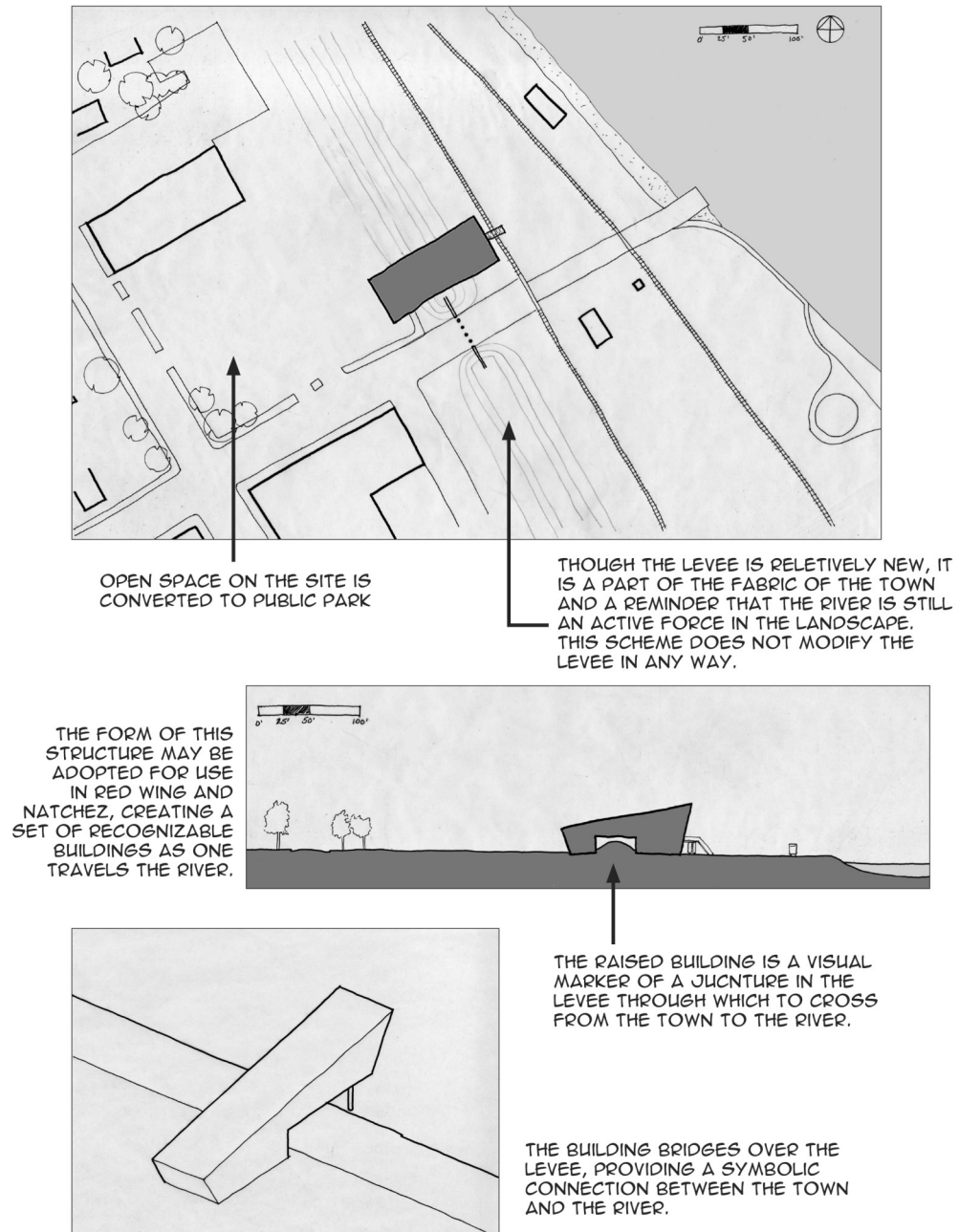


Figure 120. Scheme 3





### 8.2.3 Natchez, MS

Figure 121. Scheme 1

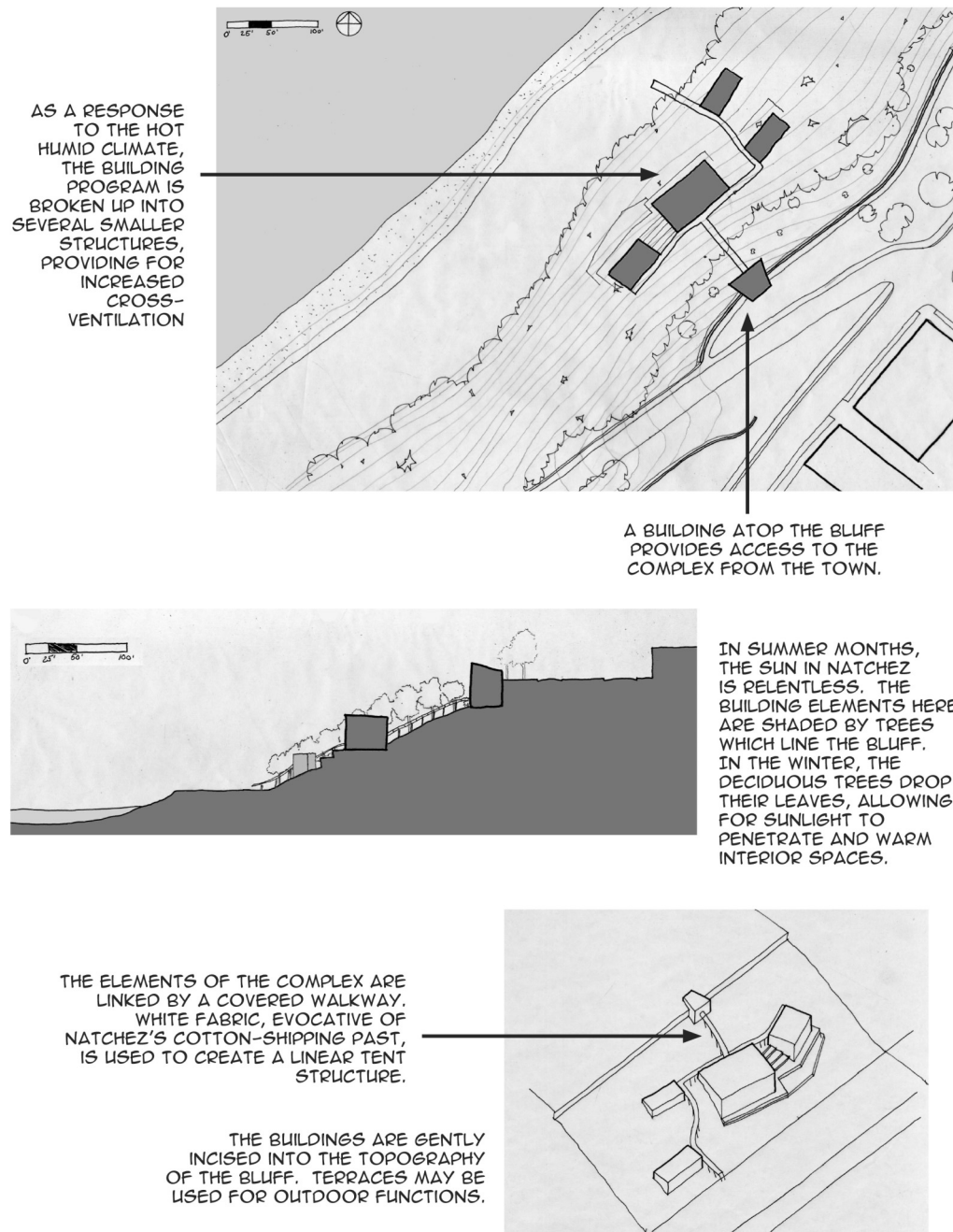
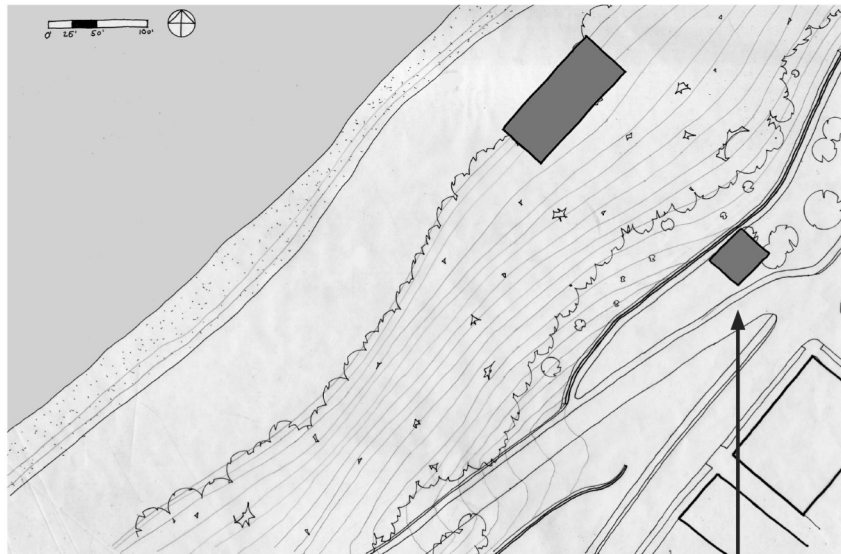
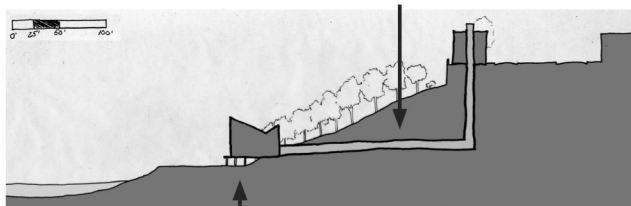


Figure 122. Scheme 2



A HEAD BUILDING ON TOP OF THE BLUFF IS THE ACCESS POINT TO THE MAIN BUILDING BELOW

VERTICAL CIRCULATION IS CUT THROUGH THE BEDROCK OF THE BLUFF. ELEVATORS MOVE VISITORS 115' BETWEEN THE TOWN AND THE BUILDING.



THE VERTICAL SHAFT ALSO ALLOWS FOR STACK VENTILATION, AS HOT, HUMID AIR IS SUCKED THROUGH THE SYSTEM.

LOCAL BUILDING CODE SPECIFIES THAT STRUCTURES ON THE FLOODPLAIN BE ELEVATED 8'.

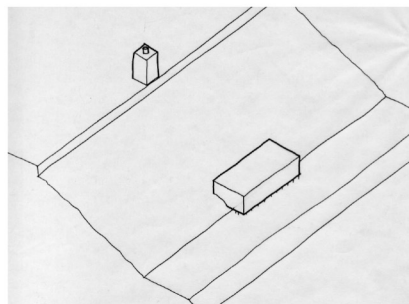
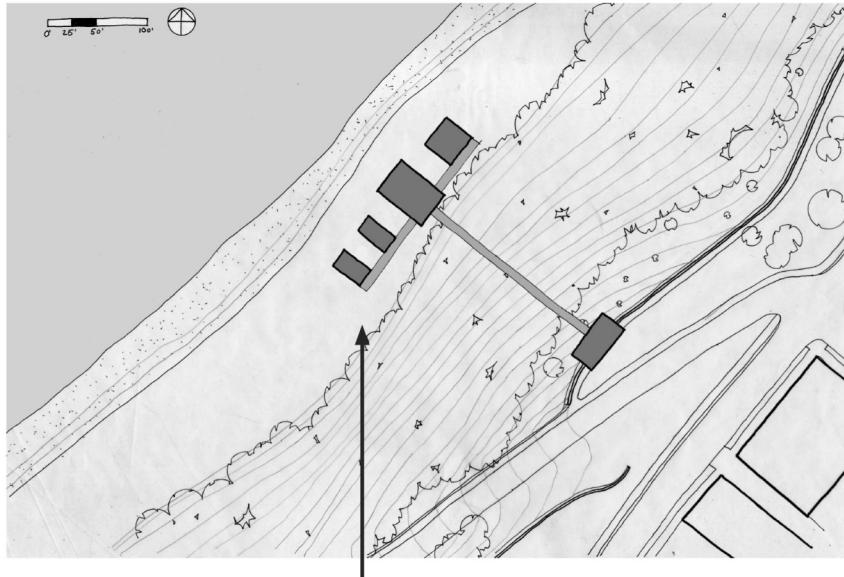
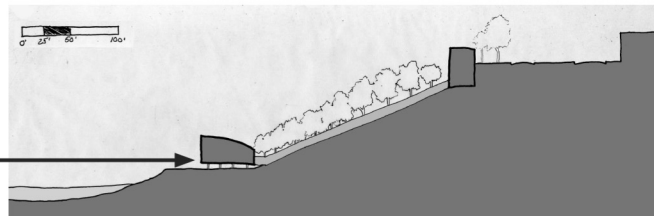


Figure 123. Scheme 3



AS A RESPONSE TO THE HOT HUMID CLIMATE, THE BUILDING PROGRAM IS BROKEN UP INTO SEVERAL SMALLER STRUCTURES, PROVIDING FOR INCREASED CROSS-VENTILATION

LOCAL BUILDING CODE SPECIFIES THAT STRUCTURES ON THE FLOODPLAIN BE ELEVATED 8'. THE DEVELOPMENT OF BUILDINGS ON STILTS IS A TANGIBLE REMINDER OF THE POWER OF THE RIVER.



A BUILDING ATOP THE BLUFF PROVIDES ACCESS TO THE BUILDINGS FROM THE TOWN. AN ENCLOSED SPINE MOVES PEOPLE DOWN THE FACE OF THE BLUFF.

THE LOCATION OF THE BUILDINGS ON THE FLOODPLAIN PRESERVES THE POTENTIALLY DELICATE BLUFF FROM EROSION.

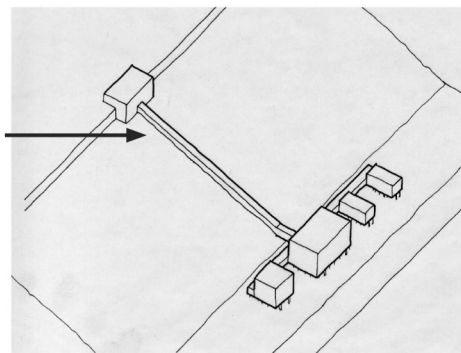
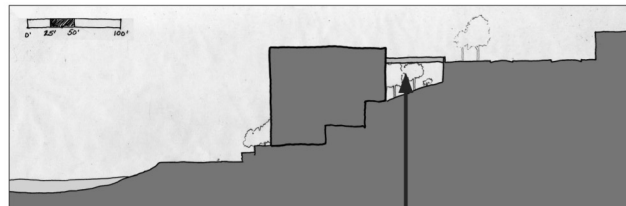


Figure 124. Scheme 4

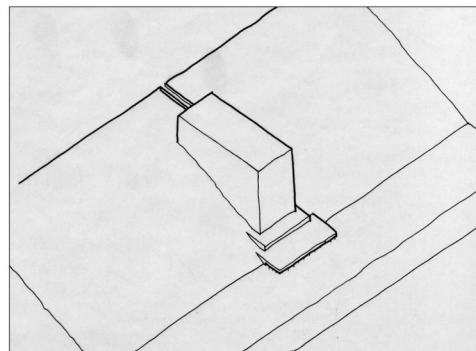
IN THIS SCHEME, THE BUILDING CUTS ACROSS THE TOPOGRAPHY OF THE BLUFF. CIRCULATION FROM THE TOWN TO THE RIVER IS MADE FROM WITHIN THE BUILDING.



THE ENTRANCE INTO THE BUILDING PROVIDES FOR SWEEPING RIVER VIEWS. NORTH-FACING GLASS CREATES CONTINUITY WITH THE LANDSCAPE WITHOUT SIGNIFICANT HEAT-GAIN.



A BRIDGE GIVES ACCESS TO THE STRUCTURE FROM THE TOWN.



THE FORM OF THIS STRUCTURE MAY BE ADOPTED FOR USE IN RED WING AND HANNIBAL, CREATING A SET OF RECOGNIZABLE BUILDINGS AS ONE TRAVELS THE RIVER.

## Chapter 9: Conclusion

### 9.1 Design Conclusions

#### *Regionalism and Universality*

Ultimately, this thesis is about two sets of design parameters, the universal and the regional, and how they came together to guide the design of each pavilion. The universal aspect of the design, a common structural system, arose out of the need for a common

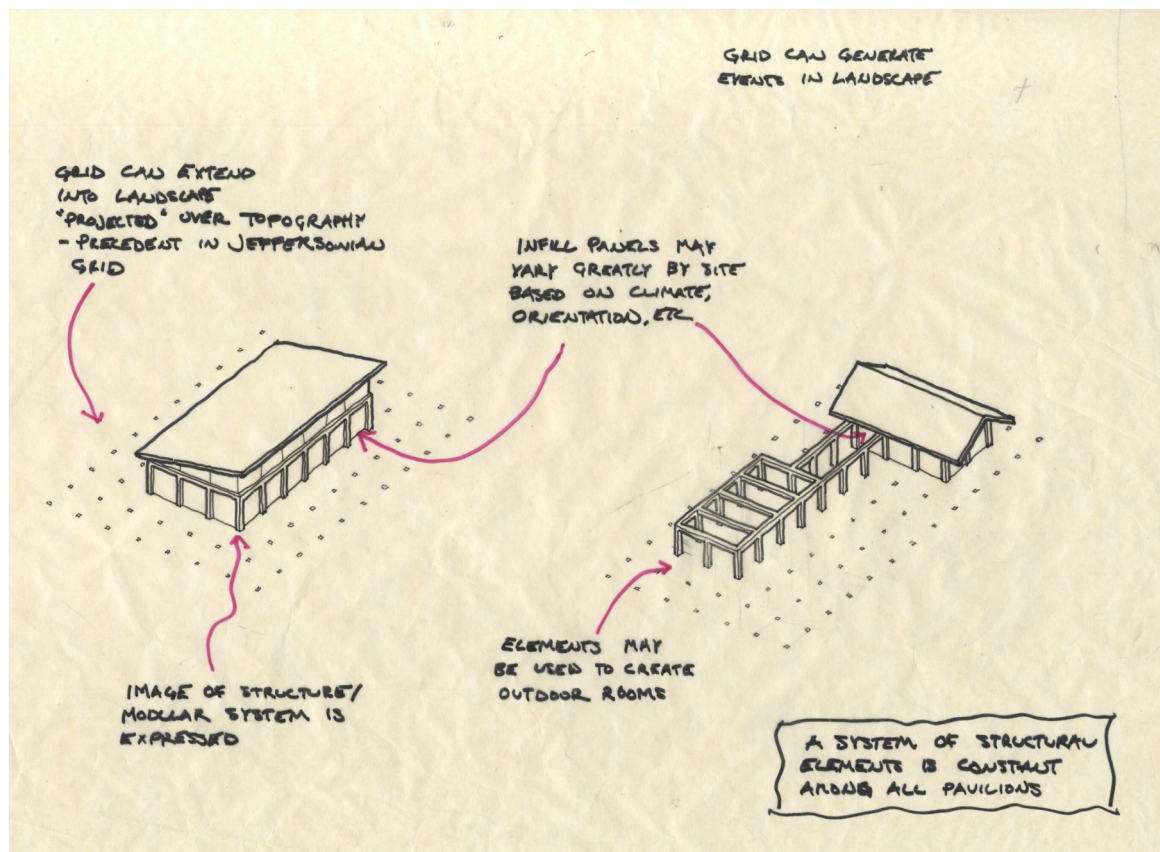


Figure 125. The grid of structural elements.

formal strategy at each site to identify these pavilions as links in a chain. This system is based on a set of identical and reproducible glulam components that can be shipped to



Figure 126. Thesis diagram

and erected at each site, thereby creating a canopy structure under which the building elements are arranged based on local site conditions.

The structure is the universal aspect of the project, and this choice is based on an understanding of the Mississippi's role in Westward expansion. Westward expansion in the 1800s was made possible in large part by the creation of dimensional components that could be shipped to remote building sites by barge and rail. The structure and structural detailing of the buildings make direct reference to this idea.

The regional aspects of each building arose out of both micro and macro site analysis. Massing of building elements under the roof and the articulation of the

building envelope respond to local climate conditions. The expression of either a heavy and impervious envelope or a lightweight and porous one against the constant backdrop





Figure 127. Column detail showing the articulation of the connection

of the structural system allow for a reading of each building's passive heating and cooling strategies.

### *Program*

The program of each building is identical – a flexible multi-use pavilion which can be programmed in a variety of ways. Each building is composed of three main

elements: a non-conditioned great room, a conditioned support space, and a covered outdoor room. As the main hall is not conditioned, the local climate must be allowed to dictate the way the building is programmed at different times of day and year. For example, a meeting likely could not be scheduled for Natchez in August, but an exhibition of local artwork could.

Other programmatic elements include a grid of landscape elements which frame a riparian landscape at each site. The building claims a portion of the waterfront, and recognizing that the river is constantly changing its position, the grid of landscape elements provides a constant backdrop by which to observe the changes in this landscape throughout the day, year, and longer periods of time.



The final landscape element is a watergate that references the historic connection that the urban fabric of each town had with the river. These features promote an interaction between users and the river.

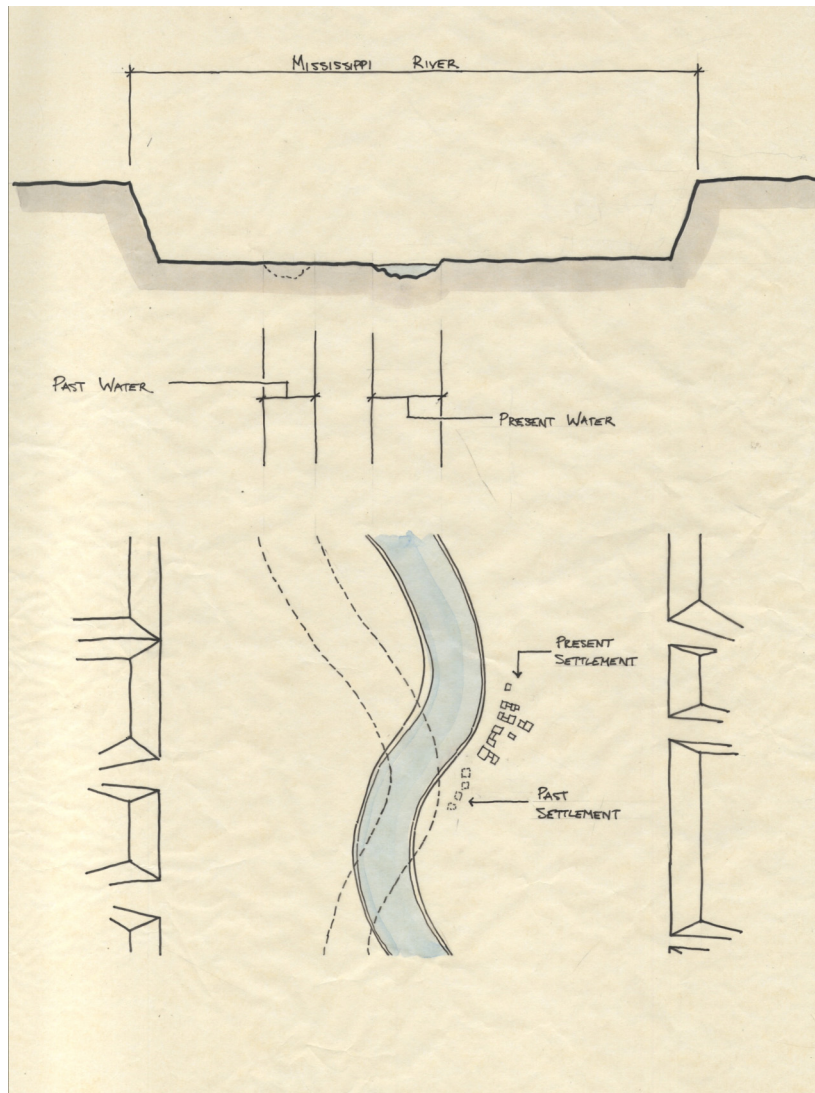


Figure 128. The changing nature of the river landscape.

### *Red Wing, MN*

The regional aspects of this site arose from climate, urban conditions, and local context.

The decision to place the building perpendicular to the river is based on the extension of a swath of urban open space to its logical ending at the river. The envelope is massive to provide insulation, and the use of panelized brick refers to the town's long history of brick and clay making. Other building features such as large sliding doors refer to the warehouses that historically lined the waterfront.



Figure 129. Red Wing Site Plan



Figure 130. Red Wing Building plan.



Figure 131. Red Wing Elevation

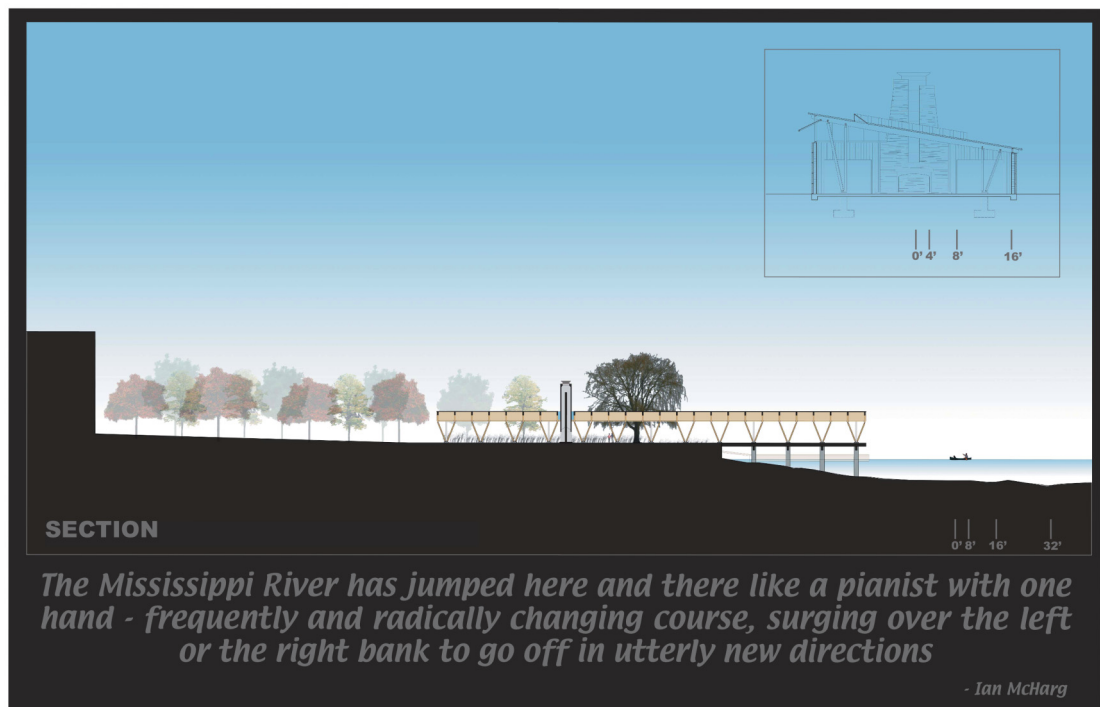


Figure 132. Red Wing Section.



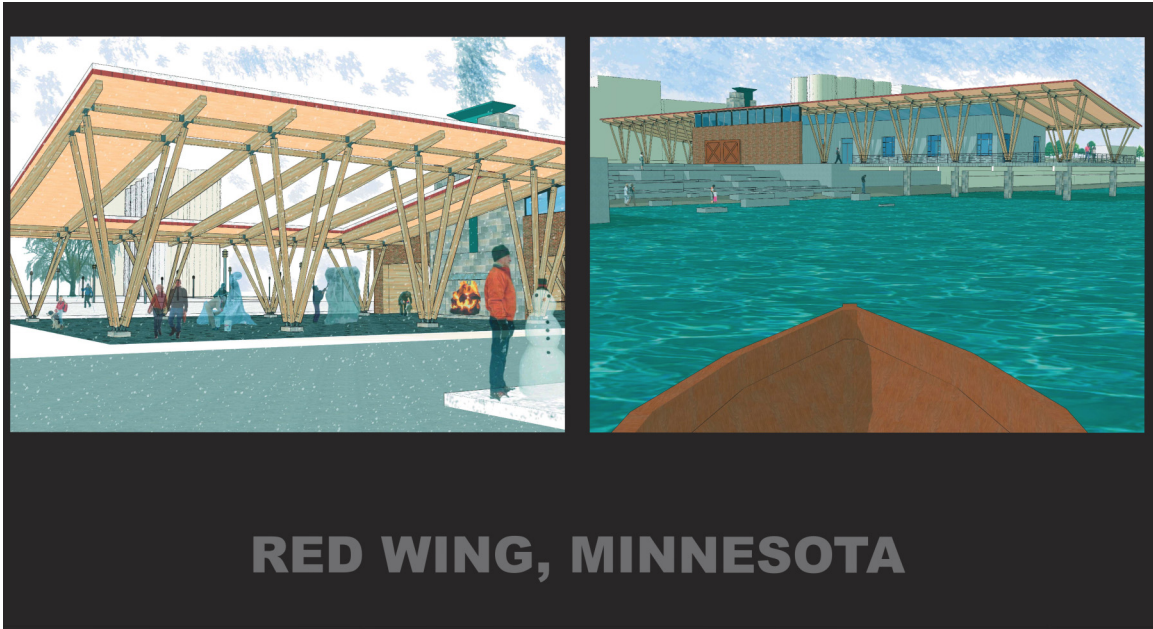


Figure 133. Red Wing exterior perspectives

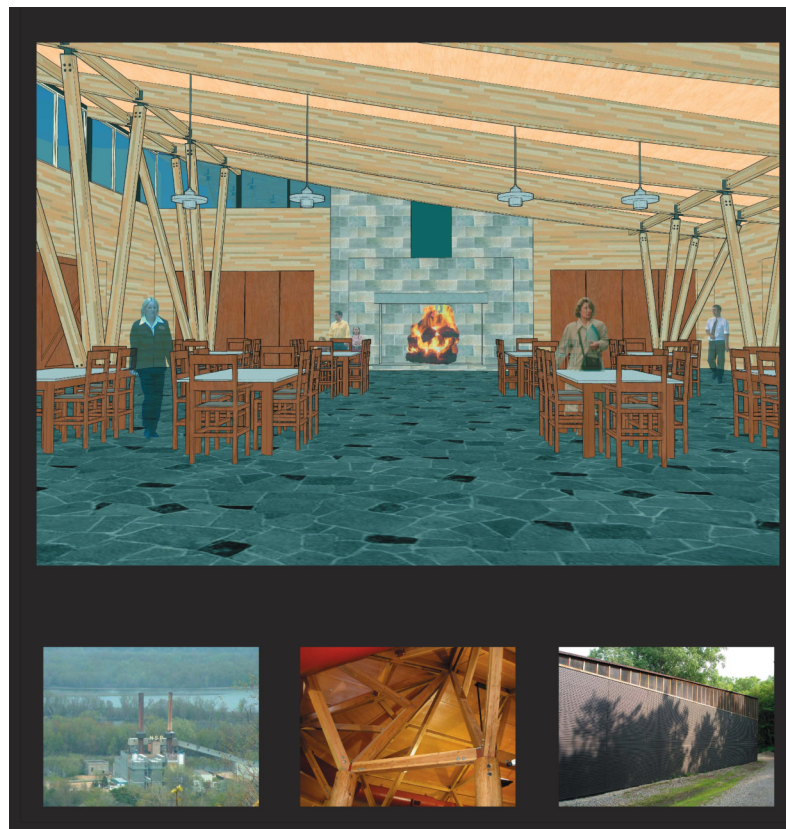


Figure 134. Red Wing interior perspectives

*Hannibal, MO*

The pavilion at this site responds to a micro site condition – the levee. In Hannibal, the levee is a negative edge that is a barrier between the town and the water. The building sits in the levee itself in order to provide a formal gateway between the two realms. The materiality of the building in the levee is stone, while a lighter weight metal clad box sits above.

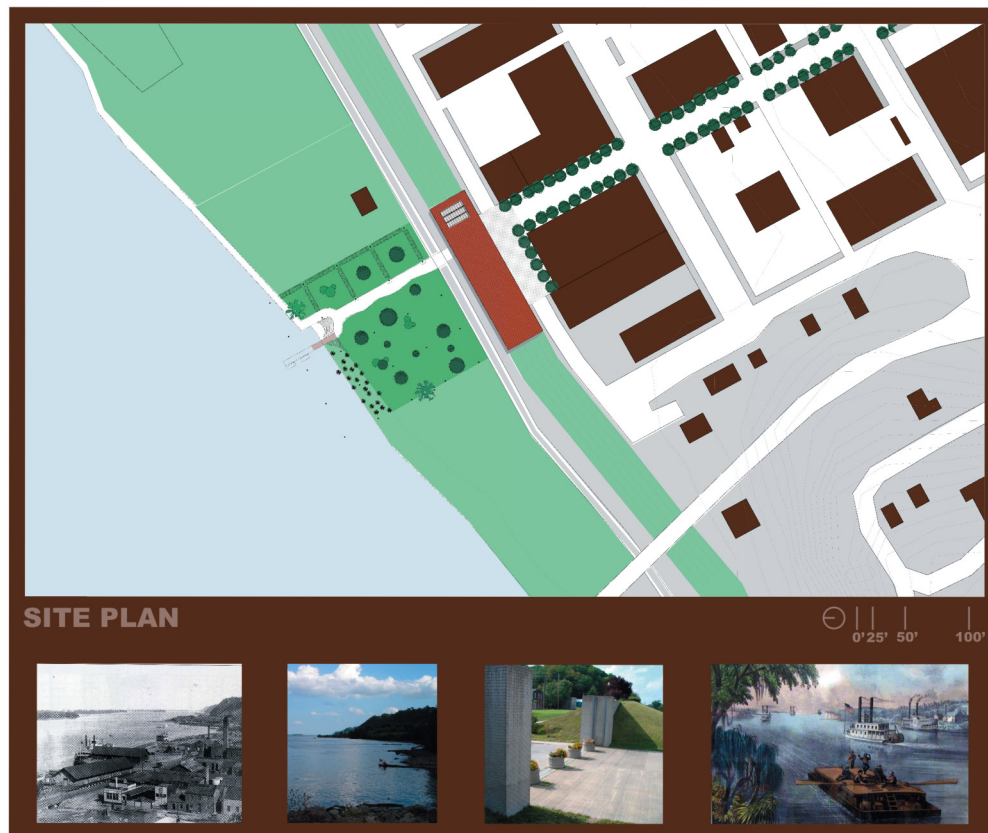


Figure 135. Hannibal Site plan

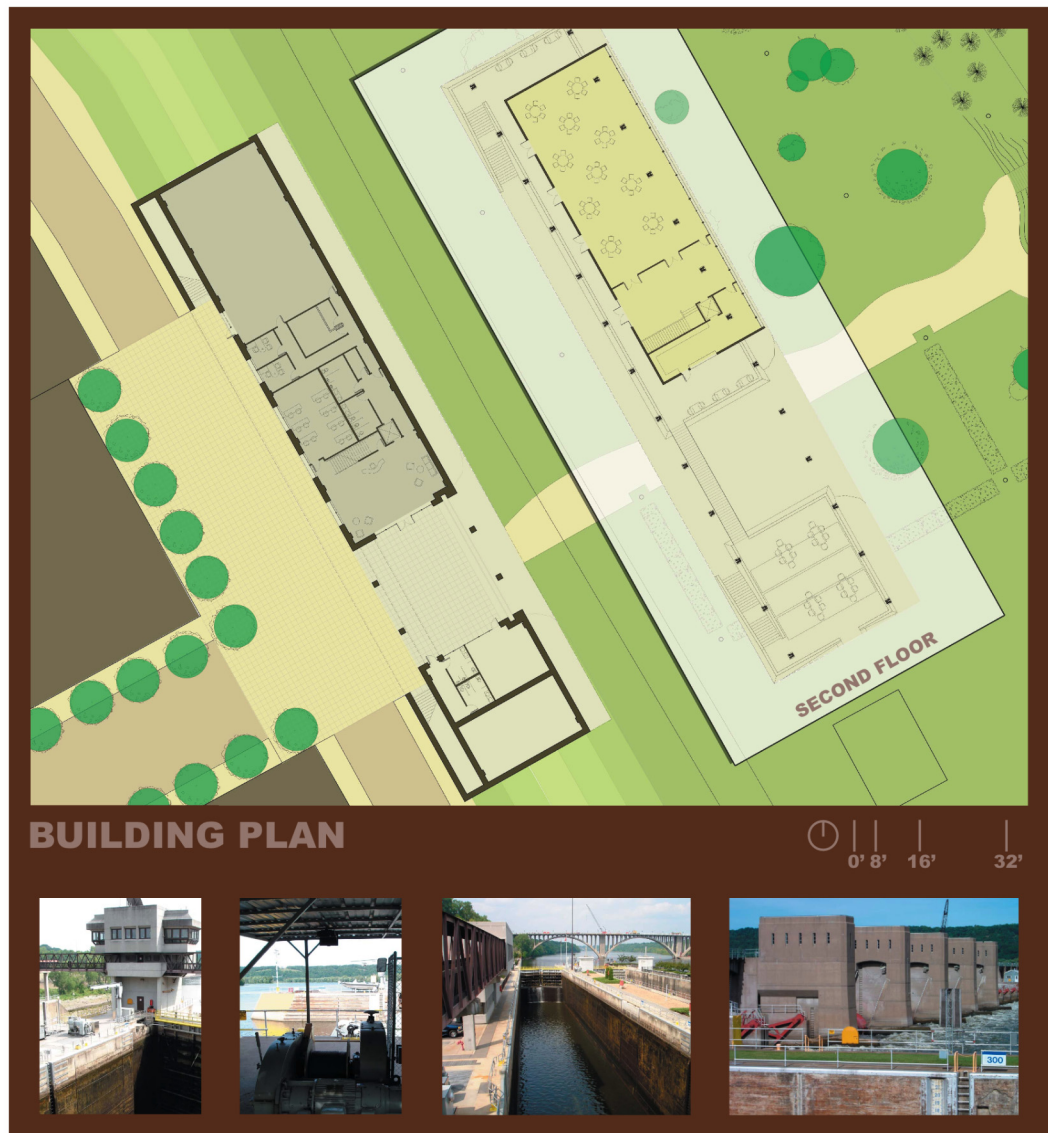


Figure 136. Hannibal building plan



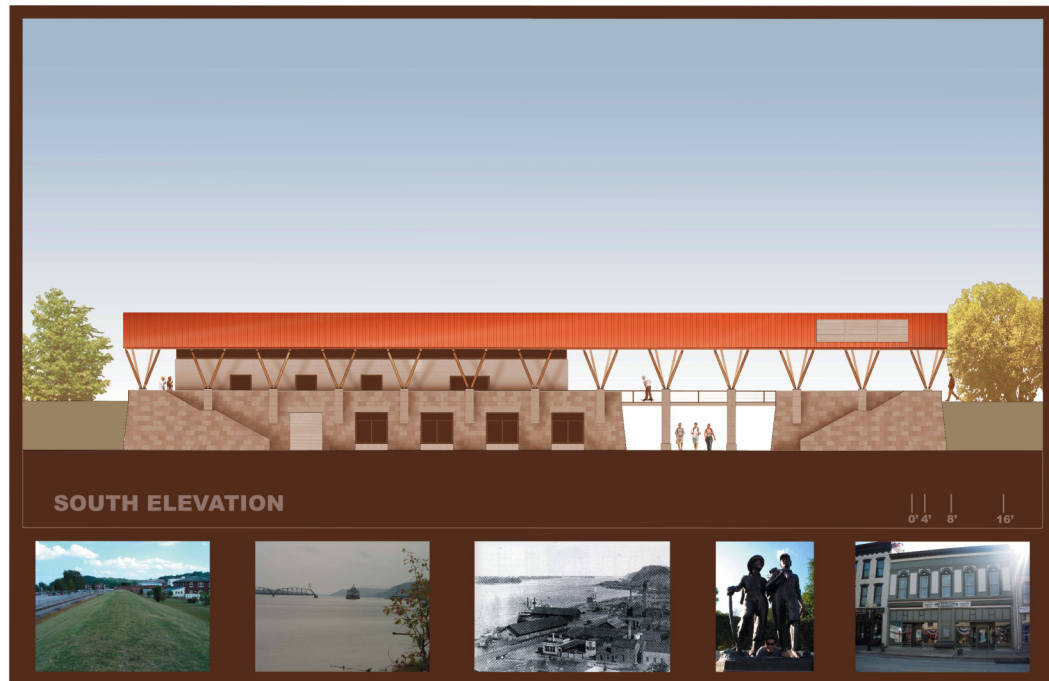


Figure 137. Hannibal Elevation



Figure 138. Hannibal Section



Figure 139. Hannibal exterior perspectives.

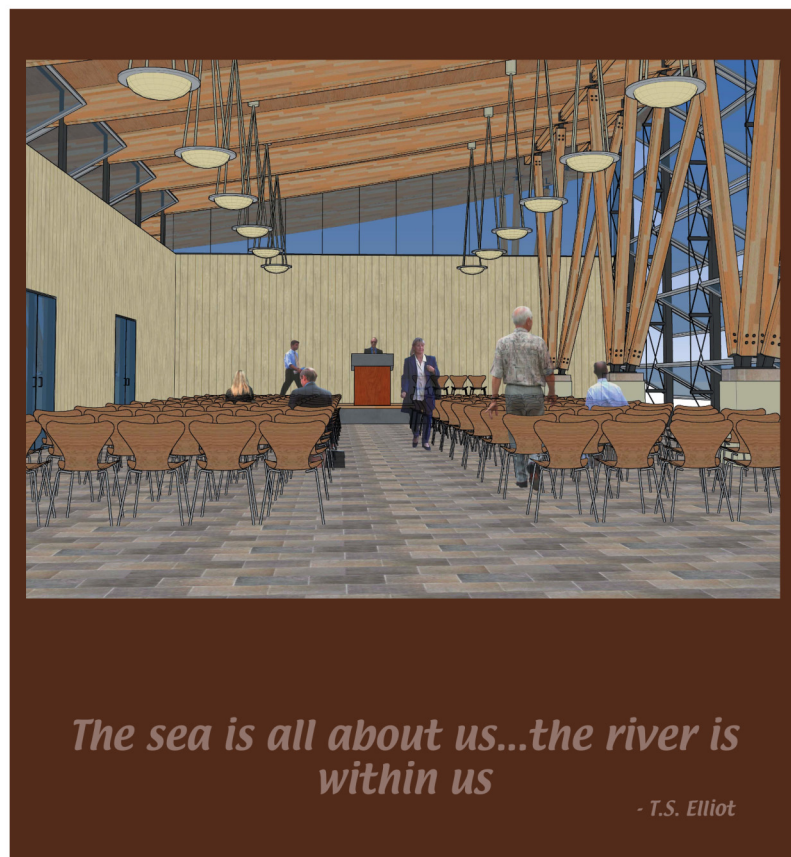


Figure 140. Hannibal interior perspective

*Natchez, MS*

This structure is perched on the edge of the bluff that separates the town from the river. This gives the pavilion a presence in the town while making it visible from the water. In addition to a commanding view of the water below, this siting allows for the circulation of air through the building. The great room here is a wood-slat envelope that maximizes this circulation while affording some privacy.



Figure 141. Natchez site plan

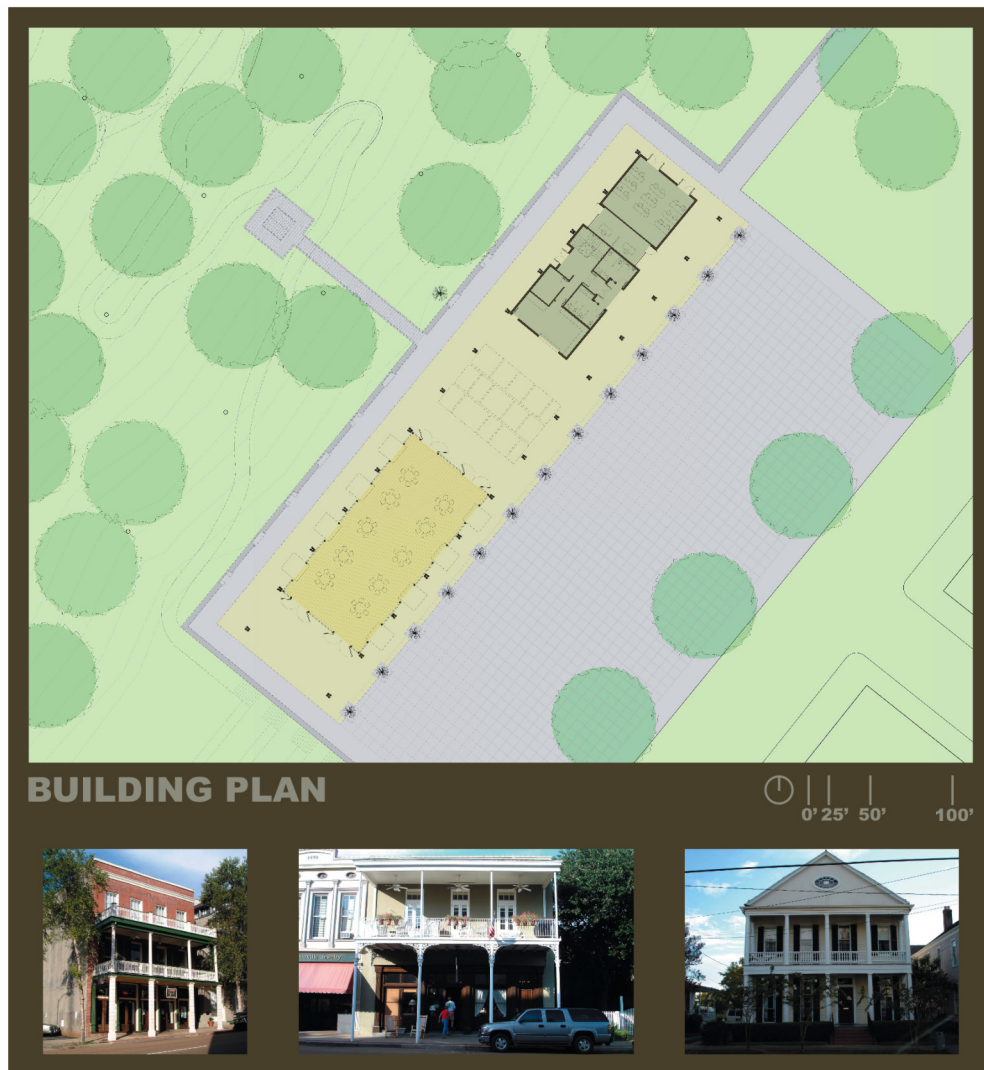


Figure 142. Natchez building plan





Figure 143. Natchez elevation



Figure 144. Natchez section



Figure 145. Natchez exterior perspectives

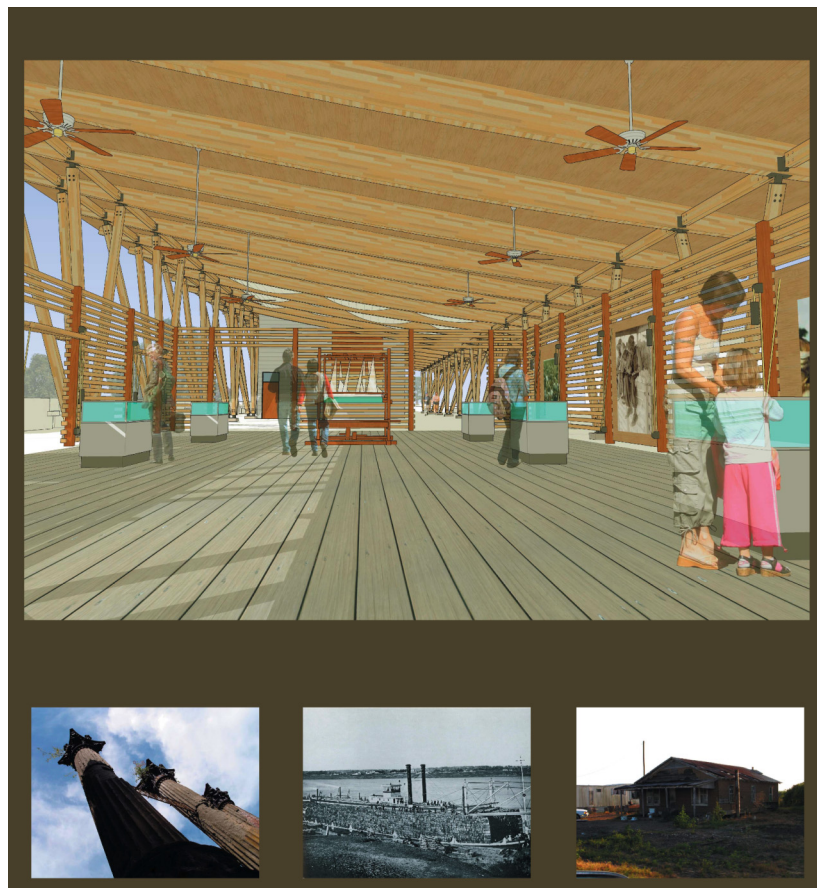


Figure 146. Natchez interior perspective.

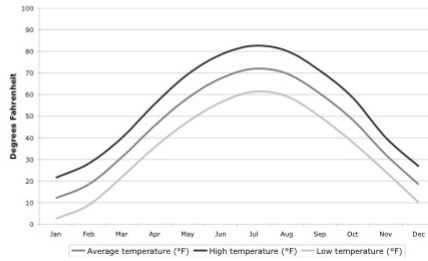


## **Afterword**

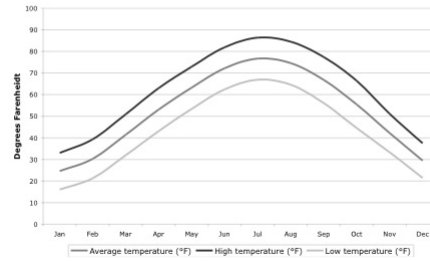
This project proposes one way that towns along the river may be linked and invigorated using architecture as a vehicle. One of the challenges over the last year has been choosing from the myriad possibilities of how to be both regional and universal, and in striking the appropriate balance between the two. There is no right answer, and many paths would have led to successful conclusions. However, it is my belief that the choice of the structure as the universal and the envelope as the regional has led to a richness of form for two reasons. The first is that while the structure is labeled “universal” for the purposes of this thesis, it has a direct and tangible relationship with the river and its history. The structure is thus universal to the system, but specific to the context of the Mississippi River landscape as a whole. Second, by allowing the building envelope to be free of any responsibilities to the network, a tectonic expression of local site and climate is possible. And it is in the viewing of the regional with a backdrop of the universal, and the universal with a backdrop of the regional, that the qualities and contributions of each may be seen.

## Appendix – Climatic information

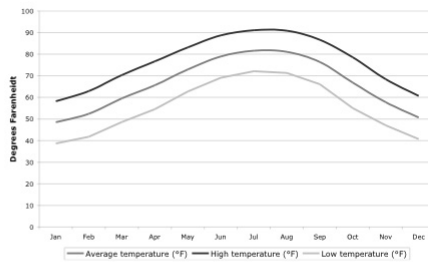
**Red Wing, MN**



**Hannibal, MO**



**Natchez, MS**



### Analysis

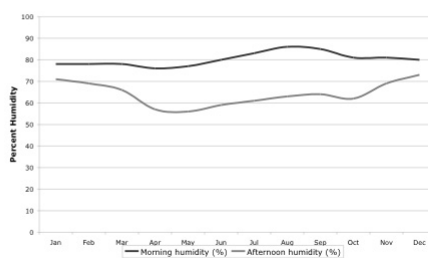
Red Wing, while cooler in the summer than the other two sites, has the greatest range of temperatures between winter and summer. This complicates the design challenge for this climate.

Hannibal's climate is similar to that of Red Wing, though the temperature range is not as great.

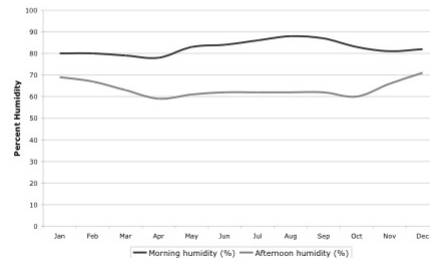
Natchez has the hottest climate of the three sites, but also the smallest range of temperatures from winter to summer. This simplifies the design challenge for this climate.

## Climate - Average Temperature

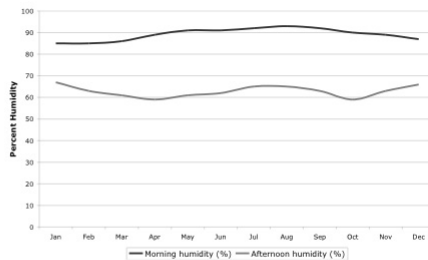
**Red Wing, MN**



**Hannibal, MO**



**Natchez, MS**



### Analysis

Red Wing and Hannibal have similar average humidities, with Red Wing being slightly dryer, especially in the spring.

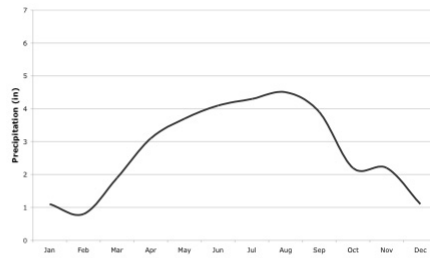
Natchez is on average more humid than the other two sites, making the warmer average temperatures that much more uncomfortable in this location.

Natchez also has the greatest average daily humidity fluctuation.

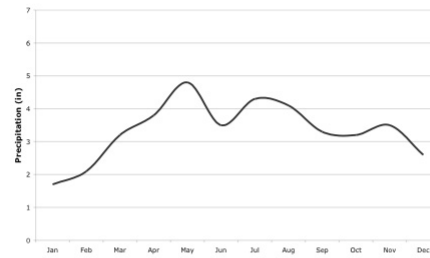
## Climate - Average Humidity



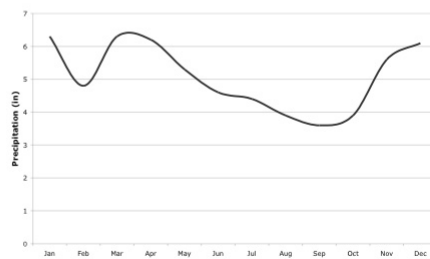
**Red Wing, MN**



**Hannibal, MO**



**Natchez, MS**



**Analysis**

## Climate - Average Precipitation

## **Bibliography**

Ambrose, Stephen and Douglas Brinkley. The Mississippi and the Making of a Nation. Washington: National Geographic Society, 2002.

Brown, Catherine, William Morrish et al. The Fourth Coast: An Expedition on the Mississippi River. Design Quarterly 150. Minneapolis: Walker Art Center Press, 1991.

Cayton, R.L. "The Anti-region: Place and Identity in the History of the American Midwest." The American Midwest: Essays on Regional History. Ed. Cayton, R.L. and Susan Gray. Bloomington: Indiana University Press, 2001.

Childs, Marquis. Mighty Mississippi: Biography of a River. New Haven: Ticknor & Fields, 1982.

Edgerton, John. The Americanization of Dixie: The Southernization of America. New York: Harper's Magazine Press, 1974

Frampton, Kenneth. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." Theorizing a New Agenda for Architecture. Ed. Kate Nesbitt. Princeton: Princeton University Press, 1996

Garreau, Joel. The Nine Nations of North America. Boston: Houghton Mifflin Company, 1981.

Gass, Mary. "Expedition of the Fourth Coast." *Inland Architect* 34.6 (1990): 63-66.

Gregg, Lynda. "Drag Queen Tradition in Omaha." *The New Yorker* 22 March 2004

Jackson, John Brinckerhoff. *Discovering the Vernacular Landscape*. New Haven: Yale University Press, 1984

Kelbaugh, Doug. "Towards an Architecture of Place: Design Principles for Critical Regionalism."

Mercil, Michael. Promises, Promises – of Earthly Power. *Places* 7.4 (1992): 74-83.

Norberg-Schulz, Christian. "The Phenomenon of Place." *Theorizing a New Agenda for Architecture*. Ed. Kate Nesbitt. Princeton: Princeton University Press, 1996

Pallasmaa, Juhani. "The Geometry of Feeling." *Theorizing a New Agenda for Architecture*. Ed. Kate Nesbitt. Princeton: Princeton University Press, 1996

Pavlidis, Eleftherios. "Four Approaches to Regionalism in Architecture."

Taylor, Helen. *Circling Dixie: Contemporary Southern Culture through a Transatlantic Lens*. New Brunswick: Rutgers University Press, 2001.

Ray, Celeste, ed. Southern Heritage on Display: Public Ritual and Ethnic Diversity within Southern Regionalism. Tuscaloosa: University of Alabama Press, 2003.

Rapoport, Amos. "On Cultural Landscapes." *Traditional Dwellings and Settlements Review* 3, no. 2 (1992): 33-47.