A MIX-USE DESIGN PROPOSAL OF THE MARTIN LUTHER KING BRIDGE:
A STUDY OF THE USE OF A BRIDGE IN A HISTORIC ST. LOUIS RIVERFRONT

BY

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Abstract

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ABSTRACT

This thesis is an exercise in a design proposal on the levee of the Mississippi spanned by a 1950's steel bridge in a historic St. Louis district known as Laclede's Landing. My intentions are to introduce a connection between the river and the city that will provide access to the water's edge; to create a linear park or esplanade alongside Wharf Street that parallels the river; to create a gateway at the Martin Luther King bridge into the Landing at Wharf Street to provide a strong edge of the Landing; and development of a program for a building on the water's edge.

With these intentions, the study for the design proposal proceeds from the analysis of the site to the development of the program. From this, a design proposal is made.

Thesis Supervisor: Fernando Domeyko-Perez
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"If American cities as a whole has not done as well with their seaport as those of Europe and other older cultures, with a very few exceptions we have treated our riverfronts abdominally by any standard at all. Particularly atrocious is the urban indifference to the Mississippi, the great water corridor which has played such a legendary role in the development of this nation. Admittedly, it is a difficult river to deal with, but I have been in most of the cities along its bank and have yet to find between Minneapolis at the top and New Orleans at the bottom, a waterfront that does justice to it...But not even Hannibal, Missouri, the boyhood town of Mark Twain, who immortalized both the form and spirit of that river for generations of readers, not even Hannibal has a decent riverfront..."

-Barrie Greenbie, SPACES
part were used for commercial activity, making few provisions for public space and therefore for public amenities at the river's edge. With the invention of the steamboats, the inland rivers became the great highways that, as Greenbie has stated, became the "great water corridor" that helped develop this young country. The commercial activities of these cities occurred chiefly at the riverfront. The docks for the steamboats, warehouses and industrial buildings were close to the river, while the residential development grew further inland.
With the coming of the railroads, the importance of the riverfront as a port slowly diminished as the trains took the commercial activity away from the water and placed it further inland. Later, the interstate highway system will continue the separation of the city from its riverfront.

The riverfronts, like the seaports and waterfronts of the coastal cities, have all undergone the loss of importance corresponding with their loss of commercial activity. However, with the rediscovery of the waterfront and the potential for new use at the water's edge, today most waterfronts are hot property along the East Coast, with New York and Boston as two examples. The inland cities are also rediscovering their rivers, and are trying to develop riverfront parks along the river. Fine examples of riverfront projects are the Promenade Park in Toledo, Ohio, by Sasaki and Associates, and Riverdesign in Dayton, Ohio, by Moore Grover Harper. Both show fine examples of creating a
public domain at the riverfront, providing access to the rivers that the city once turned its back on.

With these examples in mind, I have selected the riverfront of St. Louis as a place for a possible proposal for this recognition of the river. But as stated by Greenbie, the Mississippi is a difficult river to handle. Whereas the seaports and the smaller rivers of Dayton and Toledo allow easy access to the waters, the Mississippi is a strong mighty river, with its current running quickly down towards the gulf. Due to floods and high water that during some years cause the waters to rise quite high, the Mississippi is a force to be reckoned with. Because of this, the city of St. Louis has always turned its back to the river, fearing its strength. And yet, it is unfortunate that at the water's edge, the riverfront is underutilized as a public domain, or as Greenbie has called it, a riverfront with "sleazy concessions."
With the criteria set for this setting, my proposal is to somehow try to create a place at the water's edge accessible from the land without having to go to the docked showboats or those "sleazy concessions" that Greenbie described. The design proposal shall be an example of an exercise undertaking the building of a waterfront park, together with a building proposal (since this is an architectural thesis) that shall be a statement of what could, perhaps, happen at the river edge of the Mississippi.
History

Laclede's Landing was established in 1763 when Pierre Laclede Ligueste decided that the spot was just right for the trading post he and Auguste Chouteau wanted to establish on the banks of the Mississippi. The village that Laclede planned around the trading post started the grid pattern of streets that has survived to this day. The area was originally residential as well as
commercial, but by the mid 1800's, the residential areas had moved further inland, leaving the landing to the steamboats and other business concerns. By 1840, these included a mill, a foundry, various commercial buildings,
and even the Missouri Hotel built in 1819. Thus, in 1849, it was mostly commercial buildings that were destroyed in a fire that started aboard a steamer and engulfed much of the riverfront. The rebuilding was made easier by the architectural iron industry in St. Louis, which provided prefabricated iron fronts, structural members, and other items. However, by 1873, when Eads Bridge was completed, the railroad and the automobile were transporting more goods and people than the paddlewheelers, and the Landing
was increasingly ignored. The decline in use was so great that by 1890, Pierre Chouteau first suggested using the riverfront for recreation or a memorial. His recommendation was a reconstruction of the original French village. Other plans were proposed in later years, but nothing was done until the 1930's when the Jefferson National Expansion Memorial was proposed. The subsequent destruction of the older buildings to make way for the Gateway Arch ignored the area north of Eads Bridge, leaving the commercial buildings that comprise Laclede's Landing today.
In the 1960's, the Landing qualified for designation under the Missouri Urban Redevelopment Law, paving the way for later development. In the late 60's, two development concepts for the Landing were submitted to the Board of Aldermen. In these plans, one stressing rehabilitations and the other demolition and reconstruction, the developer would have utilized the entire Landing area. However, due to delays in the selection process, the redevelopment contract was terminated by the city in 1972.

Despite this setback, in 1974, with the area 75% vacant, a group of businessmen, Landing property owners and government officials met to discuss how redevelopment of the Landing could be accomplished. They decided that a corporation would be preferable to
single ownership. In 1975, the Laclede's Landing Redevelopment Corporation, with stock owned by property owners and members of the business community, was designated as the official developer of the area. Their plan was to combine rehabilitation with some new construction. In 1976 the developers were provided with federal grants when the area was placed on the National Registry of Historic Places and was designated a national landmark.

Today, rehabilitation is almost complete. The area is a popular
nightspot, drawing visitors and St. Louisans alike with its many and various restaurants and bars. Other attractions include the Gateway Arch, the picturesque riverboats, and outdoor events such as the Veiled Prophet Fair held on 4th of July weekend. Laclede's Landing has gone from being an uninhabited slum to one of the most popular and active areas in the city of St. Louis.
Analysis

Building a structure on the levee banks of the Mississippi is quite difficult. To begin with, the river itself causes problems in terms of the flood levels; the river has been known to rise significantly during the spring season following a severely harsh winter. Because of this, Laclede's Landing starts at the edge of Wharf Street, beyond the elevated railroad tracks.

The question then comes in the proposal of a building that will somehow allow access to the water's edge; i.e., the penetration in the direction of the river, similar to the bridges that cross the Mississippi. Now, the existing condition is such that the major paths from the land to the water are the small boarding bridges onto the docked riverboats on the banks of the Mississippi. The levee, which in the peak of the steamboat era of the mid-1800's was used as a true landing for the various shipments of cargos carried
on the riverboats, today is used mainly as a parking lot.

In proposing a building on the levee of the Landing edge, the issues concerning such a proposal are as follows:

1. Contrast of the two bridges bordering Laclede's Landing. The Eads Bridge elegantly meets the land with its solid heavy masonry and Roman arches, creating a wall that protected the Landing from the demolition of the 40-block urban fabric which became the
setting for Eero Saarinen's Gateway Arch. The Martin Luther King bridge, on the other hand, soars and floats above the Landing, making the north border of the Landing undefined at ground level.

2. Using the area under the Martin Luther King Bridge at the levee to create a sense of an entry or a wall at Wharf Street, and use this area as an area to provide a connection to the water's edge.

3. With the opportunity to penetrate towards the water, establish a way to allow the public a greater opportunity of close contact to the river, allowing vistas up and down the river, and views of Eads Bridge and the steamboats on the river. The goal would therefore be to create access to the water. The possible choices can be to create a zone that is close to the water's edge yet provide protection from the river itself. With the access, the goal shall be to create a continuous public access from the city to the water, rather than
entering through a transition area that is non-public, which is currently the function of the existing levee itself.

4. The selection of the area around the Martin Luther King for the design proposal was due to these conditions:

a. The levee, as a historical entity that ties the Landing as part of the historical past, should remain for the most part as it is. By locating the proposal under the Martin Luther King Bridge, the majority of the levee can remain intact.

b. In the Urban Design Guidelines of Laclede's Landing, under the topic of views from the Landing at the river's edge is stated that the goal is to "maintain visual and physical immediacy of the Landing and the river," and "No railings, obstructions, barriers or structure shall be allowed to block the view of the river." One can maintain, however, that a building in the area designated for the proposal can enhance
the levee rather than detract from it by providing public access to the water, and also act as a frame for the river view together with the Eads Bridge. It is not imperative to see the overall river from a standpoint of the person walking along the river's edge.

c. Land use of the levee is strongly encouraged, as the design guidelines state: "The riverfront's unique setting is both attractive and vital to the area. Levee use should be encouraged. Types of land use encouraged include restaurants, a merry-go-round, recreational boating for individual or touring boats, etc. Parking is discouraged."
Program

The creation of the program for this proposal came from the set of issues and goals mentioned in the design intention of this thesis. The type of building to do for this particular site is a hard decision to make, since there is no existing "building" on the levee edge at the Landing; the Union Electric power plant north of the Landing is situated at the river's edge, but is hardly a useful prototype to bring the public to the water's edge. Therefore, the program was created with what was currently existing at the levee (the St. Louis Visitors Center, the Goldenrod Showboat), plus examples and ideas from other waterfront cities that have utilized their location to exploit their waterfronts.

The various components of the program are described below, with a more detailed listing in the appendix.
Wharf Street

As the street running linearly along the river edge and the main thoroughfare for the Jefferson Expansion Memorial and Laclede's Landing, Wharf Street is important as the street from which the people shall encounter the riverview. The area in which they shall overlook the river off Wharf Street should be a memorable experience, and this place could be a walkway with a good surface, providing places for sitting or lying down by providing a promenade or esplanade instead of just a sidewalk.

Waterfront Plaza

The portion of the site under the Martin Luther King that reaches out to the water's edge shall be a place that shall provide the public access to the water's edge and act as a landing for the showboats. The site at the river's
edge shall step down at certain points to provide a dock for small private boats, but the plaza itself should remain mostly a hard surface; preferably perhaps the use of cobblestones to refer back to the original levee materials. The reason for not proposing a "green" park at the edge is due to the possibility of severe floods that occur from time to time; the Mississippi River is hard to control in comparison with other rivers. Because of this, the plaza shall be subject to occasional flooding, but for the most part shall provide a zone for waterfront-related public and private uses.

The Goldenrod Showboat

One of the last remaining authentic showboats in the world, the Goldenrod Showboat is a registered National Historic Landmark. The Goldenrod provides a buffet in the Captain's Dining Room, followed by a lively
musical review or comedy melodrama in the 400 seat Palace Theatre. 

St. Louis Visitor Center

Currently located in a small tugboat on the river, the St. Louis Visitor Center shall be relocated as part of the building program. Tourist information, maps, souvenirs, film and restroom facilities will be available for visitors to the riverfront.

Riverfront Museum

A museum is proposed as a way of attracting the public and providing them with a knowledge of the river to which they are returning. This idea stemmed from the Aquariums in Boston and Baltimore designed by Cambridge Seven that provided a view of the waterworld close-up and gave fuller knowledge of the seas around them. Similarly, an approach for this museum came with the same idea, but rather than an "aquarium" of the Mississippi, a museum for its history, plus the history of the St.
Louis riverfront, shall provide the same type of educational knowledge of the river and the land.

The riverfront museum will house the following:

1) Early history of the discovery of the Mississippi (LaSalle, DeSoto, Laclede)
3) Role of the river during the Civil War (Ironclad).
4) Excerpts from Mark Twain's *LIFE ON THE MISSISSIPPI*.
5) Showcase of Ead's Bridge (its building, construction, history).

6) Showing of the 1938 movie "The River", the story of the Mississippi during the Depression.
7) History of Laclede's Landing at its heyday.

"The National Park Service developed a splendid concept with Eero Saarinen's spectacular arch, which marks the "Gateway to the West" at St. Louis. This is indeed a national landmark with great symbolic value...However, although the city of St. Louis is billed as a collaborator in its development, the surrounding environment does not live up to the challenge of the concept, either as symbolism or as design. The gleaming, soaring arch is on a narrow, federally owned park wedged between an ugly city and sleazy riverbank concessions."

-Barrie Greenbie, SPACES
Design Proposal
The process of the design proposal came about with the issue of the use of the bridge, or rather the underside part of the bridge as a setting for an architectural problem. As a massing problem, the idea would have been a structure that is hanging over most of the Martin Luther King Bridge as the answer to the gesture of the Eads Bridge anchorage. In fact, the earlier scematic design proposal called for an apartment building that was hanging from the bridge. However, the idea of having an actual access to the water's edge became much more interesting if not challenging, after an investigation of other waterfront cities and the resurgence of the recognition of the water's assets. Because of these, a proposal started from the ground level at Wharf Street that extended out toward the river. A wharf-type extension is to be build on the levee itself, extending as far as the anchored Goldenrod Showboat is moored. The wharf must be a solid foundation for the building, for raised piles would be insufficient for the strong Mississippi currents.
The wharf structure shall extend a whole block width of Laclede’s Landing Boulevard and Morgan Street, with the streets extending out toward the river. This shall provide a simpler access to the Goldenrod Showboat, thus making it a true landing. This part of the wharf shall be the waterfront park that terraces down to the gangplanks, and there will be three terraces: the first, off of Wharf Street shall be part of the linear esplanade that extends from the Jefferson National Expansion Memorial to the Union Station power plant north of the landing; the second terrace shall be a small park on its own that will be filled with fountains and pools; and the third terrace shall be a open plaza at the edge of the water, with a sculpture in the center commemorating Pierre Laclede Liqueust’s founding of the city of St. Louis.

The structure nearest this open plaza shall house the St. Louis Visitor’s Center, a cafe, and a restaurant. This building has been isolated from the museum in order to
create a different identity, and also to be situated closer to the Goldenrod Showboat. Because the Museum of the Mississippi shall be the main building on this wharf, there was a need to provide better access to the Visitor's Center without having to enter the Museum.

The Museum fills up the area of the wharf under the Martin Luther King Bridge as a solution to fill that area in a similar manner as the Eads Bridge at the levee. However, there was a need to break-away from the zone of the bridge. The result is an extension of the Museum at the Wharf Street edge (in
order to create a zone on the south side for daylighting purposes), and the diagram of the Museum became an L-shaped structure, with the Visitor's Center at the opposite leg of the "L". A curved atrium at the corner of the "L" is the main focal point within the Museum; it is the entrance lobby as well as the point of reference for the Museum visitors while walking through the galleries.

On the first floor, the visitor, upon entering, shall stop by the ticket booth/information desk. He shall then be led to the auditorium, where the movie "The River", about the Mississippi during the Depression, will be showing. After that, he will then be led to the galleries on the two floors above by the
ramp. The galleries shall have a variety of exhibitions, ranging from the history of the Mississippi to the history of the Landing. The exhibitions shall be housed in various galleries in relationship to the exhibit, for example, the history of the river shall be the gallery that extends out between and through the west pier of the Martin Luther King Bridge, providing a means of seeing the river today while studying its history. This gallery, situated between the bridge above and the water below, recalls the structure of the bridge and the gangplanks of the riverboats in its steel construction. Likewise, the history of the Landing shall be situated in the gallery at the point away from the underside of the bridge, closest to the Landing, and the rooms shall be dimensioned to recall the existing Laclede's Landing buildings.

With the difference in context of these galleries, there was a need to somehow maintain a singular language in the design of the building. In the design guidelines of Laclede's Landing, there is a strong set of rules that dictate the design of a new building within the area, and materials advised are brick or cast-iron. However, in this case, brick was avoided because of the language of the Martin Luther King Bridge, which is made of steel. To propose solid masonry building would somehow not justify the bridge, therefore, the selection of more modern materials seemed more appropriate. The
reference of the whiteness of the steamboats, together with the high-tech steel materials of the SS Admiral (a stainless steel excursion boat built in the 1920's) plus Eero Saarinen's Gateway Arch was inspirational. Even the Eads Bridge, with its steel construction, was further proof of exploring this newer material. Therefore, the building shall be made of white porcelain panels, glass and steel. The building shall follow the guideline of flat roofs only since the use of a hip roof under the bridge is inappropriate.

It is with this proposal that there is a possibility to create a more urban space at the river's edge. Perhaps this is more of a dream, in that one may argue that the levee should remain as it is. If so, then the levee should be used as a place, rather than a parking lot. Therefore a mix-use proposal can be justified in order to encourage more of a choice of interaction between man and the river. As for the building design, or rather the architecture, the program was generated from what possible ways are there in order to provide a place for the public realm. In the examination of other waterfront cities,
the uses for the waterfront districts ranges from housing to aquariums, but mainly for the establishment of some type of a park. Through these references, as well as the examination of the Laclede's Landing area came the ideas for these waterfront uses.

In the process of the design proposal, the criteria became that the problem was not just an architectural design issue; i.e., not just the design of a building, but rather a whole range of design problems that led from landscape design to urban design. In a way, this was an exercise in the development of the proposal that dealt with not just a single issue, but rather a series of issues.

The culmination of this thesis has therefore resulted in a design proposal for the levee of the Mississippi river. In this exercise, the process was a result of a series of investigations and exploration in the issue of waterfront design. But in the end, the result has to be a building, complete in 3-dimensional form, that came as a result of an idea for the design proposal. The final solution in a design exercise must be a building, for I truly believe that in order to do architecture, one must have a building. Theories on architecture are great tools in the development of a design process, but in the end the result must be a building in order to set the theory straight. For I
believe that the proof of a good architectural building is in the result, and that result is architecture.

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3. Laclede's Landing Development Fact Sheet; a summary of the Laclede's Landing area since its initial resurgence from 1975 to the present to the future.

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