Gathering: 
the study of public space 
through an inhabitable bridge 
in Southwest Washington D.C.

by

Anthony Wayne Iorillo

Thesis submitted to the Faculty of the 
Virginia Polytechnic Institute and State University 
College of Architecture 
at 
Washington Alexandria Architecture Consortium 
in partial fulfillment of the requirements for the degree of 
Master of Architecture 

Approved:

Susan Piedmont-Palladino, Chair

Jaan Holt

Don Myer, AIA

June 19, 1998 
Alexandria, Virginia
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Abstract

This study builds on the National Capital Planning Commission’s (NCPC) 50 year Master Plan for Washington D.C. It focuses on several of the NCPC’s five key goals: to build on the legacy of the historic L’Enfant and McMillan plans, unify the city, with the Capitol as its center; use new buildings to stimulate economic development, and integrate the Potomac and Anacostia Rivers to the city’s public life.

This site and project has a historical tradition. A pedestrian bridge was proposed to connect SouthWest D.C. to Haines Point with a new aquarium, which was eventually located in Baltimore, anchoring the Haines Point side. This proposal was never realized.

Integral to this project is the development of the masterplan for SouthWest D.C. It proposes reinforcing the existing city grid while developing small plazas along the water’s edge. A major plaza is located at the intersection of the bridge and the city. It is the masterplan and orientation of the bridge that make it a viable development of the NCPC’s masterplan.

The project proposes an inhabitable bridge continuing the grid of Washington across the channel. Commercial shops and offices juxtapose views north to the city’s skyline. Housing units float on top of the bridge creating a vibrant daily cycle of activity. Public walkways and plazas provide vistas, places to gather, meet and reflect. It is the combination of functions that make the bridge a viable attraction.

Finally, the intersection of public and private space on the bridge creates vibrant city life. This bridge contributes to the rich texture of Washington.
"We vaunt our much prized mobility, our rush city to coin Nuetra's innocent phrase, our consumption of frenetic traction, only to realize that should we stop, there are few places within which any us might significantly choose to be. Blithely, we exchange our already tenuous hold on the public sphere for the electronic distraction of the private future."  

The environment influences activities and behaviors. Architecture is a powerful tool of culture; it serves as function and art, satisfying the needs and wants of a society, community and individual. Architecture is called upon to provide opportunities for interaction in public spaces. The bridge for southwest Washington D.C. is a vehicle for insight on public space as a critical component of architecture. 

The bridge provides spaces for the community, city and individual to interact. The intent is to create spaces of rest from the pace of life, to satisfy the basic need of fellowship. Within the bridge are varying degrees of public and private spaces creating vitality throughout the project. It is the vitality that will make the spaces successful as attractor of the public for interaction. It is the form and organization of the bridge that determine the vitality of the spaces. Therefore, through the bridge, public space is fostered and created satisfying the needs and wants

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The Potomac is the grand counterpoint to Washington’s baroque plan...The relationship of this important natural feature to the plan of Washington makes its bridges a critical design element. The bridges not only become prominent sculptural or architectural features of the developed and controlled landscape, but also integral parts of an immense series of axes and vistas.”

The project site is identified by the National Capital Planning Commission (NCPC) in the “Extending the Legacy” master plan for Washington D.C. It also is an illustration of one of their proposed guidelines for improving the city: to improve the connection to the waterfront and open spaces. The NCPC proposed a pedestrian bridge connecting southwest Washington to the Haines Point Park across the Washington Channel. This site has a checkered history, which deserves note.

In the late 1930’s the Corps of Engineers created the Washington Channel and Haines Point in an effort to remove the canals that existed in the city. This network of canals (one even ran across the Mall in front of the Capitol building) provided relief from flooding during heavy rainfall typical to the location. But it proved to be a health risk as well as an inconvenience for those traveling in town. A man made island was created starting at the west end of the Mall which later became the location for the Jefferson Memorial. Haines Point Park lies south of the Jefferson Memorial and the tidal basin flows into the Washington Channel, which empties into the Potomac River just before it merges with the Anacostia River.

The city leadership cited the Southwest as a location for the Urban Renewal projects of the 1950’s. Funded by federal grants, the existing fabric was removed and large housing projects were developed. This project was conceived without studying or predicting the influence on the community. Each project was handled individually without regard for the urban implications. The decision for urban renewal is the key influence that results in the existing site.

A master plan for the site driven by the context reveals the axis and location of the bridge. The site wants a place for gathering, a moment of contemplation and communal interaction. To satisfy this need open space and the intersection of public and private spaces are proposed.

7th Street, a major axis running north-south across the Mall, and M Street S, a major axis running east-west across southern Washington D.C., intersect at the waterfront, creating a starting point for the bridge. The bridge anchors the space at the intersection of the roads and the waterfront. The plaza is a collection space and ante room to the bridge. M Street continues on the bridge, reinforcing the east-west axis, while traffic turns north on 7th Street.

Smaller plazas at the intersections of the east-west streets provide views to the waterfront. These smaller plazas act as marshalling spaces that lead to the main plaza.

By creating connections beyond the project site, the context is engaged and reinforced. The result is a vibrant mix of public spaces binding the city to the waterfront.

"Responsible architects think very much in terms of the whole community. I have always told my students, 'I am not interested when you build a beautiful design in the gap of the street if you treat it only as a unit in itself, not considering the neighborhood which is already there. You have to blend in with the larger circumstance. This larger circumstance is the main thing and all limited objectives have to be subordinate to the whole.’"3

Context

2 Gropius, Walter.
Structure

The search for an appropriate structure leads to questions integral to the design and perception of the bridge. The system must provide strength and rhythm, allowing the elements on the bridge contrast.

The steel reinforced concrete frame, spanning between structural piers, creates parallel support tracks which receive torque strength from the infill buildings on the bridge acting as diaphragms to the frame. A symbiotic relationship is created between the structural system and the ‘parasite’ elements on the bridge. The structural frame is exposed and revealed throughout the project. The main structural bays are broken down into further bays from which the housing and retail units derive their limits.

The angle of the bridge contrasts with the flow of the channel. Individual piers adjust to the direction of the water while maintaining the geometry required. The main piers at the draw bridge run parallel to the flow of the channel. The bridge axis then bends and continues parallel, slightly downstream.

“The bridge swings over the stream ‘with ease and power’. The bridge gathers the earth as landscape around the stream...Resting upright in the stream’s bed, the bridge piers bear the swing of the arches that leave the stream’s waters to run their course...Even where the bridge covers the stream, it holds its flow up to the sky, by taking it for a moment under the vaulted gateway and then setting it free once more.”

The space expands in the ante room to the bridge. The plaza is enclosed by buildings and bordered by trees. A double row of trees provide shade and a buffer between the pedestrians and the plaza. The arena stage anchors one corner while the bridge anchors the opposite corner of the plaza. To either side of the bridge views to the waterfront and park are offered with the bridge as counterpoint.

The west side of 7th Street transitions scales from street to plaza. The first floor contains shops, galleries and restaurants, while the second and third floors are office space. Entrance to the office is at the corners of this triangle building. Trees act as sun barriers all year round and create a rhythm, drawing pedestrians to the plaza.

The south side of the plaza is defined by a building that reinforces the street scale and rhythm of M Street. Top floors are housing and the first floor contains shops.

The plaza itself slopes away from the water, hiding underground parking below its slanting surface. A fountain is located at the confluence of the pedestrian, automobile traffic and the entrance to the bridge. The noise of the fountain masks the sound of the traffic.

“The places where we spend our time affect the people we are and can become. These places have an impact on the sense of self, our sense of safety, the kind of work we get done, the ways we interact with other people, even our ability to function as citizens in a democracy.”

Garreau, Joel. The Edge City. p. 391.
Threshold

The bridge encounters the city side at the plaza. The first pier sets back, away from the plaza. This space is the threshold, transitioning from the open plaza to the bridge dance floor. The procession across the water begins at the ramp’s edge. The ramp is flanked by gentle rising steps. Structurally, this space is equally supported by the pier and the land, reinforcing the intention that the plaza and M Street continue onto the bridge.

The first pier, taller than the typical piers acts as a gate and a concrete backdrop to the revealed steel frame. The galvanized steel W sections expressing the bridge structure support the sky and enclose the space. This is a room with no walls, defined solely by steel columns and beams.

The opening in the pier’s facade condenses the space and completes the transition onto the bridge and into the main dance floor space.

“...The threshold is the limit, the boundary, the frontier that distinguishes and opposes two worlds—and at the same time the paradoxical place where those worlds communicate, where the passage from the profane to the sacred world becomes possible.”

"dance floor" plan (top) longitudinal section=south-Iorillo

model of mixed-use-Iorillo

sketch of mixed-use-Iorillo

rendering of mixed-use-Iorillo
Dance Floor

The different users interact along the main circulation, the dance floor. The dance floor is the artery providing life to the bridge; users travel to and from their daily activities throughout the cycle of the day. The different functions of the bridge are perceived at this point; commercial shops and office on one side, and the view on the other with housing above, the city behind and the park in front of the user. The dance floor surface is differentiated along the main passage; crushed stone covers the main path while concrete covers the rest of the surface. Alternative routes are available to the north and south circulation, but these spaces are more contemplative and private than the main passage.

The commercial units are steel stud construction over one-way concrete floors. The facade material is white granite on the south face with reveals of copper panels, while the north elevation is entirely storefront with copper panels above and below. The facades undulates the rhythm of the minor bays. Elevators are located on the western bay adjacent to the main structural piers.

Planters filled with Crepe Myrtles with built in seats enclose the main passage. Beyond the planters, the curtain wall system with titanium mullions frame the view of the Washington Monument and the rest of the city lying north of the bridge. Past the glass lies a balcony and alternative passageway overlooking the channel.

“We have seen that the straight line stems from the operation ‘to aim’. A straight line and a plane surface, therefore, define directions which point outside there origin.”

Along the procession mini plazas provide moments of rest. The space expands vertically and horizontally. Views are seen south to the confluence of the Washington Channel and the Potomac River and further to the confluence of the Potomac and the Anacostia River through a series of louvers within frames. North the planters step back opening the main passage to the curtain wall and the view it provides. The Capitol as well as the Washington Monument are both perceivable from the mini plazas.

The orientation of the plaza is perpendicular to the path of the procession. This expanding space draws inhabitants to the views and provides vistas.

The commercial shops stop to reveal the view south and provides direct sunlight throughout the day. The housing units define the space by compressing the volume vertically while the dance floor expands horizontally.

The crushed stone turns perpendicular expressing the change of space from movement to stationary, from procession to reflection.

“Event! A time and place where things happen and to which people are drawn...Like the city, a permanent event at the river’s edge. Just as successful urban environments attract people by their vitality, presence and sense of ‘object’, so this plaza through inventiveness of form, playfulness of image, vibrancy of color and colseness of unusual objects becomes a place so powerful that to not go there would be unthinkable.”

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housing plans of units A, B, C, & D-Ilorillo

section through 31' wide housing unit-Ilorillo

elevation analysis of two bays of housing-Ilorillo
Housing

The housing units play off the structural module bay. There are eight different housing units in four different structural bay sizes. Frontoity and light are the two primary issues in the design of the housing. Spaces for living and privacy and their relationship to the main corridor and the type of light desired in the living space are the focus.

The roof collects rain and the gutters direct the water to the piers emphasizing the structural system. The roof also allows for light to reflect off the ceiling providing natural light to the center of the units. Primary natural light is from the north in the living zones of the units. Smaller openings providing direct sunlight are in the bedrooms and stairwells.

The housing plays a vital role in this project. The addition of housing to the inhabitable bridge brings activities throughout the daily cycle. The vitality of the bridge is a result of its inhabitation.
Drawbridge

The drawbridge provides a focal point to the procession along the bridge. The drawbridge is raised to allow larger sea-faring vessels to pass between the Washington Channel and to the Potomac River and beyond. The drawbridge is a gate to and from the city, both literally and symbolically.

The drawbridge piers are hollow concrete bases with mechanical services for the drawbridge inside. The base of the drawbridge piers run parallel to the flow of the channel. This base receives a single foot wide concrete wall, buttressed at the ends, extending to the sky. Balconies cantilever off the concrete wall above the drawbridge. Here spectators watch the large boats pass through.

The dance floor continues through the plaza formed between the two structural columns supporting the drawbridge. This space is tall and the piers frame views to the northwest and the southeast.

The drawbridge space stands alone. It lacks the intersection of programs and functions since there are no commercial or residential units.
Anchoring the bridge to the East Potomac Park and Haines Point is the amphitheater. The theater is a gesture back to the Capitol and to L'Enfant’s plan for Washington. The theater is on axis to the Capitol, which is perceivable above the city. This is a symbolic gesture, intended to connect the bridge to Washington’s national monuments. The bridge functions for the local community and the city as a whole, and this gesture relates to Washington D.C. as the nation’s city.

The amphitheater is the anteroom to the park, the final step in the procession from city to nature. The final pier is on axis to the Capitol and provides an observation deck to the Capitol, over the channel and the theater below.

A ramp hugs the limestone clad final pier spilling out to the back of the theater. A small colonnade and services building provide fields of depth and obscure the view of the Capitol until entering the theater.

The theater has stair step seating with limestone edges holding back swaths of grass. The ramps and stage area is landscaped with limestone leading to stairs down to the river.
Anthony Wayne Iorillo
4510 Registry Place
Kennesaw, GA 30152
770/795.9553
aiorillo@msn.com

CONTACT

Vita

EDUCATION
Master of Architecture
Virginia Polytechnic Institute and State University at the Washington Alexandria Architecture Center
May 10, 1998

Bachelors of Science
Georgia Institute of Technology
June 6, 1995

EXPERIENCE
Joel Aycock Architects
Kennesaw, Georgia
04.2002-present

Greenberg Farrow Architecture
Atlanta, Georgia
08.2000-04.2002

Perkins & Will (formerly Nix Mann)
Atlanta, Georgia
07.1998-08.2000
05.1997-08.1997

Cole & Denny
Alexandria, Virginia
08.1996-05.1997

Henry Schwab Architects
05.1995-05.1996
05.1994-08.1994

Where there is no vision, people perish.
Proverbs 29:18