

Silver Medal Winner  
Crossroads Project and Marsupial Bridge  
Milwaukee, Wisconsin



This is an excerpt from:

# Building Sustainable Neighborhoods

THE 2007 RUDY BRUNER AWARD FOR URBAN EXCELLENCE



BRUNER FOUNDATION, INC.

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Library of Congress Control Number: 2002104398  
ISBN: 1-890286-07-9

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## The Crossroads Project At-A-Glance

### WHAT IS THE CROSSROADS PROJECT?

- ❖ A new wood, glass, and steel bus shelter and plaza located on Brady Street, at the gateway to the Crossroads project.
- ❖ An urban plaza replacing an under-bridge space that attracted nuisance crimes.
- ❖ A pedestrian bridge linking the Brady Street neighborhood with other communities in the city.

### PROJECT GOALS

- ❖ To provide an improved pedestrian connection between Brady Street and nearby neighborhoods.
- ❖ To enhance residents' connections with the Milwaukee River by providing a link to the River Walk and bike path networks.
- ❖ To enliven a space beneath existing viaduct infrastructure that was abandoned and replace it with a safe and attractive venue for gatherings, art installations, and public use.
- ❖ To promote economic development while reducing dependence on the automobile, and promote alternative modes of transportation.
- ❖ To elevate the quality of infrastructure design in Milwaukee.

## Project Chronology

**1993** Brady Street BID established.

**1995** Brady Street streetscape enhancements implemented.

**1998** Julilly Kohler, then President of the BID, first conceives of Marsupial Pedestrian Bridge.

**1998-1999** Julilly Kohler lobbies city, state and federal government to fund the Marsupial Bridge.

**1999** Brady Street BID hires La Dallman to design master plan encompassing the Brady Street bus shelter, urban plaza, and Marsupial Bridge.

**2000** Over 25 community meetings held to discuss and promote the pedestrian bridge concept.

**2000** Design for bus shelter begins.

**2002** Milwaukee DPW, with assistance from La Dallman, applies for federal Congestion Mitigation and Air Quality (CMAQ) funds.

**2002** CMAQ funding is secured for \$3.3 million, requiring an 80/20 federal/local split.

**2002** Brady Street bus shelter foundation is poured. La Dallman Architects and Bloom Consultants team together to compete for the project. Design work of Marsupial Bridge and urban plaza begins.





**2003** First design is bid and comes in 20% over budget. Bus shelter wins an Association of Collegiate Schools of Architecture Design Award.

**2004** Brady Street bus shelter superstructure is installed; Marsupial Bridge is re-designed.

**2004** Bridge construction begins.

**2005** Bridge opens. Brady Street bus shelter wins AIA Wisconsin Merit Award.

**2006** Marsupial Bridge opens. Marsupial Bridge and Urban Plaza wins an Association of Collegiate Schools of Architecture Design Award.

## KEY PARTICIPANTS INTERVIEWED

### *Architects and Consultants:*

GRACE LA, La Dallman Architects, Inc.  
 JAMES DALLMAN, La Dallman Architects, Inc.  
 YAN NENAYDYKH, P.E., Bloom Consultants  
 NOELE STOLMACK, Lighting Design

### *Government:*

Mayor TOM BARRETT  
 Former Mayor JOHN NORQUIST  
 Alderman MIKE D'AMATO  
 JEFF POLENSKE, P.E., City Engineer, City of Milwaukee,  
 Department of Public Works

MICHAEL LOUGHRAN, P.E., Chief Planning and Developments Engineer, City of Milwaukee, Transportation Section  
 BOB GREENSTREET, RIBA, PhD, Director of Planning and Design, Department of City Development, Milwaukee, and Dean, School of Architecture and Urban Planning, University of Wisconsin - Milwaukee  
 ANN E. BEIER, City Dept. of Environmental Sustainability (Green Team)

### *Neighborhood:*

GARY AHRENS, Milwaukee Rowing Club  
 LYNN BROADDUS, Friends of Milwaukee Rivers  
 RAI CHI, artist  
 KAE DONLEVY, RiverPulse  
 TIMOTHY EHLINGER, Asst. Professor, Aquatic Ecology, Conservation and Environmental Restoration, University of Wisconsin - Milwaukee  
 MIKE EITELL, owner, Trocadero Restaurant  
 STEVE FILMANOWICZ, resident and former press director for Mayor Norquist  
 GARY GRUNAU, GPD Gilbane, and Tandem Development (Phone)  
 KIMBERLY GLEFFE, River Revitalization Foundation  
 STEVEN J. JACQUART, Intergovernmental Coordinator, Milwaukee Metropolitan Sewage District  
 JULILLY KOHLER, Brady Street Business Improvement District and Brady Area Foundation for Arts and Education  
 RUSS KLITSCH, Lakefront Brewery  
 DEB LOEWEN, Wildspace Dance  
 DAN POMEROY, Clear Channel  
 SHEA SCHACHAMEYER, Bicycle Federation  
 PAT SUMINSKI, Brady Street BID

## Project Description



*View from Marsupial Bridge toward Lakefront Brewery.*

Milwaukee's history parallels that of other northern post-industrial cities. Originally Juneautown on the east side of the Milwaukee River and Kilbourntown on the west side, it was joined in 1846 and established as the City of Milwaukee, with a population of about 10,000. Over time, immigrants from Canada and Europe, particularly Germany, arrived. Many German immigrants were fleeing religious and intellectual persecution in Europe, and sought political freedom. By 1860, as the city became increasingly industrialized, the city had grown to 45,000, and by the 1880s German immigrants and their American-born children were a majority of Milwaukee's population.

By the end of the nineteenth century, Milwaukee was a very diverse city, with British, Russian, Irish, Italian and Polish immigrants in addition to the large German population. Its economy developed as a port city, with steel and iron becoming the dominant industry, closely followed by meat production, tanning, brewing, and flour milling. Consistent with the German immigrant tradition of political liberalism, in 1910 the city elected Emil Seidel as its first Socialist mayor, establishing a progressive political tradition that continues to this day. Mayor Dan Hoen, elected on the Socialist ticket in 1916, is associated with the "golden age" in the city's government, one of "honesty and efficiency." In the mid-twentieth century, Milwaukee's land area doubled and the population grew from 587,000 in 1940 to 741,000 in 1960.



When America entered World War II, Milwaukee played a central role in the production of munitions and equipment. Known as the “machine shop of the world,” many workers came to Milwaukee’s thriving factories and stayed on after the war. With population growth came an increase in the African-American population, as well as growth in inner-city ghettos, and increased rates of urban poverty. Milwaukee, like Newark and Detroit, experienced civil disturbances in 1967, brought about by ongoing racial tensions.

As with other Rust Belt cities, industrial jobs eventually declined, second-generation Milwaukeeans began moving to the suburbs and by the 1960s the city was facing economic decline and urban blight. During those same decades the population declined from 700,000 to about 590,000. Over time, more positive forces emerged in the rebuilding of the city. The movement to preserve Milwaukee’s historic infrastructure gained traction in the 1960s, and a remarkable number of handsome nineteenth century buildings were saved throughout the downtown.

After years of population loss, Milwaukee is now experiencing population growth in the downtown, mainly from empty nesters and young urban professionals seeking to move back into the city, or to live close to their jobs. Close to 3,000 new condominium units have been built in Milwaukee in recent years, and vacancy rates continue to be relatively low. The attractiveness of the city is



enhanced by an affordable cost of living, the relocation of at least one corporate headquarters (Manpower Inc.) into the city, and a rediscovery of the richness of Milwaukee’s natural and cultural resources. The city offers many amenities—its expansive lakefront boasts large swaths of well-maintained and heavily-used public open space; it is 90 miles from Chicago, close enough for summer homes for boaters who dislike the cost and congestion of marinas in Chicago; and it is home to several international companies including Pabst, Bucyrus International, Harley Davidson, Miller SAB, and Quad Graphics to name a few.

Milwaukee is also home to Marquette University, the University of Wisconsin-Milwaukee, and several major charitable non-profits such as the Bradley, Bader, and Pabst foundations, which have been generous in support of their city for many years. The 2001 completion of the new Milwaukee Art Museum, designed on the lakefront by Santiago Calatrava, has also enhanced the city’s attractiveness. (Milwaukee was recently ranked fifth in the country in per capita local donations to its art community.) These factors combined with the more recent commitments to pedestrian amenities such as the River Walk have made Milwaukee an increasingly attractive area to live and work.

**Left:** Milwaukee Art Museum, designed by Santiago Calatrava.  
**Right:** Recently restored Milwaukee City Hall.

## THE CROSSROADS NEIGHBORHOOD

The Crossroads Project was created with several goals in mind: to elevate the quality of public infrastructure design; to create new quality public space; and to connect several neighborhoods located just north of, and adjacent to, downtown with each other and with the river. The Marsupial Bridge spans the Milwaukee River at the west edge of the Brady Street Neighborhood, linking Brady Street with Brewer's Hill, Beerline B, and the Harambee neighborhoods. Brewer's Hill is characterized by single-family homes and "Polish flats," small wood bungalows that have been raised to add a second story. This area started to gentrify about twenty years ago that could once be purchased for \$20,000 now cost over \$200,000. The neighborhood is currently quite stable, with a diverse group of residents and some new commercial uses and high-end restaurants located close to the river. Prior to the Marsupial Bridge, residents of Brewer's Hill were cut off from the shops and restaurants on Brady Street which is the closest commercial district for their neighborhood.

Just below Brewer's Hill, along the river's edge, is the emerging Beerline B District. Formerly the site of large abandoned breweries, tanneries and other industrial uses, Beerline B was designated during the administration of former mayor John Norquist as a site for new residential development (see below). This part of town, along the Commercial Street side of the river, was the site of major civil disturbances in the 1970s, and had a reputation as a tough part of



town. It is, however, walking distance from downtown and accessible by the River Walk, a pedestrian pathway linking the downtown with nearby neighborhoods along the Milwaukee River. Through tax increment financing mechanisms, the city invested funds in cleaning up that bank of the river—removing brownfield contamination caused by tanneries and breweries, improving roads, and generally preparing the area for private development.

At this time, close to 300 new condominiums have been completed in Beerline B, and another 200 are "in the pipeline." These units are occupied by "empty nest" couples, many of whom are moving back into the city from the suburbs, and by young urban professionals working in the downtown. Beerline B is anchored by Lakefront Brewery, a locally-owned brewery and restaurant located at the foot of the Marsupial Bridge, and by several new major condominium developments already in place. A major development site, "The Edge" abuts the bridge on this side of the river and sits on the site of the former Schlitz brewery. Although it was purchased in 1983, the

*New construction in Beerline B.*

owner, Tandem Development, now feels the time is right to develop it. According to Gary Grunau, President of Tandem Development, the Marsupial Bridge is a strong selling point for his units because people buying these units want a pedestrian-friendly, urban environment, and do not want to be dependent on their cars.

The Brady Street neighborhood has long been a central commercial street for surrounding neighborhoods, and also forms the shortest connection—a “land bridge”— between Lake Michigan and the Milwaukee River. Historically the west side of the neighborhood has been home to mixed ethnic populations, including Irish, Polish, and Italian residents, while the Brady Street terminus along the lake shore includes multi-million dollar homes, new condominiums, and major public institutions. Beginning in the ‘60s, as second-generation ethnic households moved to the suburbs, Brady Street began to be associated with the “hippie” community.



*River Walk in downtown Milwaukee.*

In 1979, two large public housing projects were built on the west end of Brady Street. These projects attracted nuisance crimes and, together with other economic and demographic factors, contributed to a period of significant decline which persisted through the 1980s. Together these neighborhoods constitute the densest cluster of residents in southeast Wisconsin.

## EARLY DAYS

Julilly Kohler, then a Milwaukee gallery owner, moved from the suburbs to the Brady Street district in the 1980s. Despite its history as a mixed ethnic neighborhood with a stable commercial street, Brady Street was at that time experiencing a period of serious decline. In fact, Kohler purchased her house for \$23,000 and was considered by many of her friends to be something of an urban pioneer. The characteristic pattern of residential lots in the neighborhood was narrow 27 foot frontages, deep enough to locate small ancillary “mother-in-law” houses at the rear of the lot.

In 1991, when Kohler moved her gallery to Brady Street, she realized the street was in such terrible condition that something had to be done to create a viable environment for local businesses. Vacant storefronts, drug trafficking, vagrants, and deteriorating property were common on the street. Because Brady Street had once been an active and healthy commercial center, however, there were still

some stalwart merchants with restaurants and various service establishments who had kept their doors open through the area's ups and downs. An activist by nature, Kohler bought two of the most derelict properties on the street and rehabilitated them, creating storefront space on the ground floor. She then began to organize merchants and others to clean up the street and return it to its former economic viability.

In 1993, Kohler's organizational efforts led to the creation of the Brady Street Business Improvement District (BID), through which merchants borrowed \$500,000 from the city for street improvements of various kinds, and for strengthening neighborhood identity. The BID was able to have one of the public housing projects returned to elderly use, and to step up crime prevention and enforcement in the other. The BID also created a vocabulary of artistic paving of green concrete along a band between the sidewalk and the street. In front of each store and building, along Brady Street's ten-block core, a pictograph is etched into the concrete, telling of the building's



*Julilly Kohler (second from right) and members of the Brady Street community.*

history. The "Flow" installation provided a focal point for organizing the neighborhood, and helped create a strong visual identity for the street, re-establishing the reputation of Brady Street as a place that respected creativity, tolerated difference, and was committed to neighborhood stability.

Today Brady Street continues as a thriving retail and neighborhood shopping street, housing over 100 businesses, including restaurants, shops and nightclubs. It hosts an annual artisan food festival and other art-based events, and has been enhanced and promoted as the shortest distance from nearby neighborhoods to the Lake. As Brady Street continued its comeback and gained in economic strength, Julilly Kohler pondered ways in which Brady Street might be better connected to nearby communities and to the river itself, which was largely cut off from pedestrians. After a conventional pedestrian bridge, separate from the Holden Street Viaduct, had been proposed by the city and rejected by the neighborhood, Kohler conceived of the Marsupial Bridge, one that could be integrated into the viaduct itself. The Brady Street BID then hired La Dallman Architects to devise a master plan strategy which provided the visual and graphic material to lobby the city, the state, and the federal government to find funding for the project. With the help of then Congressman Tom Barrett and the DPW, the Congestion Mitigation and Air Quality (CMAQ) grant was finally identified as a viable funding source.

## PLANNING CONTEXT

Milwaukee's socialist background has led to a tradition of mayors heavily involved in community development, and four-term mayor John Norquist (1988-2003) considered himself a part of this progressive tradition. Norquist (now Director of the Congress for New Urbanism, headquartered in Chicago), also had a strong commitment to the urban built environment and a particular interest in reducing dependence on vehicles, celebrating the density of the downtown, promoting urban infill developments, and building pedestrian infrastructure. According to Norquist, "the greatest asset any city has is its density."

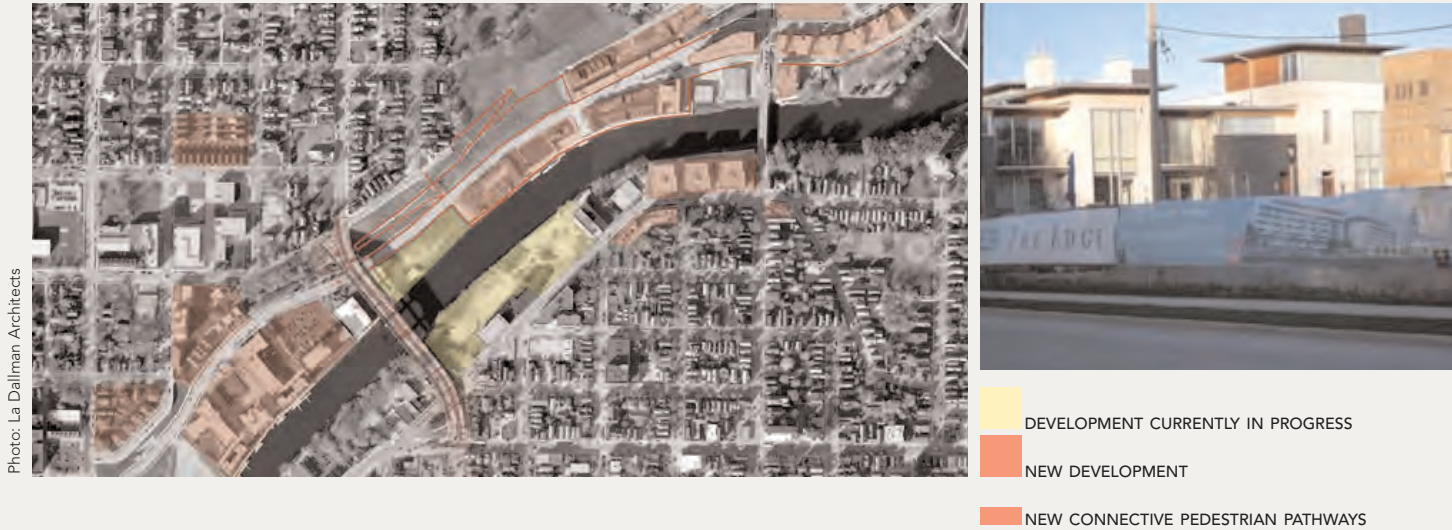
Norquist and planning director Peter Park have been credited with making a major contribution to restoring the physical and natural fabric of the city. It was in the Norquist administration that restoring the Milwaukee River was made a high priority as an essential element of "connective tissue" in the city. Restoration involved developing the \$14 million River Walk and establishing the infrastructure and a planning framework for much of the river, including the pedestrian-oriented development that is continuing today. The River Walk currently extends into the Beerline B district from downtown and is scheduled to be linked in a continuous pathway that will include the upcoming Edge development, as well as properties already developed to the north.

Through a tax increment financing district (TIF), the city cleaned up the pollution created by the tanneries and other former industrial uses, installed necessary road improvements along Commercial Street and added infrastructure that would support housing development on the north side of the river, across from Brady Street. Within the last five years, a study by a UMW architecture studio resulted in the removal of the Park East Freeway Spur, creating a large swath of developable land adjacent to the downtown.

Support for these policies has carried over into the administration of Mayor Tom Barrett, who maintains a commitment to improving public access to the river, strengthening pedestrian connections, increasing the number of downtown residents, and introducing public transit in Milwaukee. Barrett was elected mayor in 2004 after serving five terms in the U.S. Congress, and has strengthened his planning efforts by appointing University of Wisconsin–Milwaukee (UWM) Dean of Architecture Bob Greenstreet as his Director of City Development. (Greenstreet had served as Chairman of the Planning Commission under Norquist.) Under Mayor Barrett, Greenstreet brings the expertise and resources of the university, (UWM is one of the top twenty schools of architecture in the country), to the urban planning effort, establishing a new model for interaction between an urban architecture school and city government. It was Barrett who, when still a Congressman, identified CMAQ funds as a viable source of funding for the bridge.



2007



Under Greenstreet and Barrett’s leadership, the Department of City Development is currently working on a citywide plan for Milwaukee, and on plans for twelve different Milwaukee neighborhoods. Mayor Barrett has also appointed Milwaukee’s first Office of Sustainability, or “Green Team,” which includes representatives from a wide variety of environmental groups in the area and is responsible for coordinating ongoing efforts to improve water quality, reduce energy consumption, and stimulate economic development in the green technology sector. Greenstreet notes

that the Crossroads Project and Marsupial Bridge contribute design excellence to the cityscape, serve to reconnect neighborhoods within the city, and show the power of grassroots efforts.

Mike D’Amato’s aldermanic district of 42,000 is the most affluent in Milwaukee and includes multi-million dollar homes on the lakefront, Polish flats on Brewer’s Hill, new condominiums in Beerline B, and the vibrant Brady Street neighborhood. D’Amato believes that the bridge, bus shelter, and urban plaza set an important

Recent development along Milwaukee River with Holden Viaduct at center.

New construction in Beerline B.



Crossroads area development.

precedent for providing well-designed urban infrastructure. He notes that urban infrastructure was, in the early days of city building, a focus of design rather than an afterthought, and in that context the small cost increment for doing urban infrastructure at the highest level, as per Crossroads, is well worthwhile.

## THEMES

Everyone involved in Crossroads agrees that the driving force behind the project was Julilly Kohler, former president of the Brady Street BID. She, and others involved in the Crossroads believe the Marsupial Bridge to be part of an ongoing process of reknitting the fabric of the city and overcoming the separations caused by under-used industrial structures, vehicle-oriented viaducts, and vacant land. The Crossroads Project is centered on the concept of connection — between neighborhoods, among neighborhood residents, between the Brady Street commercial center and other parts of the city, between local residents and the river, and between local residents and their urban infrastructure. The previous infrastructure linking these neighborhoods had major limitations. While the existing 1925 Holton Street viaduct does have sidewalks, they lie on either side of four lanes of fast-moving traffic, separated from oncoming traffic by jersey barriers. A pedestrian or cyclist crossing this bridge on the viaduct is well above the river, and is on a dangerous and unwelcoming path. The urban plaza

and Marsupial Bridge are designed as a pedestrian alternative to this dangerous environment.

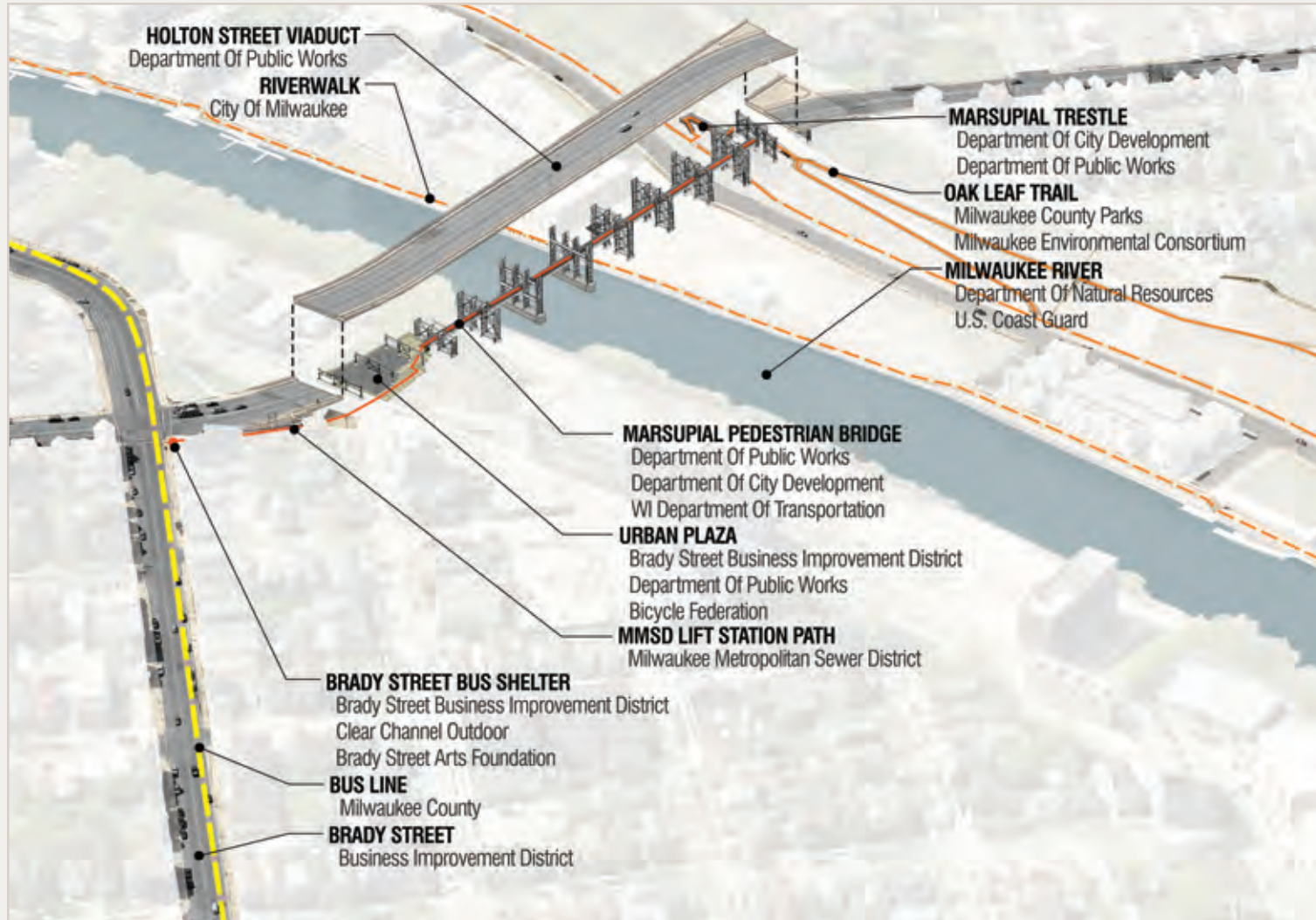
## ARCHITECTURE

### *Design*

When funding was finally secured for the Brady Street Bus Shelter, Julilly Kohler approached Bob Greenstreet for suggestions about architects. It was immediately obvious to Greenstreet that recently-hired Professor Grace La, whose private practice with husband James Dallman was considered one of the “hottest” architectural practices in Milwaukee, was the right firm for the job, in part because of La’s interest in urban infrastructure and her expertise in construction technology. La Dallman as a firm also has a strong commitment to the importance of design in all aspects of urban life.

La and Dallman were intrigued by the project. Their architectural focus had long been to bring design “to the table” not only for high-end building design, but also in the design of even the most mundane infrastructure elements. La and Dallman understood the importance of the many connections the bridge and plaza would provide and were committed to designing something that had intrinsic beauty and would be an addition to the urban landscape, helping to establish a new sense of place, close to the river and intertwined with the dramatic structure of the viaduct itself.





La Dallman Architects Inc.

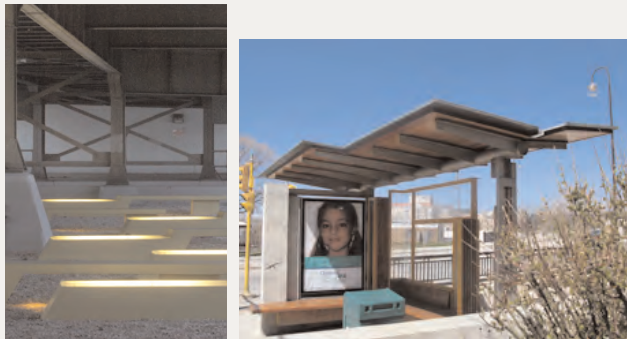
The Crossroads Project includes three elements: the Brady Street bus shelter, the urban plaza, and the Marsupial Bridge. As part of the design process, La Dallman and the Brady Street BID held 25 community meetings for potential stakeholders to solicit input of all kinds, and the resulting structures reflect that design input. The Brady Street bus shelter, which was built at a cost of \$160,000, was the first element in the project to be completed. Funded by the Brady Street BID and the Brady Foundation for the Arts, with contributions from Clear Channel Communications and the Milwaukee Metropolitan Sewerage District, it is located at the western terminus of Brady Street adjacent to the Holton Viaduct, above and across the street from the urban plaza and Marsupial Bridge below. With its glass, mahogany, and steel modern structure, brightly-painted frame, outdoor plaza, and transparency, it announces clearly that something different is happening here. It contains a small sheltered seating area, with advertising panels oriented to public interest information, and a small outdoor seating space, landscaped

with native prairie grasses and other indigenous plants. Water from the roof of the shelter is captured in a small culvert that provides irrigation for the shelter’s natural landscaping.

The shelter takes on special significance in Milwaukee, where the bus system is the only form of public transportation available. The structure is intended to provide a precedent for imaginative design in the bus shelter system and to lead people down the slope to the street below, where the plaza and the Marsupial Bridge come into view. At the lower level, just opposite the plaza, the Trocadero Restaurant and a former Sewer District pump station structure (which has been decorated with sculpture by Brady Street artists) announce again the presence of the district.

Directly across Water Street is the urban plaza, a new public open space beneath the viaduct that also forms the approach to the Marsupial Bridge. Its open and well lighted design is a response to community concern about the former space, which had become a gathering place for drug transactions and the homeless. The plaza is now brightened by bench lights, also known as the “light slabs” that serve as concrete seats set in a bed of crushed, local stone. The overall visual impact when benches are lighted is luminous, creating a “moonscape” environment in a place where planting would be difficult due to low natural light levels. The original design also included a series of large boulders, interspersed among the bench

Photo: Jim Brozek



Left: *Urban Plaza.*  
 Right: *Detail of Brady Street bus shelter.*



lights, but these were eliminated to reduce cost as part of value engineering efforts.

The design is intended to introduce light and activity to a derelict space, and to create a kind of stage for uses of many different kinds. To date, the space has been used for informal gatherings, dance performance, and for outdoor movies in the summer months. At the time of the site visit, skate boarders were also making use of its concrete parapets, and families with children were enjoying the benches en route from Brady Street to neighborhoods located across the bridge.

It is the Marsupial Bridge, however, that is the clear centerpiece of the project. The design of the bridge is intended to enhance connectivity at as many levels as possible, though at the same time it stands alone as a handsome element of Milwaukee's urban infrastructure. Located between the natural river environment and the very industrial viaduct structure, the bridge had the challenging mandate of providing an intimate experience that connects to the river and movement of the water, while integrating itself into the forest of steel beams that form the underside of the viaduct.

The concept of intertwining the pedestrian bridge under and through the existing structure of the Holton Street viaduct was an unusual one that appealed to the imagination of the city, residents,



and architects. That viaduct rises close to 60 feet above the river, and was built with extra strength because it was a bascule bridge that once opened for passing ships, and also because electric streetcars once traversed its span. It could therefore easily carry the weight of a pedestrian bridge, without additional structural support. The height of the viaduct also allowed for the required 26-foot clearance from the water surface, still allowing over 30 feet of space between head height and the underside of the viaduct.

On both sides of the river, the Marsupial Bridge terminates at transitional sites that are not yet developed. On the Brady Street side of the river is the urban plaza, located underneath the Holton Street viaduct, which creates transition from street to bridge. On either side of the urban plaza are handsome large brick industrial structures that were former tanneries—both are currently under

*Marsupial Bridge from street level, and at grade.*

agreement with developers for adaptation to mixed-use developments. Trocadero restaurant, popular among cyclists using the bike path, is immediately opposite the urban plaza and just below the bus shelter. On the other side of the river, the bridge terminates at a major Beerline B development site, “The Edge,” anchored by a brewery, and a restaurant. The Edge is slated for development by civic leader Gary Grunau, whose company Tandem Development, has recently begun development of the site.

Materials for the pedestrian bridge were chosen to provide a counterpoint to the heavily industrial structure of the iron bridge. The architects were striving to create a more inviting and intimate environment, and chose lpe, a very dense and durable wood, as the walking surface, to create a warmer feel and appearance. The architect took advantage of the large number of local builders and craftsmen who are expert in working with concrete and metals. As a result, they were able to use local vendors for much of the fabrication. Metal railings reference the industrial environment of the Marsupial Bridge but provide a light and contemporary design detail, which is echoed in the bus shelter. Post-tensioned concrete forms the base of the bridge, and echoes natural spinal forms on its sculpted underside. Because many users and neighbors look up at the bridge from the river banks below, particularly on the Lake Front and Beerline B side of the river, the bridge’s sculpted concrete underside adds an attractive sculptural element to the bridge experience.

The design also places emphasis on creating an intimate experience through the 650-foot bridge crossing. The bridge undulates and curves somewhat, giving it a very interesting appearance, and the wood railings and walking surface, as well as the lighting, enhance the warmth of the bridge environment. Muffled sound from traffic above adds to the feeling of being suspended and in a separate environment as one traverses the length of the bridge. The bridge provides unique proximity to the river, and many people pause along the bridge to watch the water current, and to watch rowers from nearby boathouses. It also affords unique views south toward downtown, as well as up river along the Hank Aaron River Path and the Beerline B developments. The journey across the bridge also provides a dramatic visual connection with the well-maintained viaduct structure and the urban forest of girders and structural towers that enclose and support the bridge.



**Left:** View from Bridge terminus to Gallun Tannery.  
**Right:** Jogging on the Bridge.

## LIGHTING

La Dallman considered quite a few lighting designers for the bridge and plaza. They wished to avoid the coldness and excessive “light spill” associated with the usual lighting solutions for urban locations. They therefore chose a theatrical lighting designer, Noele Stolmack, to work with them to create the warm, dramatic lighting environment they were seeking. The result is three levels of lighting: low lighting along the base of the bridge which illuminates its surface; overhead theatrical framing projectors (manufactured in Wisconsin) that provide a series of light hotspots and varying light intensity across the bridge, yet no light spill to the riparian landscape below; and the signature bench lighting of the urban plaza, which keeps the space illuminated in a creative and unique way during the evening hours. The spotlight system, chosen for its ability to provide true color rendition, and for its minimal light spill onto the river, shines down on the bridge from above, creating an interesting interplay with the undulation and subtle curves of the bridge. Together the

three lighting systems create a dramatic effect and a high level of light on both bridge and plaza.

Although DPW owns and operates the Marsupial Bridge, there is a minor dispute about replacement of the light bulbs on the bridge. The lower lighting system was experiencing the end of bulb life, and 40% were burned out, as well as some of the overhead lighting. The city was somewhat reluctant to undertake replacement of bulbs in a system that was non-standard and unfamiliar to them. Luckily, the lighting manufacturer, a local company, has offered to do the replacement themselves.

### **Structure**

The development of the bridge’s structural system is a fascinating story in itself. La Dallman originally designed the bridge so that steel cables would carry much of the load, with a steel support structure underneath. Although the cable design proved viable, city engineers declared the proposed steel structure underneath the bridge to be “fracture critical,” i.e., the loss of a single steel girder could threaten the structural integrity of the bridge. This invoked a requirement for annual visual inspection by a person standing no more than 10 feet away, to look for potential faults. Such an inspection would require the use of barges and other heavy equipment, and would come at extraordinary costs. The designers chose to re-design the bridge and replace the steel girders with post-tensioned concrete.

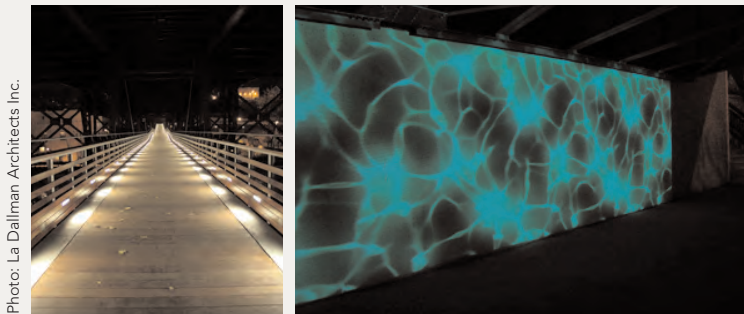
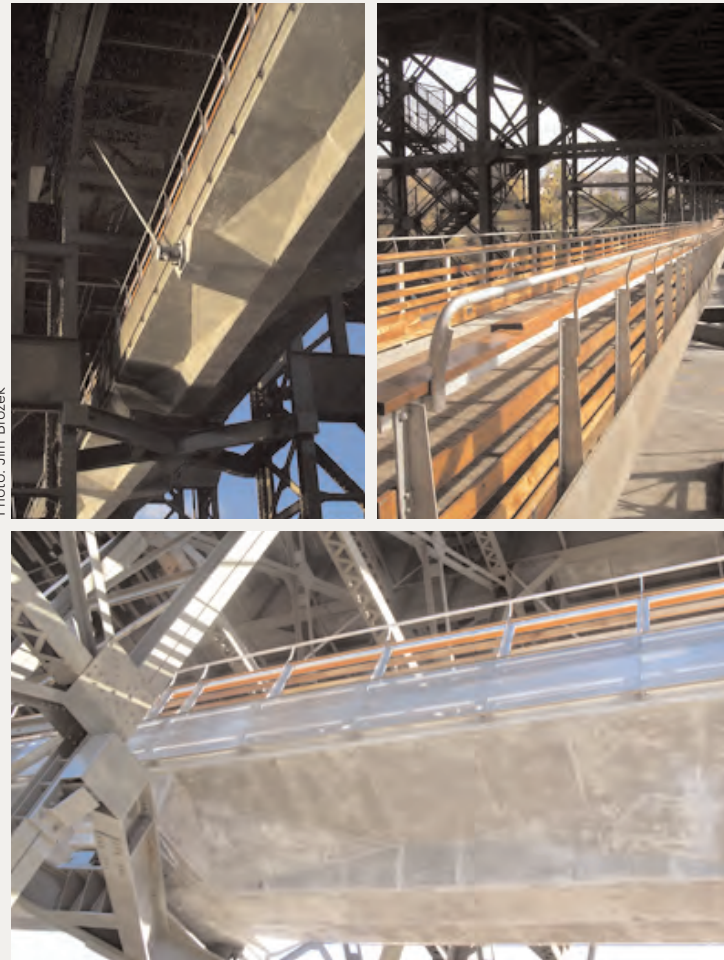


Photo: La Dallman Architects Inc.

Night lighting at Bridge and Urban Plaza.

The post-tensioned concrete system involves a system of cables which are embedded in the concrete and pulled to the required tension of 9,000 pounds per square inch by hydraulic equipment in each of the three concrete sections when the concrete is still “green.” This concrete system created the opportunity to design the very sculptural underside of the bridge, enhanced the structural capacity of the bridge, improved its appearance from below, and comes with a 100-year guarantee. The view from the underside has added an important element to the bridge’s design identity.

The engineers also designed a series of cross-bracing elements under the concrete, at each of the tower locations, dubbing these the “Milwaukee and Illinois crabs.” These X-shaped elements vary in their angular construction depending on the curve of the bridge plan in relation to the supporting towers. They were the subject of a friendly competition between the Milwaukee and Illinois offices of Bloom Consultants during the design charrette when they had to redesign the structural system in a four-month period. According to Yan Nenaydykh, the structural engineer in charge of the project, the degree of collaboration required between the architect, engineer, and the Department of Public Works was unprecedented and resulted in a combination of structural elements (not to mention 93 sheets of drawings) which he feels are absolutely unique.



Post-tensioned concrete work and Marsupial Bridge rail.

## PUBLIC/PRIVATE PARTNERSHIP

As the design process proceeded and the need for redesigning the bridge's structural system became clear, the city, the architect, and the structural engineer participated in an intense collaboration to redesign it in a way that would meet the budget. The dialogue required balancing the city's safety and inspection requirements with the design intent of the architect and the structural needs of the project. In the end, the bridge became a project in which all parties felt a strong degree of ownership and pride. There are some who feel the collaborative design experience helped open up a new way of thinking about urban infrastructure at the city level; all agree that the DPW played an essential role in project development.

## FINANCING

The Brady Street bus shelter was built before the bridge and urban plaza and was financed separately, at a cost of \$160,000. It was financed by the Brady Area Foundation for Arts and Education, and the Brady Street BID. It was also supported by Clear Channel Outdoor, which provided partial funding for the shelter and donated the glass panels which are used for public service advertising.

The urban plaza and bridge were funded by a \$2.7 million CMAQ grant, matched with a \$650,000 grant from the City of Milwaukee.

CMAQ funds are federal funds, administered through the state, then the city, and are available to areas designated as "non-attainment areas," i.e., they have not met the air quality standards established by the agency. The funds are available for projects intended to reduce automobile emissions and contribute to the air quality. Despite the fact that the architects had worked with construction estimates throughout the design process, initial bids were 20% over budget, and a value engineering effort was required.

The architects were very deliberate about their approach to keep the project within budget. They eliminated certain pieces of the plan altogether, rather than modify and compromise the entire design, expecting (correctly) that these pieces could be added back in at a later time. For example, the stairway at the west side of the bridge, providing a vertical connection to the riverbank below, was dropped. In addition, landscaping on both sides of the bridge was also eliminated, as was the creation of a bridge overlook and public space at the west side of the bridge, integral with the abandoned railroad trestle at that location. The stair and trestle overlook have been included in plans for use of earmarked federal funds during the coming year.

When the design was completed, DPW engineer Mike Loughran notes that, as part of the redesign process, the city was required to re-bid the job. He was impressed that La Dallman was willing to



draft most of the RFP, knowing that they themselves would have to enter an open bidding process, and might not be awarded the final contract. In the end, though both engineering teams on the short list asked La Dallman to partner with them, La Dallman elected to team exclusively with Bloom Consultants. The team of La Dallman and Bloom was ultimately awarded the contract.

## USES AND USERS

Although the Marsupial Bridge is still relatively new and is lacking some planned project components, the bus shelter, plaza, and bridge appear to be fulfilling the goal of re-connecting Brady Street with nearby neighborhoods and with the river. The bridge is used during both daytime and evening hours by a wide variety of people. One group interviewed was in town from the suburbs for the evening and had crossed over the bridge from the Beerline B condominiums to a restaurant on Brady Street; another was a mother and son from the Harambee neighborhood who had come to shop on Brady Street, and were enjoying the urban plaza en route to the bridge; another was an “empty nest” couple taking their grandchildren for a walk along the bridge and river pathway; rowers from the nearby Milwaukee Rowing Club report taking pleasure in rowing beneath the sculptural underside of the bridge, and cyclists and bike commuters have adopted the bridge’s bike path. Many joggers, bike riders, Beer Line, and Brady Street residents walk dogs across

and along the bridge, and many kids cross over the bridge to get home from school. Even in the cool early spring weather, the bridge appears to be well-integrated into community life, even though it was not at the level of use that might be expected when the Beerline B development is complete.

The urban plaza, which has revitalized a derelict and abandoned space, has been used for a variety of events. The cycling club stages free movies there during the summer months; a local dance company, Wildspace, staged a performance there last summer, and people use it as an informal gathering space. Julilly Kohler states that it was their intention to “build it and get out of the way,” allowing for uses of the space that would be spontaneous and largely unanticipated.



## ART

The arts play a prominent role in the Brady Street neighborhood. The Brady Street BID has already enhanced its neighborhood identity through an extended art project involving creative green-tinted pavers and historical information presented as part of the paving system along the sidewalk. The interest in the arts on the part of Kohler and the Brady Street BID is now being further developed by *RiverPulse*, an artistic and environmental education collaborative designed to increase awareness of the Milwaukee River Basin and the water quality in the river itself. *RiverPulse* includes several components—a series of interactive video installations to be located at the urban plaza and at over twenty locations along the river, well beyond Milwaukee and throughout the Menomonee River Basin; a *RiverPulse* website that will provide interactive activities and lesson plans as well as a “virtual watershed” and other educational/ environmental information; and the *RiverPulse* video art.

The basic image of *RiverPulse*, created by artist Ray Chi, is termed a “caustic,” a depiction of the pattern formed when light hits water, much like the pattern gentle waves make on the bottom of a swimming pool. In the initial condition the image is a clear, light blue pattern that moves in response to movement in the river. As the river temperature rises, the image becomes redder. As the turbidity of the water increases, the image loses focus and movement; as

the electric field of the water changes, small star-shaped light points become more numerous. At a recent prototype test (attended by the site visit team), this image was projected against the supporting wall of the viaduct, at the level of the urban plaza, and created a very dramatic effect. It attracted a crowd of passersby, and lots of inquiries about what was being communicated. *RiverPulse* holds considerable promise as a way of further animating both the Crossroads Project area and the length of the river’s edge as it extends to different counties.

The first *RiverPulse* kiosk was installed along Brady Street in the summer of 2007. The project is supported by the Brady Area Foundation for Arts and Education, the Brady Street BID, the Greater Milwaukee Foundation, Friends of Milwaukee’s Rivers, the Urban Ecology Center, and other philanthropic and environmentally oriented groups in the area.

## IMPACTS

It is difficult to sort out impacts directly attributable to the Crossroads Project from changes in the area that are related to new residential building in Beerline B, improvements and revitalization of the Brady Street business district; further development of the River Walk to the Brady Street area; and the success of both the Lakefront

Brewery and Trocadero restaurant, both immediately adjacent to the bridge.

Merchants and developers from the Brady Street and Commerce Street sides of the river feel that by connecting Brewers Hill and Beerline B with the Brady Street neighborhoods, the bridge has helped create a walkable, pedestrian environment in the city, something that is important for people moving into these areas. This has benefited both residents who now walk to Brady Street for restaurants or services, and the merchants on Brady Street who gain additional customers. One of the city's leading real estate developers feels unequivocally that the bridge is "doing everything it was intended to do." The units planned for his project are already 40% sold, and he feels the pedestrian environment created by the River Walk and the Marsupial Bridge are factors in the healthy market.

Use of the Bridge appears to be still somewhat uneven— heavy in the summer when river-oriented events are held, but sparse in the winter months. For bikers and runners the use is more consistent throughout the seasons. Presumably, as time goes on and the bridge becomes better known, use patterns will increase in all seasons. Even at this early stage, however, it can be said about the bridge that:

- It enhances the connection between Brady St, Brewer's Hill, Beerline B, and Harambee neighborhoods;
- It has brought new customers to businesses on the Brady Street side and the Commerce Street side;
- It creates a new link in the bike trail system within and around Milwaukee;
- It provides a close visual connection to the Milwaukee River;
- It provides a dramatic and uniquely urban connection with the historic iron structure of the Holden Street viaduct;
- It sets an important precedent for design quality in urban infrastructure in the City of Milwaukee;
- It is a model for use of left-over interstitial urban spaces.

## FUTURE PLANS

The Crossroads project is still technically incomplete. Future plans include the addition (in the upcoming year), of the stair connecting the bridge to the river, adjacent to the Lakefront Brewery; a public overlook at the site of the old railroad; and additional landscaping. There is currently a discussion underway about whether an elevator should be included with the stair in order to meet ADA requirements. In addition, at some time in the future, the project will benefit from additional landscaping on both sides of the bridge. The addition of the River Pulse art installations will further animate the urban

plaza. Finally, the project could also benefit from additional signage, indicating its presence from both the Brady Street and Beerline B sides of the river. As it now stands, it is hidden from view from the street level above the river, and from the Brady Street bus shelter, and signs indicating the pedestrian pathway would likely increase use to some degree.

## Assessing Project Success

### SUCCESS IN MEETING PROJECT GOALS

The goals for this project were straightforward. In summary, it was intended and designed to enhance connection. In this context, connection has meaning at many different physical and social levels.



Left: View from Bridge toward downtown.  
Right: Urban Plaza view.

**1.** *To provide an improved pedestrian connection between the Brady Street neighborhood and other nearby communities.*

The Marsupial Bridge provides a physical connection between the Brady Street district and emerging and existing neighborhoods on the other side of the river. Many of the users interviewed lived near the bridge on the west side and used it to access services and restaurants on the Brady Street side of the river. In the absence of hard data on this topic, we have relied on anecdotal information from merchants and residents who affirm its importance in this regard.

**2.** *To enhance residents' connections with the Milwaukee River by providing a link in the River Walk and bike path networks.*

This is one of the clearest outcomes of the bridge. It is heavily used by cyclists, both those using the larger regional bike path and those commuting to work. It is wide enough that pedestrians and cyclists do not seem to interfere with each other. The Trocadero restaurant, at the foot of Brady Street as well as the Roots restaurant and Lakefront Brewery on the Commerce Street side, have become something of a destination for cyclists along the path.

**3.** *To enhance access to the Brady Street commercial area.*  
See above.

*4. To enliven a space that was a neighborhood nuisance and replace it with a safe and attractive venue for gatherings, art installations, and public use.*

This has been a clear outcome of the bridge and urban plaza. Although not heavily used in the winter months, the plaza is well-lit throughout the year, with the sculptural light benches acting as an integral piece of art as well as providing seating elements for events such as a dance and film screenings.

*5. To promote economic development while reducing dependence on the automobile, and promoting alternative modes of transportation.*

An important intent of the bridge was to connect new and established neighborhoods with merchants and businesses on both sides of the river. At the time of the site visit it was difficult to measure this, but various community members felt that this had in fact been a positive outcome of the bridge.

## SELECTION COMMITTEE COMMENTS

The Selection Committee commended the design of the Marsupial Bridge for its playfulness and beauty; for strengthening the pedestrian connection among nearby neighborhoods; and for enhancing pedestrian connections to the Milwaukee River. The fact that the original idea for a pedestrian bridge came from citizen groups, and

was implemented through a model process and public/private partnership, made the project even more exemplary.

The Selection Committee also felt the Crossroads project provided dynamic and viable new models for unused space beneath a viaduct or bridge, and for urban bus shelters—two infrastructure elements common to cities across the country. They emphasized the importance of elevating the level of design in urban infrastructure and felt that the Crossroads Project sent an important message to cities about the need for quality design in all aspects of the cityscape.

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Gallen tannery site with rowers.