

# TRIPPING THE VOID

Ryan Ollson  
ID: 00013350  
Spring Term 2005

ARCH 384: Competition Elective  
Essay Component

*Precedent and Initiative in Architectural Design Statement:*

*“The works of the past always influence us, whether or not we care to admit it, or to structure an understanding of how that influence occurs. The past is not just that which we know, it is that which we use, in a variety of ways, in the making of new work.... The typology argument today asserts that despite the diversity of our culture there are still roots of this kind which allow us to speak of the idea of a library, a museum, a city hall or a house. The continuity of these ideas of type, such as they are, and the esteemed examples which have established their identity and assured their continued cultural resonance, constitute an established line of inquiry in which new work may be effectively grounded.”*

The Harvard Architectural Review. Volume 5. Precedent and Invention. Between History and Tradition: Notes Toward a Theory of Precedent. John E. Hancock.

Understanding the past history of the intended project and its developments to the present day in which we approach design is essential in creating a successful work. One must accept the project at its most fundamental purpose and develop it in its most advanced possibilities. The SSEF 4<sup>th</sup> Annual Student Awards Design Competition, *Tripping the Void*, challenged the students to 'design a single span pedestrian bridge, on a site of the designers' choosing'<sup>1</sup>, using structural steel as the primary material. Existing as one of the earliest known structures, the pedestrian bridge has a fundamental purpose and programmatic requirement of spanning, allowing for simple passage from point A to B. Some of its earliest forms are most evident in any naturally forested area as fallen logs and branches allowing the passage from one side to the other of a stream, river or ravine. However, in modern times, this simple form has been 'elevated to an art form in itself', where 'bridge design is one of the most pure areas for testing architectural ideas'.<sup>2</sup> The focus of our proposal is the replacement or re-design of the King Street Bridge in the heart of London, Ontario. Continuing with revitalization attempts of the area in and around the Forks of the Thames, the focus of our proposal is one of improving the contemporary community as well as the creation of a dynamic form acting as a landmark within the downtown core. Through the recent implications of SHoP architect's Rector Street Bridge, Wilkinson Eyre's Floral Street Bridge and dECOi's Ether/1 on form and function, it will serve to further explain our chosen approach to the re-designing of the King Street pedestrian bridge.

Over the past couple of years, the City of London has made significant attempts at revitalizing the area in and around the Forks of the Thames. What used to be the heart of London and its recreational activities had become neglected resulting in a void of activity and life, symbolizing a discontinuity between past and present; city and nature. However, with recent development in the surrounding area, the Covent Garden Market, John Labatt Centre and splash park adjacent to the site to name a few, it has begun to prosper once again with its only void being that of a visible landmark uniting the area. Filling this void with

an iconic pedestrian bridge and unifying the community was our initial stance. Pedestrian bridges must respond to their surroundings, “they are closer to the landscape and the buildings, the people who use the bridge must feel it is part of the community”<sup>3</sup>. At its most primary function the project bridges the east and west banks of the site, connecting multi-use (pedestrian, bicycle, rollerblade, etc.) pathways that run the course of the entire city. Once this was achieved the focus was then placed upon the often neglected perpendicular, or non-bridging orientation into developing and improving the programmatic and functional form of a pedestrian bridge. The south side of the site faces the York Street vehicular bridge, a busy thoroughfare of downtown London, while the north has a scenic look over the Forks of the Thames. This led to the basic concept of creating a south facing ‘wall’ that would act as a beacon to passing vehicular traffic while at the same time offering a resting point along the bridge and an uninterrupted view over the Forks of Thames to the users of the bridge. After creating the basic concept and theoretical design approach that best suited the site it was then the realization of this idea structurally where the precedences were required:

*Structural design lies not just in the realm of the engineer, but can be a means for architects of arriving at a meaningful realization of architectural ideas. It is when theory meets physical necessity that architecture can become really interesting.*<sup>4</sup>

Structurally the south facing ‘wall’ is composed of a simply constructed and supported slightly obtuse-angled ‘L’ form which is repeated along the length of the bridge at 2.5m intervals. Connecting these structural ‘fingers’ are benches, offering a place of rest along the bridge as an added programmatic feature allowing the bridge to act as more than just a simple passage from point A to B. The exact repetition of the structural ‘fingers’ did not provide the desired dynamic form so precedences were required to show the effect created by a simple shift or rotation of a repeated structural element. The Floral Street Bridge by Wilkinson Eyre provided the best example by conceiving of a ‘deceptively simple, yet

immediately legible design'.<sup>5</sup> An aluminum spine beam supports a timber deck and a series of 23 square aluminum hoops.<sup>fig.1</sup> Each hoop, and its' glazed interval, rotate 4 degrees in relation to the previous and shift in plan to accommodate the skewed alignment of the building openings.<sup>fig.2</sup> Twisting high above the street, the bridge provides the dancers of the Royal Ballet School a direct link with Royal Opera House, evoking 'the fluidity of grace and dance'.<sup>6</sup> It was realized that a simple 3 degree rotation of each structural element of the skin, beginning at each end and peaking in the centre, could provide the dynamic and recognizable wave form across the bridge. Not only did this create an intriguing form to the bridge from a distance but when traversing the bridge, the skin literally peels away from the user, giving the sensation that the bridge itself is opening out to the scenic view to the north. With the form of the south 'wall' decided upon it became a question of how to clad the wall, what type of skin would best provide the desired beacon effect.

The lighting of the bridge during the day and night were essential to the scheme, and it was the appearance of SHoP's Rector Street bridge at night and the appearance of dECOi's Ether/1 sculptural project during the day that provided the most amount of insight in how to approach the skin of the south facing 'wall'. The temporary Rector Street pedestrian bridge, designed by New York architecture firm SHoP was the first infrastructural element built in Lower Manhattan since the attacks of September 11, providing 'a microcosmic illustration of the collaborative effort it's going to take to rebuild downtown'.<sup>7</sup> Prior to the destruction of the towers, the community was served by two pedestrian bridges, one which was damaged and the other destroyed in the attack. The new bridge crosses the multi-lane West Street, reconnecting Battery Park City, home to residential neighborhoods and the World Financial Center, to the rest of Downtown and providing safe passage for commuters while sheltering them from the weather and offering occasional views to the surrounding area.<sup>8</sup> In order to accomplish this, SHoP's design wraps a prefabricated superstructure with perforated cladding, allowing for a roof and partial cladding of the exterior.

The partial cladding enables the penetration of sunlight while also providing shade during the day and at night, fluorescent light emanates from the 1.5m-long 'light planks' in the floor and the voids of cladding in the walls of the bridge.<sup>fig.3/4</sup>

*People traversing a bridge at night need enough light to feel safe.[...]not only to help pedestrians see the way and others crossing the bridge, but also to accent architectural features, including entry and exit points.<sup>9</sup>*

The lighting of the bridge at night was essential for the bridge to act as a landmark and beacon for the city and downtown core, but the required energy to achieve this then became an environmental problem. To solve this, a sustainable approach was taken in allowing the sunlight during the day to in turn light the bridge at night. The implementation of solar panels atop each structural member of the south facing 'wall' allowed for their maximum exposure during the day and the elimination of city power to light the bridge at night. This was not the only way daylight was used in the scheme as it was the desire to create a similar beacon effect during the day as the bridge would have at night. It was dECOi's Ether/1 project that provided us with the knowledge of how this could be achieved. Ether/1 is a sculptural piece that was created to commemorate the fiftieth anniversary of the United Nations in Geneva. It is a series of sculpted projects where 'image/surface/object are ambiguous in their status'.<sup>10</sup> It was created from a negative trace of two dancers that cannot be seen by the naked eye, in other words 'the trace of an absent presence'.<sup>11</sup> It is developed with use of a slender steel structure clad in an aluminum skin that allows the interweaving of its mesh to gleam along its length.<sup>fig.5</sup> The hollow aluminum tube skin detail, implemented in our scheme, gained its influence in the Ether/1 project by dECOi to allow the bridge to have the same gleam and beacon effect during the day as it would at night.

A successful design requires an understanding of the task at hand, what it is that you are creating, how it is to be used, where the idea is rooted in history and the contemporary position that one is able to build upon. Though rooted in its beginnings as a simple span connecting two points, the pedestrian bridge has developed, along with the materials used to construct it into not only a way of connecting point A to point B, but as an artistic expression marrying engineering and architecture into a unique conjunction. Currently the pedestrian bridge provides an opportunity to be more creative and explore more interesting and dramatic approaches to design. Wilkinson Eyre's Floral Street Bridge, SHoP Architects' Rector Street Bridge and dECOi's Ether/1 all explore and develop form and function which push the boundaries of what it is we are creating and also the material possibilities that we are presented with. In our time, the 'signature bridge, a one-of-a-kind structure, is becoming popular as an icon that represents a community'<sup>12</sup>, and it is this that our design successfully achieves.

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<sup>1</sup> Tripping the Void Competition Guidelines

<sup>2</sup> Tripping the Void Competition Guidelines

<sup>3</sup> Talarico, Wendy. "Crossing Safely to the Other Side"

[http://archrecord.construction.com/resources/conteduc/archives/research/3\\_00\\_1.asp](http://archrecord.construction.com/resources/conteduc/archives/research/3_00_1.asp)

<sup>4</sup> Tripping the Void Competition Guidelines

<sup>5</sup> Hart, Sara. "Floral Street Bridge," June 2004

[http://archrecord.construction.com/projects/bts/archives/bridges/04\\_floral/overview.asp](http://archrecord.construction.com/projects/bts/archives/bridges/04_floral/overview.asp)

<sup>6</sup> <http://www.wilkinsoneyre.com/main.htm>

<sup>7</sup> Ringen, Jonathan. "Bridging the Divide," July 2002

[http://www.metropolismag.com/html/content\\_0702/ob/ob08\\_0702.html](http://www.metropolismag.com/html/content_0702/ob/ob08_0702.html)

<sup>8</sup> Ringen.

<sup>9</sup> Talarico.

<sup>10</sup> Archilab. "DECOI," 1999.

<http://www.archilab.org/public/1999/artistes/deco01en.htm#>

<sup>11</sup> Archilab.

<sup>12</sup> Talarico.

Image References:

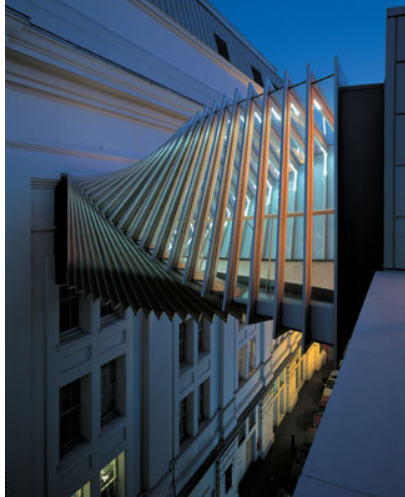


Figure 1: Wilkinson Eyre. Floral Street Bridge (Exterior)



Figure 2: Floral Street Bridge (Interior)

[http://archrecord.construction.com/projects/bts/archives/bridges/04\\_floral/photos.asp](http://archrecord.construction.com/projects/bts/archives/bridges/04_floral/photos.asp)



Figure 3: SHoP Architects: Rector Street Bridge (Exterior)

[http://www.metropolismag.com/html/content\\_0702/ob/ob08\\_0702.html](http://www.metropolismag.com/html/content_0702/ob/ob08_0702.html)



Figure 4: Rector Street Bridge (Interior)

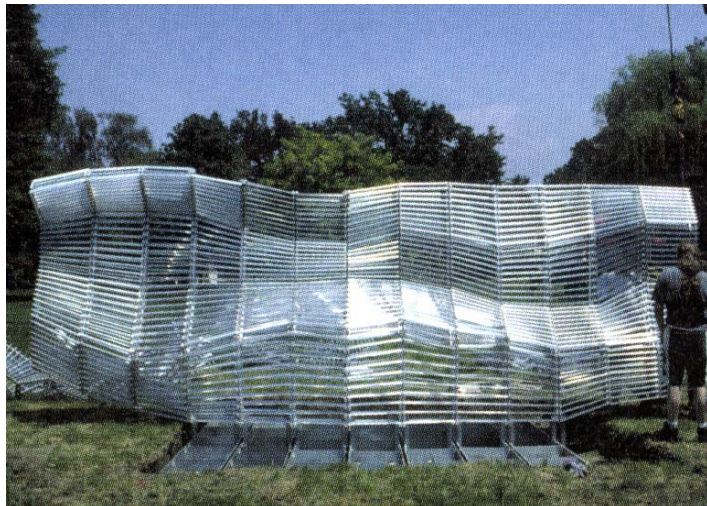


Figure 5: dECOi: Ether/1

<http://www.archilab.org/public/1999/artistes/deco01en.htm#>