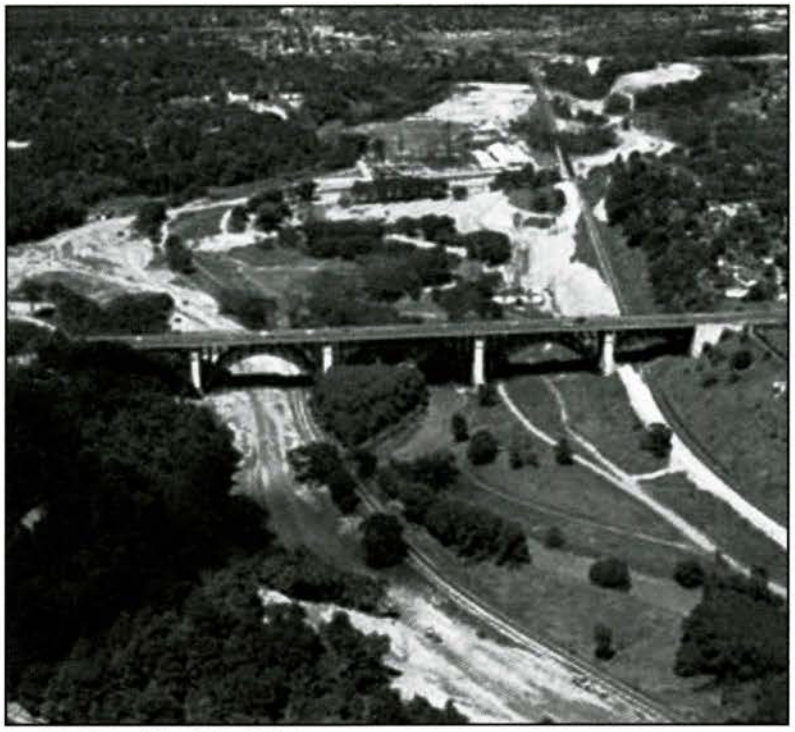

Fig. 1: Aerial view of Prince Edward Viaduct.
(City of Toronto Archives)

Marco L. Polo

The Luminous Veil: Transforming Memory and Meaning at Toronto's "Bridge of Death"

Completed in 1919, the Prince Edward Viaduct ranks among Toronto's most highly-regarded civic monuments. The viaduct spans the Don Valley, largest of Toronto's twenty-seven ravines, and represents a moment in the city's history when public infrastructure was considered an artefact of aesthetic and cultural significance (figs. 1 and 2).

Designed by city engineer Thomas Taylor and consulting architect Edmund Burke under the direction of Commissioner of Public Works Roland C. Harris, the project was rejected twice by the citizens of Toronto in plebiscites held in 1910 and 1912. It was finally approved in a third plebiscite in 1913, prompting Taylor to remark in the pages of *The Journal of the Engineering Institute of Canada* that "The verdicts rendered at the three elections indicate, on the part of the Toronto public, a growing appreciation of civic improvements."[1]

Named after the then Prince of Wales in honour of his first visit to Toronto shortly after the bridge's completion, the viaduct is a landmark structure in the city, towering 130 feet (39.6 m) above the Don River and offering dramatic views over the valley. Designated a National Historic Civil Engineering Site in 1986, its important place in Toronto's civic consciousness was celebrated in Michael Ondaatje's 1987 novel *In the Skin of a Lion*,[2] which described in fictionalized form the construction of the viaduct as a defining moment in the physical and cultural development of the city.

The viaduct also represents the early twentieth century faith in progress and constitutes a prescient anticipation of Toronto's future growth. In addition to providing a vehicular and pedestrian link connecting Bloor Street on the west with Danforth Avenue on the east, the bridge was constructed with provision to accommodate a lower deck for a subway line that would not be constructed for another half-century (figs. 3 and 4).

But, in addition to its ennobling features, the viaduct has assumed a darker notoriety in Toronto's collective consciousness. Over the course of its history, the Prince Edward Viaduct has been the site of some 480 suicides–one quarter of those since 1990–and has earned, among the mental health community, the title "The Bridge of Death."[3]

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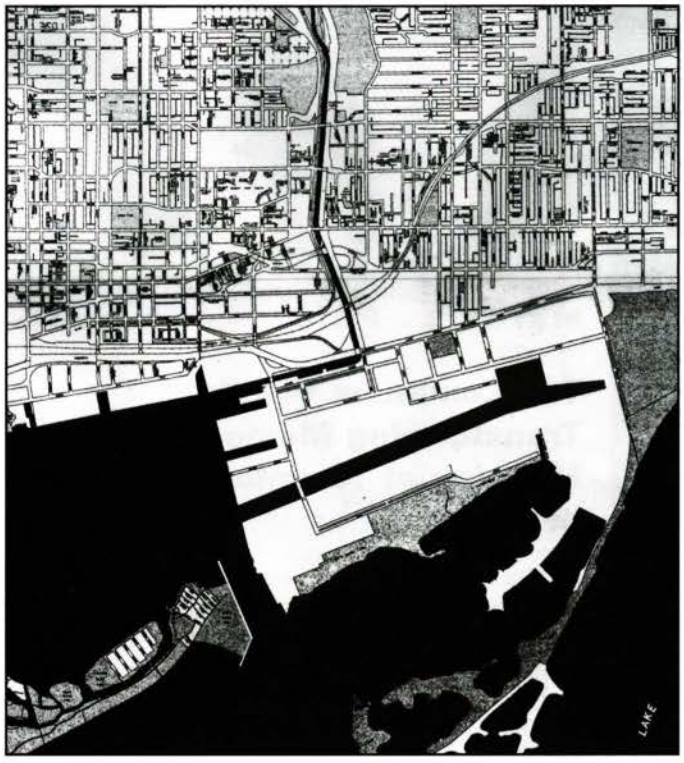


Fig. 2: Map of downtown Toronto showing location of viaduct.
(Photo: Dereck Revington Studio)

Following a number of high-profile incidents, in June of 1997 a local chapter of the Schizophrenia Society of Ontario formed a Bridge Committee[4] and, enlisting the help of other agencies and mental health professionals, spearheaded efforts to construct a suicide barrier at the viaduct. Sensitive to the cultural and civic significance of the monument, the Bridge Committee understood the importance of creating a barrier that would respect the existing structure.

Undeterred by arguments that potential suicides would simply find other sites, the Bridge Committee noted that the viaduct acted as a "suicide magnet," second in North America only to San Francisco's Golden Gate Bridge.[5] The committee presented expert opinion and studies indicating that a significant majority of failed suicides at magnets such as the Prince Edward Viaduct did not re-attempt, and that deterring suicide at that particular location would result in many lives being saved. Following intensive lobbying by the Bridge Committee, in July of 1998 Toronto city council announced a two-stage national competition for the design of a barrier.

The Luminous Veil

The winning entry was the Luminous Veil, designed by Dereck Revington Studio of Toronto, with the Yolles Partnership as structural engineers (fig. 5). The proposal stood out for its effort to transcend its pragmatic function and create a memorable piece of public art, and for what the jury considered its sympathetic relationship to the existing viaduct–a critical factor in securing the support of Heritage Toronto, the city's preservationist watchdog agency.

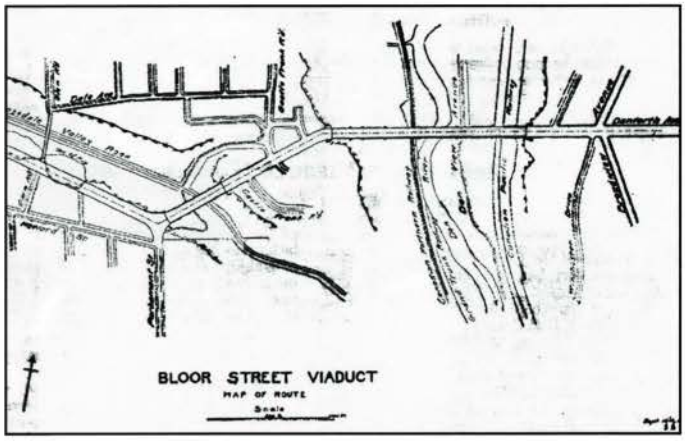


Fig. 3: Plan of Prince Edward Viaduct.
(City of Toronto Archives)

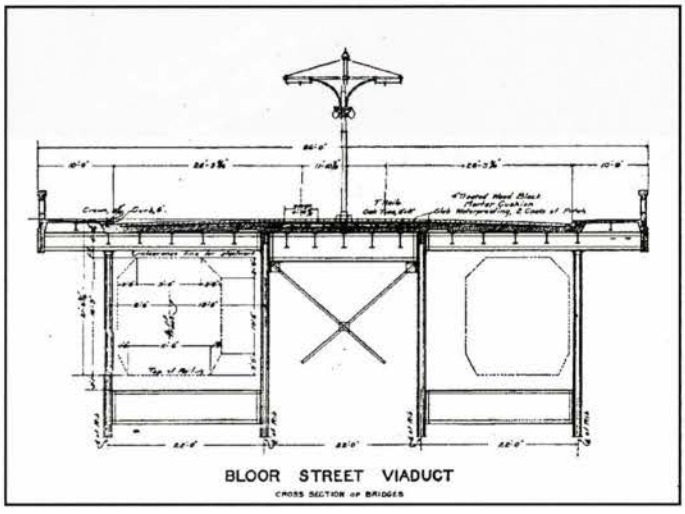


Fig. 4: Cross section of viaduct showing accommodation for subway tracks.
(City of Toronto Archives)

The Luminous Veil also built on a recently reinvigorated tradition of artfully designed public infrastructure in Toronto. In contrast to the object-oriented public art of late modernism, a number of recent projects adopted a more integrated approach to civic art and infrastructure. Examples include the Humber River Bicycle Pedestrian Bridge by Montgomery and Sisam Architects with Delcan Corporation acting as structural engineers, and the BCE Place Galleria designed by Santiago Calatrava with Yolles as engineers. Although the Luminous Veil is clearly part of this lineage, it is unique in that it has to simultaneously fulfil an important public safety requirement and respond to a powerful civic icon of massive scale.

The particular challenge of the design was to affirm the attributes and grandeur of the existing viaduct while providing the necessary safety barrier. The designers of the Luminous Veil described the three primary compositional elements of the grand bridge as Point, Line, and Veil (the vertical piers, horizontal deck, and interstitial open webbing of crescent-shaped steel arches, respectively) (fig. 6). Their response was to propose three complementary elements–Bow, Veil, and Truss–as the essential components of the new intervention.

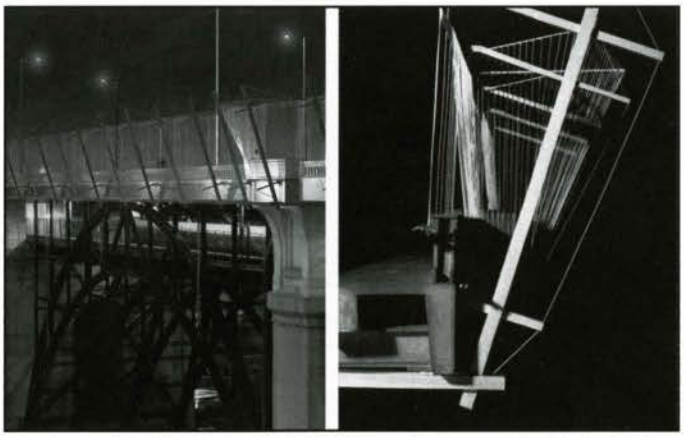


Fig. 5: Successful submission to the national design competition for a suicide barrier by Dereck Revington Studio, "The Luminous Veil."
(Photo: Dereck Revington Studio)

Fig. 6: View of viaduct from valley floor, illustrating elements identified as "point, line, and veil."
(Photo: Morden Yolles)

The Luminous Veil brings those elements together to create a tremulous spatial fabric that extends from bank to bank on each side of the bridge. A series of galvanized steel bowstring masts suspend a horizontal "V" truss of welded rolled steel plate sixteen feet (4.87 m) above the bridge deck. That truss and the balustrade below, fitted with a wood handrail of naturally-finished cultivated Brazilian Ipé, hold in tension the Veil's oscillating double layer of stainless steel rods and cables that create the essential barrier between the sidewalk and the valley below (fig. 7).

An inner layer of irregularly spaced 3/8" (1.14 cm) stainless steel rods creates an undulating visual field, set in syncopation with the regular six-inch (15.25 cm) increment of an outer layer of cables (fig. 8). At each of the viaduct's monumental concrete piers, the inner veil is interrupted and the outer layer of cables forms a crescent-shaped membrane corresponding to each of the existing lookout points without compromising the safety features of the barrier (figs. 9-12).

The layered vertical fields act in parallax to provide a range of perceptual effects varying with distance, direction, and velocity of movement, offering a variety of spatial effects to motorists, cyclists, and pedestrians as they cross one of Toronto's most powerful sites.

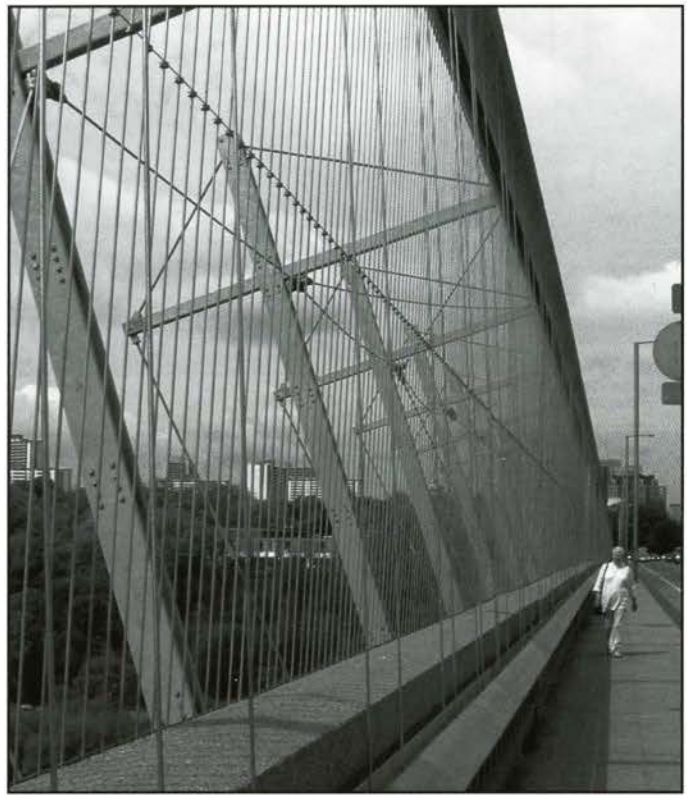


Fig. 7: Oblique view of Luminous Veil from pedestrian sidewalk on bridge deck.
(Photo: Marco Polo)

Architecture and Engineering

While it takes certain cues from the viaduct–such as its response to the spacing and rhythm of the existing steel arch framing–the Luminous Veil distinguishes itself as a contemporary work, eschewing allusion to historical type. It also differs from its host structure in its seamless integration of architecture and engineering.

In the viaduct, the work of the two disciplines is clearly distinguishable in both formal and material terms. Early proposals for the Prince Edward Viaduct embody many of the values of the City Beautiful movement, which gained favour in North America following the 1893 Columbian Exposition in Chicago. That is clear in its adoption of Beaux-Arts Classicism as an expressive as seen in early proposals (figs. 13 and 14).

In its final form, however, the distinction between the project's architectural and engineering ambitions is clearly drawn. The primary structure consists of three-hinged steel arches, with the crown pin in the upper chord, while the lower chord is provided with a slip joint at the middle.[6] These are completely devoid of architectural ornament. The piers and bridge deck, on the other hand, are constructed of concrete, which was considered for the entire bridge but abandoned since it was a relatively new material with which Thomas Taylor readily admitted the engineers were not entirely comfortable.[7] The piers are of massive scale, and the baluster and handrail–modestly scaled considering the otherwise monumental quality of the bridge–are finished to expose the red granite aggregate (fig. 15).

Fig. 8: View between layers of steel cable.
(Photo: Marco Polo)

Fig. 9: Typical lookout at top of bridge pier.
(Photo: Marco Polo)

Fig. 10: Detail of Veil at projecting lookout.
(Photo: Marco Polo)

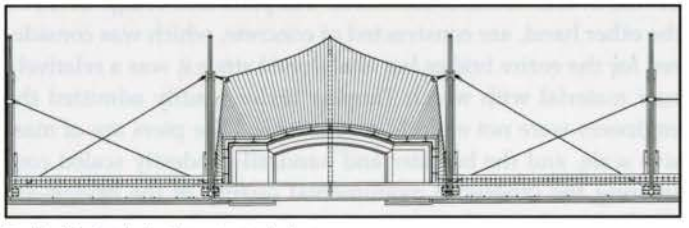


Fig. 11: Plan detail of veil at projecting lookout.
(Dereck Revington Studio)

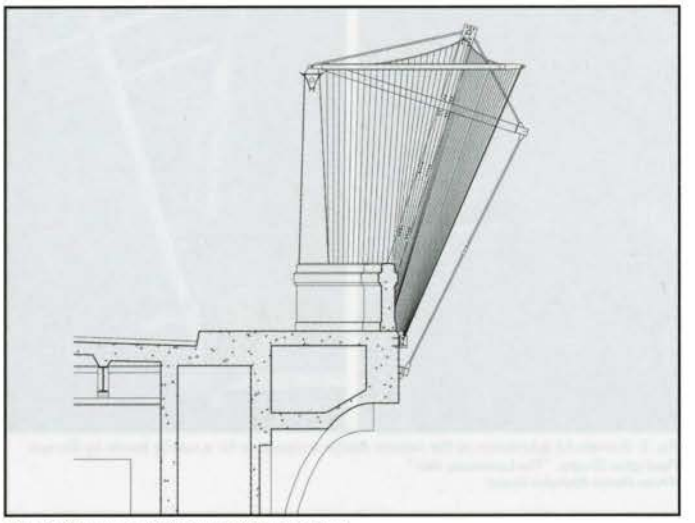


Fig. 12: Section detail of veil at projecting lookout.
(Photo: Dereck Revington Studio)

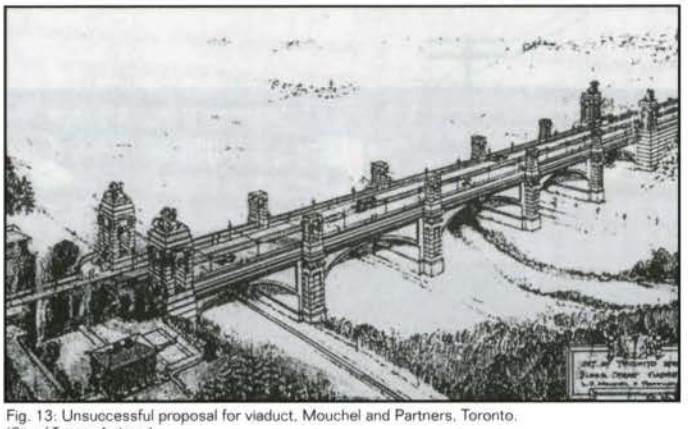
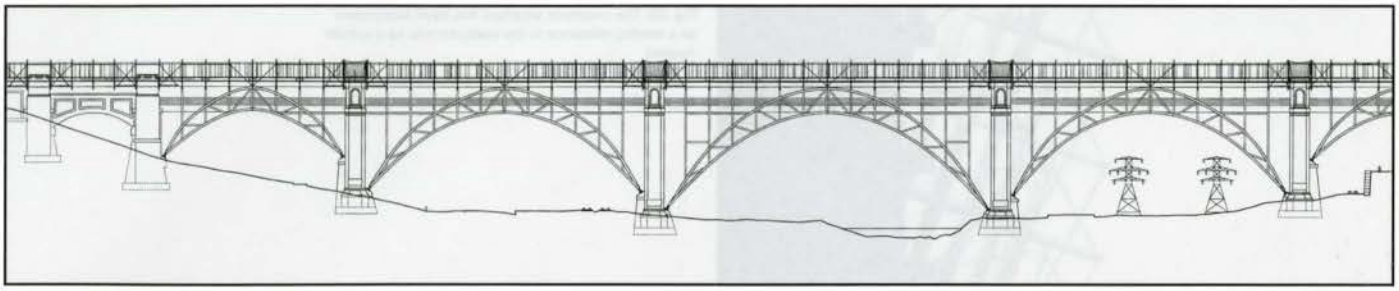


Fig. 13: Unsuccessful proposal for viaduct, Mouchel and Partners, Toronto.
(City of Toronto Archives)

Fig. 14: Unsuccessful proposal for viaduct in Beaux-Arts style.
(City of Toronto Archives)

Fig. 15: The original baluster and handrail were very modestly scaled in relation to the grand viaduct.
(City of Toronto Archives)

Fig. 16: Elevation drawing of Luminous Veil.
(Dereck Revington Studio)



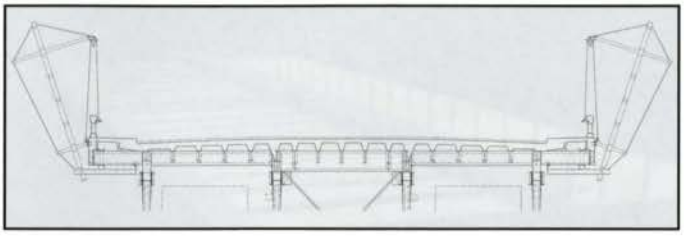


Fig. 17: Cross section of Luminous Veil.
(Dereck Revington Studio)

Fig. 18: Panoramic view of Luminous Veil.
(Photo: Peter A. Sellar/KLIK)

Fig. 19: The detailing is integral to the spirit of the Veil and its delicate relationship to the host structure.
(Photo: Marco Polo)

The Luminous Veil reveals no such distinction between disciplines. Following the rhetoric of modernism, function and expression are one, with no superfluous ornament that could be deleted without compromising the barrier's performance. However, in contrast to orthodox modernism, the Veil's design is not reductive; rather, it is accretive and multi-layered. Occupying its host structure like a benign parasite, its relationship to the viaduct is both additive and symbiotic, its formal and conceptual complexity providing an appropriate metaphor for its multivalent agenda (figs. 16-19).

Despite the competition jury's support for the proposal, there has been mixed public response to the Veil, most notably regarding imagery. Writing in the May 8, 2003 edition of *Now*, a Toronto alternative news weekly, Pat Capponi noted the resemblance of the bowstring masts to Christian crosses[8]. The writer saw that as a morbid reference to the viaduct's role as a suicide magnet, but they could just as easily be read as memorials to those who lost their lives at the site (figs. 20 and 21). Similarly, the stone slabs designed to mediate between the existing concrete baluster and the new veil can be read as tomb markers (fig. 22). Most importantly, the shimmering, tremulous quality of the veil of cables suggests the ephemeral and tenuous nature of the divide between life and death (fig. 23).

Following the design competition, the Luminous Veil was selected for a 1999 *Canadian Architect* Award of Excellence, the highest honour bestowed by Canada's architectural community for projects in the design stage. Picking up on its deft resolution of a complex set of design issues, awards jury member Barry Sampson wrote that "The design accomplishes the most difficult of tasks, adding to an historic monument and satisfying needs never imagined within the notions of civility that inspired the original bridge designers. The current generation of designers have entered into a discourse with the first and brought to their work a sympathetic new layer that represents a similarly vigorous notion of art and civility."[9] But in spite of that type of endorsement, the Luminous Veil soon became mired in bureaucratic and budgetary complications that threatened its construction.

Politics and Process

The budget for a suicide barrier initially set at the time the competition was announced was $1.5 million;[10] it soon became apparent that the complexity of construction on the existing viaduct, especially with respect to the continuous operation of the subway, would result in higher costs, and the City increased the budget to $2.5 million.[11] As the competition-winning scheme, the Luminous Veil was confirmed to be on budget by cost consultants retained by the City. However, a six-month delay in tendering due to concerns expressed by the Toronto Transit Commission regarding maintenance of the viaduct's subway deck and a huge jump in the price of steel due to unanticipated material shortages increased costs so dramatically that the lowest bid came in at $5.5 million.[12]

That marked the beginning of what would become a sometimes bitter struggle between proponents of the Luminous

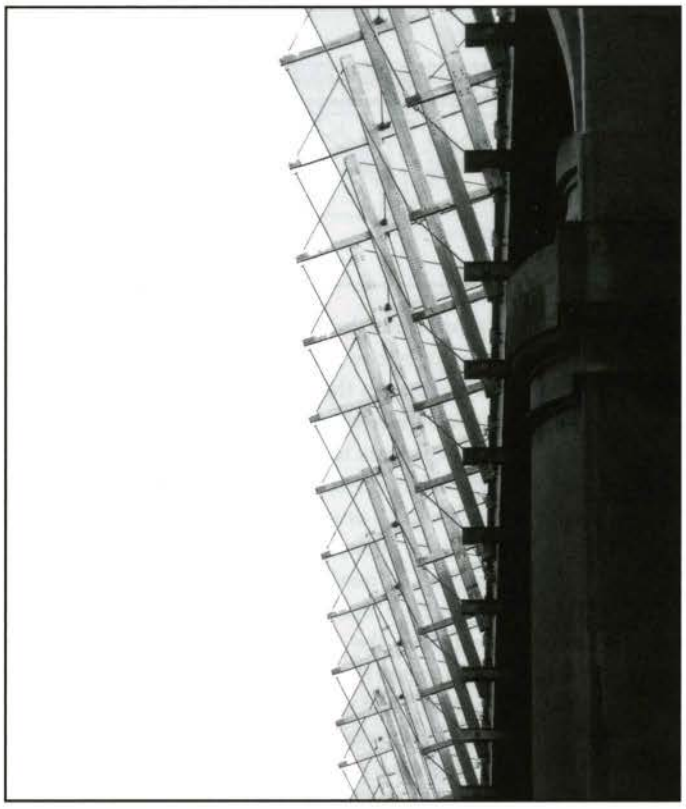


Fig. 20: The cruciform structure has been interpreted as a morbid reference to the viaduct's role as a suicide magnet.
(Photo: Dereck Revington Studio)

Fig. 21: Alternately, the cross forms may be read as memorials to those who lost their lives at the site.
(Photo: Marco Polo)

Veil and a cost-conscious city council intent on managing the bottom line. It also unleashed an unprecedented instance of a citizen group taking the lead in the provision of a piece of civic infrastructure. In January 2000, the City's Works Committee voted to scrap the project and start the process all over again in an effort to secure a design-build contract for a barrier based on the previously approved budget of $2.5 million.[13] Based on the Works Department's own estimates, that would have resulted in, at worst, a chain-link fence or, at best, a continuous bus shelter-like structure running the length of the bridge. Neither

Fig. 22: Stone slabs can also be read as tomb markers.
(Photo: Marco Polo)

of those alternatives would have been acceptable additions to an historic monument and neither had been tested to ensure that it would serve its intended primary function of public safety. By contrast, the Veil had undergone rigorous and exhaustive simulations at the University of Toronto Engineering Faculty's Structure Laboratory.

In an effort to pre-empt the Works Committee's recommendation to council to abandon the project, supporters of the Luminous Veil met with Mayor Mel Lastman and secured a promise to keep the project alive provided that the City would contribute only the already committed $2.5 million. The balance would have to be fundraised by the Bloor Viaduct Steering Committee, an organization that included representatives from the Schizophrenia Society of Ontario and other mental health agencies and professionals.

The fundraising process, which took about a year, resulted in a local advertising company coming forward with an offer to contribute $3.5 million towards the cost of the Veil in exchange for the right to erect electronic signage alongside one of Toronto's highway thoroughfares. That met with a mixed reaction from city councillors, leading to more months of debate and committee reviews, further delaying the implementation of the project.

The issue of delay had been a profoundly important one over the course of the project. Proponents of the barrier, many of whom had lost family members to the viaduct's fatal magnetism, made impassioned pleas to a variety of City committees

Fig. 23: The tremulous quality of the veil of cables suggests the ephemeral and tenuous nature of the divide between life and death.
(Photo: Marco Polo)

and councillors that bureaucratic delays in the approval process were costing lives. In 1997 and 1998, two peak years in the viaduct's dark history, seventeen and nineteen people, respectively, jumped to their deaths. Public meetings became increasingly emotionally charged and included testimonies from victims' families, from mental health professionals, and from firemen and police officers called to the scene of those tragic emergencies.

Local media accounts became increasingly sympathetic to the Luminous Veil, applying pressure for the speedy resolution of outstanding concerns. In June 2001–three full years after the competition announcement–Toronto city council voted to proceed with the construction of the project, providing full funding with the understanding that the offer of $3.5 million would be recovered at a later date once an agreement was negotiated with the donor company.

Some city councillors opposed the project throughout the process, expressing scepticism as to its effectiveness and arguing that delays were in fact being caused by supporters who wouldn't abandon the Luminous Veil for a cheaper barrier. The Bloor Viaduct Steering Committee maintained that the historic bridge demanded a solution of significant design merit, not an expedient, unsightly barrier that would be opposed by Heritage Toronto and that could create public resentment towards the mental health community for defacing one of the city's most significant civic monuments.

What might have seemed, at its inception, a straightforward public works project costing a few million dollars and taking a few months to build emerged as an exercise of extraordinary complexity on many levels–political, social, logistical, historical, philosophical, emotional, and aesthetic. While many architectural projects seek to integrate a similarly complex palette of concerns, rarely are they so publicly and overtly galvanized in a single project.

The process also illustrated some of the limitations of the political/bureaucratic process, repeatedly causing delays and reducing complex issues to budgetary line items. It was argued, for instance, that saving only four lives would more that offset the $3 million budget overrun. A 1996 New Brunswick Study calculated that costs associated with a single suicide worked out to $849,000. That figure represents direct costs such as health care, ambulances, police investigations, autopsies and funerals, and indirect costs such as lost productivity and discounted future earnings.[14] Despite such evidence, some city politicians could only see the overrun in the context of a potential political liability.

Some of the project's critics took exception not to the specific solution, but to any efforts to construct a suicide barrier on the viaduct. Arguing that the barrier's supporters were misplacing their efforts, one letter to *Canadian Architect* stated that the barrier proved that "public officials are more concerned with a band-aid solution to suicide than with getting to the root of the social problems that contribute to it."[15] According to such voices, citizen activism should have been directed to the provincial government responsible for public health, not to the construction of a barrier in one particular location.

As a project straddling the realms of civic art, infrastructure, and public safety, the Luminous Veil has brought to the fore important questions about civic values, about short-term political expediency, and about attitudes towards vulnerable communities and their representation in the public realm. Recently completed, it may come to represent and embody the current stage of Toronto's development, much as the viaduct did for an earlier era. Like its enduring host structure, the Veil promises to transcend its immediate function to enrich the lives of generations of Torontonians.

Notes

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3. Polo, Marco, 1999, « The Luminous Veil », *Canadian Architect*, vol. 44, no 12, December, p. 32-33.
4. McCamus, Michael, 2000, « Taking the attraction out of a 'suicide magnet' », *The Advocate*, Toronto, Schizophrenia Society of Ontario, Summer, p. 8.
5. *Ibid.*
6. Taylor, *op. cit.*
7. *Ibid.*
8. Capponi, Pat, 2003, « Cheating Death », *Now*, May 8-14.
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10. McCamus, *op. cit.*
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12. *Ibid.*
13. *Ibid.*
14. Clayton, Dale, and Alberto Barceló, 1999, « The Cost of Suicide Mortality in New Brunswick 1996 », *Chronic Diseases in Canada*, vol. 20, no 2, p. 89-95.
15. Schotte, Jan, 1999, Letter to *Canadian Architect*, vol. 44, no 4, April, p. 11.