

JOHNSON STREET BRIDGES VICTORIA

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HERITAGE ASSESSMENT

2010 June 08
JY09016

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HERITAGE ASSESSMENT JOHNSON STREET BRIDGES VICTORIA BC

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1. INTRODUCTION

1.1 The five (5) documents listed above all relate to the heritage aspects of the Johnson Street Bridge. The first four (4) form part of this document whereas the last 2.5 is referred to in this introduction.

1.2 Any heritage assessment is conducted with the knowledge of the recommendations within Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada*. Within this document are listed 14 standards against which any work carried out or adjacent to an historic place should be assessed. Standard 11 is the main standard that refers to new additions or related new construction to an historic place, as follows:

11. *Conserve the heritage value and character-defining elements when creating any new additions to a historic place or any related new construction. Make the new work visually and physically compatible with, subordinate to and distinguishable from the historic place.*

1.3 The Commonwealth report prepared by Dr. Harold Kalman is most comprehensive and provides an in-depth review of the history of the various bridges that have existed at the Johnson Street Crossing. It reviews the history of all the previous bridges and culminates with a detailed account of the Strauss Trunnion Bascule Bridge of 1920.

1.4 In assessing the heritage value of the Johnson Street Bridge Kalman relates it to the criteria know in the profession as the *Kalman System* of the Evaluation of Historic Buildings, but points out that as this is a unique structure and there are no local examples to which it can be compared which makes it

difficult to assess. Kalman does however use Social-Historical Values, Engineering Values, Contextual Values and Overall Value to confirm that the Johnson Street Bridge is indeed a heritage resource of very high value.

- 1.5 Within Appendix 2 of the Kalman report there is a list of “*Strauss Bascule Bridges designed for Canadian locations.*” This list does NOT identify locations where there are two bridges in tandem as with the Johnson Street Bridge. Upon further investigations it is believed that this bridge is the ONLY twin bascule bridge in Canada, thus its heritage importance is increased significantly from that of a single span bridge.
- 1.6 It should be noted here that in Ontario there exists a Provincial Bridge Register, which lists historic bridges. This listing is produced by the application of an *Evaluation Criteria for Bridges* to ascertain their heritage value and to ascertain if they should be listed as structures of historic significance. The scoring of this evaluation, derived from Ontario Regulation 9/06, is divided into three main areas; Design / Physical Value, Contextual Value and Historic / Associative Value. Within these three main divisions are further criteria that are individually scored. To quote; “*For the purposes of these Guidelines, a bridge with a score of 60 or greater is considered provincially important*” Using the above system a score of 85 was arrived at, thus if this bridge was located within Ontario it would be considered provincially important.

2. HERITAGE IMPACT ASSESSMENT

- 2.1 Statement of Significance - 2010 June 08 - Jonathan Yardley
- 2.2 Heritage Intervention Assessment - 2010 May 19 - Jonathan Yardley
- 2.3 Heritage Impact Assessment, Proposed Pedestrian / Cyclist Bridge - 2010 May 19 - Jonathan Yardley
- 2.4 Heritage Assessment - 2010 June 01 - Andrew Huctwith
- 2.5 Heritage Assessment of the Johnson Street Bridge, Victoria - April 2009 - CHRML

2.1 Statement of Significance – 2010 May 19 – Jonathan Yardley

Statement of Significance (SOS) – Johnson Street Bridge

Description:

The Johnson Street Bridge is a double Strauss Trunnion Bascule Bridge that spans the entrance to the upper reaches of the Victoria harbour. It links downtown Victoria to the Songhees lands, Victoria West and beyond. There are two separate, yet parallel, bridge spans – one to accommodate railway traffic and the second for vehicular traffic, bicycles, and pedestrians.

Heritage value:

The Johnson Street Bridge has heritage value for its connections to the growth and development of Victoria, its relationship with the Esquimalt and Nanaimo Railway, and its connections to the local trail system. It is an entry statement as the gateway into the Old Town downtown core when traveling from the west and is a highly visible and recognizable landmark in the harbour. The Bridge has high heritage value as an engineering landmark designed by one of North America's most renowned Bridge engineers / engineering firms.

The Johnson Street Bridge has very high heritage value in the context of Victoria, the Inner Harbour, and the City and Region's transportation systems. Built to improve access between Victoria the industrial lands on the west bank of the harbour channel that were created by the purchase of the Songhees Reserve by the Province of BC in 1911, it was seen as an essential component of Victoria's aspirations for economic and industrial development. Many people saw the construction of a high-capacity moveable Bridge in this location as an essential link in Victoria's

transportation system and in the development of the Inner Harbour as an industrial centre, focusing in part on the once-vital shipbuilding industry. The lift span ensured access between the Inner Harbour and the Gorge, both navigable waterways lined with industries, including sawmills and shipyards that depended on water access. The Bridge was also built to improve access between Victoria and the Dockyard and Naval and Army Bases in Esquimalt.

The Bridge is closely associated with the Esquimalt & Nanaimo Railway, which was a partner in its development. The Bridge was necessary to provide access to Victoria for the heavy steam locomotives and passenger trains used by the E&N, which contributed to the economic prosperity of Vancouver Island. The Bridge also permitted access for freight traffic to the E&N yards (called the Albion Yards) and many warehouses and industries along Store Street and nearby areas.

The Bridge is part of a larger cultural landscape focused on the E&N Railway. These include the E&N Roundhouse complex in Victoria West, which comprises the Roundhouse, Backshop, Car Shop, Stores Building, and Turntable; all virtually unaltered since their construction in 1913 and collectively designated a municipal heritage site and a national historic site. On the downtown side, the ViaRail Station terminates the extant railway resources; however the large open space at the intersection of the Johnson and Wharf Streets, framed by the historic Janion Hotel, is a reminder of the former E&N Station and track complex. And tying the complex together is the E&N main line track, with its overpass crossing Esquimalt Road.

The Johnson Street Bridge also forms part of a second industrial cultural landscape, formed by the mouth of the Gorge and including the rapidly disappearing industrial sites along the channel. Once the focus of Victoria's shipbuilding and lumber

industries, the area is in the process of a transition to residential and light commercial use epitomized by the large Dockside Green development.

The Johnson Street Bridge is one of at least 30 Strauss Trunnion Bascule Bridges designed for a Canadian location between 1909 and the early 1930s. It is one of what may be the three most familiar urban Bridges of this type in Canada; the others are the Cherry Street Bridge in Toronto, built in 1931 and the LaSalle Causeway Bridge, Kingston, built in 1917. This was an enduring and efficient design that was adopted around the world. The Johnson Street Bridge was a unique variant of the standard Strauss design in that it has two parallel but separate spans, one for the roadway and one for the railway. It is by far the longest surviving and most familiar of the three Bridges that have been built at this location.

The Bridge comprises a part of the Greater Victoria trail system. It connects with the pedestrian path system around the Inner Harbour; it also connects with the Galloping Goose Trail and the Lochside Regional Trail, extending north to the Swartz Bay ferry terminal.

Character-Defining elements:

- the historical connection between the Bridge and the development of early industrial Victoria.
- the engineering qualities of the Strauss Trunnion Bascule Bridge
- unique two bridges built parallel to each other
- the relationship between the Bridge and the Esquimalt and Nanaimo Railway buildings and tracks
- the relationship between the Bridge and the buildings on the eastern approaches – including the Donald Fraser Warehouses and the Janion Hotel - as part of a cultural landscape in forming an “entry room” to Old Town Victoria
- its very visible position as a familiar landmark in the Victoria harbour
- the identification of the Bridge as an integral part of the trail system in Greater Victoria

Draft SOS

2010 June 08



Spans being raised, viewed from the west



From the south east



Donald Fraser Warehouse and the Johnson Street Bridges

2.2 Heritage Intervention Assessment – 2010 May 19

Jonathan Yardley

2010 May 19

JY09016

HERITAGE INTERVENTION ASSESSEMENT JOHNSON STREET BRIDGE VICTORIA BC

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1. INTRODUCTION

2. HERITAGE ASSESSEMENT

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1. INTRODUCTION

1.1 This brief report is a review of the presentation slides prepared by MMM Group titled *Johnson Street Bridge Refurbishment – Interim Update* dated April 30, 2010 for both the super and sub structures seismic upgrading.

1.2 The proposed upgrades deal with two major issues as follows:

1. Foundation seismic stabilization,
2. Superstructure seismic restraint and

1.3 Any heritage assessment is conducted with the knowledge of the recommendations within Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada*. Within this document are listed 14 standards against which any work carried out to or adjacent to an historic place should be assessed. Standard 11 is the main standard that refers to new additions or related new construction to an historic place, as follows:

11. *Conserve the heritage value and character-defining elements when creating any new additions to a historic place or any related new construction. Make the new work visually and physically compatible with, subordinate to and distinguishable from the historic place.*

1.4 Within *Standards and Guidelines* is a section specifically for engineering works; *Guidelines for Engineering Works*. Under one of the *Guidelines* it is *Recommended*: - "Retaining sound engineering works, or deteriorated engineering works that can be repaired"; and *Not Recommended*: - "Replacing or rebuilding an engineering work that can be repaired". This is the approach that is being taken.

2. HERITAGE IMPACT ASSESSMENT

2.1 Substructure

2.1.1 The existing foundations consist of wood piles capped with a concrete caisson to form two (2) piers to the main support of the bridge on the east bend and a single pier at the west end of the opening section of the bridge. At both the east and west ends of the approach spans there are concrete abutments.

It is my understanding that these support points have insufficient capacity for both bearing and seismic capacity and have to be upgraded.

2.1.2 The proposed upgrading is to leave all the existing piles and concrete work in-situ and to be encased at the upper level of the caisson with a concrete ring beam connected to a new concrete piling system. Although the intervention is quite massive it does not involve the removal or destruction of the existing concrete work. Upon completion it will be possible to still see the original concrete work. This intervention follows Standards and Guideline 12

12. *Create any new additions or related new construction so that the essential form and integrity of a historic place will not be impaired if the new work is removed in the future.*

If it is determined in the future that the proposed interventions to the substructure be removed they could be without destroying the original construction; therefore it complies with Standard 12.

2.1.3 In order to comply with Standard 11 it will be important to ensure that the form and finish of the new concrete should be distinguishable from the original. This can be achieved if the detailing of the form of the new concrete is such that it is difference in detailing from the original so that the two areas can read differently. The surface finish of the newer concrete should also appear different from the original this can be achieved with colour and/or texture.

2.2 Superstructure.

2.2.1 The existing superstructure consists of an open web of steel elements consisting of lattice girder box beams, I sections, channel sections and flat lattice to form the lifting portion of the bridge. This is the most visible portion of the bridge. The major proposed intervention is to provide a more substantial connection between the road and railway bridges at the east hinge end. Connections are further provided to the top sections of the lifting part of the bridge.

2.2.2 In order to follow Standards 11 and 12 it is recommended that this new inserted materials be different from that of the original, e.g. the use of circular and/or square tubular sections rather than the I sections, channels and flat plates of the original. Further that these interventions also be different in appearance with the use of different materials and finishes. E.g. cor-ten steel, galvanized steel or stainless steel.

As with the concrete work careful detailing will be critical to ensure that it complies with Standards and Guidelines.



3. CONCLUSION

3.1 This brief assessment would suggest that the approach that has been taken with the necessary upgrades to both the sub and superstructures conforms to Standards and Guidelines, international charters and good heritage conservation practice. The success of these interventions will be decided by exactly how they are detailed and the materials used. With adequate review of the design and construction process this will be achieved.

2.3 Heritage Impact Assessment, Proposed Pedestrian / Cyclist Bridge – 2010 May 19 – Jonathan Yardley

2010 May 19
JY09016

**HERITAGE IMPACT ASSESSEMENT
PROPOSED PEDESTRIAN/CYCLIST BRIDGE
JOHNSON STREET CROSSING
VICTORIA BC**

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1. INTRODUCTION

2. HERITAGE IMPACT ASSESSMENT

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1. INTRODUCTION

1.1 The following assessment is made of the proposals contained in Wilkinson Eyre Architects set of drawings dated 12/04/10. These drawings illustrate the design of a new pedestrian/cyclist bridge located parallel and north of the existing Johnson Street Bascule bridges. This assessment will address the impact of this new bridge on both the existing Johnson Street Bridge and the adjacent areas.

1.2 Any heritage assessment is conducted with the knowledge of the recommendations within Parks Canada's *Standards and Guidelines for the Conservation of Historic Places in Canada*. Within this document are listed 14 standards against which any work carried out or adjacent to an historic place should be assessed. Standard 11 is the main standard that refers to new additions or related new construction to an historic place, as follows:

11. *Conserve the heritage value and character-defining elements when creating any new additions to a historic place or any related new construction. Make the new work visually and physically compatible with, subordinate to and distinguishable from the historic place.*

2. HERITAGE IMPACT ASSESSMENT

- 2.1 The design of the proposed pedestrian/cyclist bridge has to be “*subordinate to and distinguishable from the historic place*”. In this case, it would appear that the proposed bridge is very similar in form and in operation to the existing Johnson Street Bridge and as such tends to be more of a replication than a new modern intervention. It has been found that the most successful interventions adjacent to an historic place have been those that respect the existing but solve the problem with a current (i.e. modern) approach using materials and techniques that are available to us today. The new bridge, when seen in say 25 years time, should reflect the time when it was built so that at that time, people will be able to distinguish it from what was built in 1917. These distinguishing features can be subtle such as using steel, but of modern form i.e. square or round hollow sections instead of I sections, channels, plates and latticework. A different type and/or finish would also differentiate the old from the new such as Corten steel, galvanized steel or stainless steel.
- 2.2 As well as the details of the design the broader concept of the location of the proposed bridge to the existing Johnson Street Bridge should be addressed. It is currently located parallel, adjacent and with a similar opening span. To differentiate it more from the existing Johnson Street Bridge it may be better to move it further away, to perhaps allow its alignment to curve to provide a viewing platform of the Johnson Street Bridge from the new bridge. As current shown in the elevation and perspective view it is very difficult to differentiate from the existing to the new.

- 2.3 It would appear that the design tends to mimic the Johnson Street Bridge so it becomes more difficult to differentiate it from the Johnson Street Bridge. Perhaps a more modern design of a lower profile would be more respectful of the Johnson Street Bridge.
- 2.4 One of the Character-Defining Elements (CDE) of the Johnson Street Bridge is an entry into downtown Victoria. This is important and should not be lost. Second, is the containment of this entry with its landscaping, major transport intersection and surrounding historic buildings. These two aspects should be taken into account as to the entry of the proposed pedestrian/cyclist bridge enters into this “entry room”. The current design would appear to address these two issues. However, it could be that this should be further investigated to tie more directly to these elements.

3. CONCLUSION

- 3.1 This brief assessment would suggest that the current design is perhaps too close to the appearance of the existing Johnson Street Bridge and consequently will not be read as a separate eternity, rather as a further addition to the existing bridge.
- 3.2 Standard 11 definitely is subject to interpretation but historically the interventions that have been most successful have been those that provide a modern interpretation, which is subservient to the historic place. To replicate or mimic is not the way to go.

- 3.3 Although the current design does depart somewhat from the scale of the existing bridge I believe is still too close to the design of the original to be readily distinguishable from it. It is suggested that a more modern design would be appropriate.
- 3.4 It is further suggested that by “pulling” the bridge further away from the north side of the Johnson Street Bridge it would allow it to become less crowded and would provide a better view of the Johnson Street Bridge from the north and from on the proposed new pedestrian / cyclist bridge.
- 3.5 The above is a brief assessment of the heritage implications of the proposed pedestrian/cyclist bridge using Parks Canada’s *Standards and Guidelines* together with international charters for heritage conservation.

2.4 Heritage Assessment – 2010 June 01 – Andrew Huctwith

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June 1, 2010

VIA EMAIL

Jonathan Yardley Architect Inc.
316 Isabella Point Road
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Attention: Mr. Jonathan Yardley, Architect

**RE: Johnson Street Bridge
Victoria, British Columbia
Review of Heritage Assessment
Our File: 10 7956**

Dear Jonathan

I have reviewed your submissions for the Statement of Significance and the Heritage Intervention Assessment for the existing two bridges and the Heritage Impact Assessment for the Pedestrian Bridge. I am in agreement with the heritage assessments and that the bridges represent a significant heritage asset demonstrating the classic form of the Strauss Trunnion Bascule Bridge with the elevated counter weight, four hinge mechanism and box beamed steel truss.

While being from Ontario I do not have a full appreciation of the significance to the local development through your description and a brief review of sites related to the development and significance of the Esquimalt and Nanaimo Railway it is easy to recognize the significance and place of these bridges in the community.

Should you have any questions or concerns, please call.

Yours Very Truly,

MMM GROUP LIMITED



D. Andrew Huctwith P.Eng. MASc. CAHP.
Senior Structural Engineer

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2.5 Heritage Assessment of the Johnson Street Bridge, Victoria
- April 2009 - CHRML



Under separate cover.

3. CONCLUSION

- 3.1 It is hoped that the above assessments of the various aspects of the existing and proposed interventions to the Johnson Street Bridge will be of assistance during the decision making process.
- 3.2 These assessments confirm that the Johnson Street Bridge is perhaps unique in Canada and as such is of Federal as well as Provincial and municipal importance.
- 3.3 The author would be available to elaborate on the contents of this report and to clarify any issues.

Respectfully submitted

A handwritten signature in blue ink, appearing to read "Jonathan Yardley", written in a cursive style.

Jonathan Yardley, Dip Arch (Birm), MAIBC, MRAIC, RIBA, CAHP, BCAHP
Register Architect &
Professional Heritage Consultant