

EP8.3 Presentation



EXHIBITION PLACE **SOUTH BRIDGE FEASIBILITY REPORT**

BOARD OF GOVENORS' PRESENTATION – JANUARY 30, 2018

Executive Summary

The **South Bridge Feasibility Report** documents a study commissioned by the Governors of Exhibition Place to further explore and evaluate the viability of a southern pedestrian bridge across Newfoundland Road connecting the soon to be completed Hotel X and the existing Beanfield (formally Allstream) Centre.

Report Scope

The first section of the report provided a summary of the analysis and recommendations explored in detail in the previous **Exhibition Place Tunnel Feasibility Report**, prepared by NORR Limited, dated 9th August 2013.

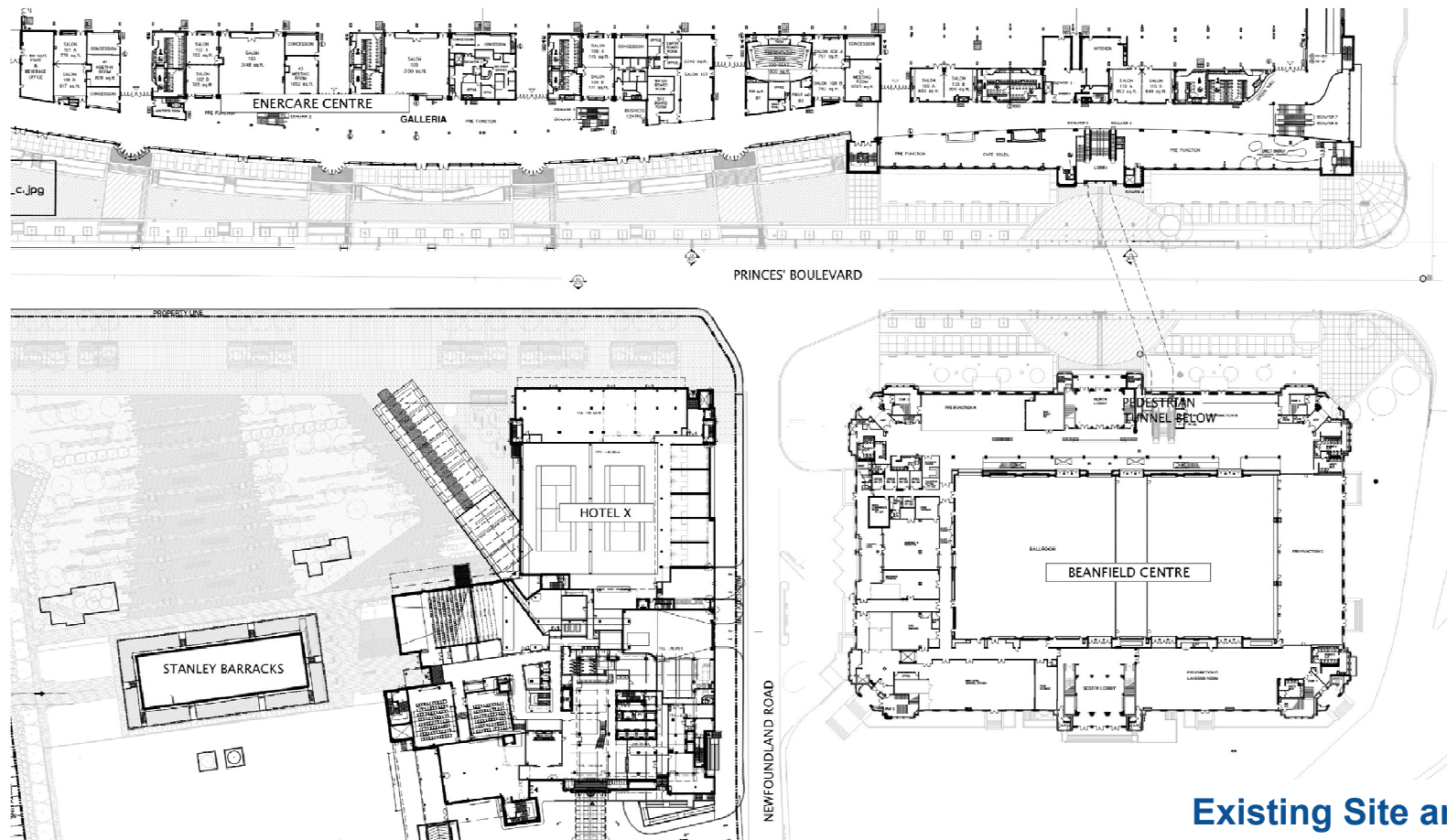
The second part of this report detailed a more extensive evaluation of the South Bridge Option, directed by Exhibition Place to be undertaken as part of the previous report's recommended next steps.

Supporting Material

In concert with development of the South Bridge Option, Exhibition Place commissioned an accompanying Heritage Impact Assessment Report which evaluated potential impacts of the bridge proposal on defined heritage fabric and features of Beanfield Centre. This HIA report, fully supporting the South Bridge Option, was prepared by ERA Architects in January 2014.

Exhibition Place also commissioned a revised Class D estimate for the South Bridge Option, based on the more fully developed South Bridge Feasibility Report scheme.

Extracts from both documents were included as Appendices to the final South Bridge Feasibility Report.



Existing Site and Vicinity

- Original construction 1929, by Douglas Kertland Architect
- Heritage Designation enacted 2009
- Major renovation in 2009, by NORR Limited, Executive Architects.
- Re-launched as the 'Allstream Centre', adding modern conferencing facilities
- Renamed as Beanfield Centre in 2016
- Connected to Enercare Centre with a tunnel under Princes' Boulevard



Beanfield Centre

- Largest conference and exhibition space in Canada, 1,072,000 sq. ft. of exhibit space.
- Divisible into eight halls – with 25,000 sq. ft. of meeting space

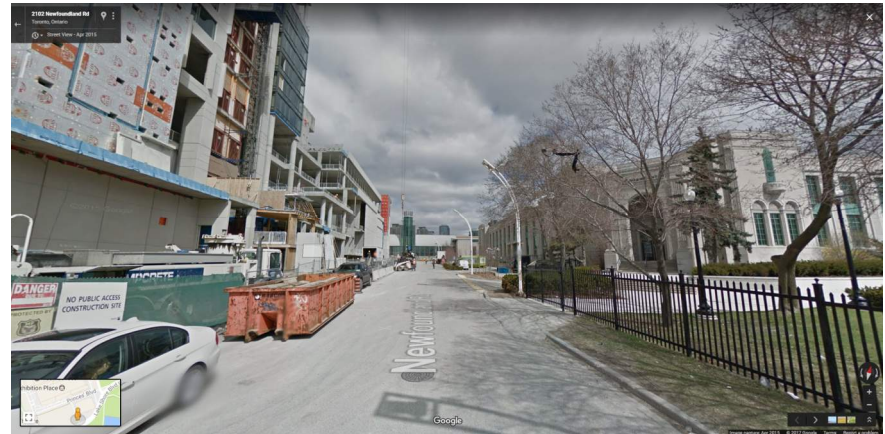
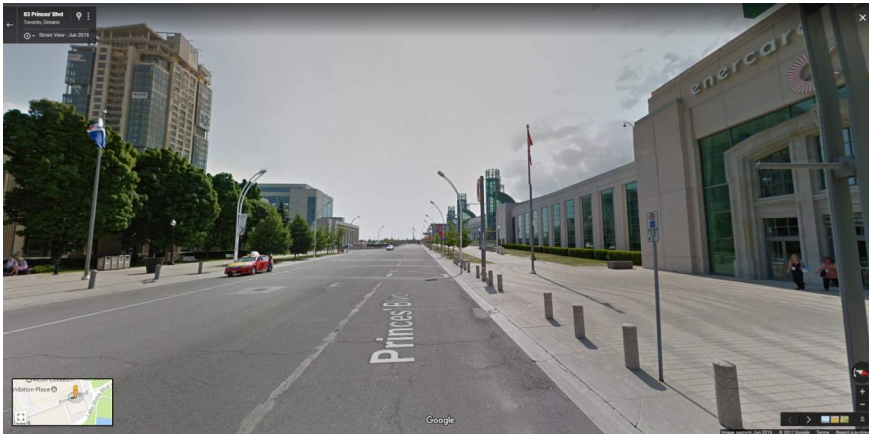
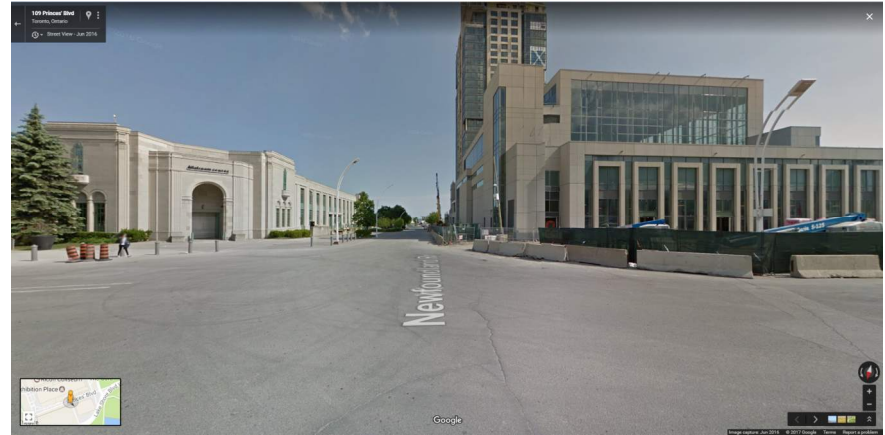


Enercare Centre

- Hotel X development includes 406 keys, ballrooms, meeting rooms, 2 restaurants and a rooftop amenity area
- Two main elements: tower with guest suites and hotel amenities to south, with a four storey podium retail, spa, and sports club facility tenant area to the north
- Approximately 68000m², 28 storeys above ground, with two basement levels providing 400 parking spaces
- Hotel complex to be completed in spring of 2018



Hotel X

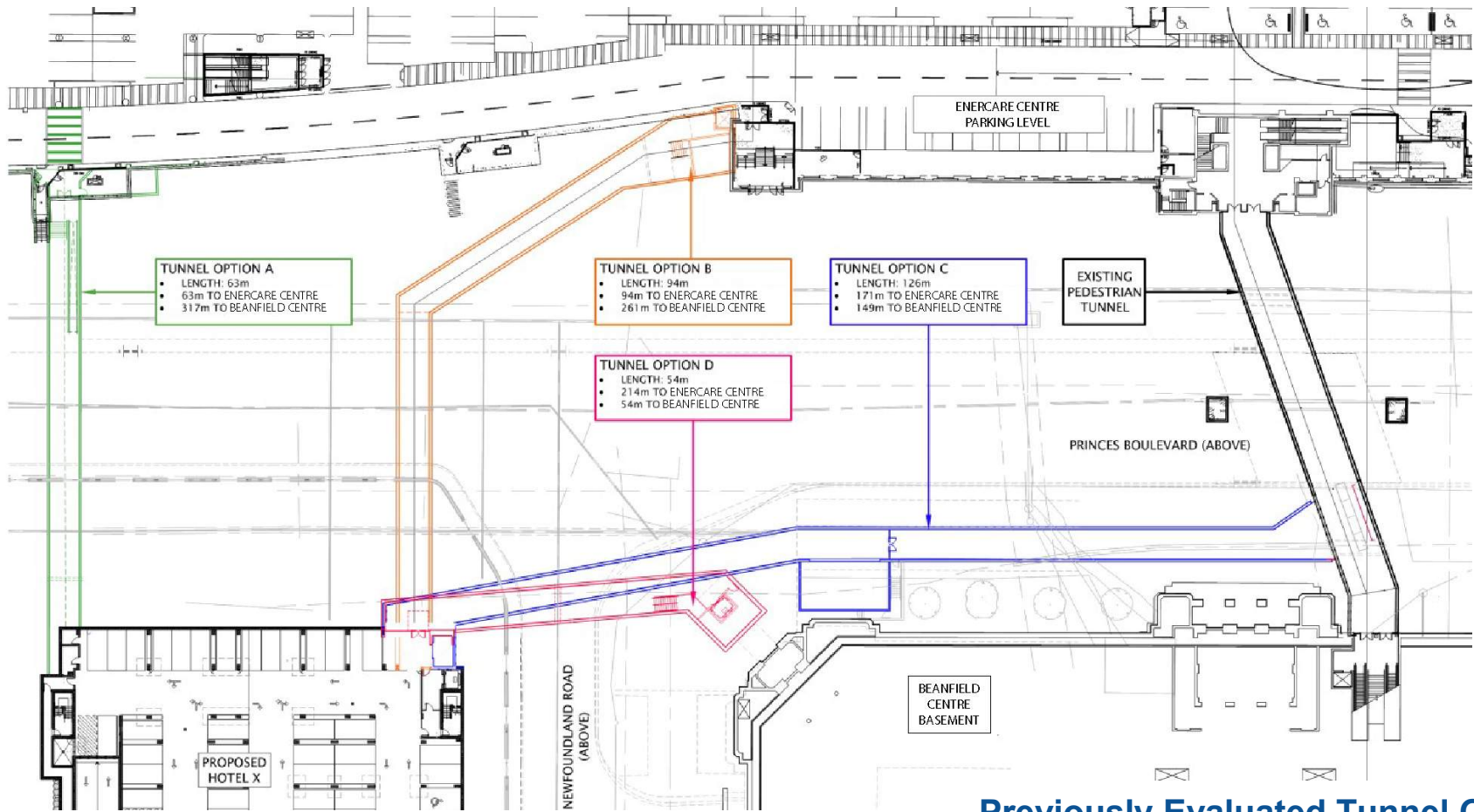


Key Street Views

Previously Evaluated Tunnel Options

A total of 4 tunnel solutions were evaluated and presented in the previous **Exhibition Place Tunnel Feasibility Report**. These were designated as Options A through D.

The Tunnel Feasibility Report noted that due to the basic existing underground constraints between buildings, all four tunnel options provide less than ideal routes for pedestrian travel when generally compared to above-grade bridge connection options.

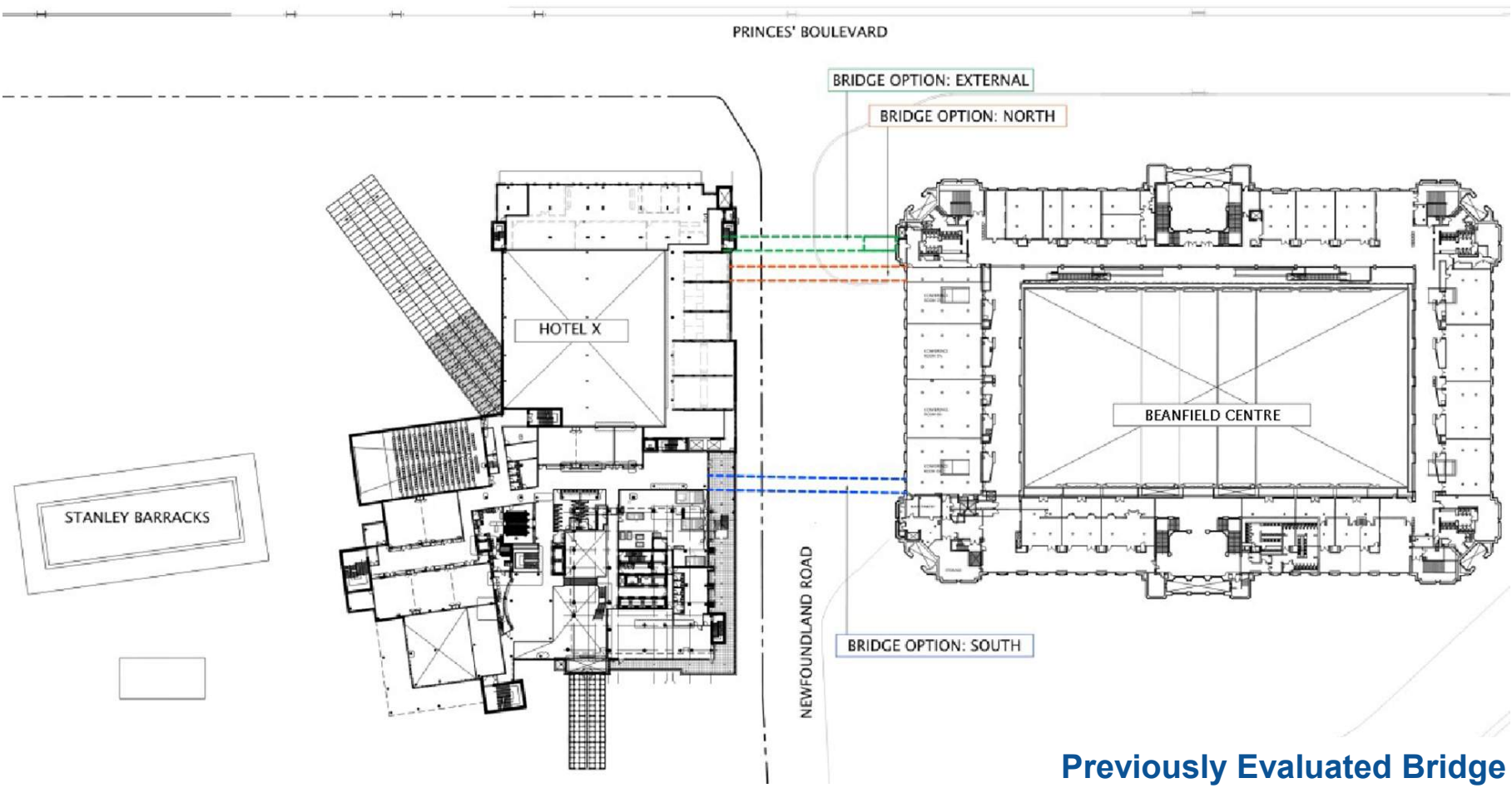


Previously Evaluated Tunnel Options

Previously Evaluated Bridge Options

In addition to the 4 Tunnel options, 3 major bridge options across Newfoundland Road were also presented in the previous **Exhibition Place Tunnel Feasibility Report**.

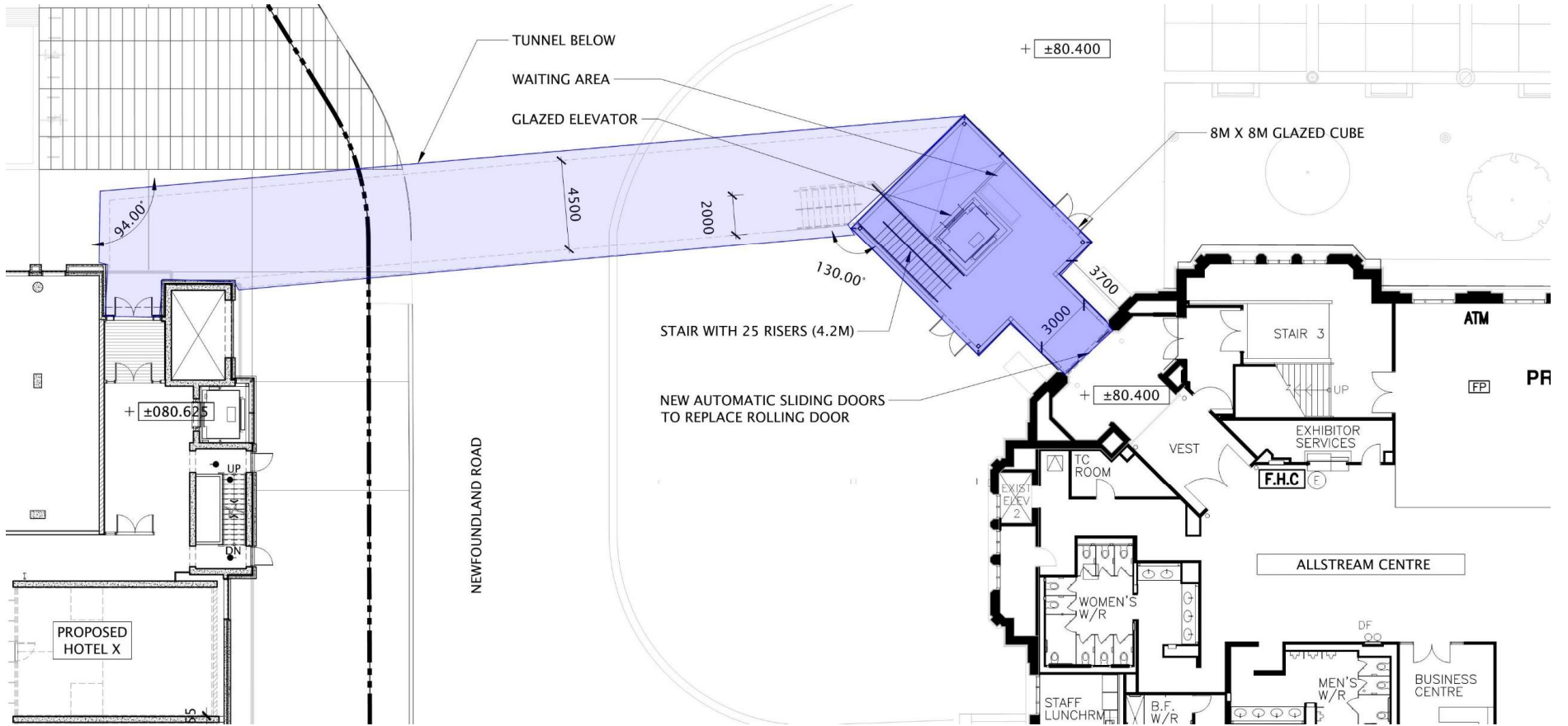
As noted in that report, additional direct Bridge connections between Hotel X and the Enercare Centre were not examined due to the extremely high planning risk of building over Princes' Boulevard.



Previously Evaluated Bridge Options

Previously Recommended Connection Option

In rating the scale of risks to City Planning approval understood at the time, the previous Tunnel Feasibility Report noted that Tunnel Option 'D' would be preferable to bridge options as it did not introduce potential concerns with respect to the issue of view corridor preservation along Newfoundland Rd.



Previously Recommended Tunnel Option 'D'

Previous Responses from City of Toronto Planning Review

Upon presentation of the Tunnel Feasibility Report to City Officials, the recommended Tunnel Option 'D' was subsequently challenged by Heritage Preservation Services, which noted their strong objection to supporting any development option which proposed the construction of an above-grade entrance facility in front of the Beanfield Centre, or along Princes' Blvd.

It was with this understanding that the further re-examination and development of the South Bridge Option was undertaken.

South Bridge Option Development

Subsequent to the general study undertaken in the Tunnel Feasibility Report, NORR undertook a more detailed review and evaluation of the South Bridge Option at the request of Exhibition Place.

This study was developed as the **South Bridge Feasibility Report**, and submitted to Exhibition Place in September 2017.

South Bridge Considerations

The development of the South Bridge Option was undertaken with consideration of the following key concerns:

- Previous City Planning objections identified during Tunnel Feasibility Report meetings
- Potential impact on street view corridors
- Preferred alignment of Bridge over street
- Heritage implications to Beanfield Centre facade

6.0 South Bridge Development

6.1 Constraints

Planning Concerns

Preliminary discussions with City planning officials to discuss Exhibition Place's preferred development plan for the South Bridge option confirmed several key concerns previously identified and discussed in the original Tunnel report. These included:

- Introduction of an overhead crossing structure which would interfere with the established Newfoundland Rd. north and south visual linkages.
- Connection and integration of a bridge structure to the existing Beanfield Centre heritage building facade.
- Geometric alignment of bridge over Newfoundland Rd.

View Corridors

In order to address City Planning concerns about impacts on the existing visual linkages up and down Newfoundland Rd., the new bridge continues to be recommended to maximize elements of transparency in its design.

It should be recognized in any discussion about the limitations on views imposed by a connecting bridge element between buildings, that both north and south view linkages along Newfoundland Rd. were established prior to the development of Hotel X. From Lakeshore Blvd., the hotel complex now already severely restricts the intended view north towards the full sweeping façade of the Enercan Centre. The south visual linkage towards Lake Ontario and the Ontario Place site is similarly compromised due to Hotel X's dominant building profile.



Figure 9 Visual Linkage to proposed Urban Park (Google Maps 2017)

In addition, it is understood that the south visual linkage has been further promoted to recognize an anticipated urban park originally incorporating lands directly across Lakeshore Blvd. from Newfoundland Rd. The extents of this parkland space have been subsequently defined to only include lands south of the Ontario Place Blvd. causeway and therefore would not be realistically viewable from any main public vantage points along Newfoundland Rd.

Bridge Elevation and Alignment

The second level of the Beanfield Centre is located at an elevation of 85.645m (geodetic datum), with the second floor of Hotel X located approximately 300mm lower at an elevation of 85.315m.

A straight bridge connecting the exterior façade of Beanfield Centre to the exterior glazed terrace wall of Hotel X results in an overall walkway length of approximately 43m, with a bridge span between street level building facades of approximately 36m. An opportunity for a mid-span bridge support column within an existing landscape boulevard separating Newfoundland Road from the Beanfield Centre's loading area reduces the maximum unsupported bridge span to approximately 20m.

To accommodate floor elevation differences between the two buildings, a 1% (1:100) floor slope would be required, well under the maximum 5% (1:20) slope allowable to achieve simple barrier free accessibility without introduction of structured ramps.

With a crown of roadway elevation along Newfoundland Road at the bridge location estimated at approximately 78.700m, a minimum road vehicle clearance of 5m would be well exceeded by an over 6m estimated clearance between road surface and reasonably expected bridge soffit depth.

Alignment of the bridge across Newfoundland Rd. has been carefully considered with respect to its connection points to both Hotel X and Beanfield Centre and its perceived relationship to the street below. This plan alignment place the bridge element within four degrees of the perpendicular to Newfoundland Rd.

	Level	Height above ground floor (m)	Geodetic datum (m)
Beanfield Centre	2	5.615	85.645
Hotel X general	2	4.690	85.315
Hotel X fitness club	2	6.680	87.305
Hotel X general	3	9.415	90.040

Table 1 Building Levels Comparison

Beanfield Centre Connection

As noted in the previous Feasibility Report, the southernmost existing window opening along the western facade of the Beanfield Centre was recommended as the preferred location for the new pedestrian bridge tie-in point under the South Bridge option. Fundamentally, this connection location minimizes planning impacts on existing second floor meeting room programme (in particular, reduction of area of Conference Room 6A), but also is shown to minimize potential overhead operational impacts within the adjacent existing Beanfield Centre waste collection area.

The southernmost Beanfield Centre window location has also been recognized in the Heritage Impact Report (included as Appendix A) as being the preferred bridge connection point with respect to least impact on heritage fabric of the building.

ASSESSMENT OF SITE ALTERATIONS

6.1 Proposed Site Alteration

Proposed is the addition of an enclosed pedestrian bridge connecting the Allstream Centre with the adjacent Hotel X over Newfoundland Road. The bridge will extend from the second level of the hotel to the second level of the Allstream Building through a south window opening on the west elevation of the building.

Exhibition Place's goal is to have a convenient all-weather connection between Hotel X and Allstream Centre to enhance the guest experience and increase convention/banquet opportunities for the Allstream Centre.

In the feasibility study undertaken by NORR Ltd, three bridge options and four tunnel options were reviewed and analyzed. Details of these options are included in section 7 showing how, for reasons of feasibility and planning below-grade tunnel options in particular were found to be impractical. Through this review we believe the proposed south bridge option has the least impact on the heritage fabric.

The proposed bridge will be structurally independent of the Allstream Centre. Columns, located between the two buildings, will carry the structural load. Column positioning is under study. The intent is to minimize the cantilevers from the pier to the Allstream Centre thus reducing any secondary loads on the existing structure. Possible connections to the Hotel X and Allstream Centre, located at the existing window opening, will stabilize and anchor the bridge to the buildings.

The bridge connection will not damage the heritage fabric of the Allstream Centre. The existing window and cast metal spandrel panel will need to be removed from the window bay to accommodate the height required for the passageway. The existing window, installed as part of the 2009 building rehabilitation, has no heritage value.

Column Position Options

Column locations were reviewed to determine a preferred strategy for minimizing the impact on the Allstream Centre and the existing landscape. The possible locations for the column(s) is restricted by the existing service entrance, loading bay, egress stair and roadway.

Option 1:

This option allows for one column, located on a new median mid-way between the two buildings, to support the bridge load. The column will need to be larger than in the two pier options reviewed. Set away from the face of the building this option has less impact on the historic structure than the other options. However its location impacts the view up/down Newfoundland Road.

Option 2 & 3

In these options a column would be located on either side of Newfoundland Road to carry the bridge load. Column size would be reduced by sharing the load between the two columns. However due to existing site restrictions the column on the east, Allstream Centre, side of Newfoundland Road will impede the ground floor egress stair in both of these options. Therefore option 2 and 3 are not considered viable.

The decorative metal spandrel panel is one of the heritage attributes of the building. The panel will be removed, labelled and stored for future use and/or reinstallation. During the previous building rehabilitation some cast metal spandrel panels were removed and reinstalled. The panels sit on a steel shelf angle and are anchored to the back up masonry with bolts. Due to the robust material of the spandrel panel, and the connection method, we believe the panel can be successfully removed without damaging it or the surrounding building fabric.

The bridge is in the design phase therefore details of its appearance have not yet been fully determined. The following strategies and guidelines are informing the design process:

- **Reversibility:** The bridge could be removed at some future time and the window with its spandrel panel restored to its original condition;
- The width of the bridge is informed by the existing window opening (+/-1950mm), and the two pilasters flanking the window;
- Overall height of the bridge is informed by the existing cornice line of the building;
- Physical connections between the bridge structure and the Allstream Centre will be kept to a minimum. Connections where necessary will occur on the interior of the building so as not to impact the exterior masonry;
- The bridge will be positioned symmetrically within the window bay respecting the rhythm of the building;
- Transparency: the bridge will be clad in glass to minimize the visual impact of the structure; and,
- The bridge will be modern in design to compliment the historic structure.

South Bridge Development

The South Bridge Option Feasibility Report focused on resolving the following key development concepts:

- Bridge elevation and preferred connection points
- Bridge alignment over street
- Bridge width to accommodate anticipated usage
- Bridge structure, envelope and general cladding approach

6.2 Architectural Development from Previous Report

Subsequent to the general study undertaken in the Tunnel Feasibility Report, NORR has undertaken a more detailed review and evaluation of the South Bridge Option based on the goals and directives defined in Section 1.1. of this Report. The following four sub-sections identify areas of focus that were specifically considered. Each includes a brief summary outlining the key issue(s) and outlines the preferred concept solution. These items should be read in conjunction with Figures 10 through 22, which follow.

Bridge Elevation and Connection Points

NORR has established the elevation and connection points of the bridge in accordance with the existing constraints noted in Section 6.1.

Bridge Alignment

Evaluation was made with respect to two possible plan configurations for the bridge. In the first option, NORR reviewed a bridge layout aligned with the Beanfield Centre's south window and connecting to Hotel X perpendicularly across Newfoundland Road. In order to resolve the resulting offset condition to the Hotel's identified tie-in point, a wider, intermediate corridor transition was planned within the area of the Hotel's recessed exterior terrace. In a second option, NORR reviewed a simple straight line connection between the two building's tie-in points, directly acknowledging the resultant four degree angle differential.

NORR has demonstrated their recommendation for the second option in their developed design for the following reasons:

- an angled alignment is not appreciably perceptible from major view corridors and is not inconsistent with the sloped bridge geometry required to accommodate floor elevation differential between the two buildings.
- an angled alignment benefits the location for the intermediate column support, which can be accommodated without alterations to the existing landscape boulevard along Newfoundland Drive or the existing driveway access into Beanfield Centre's waste collection area.
- an angled, consistent width bridge element results in a simpler overall bridge expression than a straight bridge element which requires a noticeably wider connection element at one end.
- An angled alignment avoids potential circulation conflicts at the base of Hotel X's exterior terrace stair

Bridge Width

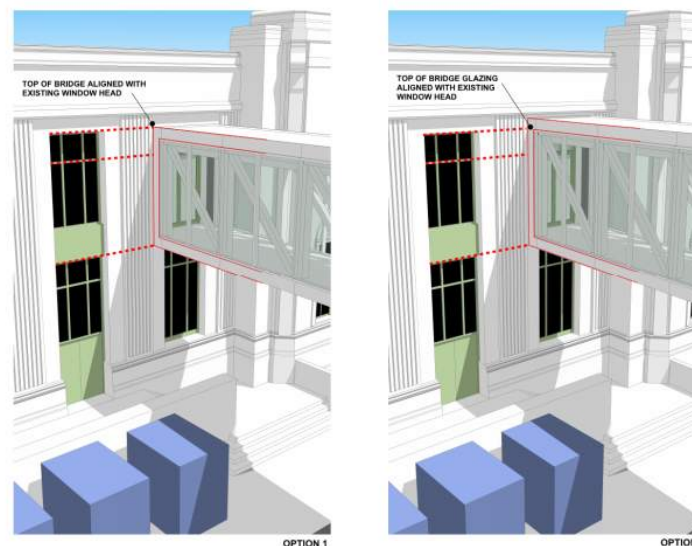
Evaluation was made to determine the appropriate width of the new bridge in order to address expected pedestrian volumes, as well as accommodate the bridge's tie-in to the existing south window of the Beanfield Centre

NORR has recommended a nominal 3 meter wide bridge. This width allows for the bridge to accommodate a standard double door closure at each end, and allows the bridge to cleanly meet the Beanfield Centre's façade between stone pilasters which flank each side of the existing south window opening

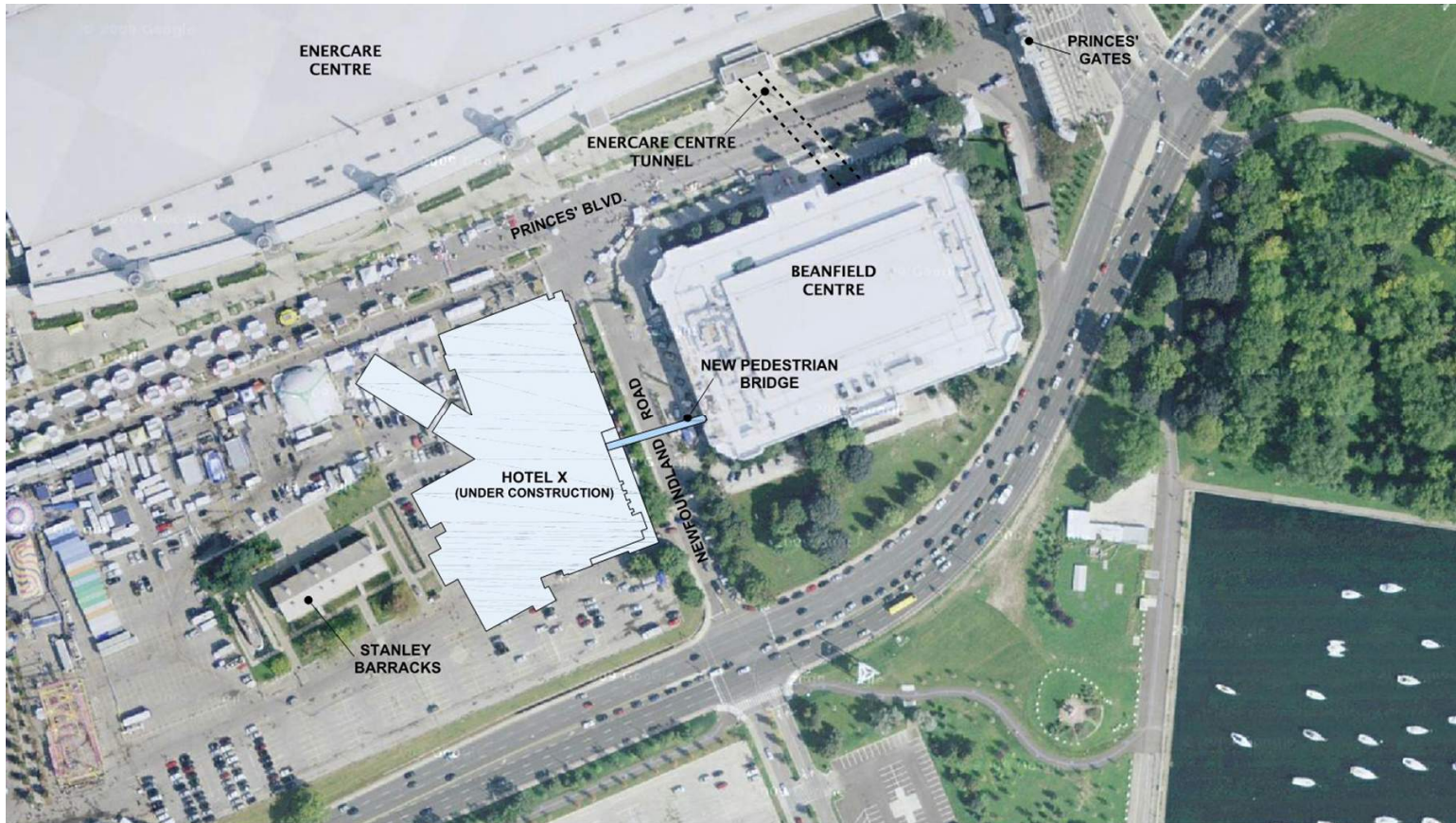
Bridge Envelope

A preliminary evaluation was made to define a general cladding approach to the bridge for the purposes of; visually demonstrating the expected transparency of the bridge, determining reasonable fascia and soffit depths required to enclose structural support elements, demonstrating an approach for bridge integration at building connection points (particularly at Beanfield Centre façade), and defining a reference basis for costing.

One particular area of detailed review was in establishing key datums or proportional relationships of elements within the Beanfield Centre's building façade which would thereby inform the design of the bridge envelope. Two reference line sets were examined, each affecting the overall height of the proposed bridge enclosure:



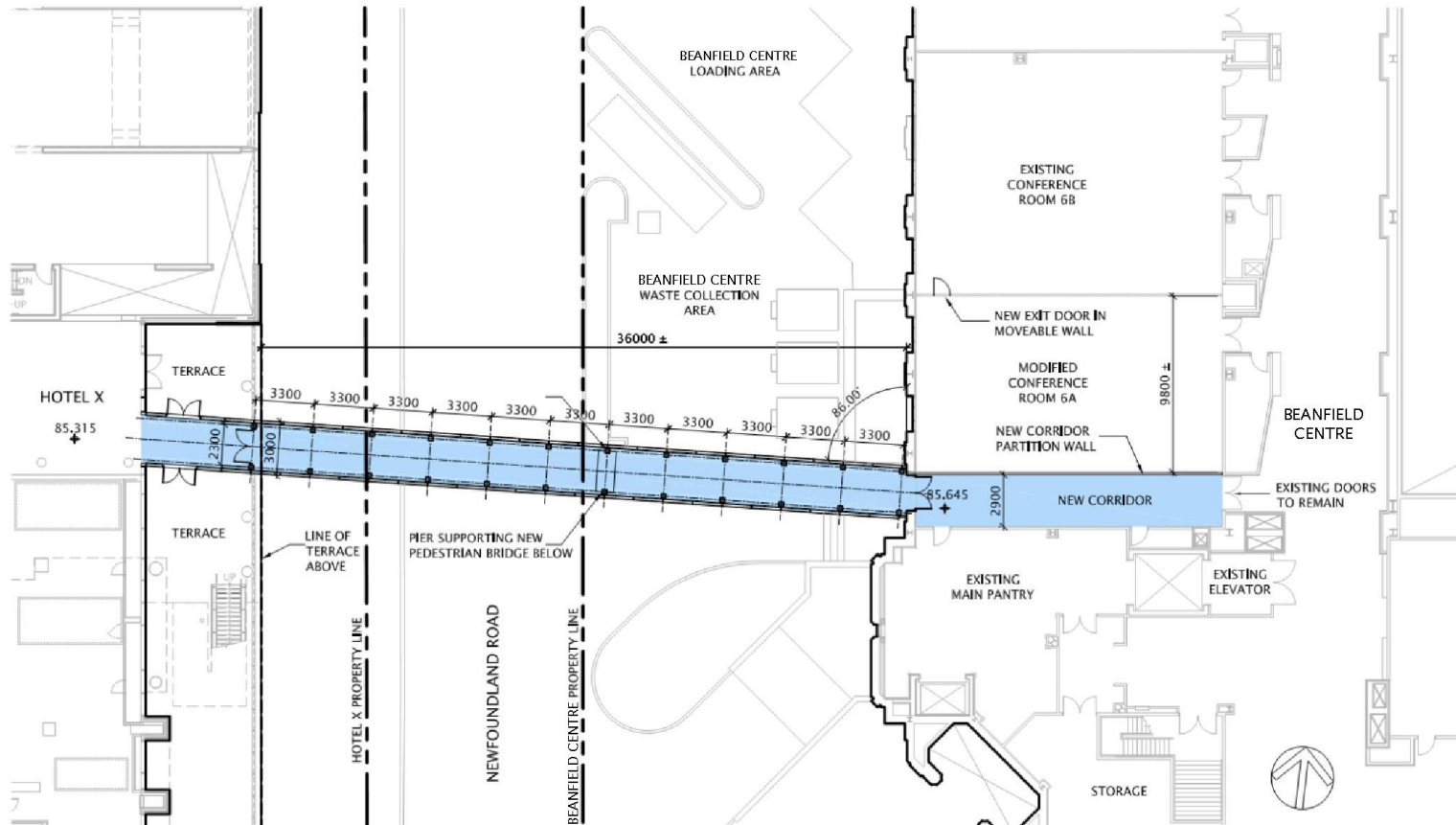
NORR has demonstrated their recommendation for the second option, as it provides a slightly higher interior bridge volume, establishes a common datum between top of bridge glazing and top of adjacent Beanfield Centre windows, and results in an overall bridge height matching Hotel X's terrace soffit height.



Context Plan showing South Bridge location



Site Plan showing South Bridge location



South Bridge Plan



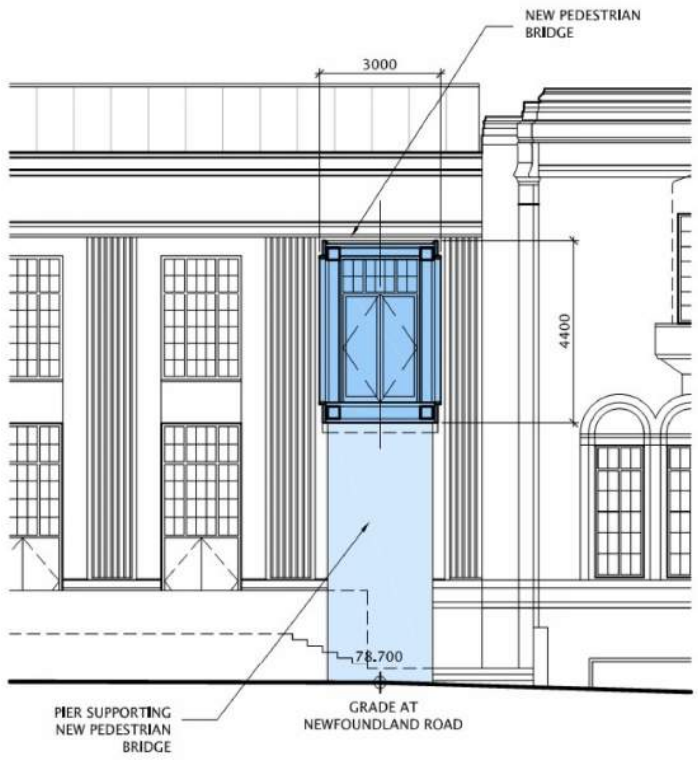
South Bridge view from Princes' Blvd.



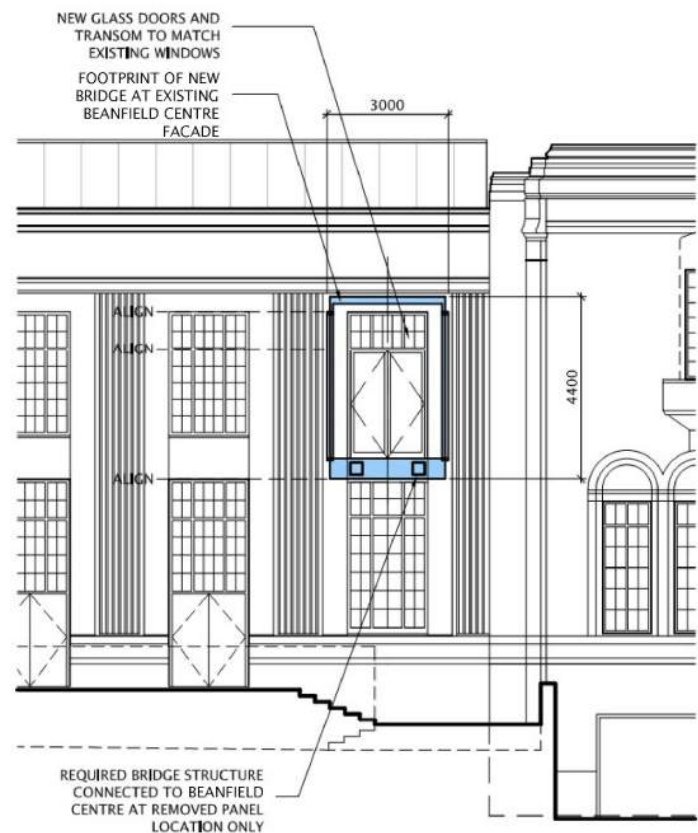
South Bridge view from Lakeshore Blvd.



South Bridge connection to Beanfield Centre

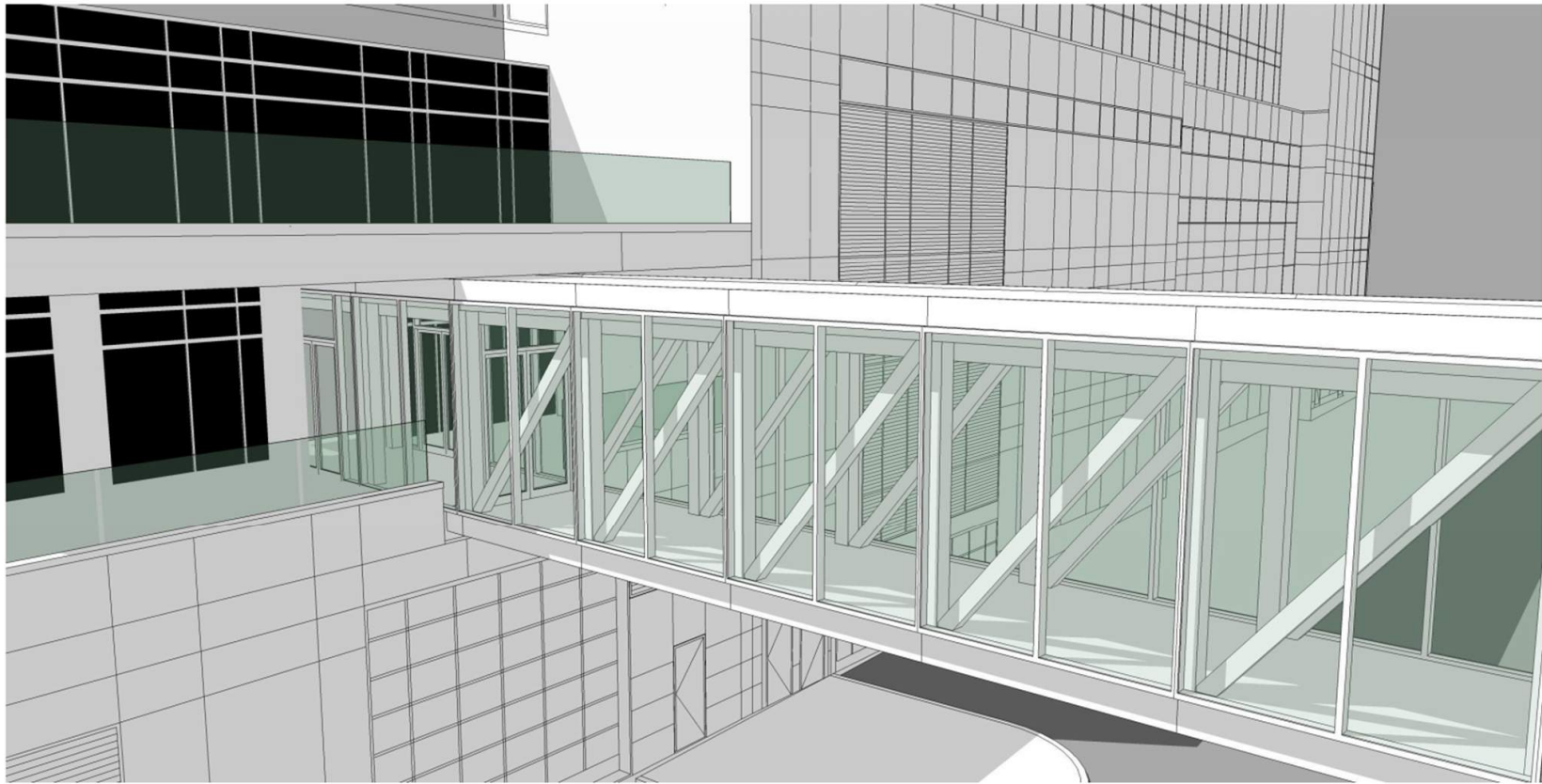


SECTION AT BRIDGE SUPPORT



SECTION AT BEANFIELD CENTRE FACADE

South Bridge connection to Beanfield Centre



South Bridge connection to Hotel X

Initial Consultation with City Planning for South Bridge Connection

An informal presentation of the full developed concept for the South Bridge Option was made to Community Planning, Urban Design, and Heritage Planning officials on April 30, 2014.

In an written response, received on June 3, 2018 the City noted it could “***not support the pedestrian bridge due to the impacts to the heritage building as well as to various view corridors.***”

The South Bridge Feasibility Report was subsequently compiled and finalized in September 2017 with this understanding.

Subsequent Consultation with City Planning for South Bridge Connection

At the request of Exhibition Place, the final South Bridge Feasibility Report was re-presented and submitted to the City in November 2017. This was followed by a site tour of Beanfield Centre and Hotel X facilities with City Planning officials, undertaken in early January 2018.

City Planning agreed to review the submitted South Bridge proposal as Pre-Application submission and provide response comments.

Pre-Application City Planning Comments on South Bridge Proposal

On January 16th, 2018, preliminary comments on the submitted south bridge proposal were received from Mr. Corwin Cambray, Community Planning. The letter noted that:

“....City Planning staff do not support the proposed elevated pedestrian bridge and recommend further investigations into less intrusive options....”

“....it is understood the applicant considers the introduction of an elevated bridge as the most.....viable ...way forward. Should such a proposal be advanced, the points/issues raised below should be considered.”

“The pedestrian bridge should be of ...limited scale, ...elegantly designed, ..focus on high quality and interesting materials, ...fit well within historical the context and create visual interest”

“the proposed bridge could create an interesting and inviting gateway into Exhibition Place(through) the use of appropriate lighting ...and.. scope for signage incorporated into the design ..”

Pre-Application City Planning Comments on South Bridge Proposal (cont'd)

With respect to heritage concerns, the letter also noted :

”...to be supportable, the quality, compatibility and legibility of materials and the quality of design is imperative..”

“.. (the bridge would) need to sympathetically attach through the window opening of the Beanfield Centre , ...with all work reversible...”

“....would require an amendment to existing memorandum of Understanding for Hotel X, ...Council approval and amendment of existing Heritage Easement Agreement, and recommend(ation) that approval be conditional on submission of a conservation plan”

Pre-Application City Planning Comments on South Bridge Proposal (cont'd)

On behalf of Exhibition Place, NORR further queried with the City several of the statements made in the letter with respect to Planning support for the submitted concept and further investigation into alternative pedestrian connections. The following was clarified in a response email of January 19th, 2018.

“...the City's position was that we cannot support the principle of a bridge across Newfoundland Road (i.e not just the current proposal) but that should you wish to proceed with an application for the current bridge option we would continue to work with you on the design to ensure there was as little harm proposed as possible.”

“...reference to further investigations was left open to any option you may wish to bring forward at the discretion of Exhibition Place. However, I did note that you had carried out extensive work on tunnel options, and alternative bridge locations and that if you didn't intend to proceed with these any further this should be made abundantly clear in any submission with adequate justification provided.”