



July 15, 2013

Aird & Berlis LLP  
181 Bay Street, Suite 1800, P.O. Box 754  
Toronto, Ontario M5J 2T9

Attention: Mr. Christopher Williams

Dear Sir:

**RE: Cooper Site, Stratford, Ontario**  
**Potential Salvage/Remediation of Three Bays of**  
**The Existing Building**  
**Feasibility Study**

RJC No.: TOR.103282.0005

## **1.0 Introduction**

Further to your request, Read Jones Christoffersen (RJC) has completed the feasibility study on the potential salvage and/or remediation of three (3) bays of the existing industrial building at the above noted site, as per our proposal dated June 26, 2013.

In general, the purpose of this study was to provide further input to the following questions:

- .1 What would be the cost of preserving three bays of the existing structure (assuming that the remainder of the building is removed).
- .2 What would be a reasonable budget for a base building that utilized the three bays as its structure, include new roof, floor, masonry walls, allowance for windows, doors, HVAC, etc...
- .3 Does this cost vary depending on which three-bay structure is selected for retention?
- .4 What would be the cost of preserving one, two, or three bays in situ, as opposed to removing the steel and relocating a single bay, or several bays, to a new foundation somewhere else on the site?

As part of this feasibility study, the following was undertaken:

- .1 Review of our June 25, 2013 Condition Assessment Report and associated field notes to re-familiarize ourselves with the facility, its construction, and the needed work.

- .2 Theoretical structural analyses to determine the structural retrofit work required to stabilize the three-bay section of the building as a standalone structure. This analysis would also look at the structure requirements associated with the relocation of the three bays.
- .3 Determine the current costs required to salvage, stabilize, and restore the three-bay section of the existing building.

## 2.0 Brief Description of the Existing Building

The building located at 350 Downie Street is an abandoned industrial building constructed circa 1871 generally consisting of riveted steel construction and currently covering a footprint of approximately 160,000 square feet. The building has undergone various iterations of additions and demolition over its history prior to and following abandonment in 1989.

The building located at 350 Downie Street was originally constructed in 1871 as a locomotive repair shop with expansions in 1889 and 1907, and an addition in 1949. Currently, only the 1907 expansion and 1949 addition exist on site, with the original building and 1889 expansion having been demolished in 2004 and 2010 respectively. The property is bounded by a community centre on Downie Street to the east, a municipal parking lot and new construction on St. Patrick Street to the north, residences on Wellington Street to the west, and St. David Street to the south.

The remaining building is generally arranged with four (4) bays, all of which are open from the ground to the roof structure with the exception of the north-most bay, which includes a mezzanine level (*Refer to Figure #1*). From north to south, the north-most bay (herein referred to as the "mezzanine bay") is approximately 615-ft long by 40-ft wide and 50-ft high to its peak. The next bay south (herein referred to as the "low bay") is approximately 770-ft long by 65-ft wide at a similar height of 50-ft to its peak. The 3rd bay south (herein referred to as the "high bay") is approximately 780-ft long by 70-ft wide and 67-ft high to its peak. Finally, the south-most bay (herein referred to as the "addition bay") is approximately 580-ft long by 50-ft wide and 38-ft high to the roof surface.

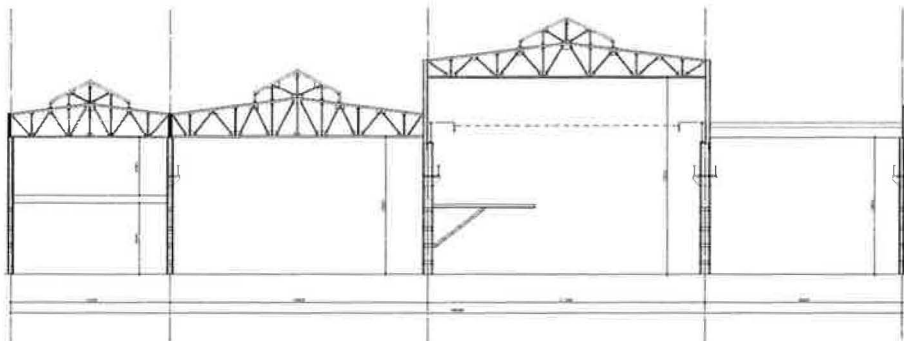


Figure #1: Typical Building Section

The building structure utilizes traditional structural steel construction with cast-in-place concrete foundations and footings. Currently, the exterior walls are typically a concrete frame fastened back to the building columns with large window openings, which have since been infilled with concrete block unit masonry. The building is clad with corrugated metal siding. The current roofing system consist of mopped multi-ply asphalt roofing on solid 2" thick tongue and groove wooden roof decking on the low slope roofs. The apex roofs are typically sheet metal supported by wood strapping and metal channel grits.

### **3.0 Summary of Findings**

Based on the findings of our June 25, 2012 Condition Assessment Report and associated field notes, and the current building standards for construction, we provide the following:

#### **3.1 Preservation of Three Bays of the Existing Structure**

To preserve three bays of the existing building, assuming the remainder of the building is demolished and removed, will require the following:

- .1 Installation of lateral wall bracing to stabilize the building.
- .2 Installation of frost wall foundations along the east and west extents of the three-bay section of the building to remain to protect the foundations and interior slab-on-grade.
- .3 Installation of tarping or siding on the east and west sides of the three bays to be preserved to prevent wind gust into the building and protect against increased uplift wind pressures.
- .4 Controlled cutting of the roof, walls, and foundations at the east and west extent of the three preserved bays.

The probable cost of this exercise will be in the order of **\$390,000 to \$410,000 (plus H.S.T.)** and is in addition to the demolition cost for the remainder of the building.

#### **3.2 Construction of Base Building that Utilizes the Preserved Three Bays as its Structure**

The utilization of the three preserved bays of the existing structure is feasible. In order to achieve this, the following will be required:

- .1 New column and perimeter wall foundations and footings;
- .2 Remove and dispose the existing roofing and cladding from the preserved bays;
- .3 Relocate the preserved structure to new foundations and anchor it in place;

- .4 Repair/replace/retrofit/restore deteriorated sections of the structure;
- .5 Install new cladding system (walls, doors, glazing);
- .6 Install new roofing system;
- .7 Install new concrete slab-on-grade;
- .8 New electrical systems (i.e. power, lighting, etc...);
- .9 New heating, ventilation, and air conditioning;
- .10 New fire and life safety systems.

The probable cost of this work will likely be in the order of **\$2.8 to \$3.0 Million (plus H.S.T.)**.

### **3.3 Cost Variance Depending on which Bays of Existing Building are Preserved**

Based on our analysis, with respect to the preservation of three bays of the structure (i.e. item 3.1 above), the costs noted were based on three central bays being preserved. If there is a desire to preserve the end three bays of the building, the probable cost of the preservation would be reduced to **\$240,000 to \$270,000 (plus H.S.T.)**. The main reason for this is that only one side of the three bays would need to be treated instead of both sides.

With respect to Item 3.2 above, the budgeted costs provided were for the use of three central bays. If there was a desire to preserve three bays at the end of the building, the cost of construction would increase, as there would now be extra work for the preparation of the end wall. The probable cost of construction for preserving the end bays for relocation would likely increase by **\$80,000 to \$100,000 (plus H.S.T.)**.

Further, it should be noted that the in-situ structure (i.e. steel frame structure and slab-on-grade) is not in the same physical condition throughout the structure. Some bays are in better condition than others with respect to deterioration and damage. The choice of bays to preserve may affect the above cost as it relates to the repairing/replacing/restoring/retrofitting the existing structure only.

### **3.4 Preservation of Three Bay In-Situ and Construction of Building In-Situ**

To preserve three bays of the existing structure in-situ, and create a separate building around them (i.e. base building) complete with new roofing, cladding, windows, doors, mechanical, electrical, and fire protection systems, similar to 3.2 above, will require a similar scope of work as 3.2 above, except for the following:

- .1 No need to relocate the building's super structure;
- .2 No need for full new foundations, just a new foundation wall along the east and west sides of the building;
- .3 No need for a new slab-on-grade, the existing slab can be infilled and retrofitted;

The probable cost of this option will be in the order of \$2.0 to \$2.2 Million (plus H.S.T.) to create the base building at the in-situ structure.

#### 4.0 Closing Remarks

Thank you for selecting Read Jones Christoffersen Ltd. for this project. RJC would be pleased to assist you with the implementation of our recommendations. Should you have any questions or concerns, please do not hesitate to contact this office.

Yours truly,

**Read Jones Christoffersen Ltd.**



Philip Sarvinis, P.Eng.  
Managing Principal  
Building Science and Restoration

