STRUCTURAL REPORT
Feasibility & Condition Assessment

Date:	December 9, 2024	**No. of Pages:**	3 + Encl.
Project:	Feasibility and Condition Assessment	**Project No.:**	TW-1481-24
Address:	63 Courtland Avenue, Kitchener, Ontario	**Permit No.:**	N/A
Client:	Cantiro		
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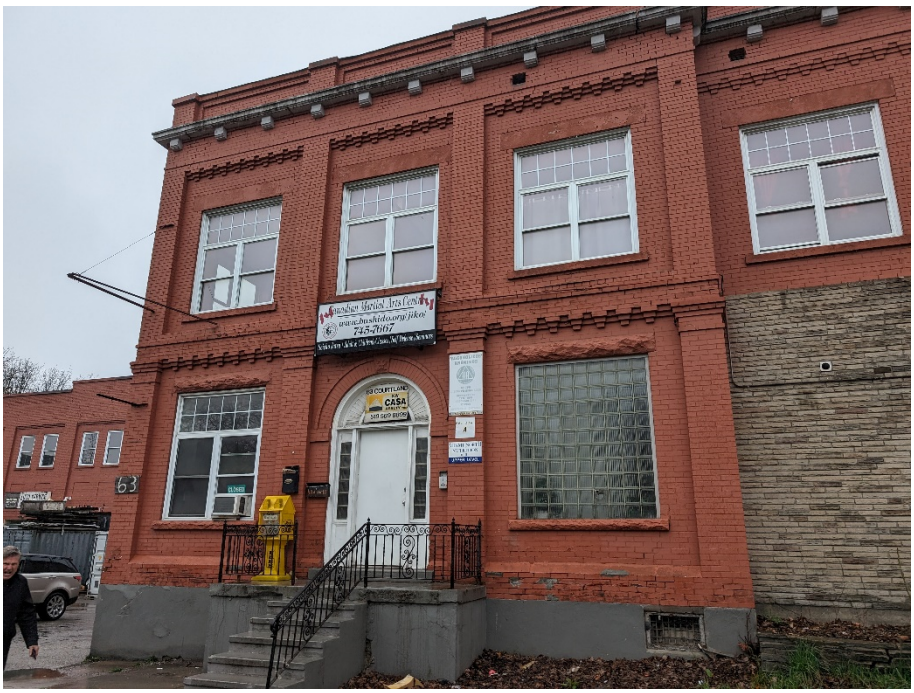
Background

Tacoma Engineers has been retained by Cantiro to carry out a structural review of the building located at 63 Courtland Avenue, Kitchener, Ontario. An overview of the building is shown in Photograph 1. The property is being considered for redevelopment, and the developer is wishing to understand the feasibility of retaining a portion of the building as a part of the proposed redevelopment. The subject building was originally constructed in 1909 by J.M. Schneider as a part of his business venture. As such, the building has historical value, and it is believed the City of Kitchener will want a portion retained as a part of any redevelopment of the property.

A site visit was carried out by Nick Lawler, P.Eng. on April 19, 2024 and November 6, 2024 to complete the assessment.



Photograph 1: Overview

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Scope

This report is based on a visual inspection from grade only and does not include any destructive testing. No further structural analysis or building code analysis has been carried out as part of this report unless specifically noted. This report is not being prepared as a response to an Order, recommendations, or request by any regulatory body.

Observations

Construction

The building is constructed as a typical early 20th century factory, constructed with a mixture of wood and steel framing, supported on exterior masonry walls. The exterior masonry walls have been painted red, however the original brick does appear to be red brick. The age of the paint is unknown, but appears to be from the late 20th century, as it is peeling significantly.

Foundation walls are constructed with rubblestone mass masonry and appear to have been repaired at various times during the building history. An interior render, which has been painted white covered the interior face of the foundation walls in the basement area. Some areas of the building also contain concrete foundations, likely from the more modern additions.

Framing in the living area was mostly covered with finishes and was not accessible for view. The framing was visible in some open office areas, which had been left unfinished. The framing was found to be conventional wood framed construction, with steel beams used for longer spans. The main floor structure was confirmed to be reinforced concrete with structural steel beams, which was a typical construction for a heavy industrial floor area.

The complex contains several additions, which were used to expand the business and production area. These are less historically significant than the original 1909 one storey storefront building.

After the business was successful, the Schneider family constructed a second storey addition to the building, the early portion of the 20th century. The original “house” on the property, which was used in some capacity for the business was demolished as a part of these previous expansions.

Discussion

The interior of the building has been heavily modified from the date of original construction. As such, there is little to no historic fabric remaining on the interior of the building, beyond its association with the J.M. Schneider company.

The building was found to be in fair condition, with no observed damage that would cause concern for structural stability. However, the exterior masonry was showing signs of distress due to lack / incorrect maintenance practices over the years. Long term exposure to the elements will cause deterioration of the lime mortar joints in the brick, and the brick themselves. This damage can be accelerated with poor water management, caused by damaged downspouts, or poor roof flashings. The exterior masonry will need to be restored as a part of any redevelopment to ensure that the historic fabric is not compromised by the exterior weather elements.

In terms of redevelopment of the site, portions of the existing building complex will need to be removed. Retention of the most historic portions of the building are desired to be preserved and integrated into the redevelopment of the site. Several options exist to make this retention;

Selective Demolition Approach

It is structurally feasible to remove the rear portions of the building without affecting the structural stability of the building portion that would remain. The building has been constructed in "bays", which are delineated with columns on a grid pattern. By retaining the first three to four bays of the original storefront building, the remaining portion could be removed. Additional structure would likely be required to provide lateral stability to the remaining portion of the building. These lateral elements may be a part of the proposed new structure, or could be purpose built to support the heritage portions of the building only. These decisions would be made as the project details develop along with the project architect and owners.

Façade Retention Only Approach

To maximize footprint of the new construction, the proposed development could see demolition of the interior wood framing, and conservation of the perimeter masonry walls. The interior wood framing currently provides the lateral support to the masonry walls. It is anticipated that the completed new structure will be designed to provide lateral support to the heritage walls over the long term life of the project.

During the construction phase of the project, the heritage masonry walls will require temporary support. Typically, this support is provided by a structural steel brace frame, tied into the masonry wall. Utilizing the space around the perimeter of the site, the structural steel frame is typically comprised of two vertical steel columns, with multiple horizontal and diagonal bracing members.

It is anticipated that after the redevelopment project is complete, and the temporary shoring framing removed, repairs to the brick masonry will be necessary. The repairs are required to provide long term durability to the brick masonry walls, and to repair any damage which occurs during construction. The project budget should include provisions for restoration of the brick façade which would include, repointing of the mortar joints, replacement of damaged brick units, and reinforcement and repair of step cracks in the brick. No significant repairs to the brick are expected to be required in advance of the temporary support framing, or redevelopment project.

Per _____

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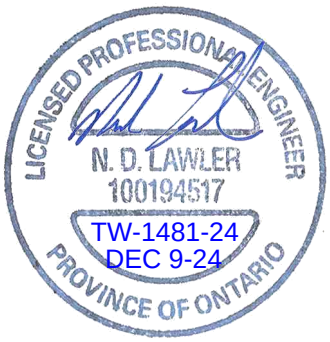

Encl. Nil