Text of engineer's letter on Victoria Hall structure

The Corp. of the Town of Cobourg,
55King St. West,
Cobourg, Ontario.

Attn: Mr. B.W. Baxter

Re: Cobourg Opera House

Gentlemen:

On January 26, 1971 the writer attended a meeting of the Traffic & By-Laws Committee to consider the action to be taken with regard to the Town Hall Building. Reeve W.I. Thomas, Councillor W.E. Huskilson, Town Clerk B.W. Baxter and the writer attended.

Prior to the meeting the writer toured the building to determine its general condition and to estimate the amount of work required to perform a complete investigation to certify the structural integrity of the whole building.

Several structural deficiencies were observed. They are:

1. The floor joists supporting the ground floor are visible in the basement and extensive rot at the perimeter of the building is present. The joists have been shored and braced, but the rot has not been cut out.

2. The exterior brick masonry walls are badly cracked, particularly on the south-west wing.

3. The north wall and the west wall between the 3rd floor and the roof has signs of outward movement of up to ¾ inch. The movement does not appear to be too recent.

4. The joists appear to be resting on the masonry walls without wall ties.

5. The roof structure over the opera house is of a heavy timber construction. The timber members are badly checked and cracked. Their structural capacity has been considerably reduced. The bearing of the trusses in most cases is hidden within the wall and based on the conditions found in the opera house floor may contain rot.

Considerable evidence of water staining is present in the roof structure.

6. The conditions of the opera house floor is reported in our report of January 14, 1971.

The above deficiencies were noted by casual observation.

A complete and thorough investigation of the building, sufficient to determine the expected life of the building and all of the existing deficiencies would require considerable time and expense.

It would require the exposure of the structual elements of the building and such testing as necessary to determine beyond doubt the exact condition of the structural members. We estimate the engineering fee would be in the order of 10 to 15 thousand dollars. The contractor's fee for exposing the structure and patching the openings would be substantial and in the order of 15 to 30 thousand dollars.

However, the conclusions we can make from our investigation to date are as follows:

1. Substantial evidence of deterioration of the building is present.

2. The building has a limited useful life.

3. We are unable to express an opinion as to the safety of the building without a complete investigation. However, we have observed sufficient deficiencies to say that the building does not meet the requirements of the National Building Code of Canada, not only under the structural requirements but under the use and occupancy requirements for fire. (The appropriate Clauses are appended.) The use and occupancy requirement is applied to new buildings or to those undergoing extensive alterations.

The rot observed in the building has not progressed to the point where collapse of the floors are imminent, but there is no way of determining the rate of progression.

Based on our experience with the St. Lawrence Hall restoration and on the evidence observed in the Town Hall, it is our opinion that investigation would reveal further deficiencies and the cost to restore the building might be well over one million dollars.

In conclusion we recommend that consideration be given to the closing of the building to public assembly, as there is reasonable evidence of structural deterioration within the building. Under conditions of overloading, severe shock or other unforeseen events, failure of the sturctural members may occur. In addition, the fire hazard is high and by the National Building Code standards, the building is unsuitable for public assembly. If the building is to be kept in use as office space, the alternatives are:

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NOTE: Cost Estimates may vary depending on conditions as found.

1. SHORT TERM (2-5 years) Abandon the strengthening of the Opera House floor. Repair the cracked roof trusses to prevent total failure of the roof system. Arrange for frequent inspection of the building to monitor the progression of deterioration. Estimated cost - $10,000 to $15,000.00

MEDIUM TERM (5-10 years)

Remove and repair all rotted timbers and joists. Install tie rods to stabilize the walls. Repair roof trusses and investigate and repair if necessary the roof structure over the East and West wings. Arrange for frequent inspection of the building. Estimated cost - $40,000 to $60,000.00.

LONG TERM (25-30 years) Complete investigation of structure. Make all necessary repairs. Estimated cost - $100,000 to $400,000.00.

4. MEDIUM TERM - Opera House and Court Room in Use

Repair Opera House floor. Investigate and repair the Opera House roof structure. Complete the strengthening of the Opera House floor. Repair and remove the rotted ground floor members. Arrange for frequent inspections for the balance of the building. Estimated cost - $75,000 to $125,000.00.

NOTE: Due to the nature and amount of work to be carried out under this alternate, the Ontario Fire Marshal may require the area of the building housing the Opera House and the Court Room to be brought into line with the regulations presently in effect. This would require the centre section of the building to be of fire resisting non-combustible construction and could involve replacing the ground floor and the Opera House floor with steel and concrete construction. Estimated cost $250,000.00.

5.COMPLETE RENOVATION & RESTORATION

Estimated cost - 1 Million Dollars

We trust the foregoing is sufficient information for you at this time.

Yours very truly,

C.D. CARRUTHERS & WALLACE, CONSULTANTS LIMITED

Per:

C.E. WELSH
Executive Vice-President.