

CANADIAN ENGINEERING GROUP (CEG)  
120 CARLTON STREET, SUITE# 412, TORONTO, ONTARIO, M5A 4K2  
WEB SITE: WWW.CEENGINEERING.CA

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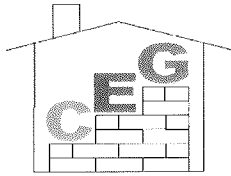
## Structural Assessment Report

For  
781 Craven Road, Toronto  
Ontario



Prepared for CIBC c/o A.G.C. Incorporated  
P.O.Box 299, Kleinburg, Ontario, L0J 1C0  
March 29, 2008

Project # CEG-0824



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March 29, 2008

CEG-0824

Ms. Angie Fiorilli  
CIBC c/o A.G.C. Incorporated  
P.O.Box 299  
Kleinburg, Ontario  
L0J 1C0  
Tel: 905-850-4497-X231 Fax: 905-850-3919

**RE: Structural Assessment Report for the house located at  
781 Craven Road, Toronto, Ontario**

Dear Ms. Fiorilli

In accordance with your instructions, the above noted building was visited on March 12 and 27, 2008 by *Canadian Engineering Group* for the purpose of carrying out a structural assessment of the main components of the subject house.

### 1. INTRODUCTION

The property is located at 781 Craven Road, Toronto, Ontario. The residential property that is the subject of our review is comprised of a single detached 1 storey house (Bungalow type) with no basement. The house sits on a concrete slab. It was not possible to verify the type and the design basis of the foundation system for the subject house. However the evaluation was carried out for the current exposed parts and elements of the subject house.

The house contains a total of 1 bedroom, 1 bathroom, living/dinning room and a kitchen with a footprint of approximately 600 square feet. The wood framing house has a stone cladding. The house is constructed on a sloped land. There are shallow retaining walls on both sides of the subject house. The house is supplied with electricity, water and connected to the local sewage system. The pictures of appendix 'A' show some of the exterior and interior features of the house.

## 2. SCOPE OF WORK

CIBC c/o A.G.C. Incorporated requested *Canadian Engineering Group* to carry out the following scope of work as outlined in our proposal P010908-A dated January 09, 2008

- 2.1 Carry out a structural assessment for the subject property.
- 2.2 Preparing a report including all the findings and the deficiencies.
- 2.3 Construct a report outlining our recommendations. Recommendations include areas requiring repair and approximate cost estimates to carry out remedial repairs. The contents of our report will form the basis for the repair specifications.

## 3. ACKNOWLEDGEMENTS AND ASSEMBLY OF THE REPORT

Several personnel have assisted with this report

The following individuals comprise the investigation team:

The assembly of the information and preparation of this report was carried out by Mr. Al Ganabi, H., P. Eng. and Mr. Dhanhsukh Ahir B.Sc. The final report was organized and prepared by Mr. Mashriq A. and Dhanhsukh Ahir and reviewed by Mr. Al-Ganabi. Most of the exposed elements of the subject house were reviewed from grade level. A binocular device was used for exposed high locations and upper cracks.

## 4. DOCUMENTATION

There were no available drawings or documents related to the subject property. We hence depended on our visual site observations and the experience of our staff in the field inspection.

Two extensive site visits were carried out to collect more information about the subject property. The inspection was limited by the accumulative thick layer of the snow. Also for house being occupied by tenants, it was difficult to carryout some tasks. However we went over most of the interior elements of the subject house. By using simple tools we could verify and measure the extent of some damages and cracks present in the walls.

Outside the house, we noticed the topography of the surrounding area to understand the different elements affecting the soil and the area of the subject house.

## 5. LIMITATIONS

All opinions, conclusions and recommendations are those of *Canadian Engineering Group* and represent their best judgment under the natural limitations imposed by the scope of work.

This report is intended solely for the Client named as an indication of the physical condition of the building components addressed in the report. The use of this report by any party shall only be with the complete acceptance of the following limitations as noted below.

The report shall not be distributed further without our knowledge and shall not be relied upon for any purpose other than by the Client named without the express written consent of *Canadian Engineering Group*.

We did not design or construct the building and its structure and therefore shall not be held responsible for the impact of any defects, whether or not described in the report.

This report is limited in scope to only those building components which are specifically referenced in the text. Deficiencies existing but not recorded in this report were not apparent, given the level of study undertaken. We shall endeavor to explain what tests can be undertaken to increase the knowledge of the building construction, but cannot predict how much additional investigation would be sufficient to detect all deficiencies. No physical or destructive testing and no design calculations have been performed unless specifically recorded.

Any comments and conclusions are therefore based on apparent physical installation. Do not use any part of this report as a separate entity. It is written to be read in its entirety.

## 6 OBSERVATIONS AND FINDINGS

A visual review of the subject property was carried out on March 21, and 27, 2008 by *Canadian Engineering Group* to assess the present condition and safety of the house.

Using probing and simple hand tools both, laser and bubble levels, moisture meter, dial gauge, binoculars, magnifier, as well as a thorough visual inspection to all areas of accessibility; we were able to ascertain the following.

- Although most of the floor was covered in by furniture or debris, the areas at the rear side of the house shows a visible crack which extends to the walls
- The whole house was tilting towards the rear and to the left side of the house ( north side)
- There was a crack present at the outside wall of the house which matches the inside crack. That reveals that there is an active movable crack.
- Most of the walls are in poor shape. Some of the walls are out of plumb.
- The reoccurring vertical crack in the side wall that is at the rear side of the living room is further evidence of the overall tilt of the structure. The layout of the house make it impossible to run the laser level around the entire interior perimeter, thus, making it difficult to pin point the exact amount of tilt's

- All windows and doors are in poor shape. Most of them can not open and shut properly. Replacement of windows and doors without proper repair to the structure of the house will not solve the problem
- Most of the present plaster and paint for the walls are in poor shape and have to be repaired after solving the structural repair issue.
- The roof is sagging and generally is in fair to poor condition.
- Down spouts should terminate on splash pads and or extended as far as possible from the foundation and footing.
- There was a visible presence of mold inside the house. This issue has to be addressed by others.
- Air quality has to be tested if the house will be saved.

### **Discussion and Recommendations**

It is agreed that the structure in question has a tilt due to differential settlement in the foundation of the house. It appears that the subsurface condition of the soil underneath the subject house, being altered with the time or due to possible water streams running in the surrounding area. The current general high slope of the facing road and the nature of the neighborhood -where some ravines and water surface are running- might affect the subject house. We do not have any documents or soil reports about the subject house or the area. Also we do not have any idea about the calculated factor of safety used by the designer in the calculations. However it is most likely that the soil characteristic being altered with the time and due to many other factors. The existing slope and the general topography of the area is one of the leading factors in the reduction of the bearing capacity for the soil.

The current house has a major differential settlement. This settlement seems to be continuing and as we understood from the current occupants of the house, the structural crack present in the rear side of the house is enlarging with time.

Considering the light current live and dead loads of the one storey house, it seems that there is a major deficiency in the bearing capacity of the soil itself. There are two retaining walls present on both sides of the house. Both retaining walls have to be re-evaluated.

To repair the front to back tilt of the structure a full soil investigation is required. The existing bearing capacity of the soil has to be verified. Classification and type of the soil have to be verified too. Moreover; a full survey and study for the surrounding area is required to choose the best solution and remedy work. That investigation might needs boreholes in the subject property.

The analysis and the results of the boreholes logs will guide to the appropriate plan of remediation. Underpinning, screw jacking or/and other kind of extra supporting might be required.

Most of possible solutions in such cases would be costly and labour intensive. We think that the subject house does not worth that cost and efforts to save it .The demolition of the subject house has to be considered as a possible choice.

However a comprehensive soil report with a full design of the remedy work will be required before starting any major renovation or remedy work. Such study will cost between, \$8,000 to \$12,000. On the other hand the cost of the full structural remedy including the soil stabilization will be in the range of \$15,000 to \$30,000. This wide range in the estimate can be more accurate after finalizing the soil report.

Finally the finishing of the house both the interior and the exterior has to be repaired too. The estimated cost for this repair will be around \$20,000 to \$25,000 on a condition that final finishes/fixtures etc are basic.

In our opinion, the full extent of repairs can only be verified by further testing and ultimately upon completion of repairs.

We trust that the above information is satisfactory to your present requirements. Should you have any questions regarding this report please do not hesitate to contact us.

Yours truly,


**CANADIAN ENGINEERING GROUP**

Prepared by



Dhanhsukh Ahir B.Sc.  
Project Manger

Reviewed by

  
March 29, 2008  
Al-Ganabi, H., P.Eng.  
President

## Appendix “A”

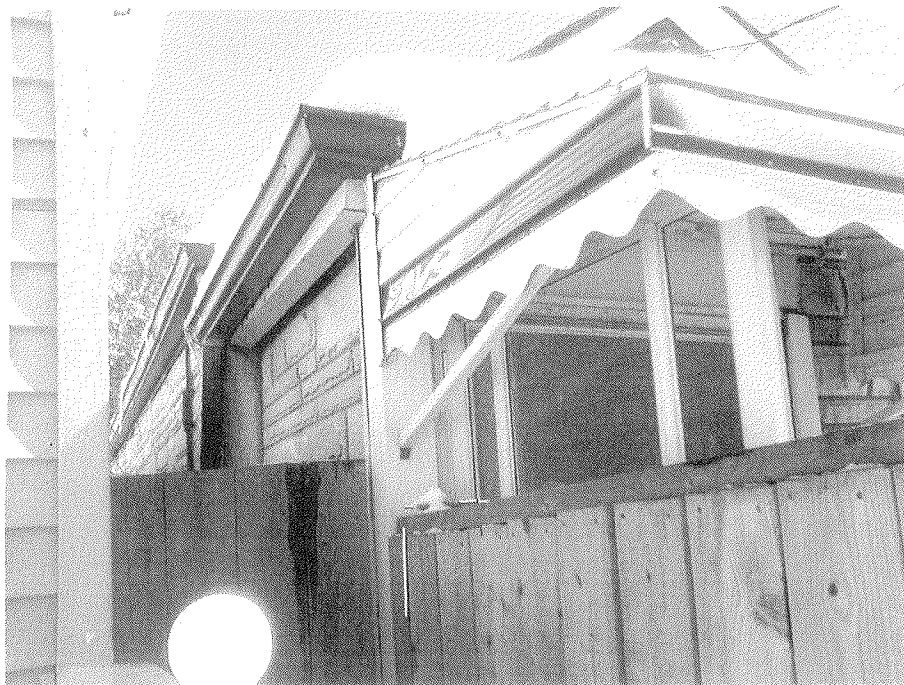


Pic # 1



Pic # 2





Pic # 3



Pic # 4



Pic # 5



Pic #6



Pic # 7



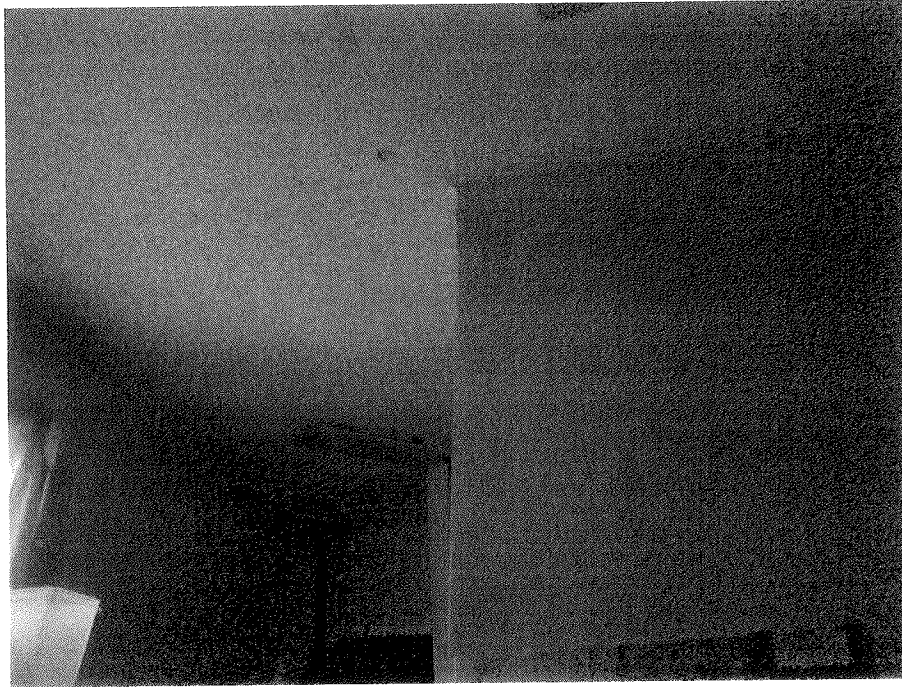
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Pic # 9



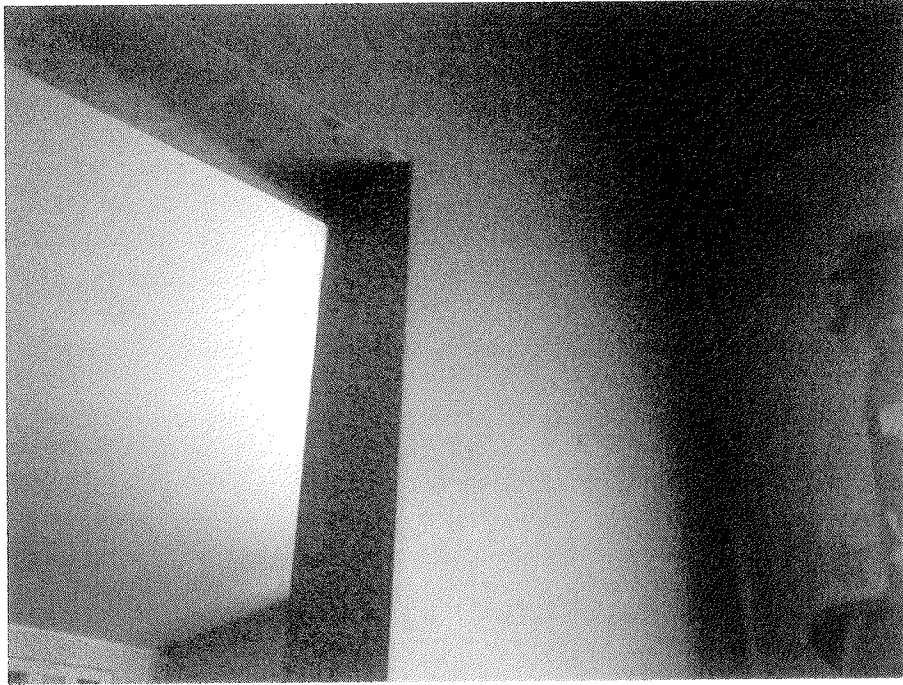
Pic # 10



Pic # 11



Pic # 12



Pic # 13



Pic # 14



Pic # 15



Pic # 16

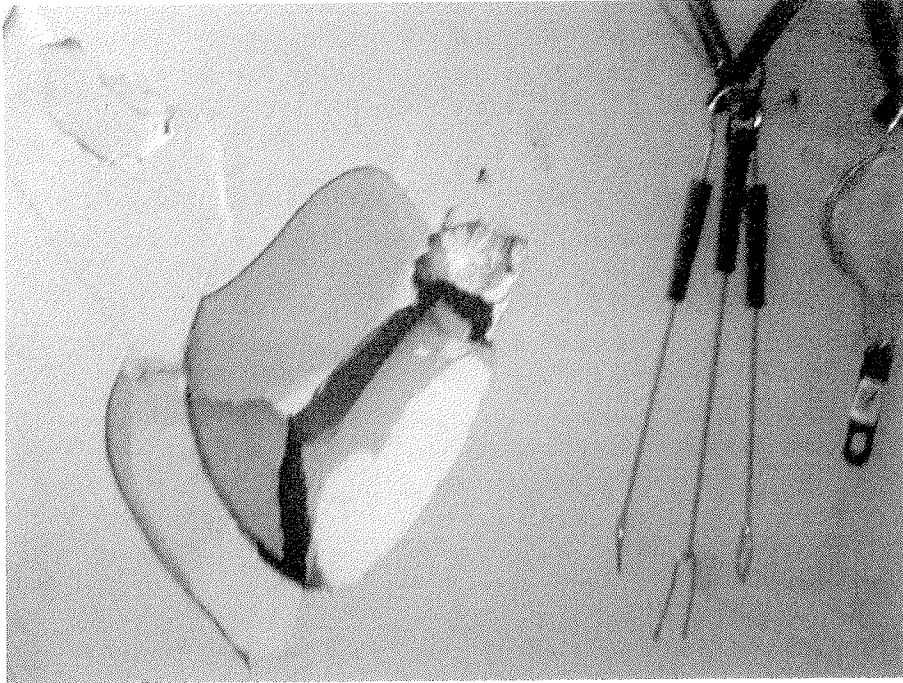


Pic # 17



Pic # 18

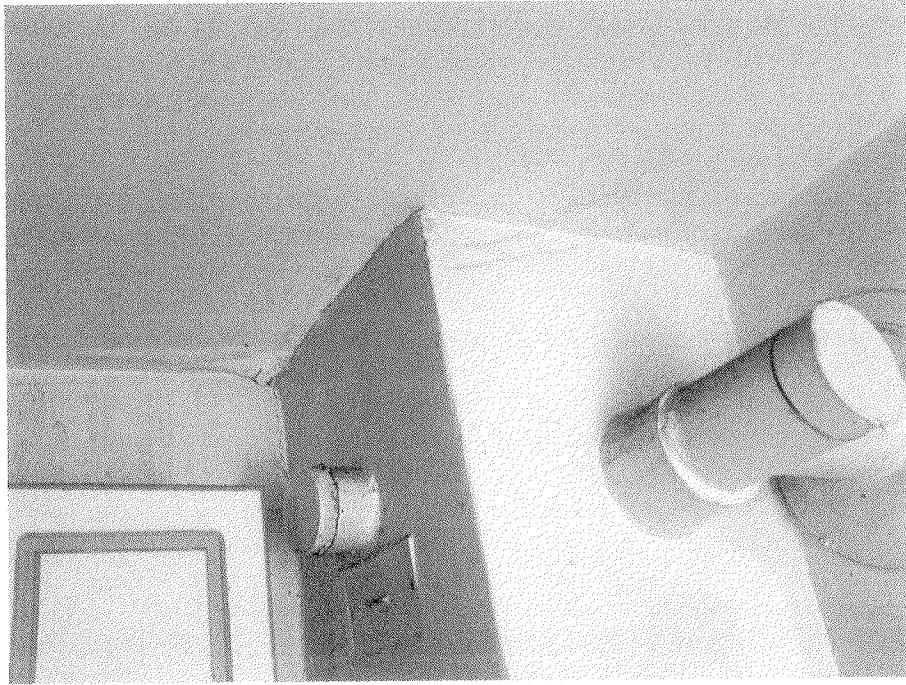




Pic # 19



Pic #20



Pic # 21



Pic # 22



Pic # 23



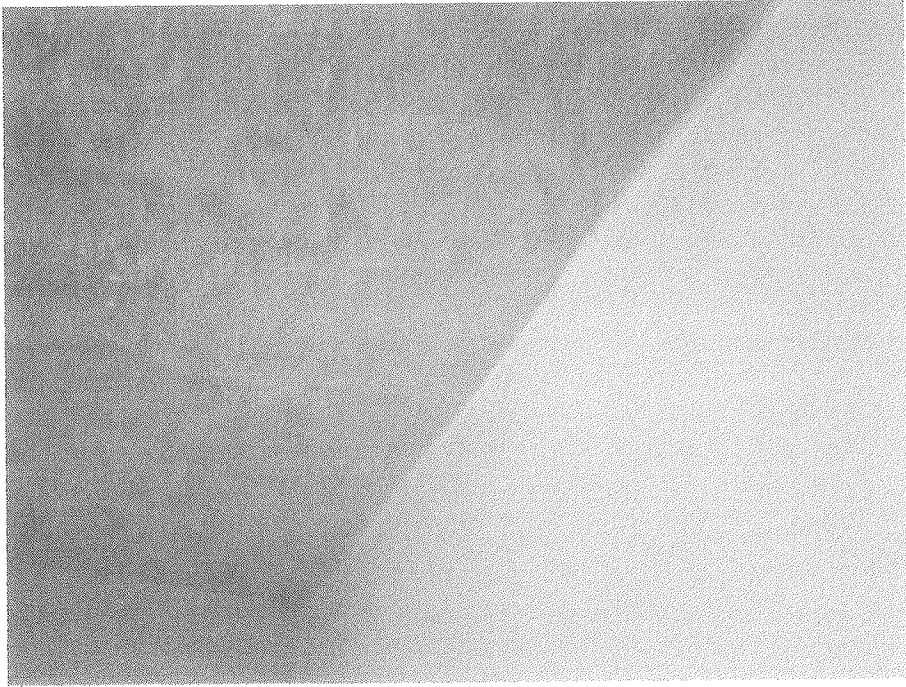
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Pic # 25



Pic # 26



Pic # 27



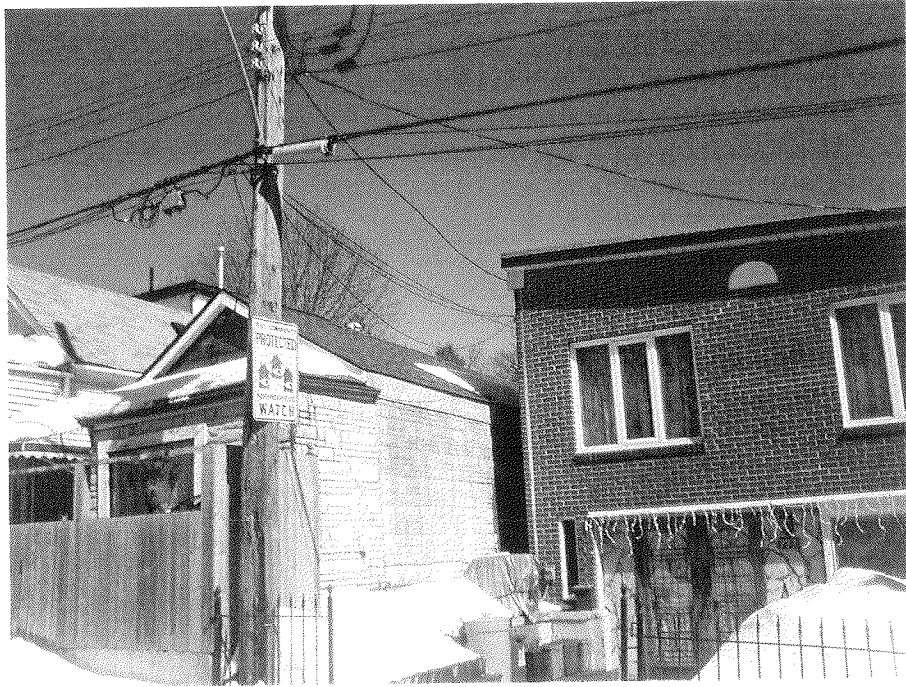
Pic # 28



Pic # 29



Pic # 30



Pic # 31



Pic # 32