Building Condition Report

FOR: The Holborn Group of Companies
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1.0 Introduction

The Holborn Group of Companies has retained MHI Services Inc. to inspect the last remaining 6-plex building of the Little Mountain site on Grouse Walk located on Main Street between 33rd and 37th Avenues.

The purpose is to evaluate the alternatives of:

1) Rehabilitating the building and leaving it on the existing foundation.

2) Relocating the building onto a new foundation at a different location on the property.

The inspection includes visual assessments of the structural, mechanical, building envelope and specialist investigations for air quality, pest and mould.

The inspection and subsequent report are based on visible conditions at the time of the inspection on September 8, 2010. The weather was mostly clear and the temperature was 14°C to 16°C. The inspectors had access to the interiors of two vacant units (149 and 159).

Metro Home Inspection Services Inc. expressly cautions there could be conditions not identified in this report. The writer took a series of photographs at the time of the inspection and these are included in the appendix (A) to this report.

2.0 Plumbing Systems

The main water service to each unit is ¾" copper with shut off valves. The interior supply piping is a mix of copper and newer plastic (PEX). The interior waste lines are mostly cast iron and galvanized steel with some newer plastic (ABS). Both accessible units have newer electric hot water tanks.

Observations

There are no pressure reducing valves. These should be added. (Refer to Appendix A Photo Pg. 3)

The smaller diameter cast iron and galvanized sanitary/waste piping is statistically at the end of its life expectancy, but did not leak at the time of the inspection.

3.0 Heating Systems

The units are heated with gas fired forced air furnaces. Unit 159 has an Airco 60,000 BTU furnace installed in 1977. (Refer to Appendix A Photo Pg. 4)

Observations

The 33 year old furnace is near the end of its reliable life expectancy. The heat exchanger is intact but the furnace is short cycling (probably the limit switch). There are also signs of condensing in the furnace due to operating at too low a temperature or condensing in the flue (see 8.0 - Roofing). The unit needs servicing now.

The white tape on the heat ducting may contain asbestos and additional investigation is advised. Some of the visible tape in the basement is damaged and friable. (Refer to Appendix A Photo Pg. 5)

The furnace should have a dedicated 110V circuit not shared with any other lighting or outlet circuit.

4.0 Electrical Systems

The overhead main service enters into a locked storage closet in unit 159 that was not accessible but appears to go to a fused main disconnect. Each unit has a 100-amp electrical panel (date code 49-10). This panel and the breakers are beyond their life cycle expectancy and, if retained, the breakers should be load tested to ensure their function as over current circuit protectors. (Refer to Appendix A Photo Pg. 6) Original wiring is 2 copper conductors in EMT with no ground wire. (Refer to Appendix A Photo Pg. 7) There are a limited number of circuits in the units. (8 – 110V & 2 – 220). Current residential standards would require 20 – 25 circuits per unit using grounded wiring.

Observations

There are two conductors with corroded breaker connections in the panel. 220V stove breakers require mechanical couplers. (Refer to Appendix A Photo Pg. 8)

Missing knock-out cover on the side of the panel. (Not visible in Appendix A Photo Pg. 8)

The panel is grounded to a copper pipe section that is not continuous to the earth ground. The water pipes are also un-bonded due to newer sections of plastic (PEX) piping. (Refer to Appendix A Photo Pg. 9)

The bathroom light switches are too close to the bathtubs. (Refer to Appendix A Photo Pg. 9)

5.0 Site Surface Conditions

The building sits in a low-lying area with poor draining soils and/or a high water table (see 9.0 – Foundation and Basement). Clay risers take the roof drainage below grade. The inspectors were unable to confirm if the risers connect to continuous foundation drain tiles and to ascertain their condition.

Observations

The concrete sidewalks have settled in areas and some of these pose a trip (safety) hazard (i.e. at the NW corner of the building). This condition should be corrected due to the liability risk. (Refer to Appendix A Photo Pg. 10)

6.0 Exterior Surfaces

The exterior walls are primarily clad in ¾" stucco on square mesh over lumber sheathing. The stucco has been painted at some time in the past and there are areas where the paint is peeling. The upper gable ends are clad in vertical channel siding. The window and doorframes are wood. Single pane windows in baked enamel finished aluminum frames were set in the original wood casings (likely in the early 70's) and the wood sills were clad in metal.

Observations

Vertical hairline cracks visible on the south and north walls due to expansion and contraction, possibly from internal moisture variations. (Refer to Appendix A Photo Pg. 11)

Pattern cracking is visible on the east wall, which is generally an indication of water penetration resulting in stucco failure.

Peeling paint and stained stucco below the bathrooms on the north wall likely caused by water penetration from inside (shower wall at window) with a risk of concealed damage. (Refer to Appendix A Photos Pg. 12, 13 & 14)

Warping and splitting visible to the wood vertical channel siding at the gable ends. (Refer to Appendix A Photo Pg. 15)

The doors and windows are functional but obsolete. Note that installing new windows within the existing openings would not meet currently accepted standards for building envelope integrity.

7.0 Porches

The porches are concrete slabs that are cantilevered from the concrete foundation. The porches have either wood or metal hand/guard rails.

Observations

The slabs are functional but the adjacent soils have settled and the steps have uneven risers and in general are unsafe. (Refer to Appendix A Photo Pg. 16)

Both the metal and wood guards are also technically unsafe by current standards. (Refer to Appendix A Photos Pg 17 & 18) Current standards require the guardrail be 36” high with 3.5” maximum vertical openings.

8.0 Roofing Systems

The sloped (approximately 10/12 pitch) roofing appears to be a single layer of interlocking composition shingles installed over a tar felt underlay on solid shiplap (board) sheathing. (Refer to Appendix A Photo Pg. 18) The brick chimneys have been re-pointed (new mortar) and the flashings replaced. (Refer to Appendix A Photo Pg. 19) A torch-on membrane has been installed on the (flat) porch roofs and is probably the same age as the main roofing.

Observations

The estimated age of the roofing is 8 – 10 years and is in good condition (minor moss). These roofing systems have a total expected lifespan of 15 – 20 years.

The metal drip edge flashings of the torch-on membrane were poorly installed, as they leak at the lapped joints.

Add rain caps to the masonry chimneys as this may reduce combustion gas condensation (see 3.0 – Heating). (Refer to Appendix A Photo Pg. 19)

9.0 Attic and Roof Structure

The attic structure is 2 x 4 rafters with collar ties and knee walls. The insulation is the original paper-backed mineral/steel wool batts (estimated R4 value) over a tar impregnated Kraft paper air barrier. (Refer to Appendix A Photos Pg. 20) Current standards require R40 insulation value with a continuous air/vapour barrier. There are concrete masonry unit (CMU) firewall separations between the units, which extend from the basement to the attic. (Refer to Section 10.0 & Appendix A Photo Pg. 21)

Observations

There are small wood shims between the top of each rafter and the ridge board on the north slope in unit 159. There are no obvious framing concerns and the inspector does not know why the shims were used.

There is no evidence of rodent problems. (Refer to the Pest Assessment Report Appendix B)

There are signs of some past moderate condensation.

10.0 Foundation and Basement

The six-unit 2-storey wood framed structure is founded on a concrete perimeter foundation over a full depth basement. The floor joists are 2 x 8 at 16” on center spanning (approximately 11’ 6”) from the outside walls to a center load-bearing beam. Wood columns on concrete piers and concrete masonry unit (CMU) pilasters support the center load-bearing beam. There are concrete masonry unit (CMU) firewalls separating each unit from the basement to the attic.

Observations

There is a visible 3/8” soft copper line at the basement floor slab. This would indicate that oil was used as a heating fuel source prior to the current natural gas. All underground oil tanks should be located, drained if necessary, and removed. It is also

advisable to test the soils for contamination. (Refer to Appendix A Photo Pg. 22 & Appendix C)

Hairline cracks in the foundation would imply the use of some reinforcing steel and there are no indications of foundation movement. There is, however, no evidence of reinforcing steel in the concrete masonry unit firewall where the inspector checked. (Refer to Appendix A Photo Pg. 23)

There were no visible anchor bolts at the sill plate where checked. The wood-framed structure is probably not anchored to the foundation. The lack of seismic restraint could be considered a significant safety concern in public housing.

The basement shows signs of chronic water problems. This includes efflorescence on both the concrete and concrete masonry unit walls, stains, water in the basement floor drain at the time of the inspection (6" below the finished floor), soft mortar at bottom of concrete masonry unit firewall and stains along a hairline crack in the foundation. (Refer to Appendix A Photos Pg. 24 & 25)

11.0 Fire Separation between Occupancies

Hollow core concrete masonry unit walls were observed at the common walls between occupancies. They are exposed in the basements and in the attics. There is no evidence of vertical reinforcing steel (a mortar joint was cut to view– see Appendix A Photo Pg.23). In addition, the walls are not airtight. Therefore, they would not conform to current standards for fire separation in residential occupancies.

12.0 Discussion

Based on our observations, it is our opinion that it is technically possible to upgrade the wood-framed structure to currently accepted standards whether the building is left in place or relocated to a new site. However, it appears the current value of the structure is limited to the replacement cost of the salvageable wood framing.

The necessary upgrades will essentially require asbestos abatement followed by the complete gutting of the existing structure to the framing inside and out and:

- Replacing the furnaces with high efficiency units and all new ductwork.

- Replacing all plumbing supply and waste lines (however, the 4” cast iron waste lines have a probable remaining useful life of 30 – 40 years).

- Installing new electrical services, panels and re-wiring the building.

- Replacing the doors and windows (the windows must be thermally broken and conform to CSA standard A440).

- The new exterior cladding must have a drainage cavity (rain-screened).

- Insulating the walls and ceiling including a continuous air/vapour barrier.

- Installing fire-rated separations between the units.

- Providing hand/guard rails that meet current safety standards at all entrances.

- Providing exhaust fans that are vented to the exterior.

- Installing fire sprinkler systems.

If the building is left on the current foundation, the basements will have to be made resistant to ground water penetration and the oil contamination has to be remediated. The basement floors do not have a vapour barrier and the local water table was only a few inches below the concrete floor. Any attempt to reduce the natural rate of air exchange in the building will probably result in an increase in interior humidity to problem levels.

We cannot determine if the levels of the detected volatile organic compounds would be considered toxic. This issue requires consultation with the Provincial Health Authorities since different types of organic compounds are considered to have different levels of toxicity to humans. There is also the problem that different people will have varying levels of sensitivity to total volatile organic compounds. Published reports suggest the human threshold for odour detection of volatile organic compounds can be as low as 50 micrograms per cubic metre. As per the Alara report (Refer to Appendix C), the measured levels exceed this by approximately three times and do not necessarily represent the total amount in the air.

In our opinion, the cost of relocating the structure to a new foundation is partially offset by the necessity to address the ground water penetration and volatile organic compounds at the current location. Rehabilitating the existing building depends on the degree of probable soil contamination and the inherent complexity in remediating the

site. The difficulty in relocating the building depends on whether or not the concrete masonry unit firewalls can be moved as part of the structure.

13.0 Appendices

A. Photo Selection

B. Pest Assessment

C. Mould & Volatile Organic Chemicals (VOC) Assessment