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ELEVATOR CONDITION ASSESSMENT

123 King Street West, Hamilton, ON

Date of Report
August 2022

1.0 PURPOSE

On August 3, 2022, a review of the elevator equipment located at 123 King Street West, Hamilton, ON was undertaken. This was conducted to determine the condition of the elevator equipment and to determine the capital costs likely to be encountered by the Owner.

The site review undertaken was predominantly visual, and system components were not disassembled under the scope of our work.

2.0 SUMMARY, RECOMMENDATIONS AND COSTS

We recommend that the deficiencies of Section 5 of this report be referred to the maintenance contractor for their corrective action. We would suggest 60 days as a reasonable time frame for them to correct the deficiencies.

Almost all the major components of the existing elevator system should be covered under the terms of a full maintenance program. Accordingly, there should be no major capital expenditures to replace or repair these components within the expected life of the system. Notable exceptions are vandalism and replacement of obsolete parts. Another common source of extra costs occurs when one maintenance contractor's services are terminated by the property owner, or the contractor themselves terminates their contract. This can lead to a new contractor requiring extras to the monthly maintenance fee to cover major components left in poor condition by the outgoing contractor. Vigilant ongoing policing of the performance of the maintenance contractor is an effective method of avoiding this source of extra costs.

Complete modernization – Now at an age of 46 years, the elevator system of cars 2 and 3 have surpassed its engineered life expectancy. Modernization is required in the short term: the existing controller and pumping units require replacement. A modernization typically also involves the replacement of door operating equipment, operating buttons and fixtures, as well as replacement of all wiring.

Elevator 1 was modernized in 2011 by Otis with the original controller, pumping unit, cab interior and operating fixtures either replaced or upgraded. The equipment is in good condition and does not require modernization of the major components.

A new version of the CSA-B44 Safety Code for Elevators has been adopted in Ontario effective August 1, 2022. A new requirement of this code during a major alteration (ie, Cars 2 and 3) is the provision of two-way audio and video communication between the cab interior and a monitoring company. Currently Elevator 1 is equipped with only two-way audio communication (as required by the previous version of the Code). Although the elevator does not require modernization, it may be beneficial to provide two way visual and audio communication for this elevator. This would provide consistency between all three elevators for security reasons.

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3.0 DESCRIPTION OF VERTICAL TRANSPORTATION SYSTEM

The vertical transportation system consists of three inground hydraulic elevator - two passenger and one freight elevator.

3.1 Technical Data

The technical and nameplate data of the elevating equipment is as follows:

Category	Description
Building Designation	1 (gallery)
Installation Number	30212
Class	Passenger
Capacity	3,000 lb
Speed	150 fpm
Floors Served	4 (S, G1, G2, 0) – all front opening
Car Door Opening	42" wide x 84" high one-speed, center opening
Door Protection	Multibeam infrared
Door Operator	GAL MOVFR
Power Unit	Otis Submerged unit, remote machine room Allweiler Pump, 3460 RPM, 50 HP, 575 volt, 3 phase
Electrical Controller	Otis 211, 600V, 3 phase, 50 hp
Drive	Inground hydraulic with PVC (installed circa 2016)
Manufacturer	Otis Elevator
Installation Date	circa 1976, Modernized 2011 by Otis
Maintenance Contractor	Otis Elevator

Category	Description
Building Designation	2 (parking and Plaza)
Installation Number	30213
Class	Passenger
Capacity	3,000 lb
Speed	150 fpm
Floors Served	4 – all front opening
Car Door Opening	42" wide x 84" high one-speed, center opening
Door Protection	Multibeam infrared
Door Operator	GAL MOVFR
Power Unit	Otis Submerged unit, remote machine room Allweiler Pump, 3380 RPM, 50 HP, 575 volt, 3 phase
Electrical Controller	Otis 20HICL, 600V, 3 phase, 50 hp
Drive	Inground hydraulic with PVC (installed circa 2016)
Manufacturer	Otis Elevator
Installation Date	circa 1976 Hydraulic tank, valve and motor upgraded in 2015 by Otis
Maintenance Contractor	Otis Elevator

Category	Description
Building Designation	3
Installation Number	30214
Class	Freight
Capacity	15,000 lb
Speed	50 fpm
Floors Served	3 – all front opening
Car Door Opening	123" wide x 120" high Vertical bi-parting, power operated
Door Protection	Edge only
Door Operator	Otis
Power Unit	Otis, double pump and motors Dry unit, remote machine room Otis Pump, 1760 RPM, 2 x 40 HP, 575 volt, 3 phase
Electrical Controller	Otis 20HIBL, 600V, 3 phase
Drive	Inground hydraulic with PVC (installed circa 2016)
Manufacturer	Otis Elevator
Installation Date	circa 1976
Maintenance Contractor	Otis Elevator

3.2 Existing Conditions

The three elevators were installed circa 1976 by Otis Elevator. The elevators share one common machine room which is located remotely to the hoistways.

Elevator 1 was modernized in 2011 by Otis with the original controller, pumping unit, cab interior and operating fixtures either replaced or upgraded. The equipment is in good condition.

Elevator 2 controller is original with the pumping unit having been replaced in 2015 by Otis. The controller has reached the end of its engineered life and can be considered obsolete.

The major components on Freight Elevator 3 appear to be original controller is original with the pumping unit having been replaced in 2015 by Otis. The controller and pumping units have reached the end of their engineered life and can be considered obsolete.

The elevator hydraulic system uses hydraulic fluid as its means of vertical propulsion. Hydraulic fluid is forced under pressure into the cylinder by action of the electrically-driven pump. This causes the piston, situated within the cylinder, to displace upwards. Down-direction travel is achieved through controlled gravity lowering. Under this condition, oil within the cylinder is allowed to return to the oil tank, through the controlled back flow as monitored by an electrically-regulated valve unit.

The elevators are of an in-ground cylinder design. This type of cylinder is prone to attack by electrical or corrosive chemical elements contained in the soil near the elevator. These mechanisms have led to the failure by leakage of elevator cylinders. All elevators have been equipped with PVC cylinder protection circa 2016 as per current Code requirements during a separate project.

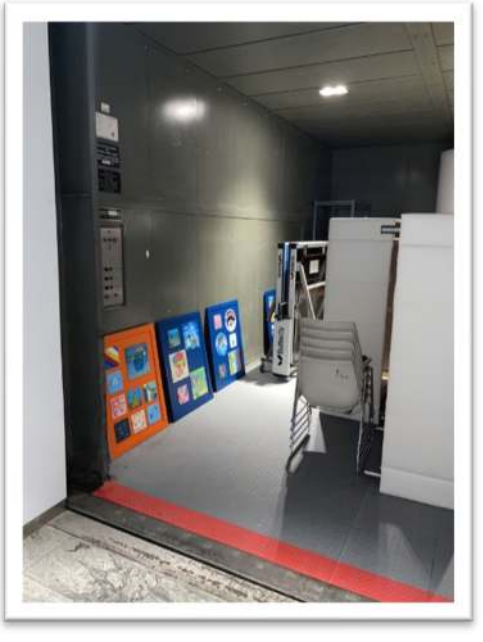
APPENDIX A – IMAGES

IMAGE 1 – Elevator 1 Controller and pumping unit	
IMAGE 2 – Elevator 1 Cab Interior	

APPENDIX A – IMAGES, CONTINUED

IMAGE 3 – Elevator 2 controller - original	
IMAGE 4 – Elevator 2 Cab	

APPENDIX A – IMAGES, CONTINUED

IMAGE 5 – Freight Elevator pumping unit - original	
IMAGE 6 – Freight Elevator Cab	

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