MORRISON HERSHFIELD

FINAL REPORT

Comprehensive Reserve Fund Study with Site Inspection

Carleton Condominium Corporation No. 634

95 Beech Street

Ottawa, Ontario

Presented to:

The Board of Directors
Carleton Condominium Corporation No. 634

c/o Ms. Barbara Ravanelli
Capital Integral Property Management
904 Lady Ellen Pl.,
Ottawa, Ontario K1Z 5L5

Report No. 2170065.00 October 30, 2017

\\MH.LOCAL\DATA\OFFICES\OTTAWA\PROJ\2170065\09 FINAL REPORT\CCC 634 FINAL REPORT - OCTOBER 30 2017 R1B.DOC

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

1. INTRODUCTION

Morrison Hershfield Limited (Morrison Hershfield) was retained to conduct a Comprehensive Reserve Fund Study with Site Review of Condominium Corporation No. 634 (CCC 634) located at 5 Beech Street, Ottawa, Ontario. Authorization to proceed with the study was provided by Eide McCord Property Manager (Integral Property Management Company), on behalf of the Corporation.

1.1 Objectives

The objective of this Reserve Fund Study is to provide the Board of Directors with sufficient information to enable them to:

a) Set up a schedule for the anticipated repair and replacement of common element items based on the last Reserve Fund Study Update with Site Review,

b) Set up a special account for major repair items and replacement of common elements and assets of the Corporation,

c) To determine the annual contributions necessary to maintain an adequate balance for the 30 year period of this study, and

d) Satisfy the legislation regarding the *Condominium Act, 1998* and related regulations.

This reserve fund study was conducted as a Comprehensive Reserve Fund Study/ with Site Review and is in general compliance with the regulations of Section 94 of the *Condominium Act, 1998* and Part IV, Sections 29 and 30 of O.Reg. 48/01.

1.2 Terms of Reference

This Reserve Fund Study was subject to the limitations of Section 1.7 and addressed the following scope of service as detailed in our proposal.

- A review of available documentations (as outlined in the Act).
- Meeting with representatives of the Board of Directors or Property Manager to discuss the history of problems, repairs, and remedial work undertaken CCC 634 since the last Reserve Fund Study.
- A visual inspection of the common elements of the building in order to assess the current condition and estimate remaining service life. The review will be conducted from grade, accessed units, roofs and balconies, where safely accessible. Observations will be made only of those areas that are readily accessible during a “walk-through” type of review and will not include any concealed elements. Material sampling and testing, and systems performance testing are not included, unless otherwise identified herein.

- Prepare a Reserve Fund Study Report and Form 15. The report will include a physical analysis of each common element, including a description, current observed condition, any observed deficiencies, life expectancy and recommended time frame for repair and/or replacement. The report will also include a financial analysis, indicating the current financial status of the reserve fund, the estimated repair and/or replacement cost of the common elements, and up to two recommended funding plan scenarios for a minimum of 30 years.

1.3 General Terms

As required by the Condominium Act, the corporation shall conduct periodic studies to determine whether the amount of money in the reserve fund and the amount of contributions collected by the corporation are adequate to provide for the expected costs of major repair and replacement of the common elements and assets of the corporation.

The steps in completing a Reserve Fund Study are as follows:

1. Identify elements to be included in the component inventory (Component Inventory Table of Appendix A).

2. For each item in the component inventory, assess parameters for each component (Component Inventory Table of Appendix A). These parameters include age, life expectancy, estimated years for major repairs and replacements, and opinion of probable cost for major repairs and/or replacements.

3. Based on the information shown in Appendix A, generate a list of annual expected expenditures (30-Year Detailed Cash Flow Plan) and calculate contribution scenarios that may be considered adequate (Appendix C).

1.4 Project Team

This Reserve Fund Study has been prepared and/or reviewed by various personnel within Morrison Hershfield. The following are the reviewers and the respective disciplines for which each was responsible:

This Reserve Fund Study has been prepared and/or reviewed by various personnel within Morrison Hershfield. The following are the reviewers and the respective disciplines for which each was responsible:

- Stephen Thwaites, P.Eng, conducted the review of the building envelope, structure, interior finishes, and site and prepared those portions of the report. Shereen Rifaat, P.Eng. provided technical review of these sections of the report.

- Donald Stephens- Dunn conducted the mechanical systems review and prepared those portions of the report. Paul Seguin, P.Eng. provided technical review of the mechanical sections of this report.
- Jared Fleming conducted the electrical systems review and prepared those portions of the report. Alfreg Ng, P.Eng. provided technical review of the mechanical sections of this report.
- Stephen Thwaites, P.Eng., reviewed the report for general compliance with the Act.

The elevators were addressed by a sub-consultant, Rooney, Irving and Associates Limited (RIA) during a separate site visit. The elevator report is included in Appendix D.

1.5 Report Format

The report is separated into the following sections for the convenience of the reader. Briefly, the contents of each of these sections are:

1. Introduction

A general description of the services provided.

2. Component Inventory

Description and identification of items to be included in the component inventory forming the framework for the Reserve Fund Study.

3. Physical Analysis and Costing

Information regarding the methodology of the site visit and development of anticipated repair costs, and a summary of recommendations for further investigation where there is uncertainty regarding a specific item.

4. Financial Analysis

Methodology of calculating cash-flow plan and a recommended contribution plan.

5. Conclusion

A summary of the Reserve Fund Study process and the Board's proposed contribution plan.

6. Appendix A – Component Inventory

Includes the Component Inventory Table of the common elements to be addressed by the Reserve Fund.

7. Appendix B – Current Contribution

Includes tables representing the current annual contribution to the reserve fund increased by inflation only.

8. Appendix C – Proposed Contribution Scenario

Includes tables representing the recommended Scenario – the tables provided include a 30-Year Detailed Cash-Flow Plan, Chart, and Table and Contribution Table which outlines the proposed contribution levels.

9. Appendix D – Elevator Report

The elevator report prepared by the sub-consultant, Rooney, Irving and Associates, Limited.

1.6 Reference Documents/Information

The following documentation was provided for our review to assist in the preparation of this Reserve Fund Study:

- MH Start-up Questionnaire, completed January 12, 2017,
- Financial Statements for OCSCC 634 prepared by Integral Property Management Accountants,
    - March 01, 2016 to Februrary 28, 2017
- Architectural drawings A1-01 to AB-01 (17 pages) prepared by Douglas Hardie Architects, dated February 19, 2001, and
- Mechanical drawings S1 to S6 (06 pages) prepared by AJ Garwood & Associates, dated November 10, 1999

1.7 Limitations and Assumptions

This report is intended for the sole use of CCC 634, and must not be distributed or used by others without our knowledge. It is based on the documents and information provided to us and the findings at the time of our on-site investigation.

It is a basic assumption that any correspondence, material, data, evaluations and reports furnished by others are free of latent deficiencies or inaccuracies except for apparent variances discovered during the completion of this report.

Unless specifically noted in this report, no testing, verification of operation of systems, review of concealed elements, intrusive openings, opening of system components for internal inspection, detailed analysis or design calculations were conducted, nor were they within the scope of this review.

Some of the findings herein are based on a random sampling visual review of the surface conditions, discussions with the Board of Directors and/or their designated representatives, and review of relevant documents. Observations were made only of those areas that were readily accessible during our review. Deficiencies existing but not recorded in this report were not apparent given the level of study undertaken. Components not included have not been reviewed, and if their conditions need to be known, further study will be required. Unless otherwise noted, we have not undertaken a physical review of subsurface conditions or concealed structural systems. In particular, our review of structural components consisted of a visual walk-through survey of a sampling of readily accessible structural components. Structural members were generally not subjected to their full design live loads (including wind and seismic effects), so this type of review is very limited in identifying hidden or latent structural defects.

It is possible that unexpected conditions may be encountered at the building that have not been explored within the scope of this report. Should such an event occur, Morrison Hershfield should be notified in order that we may determine if modifications to our conclusions are necessary.

In issuing this report, Morrison Hershfield does not assume any of the duties or liabilities of the designers, builders or owners of the subject property. Owners, prospective purchasers, tenants or others who use or rely on the contents of this report do so with the understanding as to the limitations of the documents reviewed and the general visual inspection undertaken, and understand that Morrison Hershfield cannot be held liable for damages they may suffer in respect to the purchase, ownership, or use of the subject property.

Professional judgment was exercised in gathering and analyzing the information obtained and in the formulation of the conclusions. Like all professional persons rendering advice, we do not act as insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions. No other warranties, either expressed or implied, are made.

2. COMPONENT INVENTORY

O. Reg. 48/01, s. 29 indicates that a Reserve Fund Study shall include a physical analysis. The first step in conducting the physical analysis is identifying the component inventory for your complex, as listed in Appendix A.

2.1 Building Description

CCC 634 is located at 95 Beech Street in Ottawa, Ontario. It was converted into a Condominium circa 2000.

The condominium complex consists of a three-storey building with a total of 30 residential units. Some of the units have access to balconies or a rooftop terrace. Interior common spaces include corridors, stairwells and locker rooms. An elevator provides access to all floors. A single level of underground parking is provided for the use of the residents. The building is located at 95 Beech Street.

2.2 Definition

O.Reg. 48/01, s. 27 defines a component inventory as "… an inventory, in a reserve fund study of a corporation, of each item of the common elements and assets of the corporation that requires, or is expected to require within at least 30 years of the date of the study, major repair or replacement where the cost of replacement is not less than $500;"

The $500 limit can be interpreted in two ways:

- All common elements that cost at least $500 must be included in the component inventory; OR
- No item costing less than $500 is to be included in the component inventory

It has been our experience that most Boards of Directors choose to cover small capital expenditures out of the operating budget.

The Authorizing Property Manager for CCC 634 has directed Morrison Hershfield to assume that capital expenses less than $2,000 will be covered out of the operating budget, and expenses greater than that amount be budgeted for in the Reserve Fund

Common Elements

Based on our review of the Declaration, and information provided by Property Manager, we understand that the following building components are common elements at CCC 634:

- Structural systems,

- Parking garage,
- Exterior walls, all components up to the back-side of the interior gypsum wall board,
- Windows, & Doors
- Roofing systems,
- Building common areas (corridors, service rooms),
- Common area landscaping,
- Mechanical systems (components that serve more than one unit),
- Electrical systems (components that serve more than one unit), and
- Elevators.

The Board of CCC 634 has reviewed this report and confirmed the list of common elements.

2.2.1 Shared Facilities

The cost of the aluminum siding on the common wall with 80 Aberdeen Street is shared on a 50/50 basis.

2.3 Operating Expenses

The reserve fund is to be used only for capital expenditures including major repair and replacement of the common elements. We assume that minor repairs, localized replacement, and maintenance of the common elements is completed on a regular basis out of the operating budget.

We recommend the Condominium plan to conduct metallurgical testing of the piping (circulation, domestic water, sanitary, storm and sprinkler) as it approaches the end of its service life (typically when it reaches approximately 75% of service life). The testing can be completed as part of the operating expenses. The testing will allow for more accurate prediction of the timing for piping replacements, which are very large expenditures.

3. PHYSICAL ANALYSIS

Once the items to be included in the component inventory are defined, a visual review of each of those elements, along with information provided by and discussions with the Board and/or their designated representatives, is conducted in order to assess the following eight parameters for each component:

1. actual or estimated year of acquisition,
2. present or estimated age,
3. normal expected life,
4. remaining life expectancy,
5. estimated years for major repairs and replacements,
6. opinion of probable cost for major repairs and/or replacements,
7. the percentage of the cost of major repairs and replacement to be covered by the reserve fund, and
8. adjusted cost resulting from the application of that percentage

The above criteria are outlined in the **Component Inventory Table**, which can be found in **Appendix A** of this study.

3.1 Site Review

The visual review of the complex was conducted on April 25, 2017. The common elements of the complex and the interiors and balconies of units 305 and 203 were reviewed. During our review of the building we were accompanied by Eide McCord, Property Manager.

Our site review consisted of a general visual survey of the complex to review a sampling of readily accessible, exposed components. Our review was conducted from the accessed suites and balconies, from the roof level(s), and from ground level.

A review of the design, test openings, and/or physical testing of any of the common elements was not conducted and did not form part of the scope of our services. Physical sampling and/or test openings to assess materials and/or assemblies was not conducted.

NOTE: No access was provided to the attic.

3.2 Life Expectancy

In the Component Inventory Table, we have listed the normal life expectancy for each item in the component inventory. The normal life expectancies are based on our experience, manufacturer's recommendations and published industry guidelines.

An adjustment is made to the normal life expectancy when, in our opinion, the maintenance and/or use of an item has been such that the normal life expectancy will be notably affected (either positively or negatively). Unless otherwise noted, we assume that regular annual maintenance and repairs will be performed to all elements at the facility to ensure the full life expectancy of each component is reached.

The timing of major repairs or replacements is based on the remaining life expectancy. The remaining life expectancy is based, in part, on the current condition of the component determined during the site review. The condition is described as:

- **Good** = Functioning as intended, normal deterioration observed.
- **Fair** = Minor deterioration and distress observed or deficient operation; some maintenance, repairs or replacement required to maintain functionality.
- **Poor** = Not functioning as intended, significant deterioration and distress observed; repairs or replacement required to restore functionality.

3.3 Total Repair or Replacement Cost

Opinions of probable cost are provided only as an indication of possible cost of remedial work. The repair or replacement costs are based on published construction cost data, recent bid prices on similar work, and information provided by the owner. More precise opinions of probable cost would require more detailed investigation to define the scope of work.

The opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified. All opinions of probable cost assume that regular annual maintenance and repairs will be performed to all elements at the facility.

We recommend that costs for consulting services, including design, tendering and construction review, be included in the reserve fund plan. The cost for these services can vary significantly depending on the size, scope and degree of complexity of the project. For the purposes of reserve fund budgeting, we have included an allowance of 7.0 percent for consulting fees where we believe it is appropriate, and 13.0 percent for applicable taxes (HST). All costs in the Component Inventory Table are identified in **2017 Canadian dollars**.

The costs identified in the Component Inventory Table represent the adjusted cost when the percentage of the cost of major repairs and replacement is applied to the complete replacement cost. For most items, 100 percent of the complete replacement cost is provided; exceptions include where complete replacement is not anticipated (such as repair allowances). Where specific common elements are shared with another corporation, we have provided a description under the

Recommendation indicating the percentage (less than 100 percent) of the total cost for which CCC 634 is responsible.

3.4 Significant Capital Expense Forecasts

The following major items should be budgeted for over the next 10 years, which can have a major impact on the Reserve Fund Study.

- Replace operable portion of windows
- Repair EIFS
- Replace Garage fans, CO detection and heaters
- Elevator Modernization

Note there is in Appendix E - Near Term Capital Expense Forecast, a listing of the expected Capital Expenses over the next six years

4. FINANCIAL ANALYSIS

A visual survey of the condition of the common elements has been conducted. Based on our experience and limited visual review, an assessment of the remaining life expectancy and replacement costs (in e.g. 2017 Canadian dollars) for each of the common element components, is shown in Appendix A.

The Reserve Fund Study is generated based on the information shown in the Component Inventory Table, from CCC 634, and certain assumptions as discussed below.

4.1 Input from CCC 634

In calculating the Reserve Fund Cash-Flow Plan, we have used the following information provided by CCC 634:

- Current Fiscal Year e.g. 2017 from March 01, 2017 to February 28, 2018
- Present Annual Contribution to the Reserve Fund (From Questionnaire) $70,184
- Reserve Fund Balance on March 01, 2017 (From Questionnaire) $134,000

4.2 Assumptions

4.2.1 Interest and Inflation Rates

The Government of Canada and the Bank of Canada inflation-control policy is aimed at keeping inflations at agreed to target values. At present the target range is 1.0 to 3.0 percent, with the Bank's monetary policy aimed at keeping inflation at the 2.0 percent target midpoint. This policy has continued to be renewed since implementation in 1991, and currently extends to December 31, 2016.

For the preparation of this Reserve Fund Study, we have assumed an Inflation Rate of 2.0 percent (midpoint of target range) and an Interest Rate of 3.0 percent for the duration of this study.

The interest earned on the Reserve Fund for each year is based on a **Mid-Year Interest Calculation**. It is our understanding from previous discussions with clients involved in long-term financial planning that this interest calculation is accepted for long-term financial planning. Over the 30 year period, the calculated interest is lower than calculating Simple Interest; therefore it is a more conservative method for calculating interest.

With the Mid-Year Interest Calculation, the interest earned on the Reserve Fund is calculated at the middle of the fiscal year assuming that half the expenses have been taken out of the Reserve Fund and half the annual contribution has been deposited into the Reserve Fund. Therefore, Interest is calculated as follows:

$$Interest = Interest\ Rate \times \left(Starting\ Balance - \frac{Expenses}{2} + \frac{Annual\ Contribution}{2} \right)$$

These interest and inflation rates were presented to the current Board of Directors and approved and used in the final report.

4.2.2 Adequate Reserve Fund

The Act indicates that the Reserve Fund must be adequate to provide sufficient funds for the expected costs of major repair and replacement of the common elements and assets of the Corporation. However, "adequate" is not defined by the Act. We interpret adequate to be where the closing balance in every year of the 30-year period of the study is positive.

We have requested that CCC 634 provide some guidance regarding a minimum balance to be maintained during the study period. The Board of Directors and/or their designated representatives has directed that the **Minimum Balance** for the Reserve Fund is not to be less than **$0.00** for each year of the study.

4.3 Cash-Flow Calculations

The Cash-Flow Calculations shown in the Detailed 30-Year Cash Flow Plan are discussed below. Each of the years shown in the Detailed 30-Year Cash Flow Plan represents the Fiscal Year of the Corporation as indicated in Section 4.1 above.

4.3.1 Starting Balance

The Starting Balance for this Reserve Fund Study has been shown in Section 4.1 above.

4.3.2 Total Expenses

The cost of each item in the Component Inventory Table is projected forward to the appropriate year, inflated annually as indicated in Section 4.2.1, and totaled.

The repairs and replacements we have forecasted in the Detailed 30-Year Cash Flow Plan do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated.

Review of the Tables reveals several projects that occur in a single year of the study period. These repairs and replacements may not all take place in one year, or be required at all; however, it is prudent to budget for such projects since failure of some components is unpredictable.

4.3.3 Annual Reserve Contribution

The Annual Reserve Contribution for the first year of this study is indicated in Section 4.1 above. Future annual contributions are calculated based on the estimates of life expectancy and opinions of probable cost, minimum Reserve Fund balance, and the assumptions for inflation and interest.

4.3.4 Other Contribution

When large expenses are anticipated in the near future and the existing Reserve Fund Balance is relatively low, increases to the annual contribution may not be sufficient. Increasing the annual contribution to an amount that can accommodate the major expenses is typically not considered a suitable funding plan since the Reserve Fund Balance often becomes relatively high for the remainder of the study period. Excess funds in a Reserve Fund cannot be used for any other purpose except for the major repairs and replacements for which they have been budgeted.

In such cases, Other Contributions are considered in the Cash-Flow Plan. These contributions can be in the form of special assessments or surplus funds that the Board has indicated will be available from other sources (i.e. transferred from operating budgets or contingency funds).

4.4 Contribution Scenarios

The actual condominium Corporation's annual contributions to the Reserve Fund Account should be established by the Board of Directors. We recommend you review this Reserve Fund Study with your accountants to ensure it meets the needs of your Reserve Fund. Alternate funding strategies should be reviewed with your solicitor and/or accountant to determine if they meet the intent of the Act.

Below we summarize the current contribution and provide two possible funding scenarios for the reserve fund.

4.4.1 Current Contribution

As a result of this study we have verified that there will not be sufficient funds available to meet the anticipated expenditures for the 30-year period addressed by this study at the current contribution rate of $70,184 per year, increased by 2.0 percent inflation only for the next thirty years. The Reserve Fund Balance becomes negative in the year 2019 and never recovers. This

is shown in the Cash-Flow Table and Cash-Flow Chart of the **Current Contribution Plan** in **Appendix B**.

4.4.2 Proposed Contribution

The Proposed Contribution increases the annual contribution is increased by 22 percent (including 2.0 percent inflation) over the next three fiscal years. It is then increased by inflation only thereafter.

The Reserve Fund Balance remains positive over the next thirty years, with a minimum balance of approximately $61,500 in 2020. This is represented as **Scenario 1** in the Cash-Flow Plan, Chart and Tables in **Appendix C**.

The average per unit costs and increases for the funding plan represented are summarized below.

CCC 634
Comprehensive Reserve Fund Study
Scenario 1 - Final - October 30, 2017

	2018	2019	2020	2021
Annual Reserve Contibution*	$70,184	$85,624	$104,462	$127,443
% Increase	n/a	22.0%	22.0%	22.0%
Average Increase per Unit per Month	n/a	$42.89	$52.33	$63.84
Average Annual Contribution per Unit per Month	$194.96	$237.85	$290.17	$354.01
Total Other Contributions**	$0	$0	$0	$0
Average Other Contribution per Unit per Month	$0.00	$0.00	$0.00	$0.00
Total Average Contribution per Unit per Month	$194.96	$237.85	$290.17	$354.01

5. SUMMARY

Morrison Hershfield Limited has reviewed and assessed the reserve fund requirements of Carleton Condominium Corporation No. 634 (CCC 634) in accordance with the Scope of Services and Limitations outlined in Section 1 of this report.

In general, the common elements of OCSCC 634 are in fair condition. A detailed list of components and their condition is included in the Component Inventory Table of Appendix A of this report. The major expenses anticipated over the next ten years include:

- Replace operable portion of windows
- Repair EIFS
- Replace Garage fans, CO detection and heaters
- Elevator Modernization

This Comprehensive Reserve Fund Study with Site Review presents a suggested funding strategy that will provide adequate funding to cover anticipated major repairs and replacements expected in the next 30 years. It has been developed based on the information provided to us by CCC 634 and our review of the site.

- Proposed Contribution Plan – The current annual contribution of $70,184 is increased 22 percent (including 2.0 percent inflation) for the 2018-2019, 2019-2020 and 2020-2021 fiscal years and then increased by inflation only from fiscal year 2012 onwards. This is shown in the Tables for Scenario 1 in Appendix C of this report.

We understand that this study has been reviewed by Property Management, the Board of Directors, and the (if applicable: investment planner, auditor, accountant, etc.) for CCC 634. CCC 634 has indicated to Morrison Hershfield that they will implement the proposed contribution plan associated with Scenario 1 as presented in the attached tables. If such funding is not achieved, future condominium owners can expect the need for additional special assessments to address major renewal activities.

The Reserve Fund Study is a dynamic document that will change over time as repairs/replacements are carried out on the common elements and interest/inflation rates change. The repairs and replacements we have forecasted in the Detailed 30-Year Cash Flow Plan do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated.

Similarly, the opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified. As such, regular updates to this Reserve Fund Study are necessary to re-assess the needs of your condominium.

CCC 634 is required to complete a Reserve Fund Study Update without Site Inspection within three years of the date of this study, and a Reserve Fund Study Update with Site Inspection within three years of that study (as specified by O.Reg. 48/01, s. 31 (3)). This is the minimum requirement for conducting Reserve Fund Studies. However, the Board

should consider an Update with Site Inspection if any significant changes in the condition of the common elements become apparent. Similarly, the Board should consider an Update without Site Inspection at an earlier date (prior to the three-year anniversary of this study) if there are any significant changes to the cash flow due to unforeseen conditions.

If you have any questions regarding the information contained herein, please contact the undersigned.

MORRISON HERSHFIELD LIMITED

Stephen Thwaites, P.Eng.
Project Manager
Structure, Cladding, Interior & Site

Stephen Thwaites, P.Eng.
Building and Site Elements OR

Donald Stephens-Dunn
Mechanical Systems

Jared Fleming
Electrical Systems

LICENSED PROFESSIONAL ENGINEER
S. D THWAITES
46445300
OCT 30/17.
PROVINCE OF ONTARIO

APPENDIX A

Component Inventory

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
1	Foundation -	The foundation of the building consists of the cast-in-place concrete walls and concrete block walls. They are likely supported by cast-in-place footings. The cast-in-place concrete walls could be 100 years old. The concrete block walls likely date from the conversion, circa 2000.	There is evidence of dampness on the roomside surface of the foundation walls. There is effloresence adjacent to the south facing basement windows. There was dampness near the base of the walls near the NE corner of the basement. Additionally there is a crack in the south wall of the foundation from the bottom corner of the opening for a window to the floor. On a subsequent vist, just after the "Microburst " storm, there was water in the SE corner of the basement. Approx 5m^2 of the floor had water on it	Fair	Budget to investigate the dampness along the south wall and in the NE corner Monitor the crack in the south foundaton wall. Repair the crack, so that any re-opening of the crack would be apparent.	5 - 10	1900	118	0	40	1	$10,000
2	Structure	Small areas of the structure were visble. In the parking garage concrete columns appeared to support beams, which, in turn likely support wood floor joists. Some beams appeared to be squared timber, others cast-in-place concrete. Additionally, the drawings indicated some of the parking garage level beams are steel, enclosed by Gypsum wallboard. Exterior walls appeared to EIFS covered brick. The drawings show the brick portion of the walls being three wythes in thickness. In units, timber beams and columns were visible. The drawings indicated some columns are steel 'H' sections. Also occassionally visble were timber lintels over windows.	A random sample review of surface conditions did not reveal pervasive indications of structural distress. Aside from the crack mentioned in S1 Foundations, there was a 5-10mm gap between the drywall and the wood column in Suite 305. Exposed brick in the south stairwell apeared discoloured	Good	Monitor the crack between the drywall and the wood column in Suite 305. Repair the crack, so that any re-opening of the crack would be apparent. Clean the discoloured brick in the south stairwell. If the discolouration returns, investigate for a water leak.	1 - 1	2000	18	0	1	1	$0
3	Stairwells	There is are two stairwells. Their interior walls are concrete block. The stairs are fabricated from steel. The treads and landings are covered with rubber flooring. The balusters and railings, are painted steel.	There did not appear to be any unusual deterioration to the stairwells, other than the normal wear and tear to floor and wall finishes.	Good	Paint the railing with funds from the Operating Budget.	1 - 1	2000	18	0	1	1	$0

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
4	Roof -flat	The main roof of the building is protected with a modified bitumen roofing system. Drainage of the roof is managed via roof area drains. The roof is ventilated with elevated painted metal roof vents. A prefinished metal flashing is installed at the parapet. The main roof area includes several doghouse sized raised pedestals with metal covers. These pedestals provide vertical surfaces for exhaust grilles and disconnect switches for roof top mechanical equipment. There is a smaller flat roof area near grade level over the garbage room. This roof area is also protected by a modified bitumen roofing system.	The flat roof membrane was replaced in 2013 according to the previous RFS. There were areas of ponding around the drains. There were some (we saw 3-4) small knicks in the granular surface of membrane. No leaks were reported.	Good	Replace the modified bitumen roofing system at the end of its service life.	15 - 20	2013	5	10	15	1	$144,000
5	Roof - sloped	Extending downward from the main roof is a sloped roof that includes dormers and is covered in shingles	The shingles were replaced in 2016. No leaks were reported.	Good	Replace the shingle roofing system at the end of its service life.	15 - 20	2016	2	13	15	1	$36,000
6	Balconies	There are 10 balconies on each of the 1st and 2nd floors (20 in total) The inner edge of the balconies is supported by a ledger beam bolted to the building building. The outer edge of balconies are supported on extruded aluminum posts. Together these posts and the ledger, in turn, support a framework of pressure treated wood joists. A one piece fiberglass deck surface sits on the wood framework. There are also two small balconies at the Loft level. There is one balcony on the first level over the ramp to the parking garage. It is supported by structural steel I beams, that in turn are supported by the building and a short steel column on the garage retaining wall.	The visible portions of the supporting joists were water stained, but did not appear to be rotting. The fiberglass surface on some balconies is starting to crack. The black paint on the extruded aluminum posts is faded, but for the most part intact - although some posts are missing paint intermittently on their outside corners. The cast aluminum brackets for the columns have lost their paint and appear pitted. One post on the parking lot side of the building is dented near where it sits on its concrete footing. There are some signs of surface corrosion on the structural steel supporting the balconies over the parking garage ramp (Suites 104 & 105)	Fair	Replace the fiberglass decks on the balconies. Budget to replace the aluminum columns. Replace the dented aluminum post. Paint the structural steel supports for the balconies over the parking garage ramp (Suites 104 & 105) . This can be done from the Operating Budget..	10 - 15	2000	18	1	10	1	$31,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
7	Balcony - Railings	The balcony railings are painted metal. The metal is likely aluminum. The posts are set on painted aluminum base plates. The base plates are fastened to the deck with stainless steel screws. Where balconies adjoin, painted metal, likely aluminum, privacy screens separate them.	The railings were replaced in 2010 according to the previous RFS. The painted surfaces of the railing appear to be in good condition. Some of the bases have lost their paint, but so far are not showing signs of corrosion. Similary we did not notice corrosion on the visible fasteners.	Good	Budget to replace the railings at the of their service life.	20 - 30	2010	8	12	20	1	$25,000
8	Terraces	There are 10 terraces on the 3rd floor. The terraces covered by a interlocking synthetic tiles that have a wood-like appearance. They are reported to be made by Resideck. They are arranged in a parquet type pattern. The terraces are reported to be protected by a modified bitumen roofing membrane systems.	The terrace decks were replaced in 2010 according to the previous RFS. The surface of the terraces appears to be in good condition. There was no visible in deterioration of the surface in the visited unit.	Good	Budget to replace the terrace decks at the of their service life.	15 - 20	2010	8	7	15	1	$36,000
9	Terraces - Railings	The terrace railings sit on a 'pony' wall. The wall is covered in metal flashing. A painted metal railing extends up approximately 300mm from the 'pony' wall. Where balconies adjoin, painted metal, likely aluminum, privacy screens separate them.	The railings were replaced in 2010 according to the previous RFS. The painted surfaces of the railing appear to be in good condition. The railing bases in the visited unit have lost their paint. They are starting to show signs of surface corrosion. Similary we did not notice corrosion on the visible fasteners. There was some corrosion on a bracket that supports the privacy screen - possibly from intartaction with the steel flashing that covers the 'pony' wall below the railing.	Good	Replace the railings at the of their service life.	20 - 30	2010	8	12	20	1	$13,000
10	Metal Flashing	The majority of the metal flashing is associated with the 2 uppermost levels (3rd floor & loft). There is metal flashing at upper roof level. The parapet flashing as well as the flashing over the doghouse sized raised pedestals is included with the Roofing (R1a). There is also metal flashing associated with the windows and doors. It takes the form of perimeter trim and sub-sill flashing. It is included with the windows and doors (BE4 & BE5) There are a number of elements fabricated from metal; fascia (2 pc), 'interior' of terrace walls, parapet above stucco, transition between siding and stucco	The metal flashing on the railing pony walls and the between the siding and the EIFS was replaced in 2016. This flashing appeared to be in good condition. Importantly, no leaks were reported.	Good	Replace the metal flashing as it nears the end of its service life. Ideally this would be done at the same time as the vinyl siding was replaced. However the recent replacement of the flashings and the 17 year age of the vinyl siding may preclude this. Replace the Window and Door flashings when replacing the EIFS and/or the windows and doors. Costs for this are included with both the EIFS and the windows and doors - so there is some double counting, but its small compared to overal RF expenditures.	20 - 30	2017	1	19	20	1	$28,000
11	Metal Siding	There is aluminum siding on the south side of the common wall, The common wall separates 95 Beech Street on the south, from 80 Aberdeen Street on the north.	The aluminum siding was replaced in 2013 according to the previous RFS. The aluminum siding was dented adjacent to the roof ladder. The denting is consistent with damage from hauling a heavy objects up (or down) the ladder.	Fair	Discuss the merits of changing the dented siding. The dents do not affect the functionality of the siding. The dents are not visible from anywhere but the roof. This repair can be effected from the Operating Budget.	20 - 30	2013	5	15	20	1	$15,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
12	Vinyl Siding	There is vinyl siding on the walls of the 3rd floor units and the walls of their loft level.	The vinyl siding was likley installed when the building was converted into a Condo in 2000. No unexpected deterioration was observed from grade or from the accessed units	Good	Replace the Vinyl Siding at the end of service life.	20 - 30	2000	18	12	20	1	$28,000
13	Soffits - Aluminum	Vented aluminum soffits are installed under the eaves of the sloped shingled roof.	The soffits were likely installed when the building was converted into a Condo in 2000. No unexpected deterioration was observed from grade or from the accessed units.	Good	Replace the soffits with the next shingle replacement.	15 - 20	2000	18	13	15	1	$5,000
14	Rainware	Aluminum eavestroughs are installed at the base of the shingled roof. The eavestroughs drain to grade via aluminum downpipes.	The rainware was likely installed when the building was converted into a Condo in 2000. Several of the downpipes had a dent or two in them.	Fair	Replace dented downpipes. Funded from the Operating Budget. Budget to replace all Rainware with the next shingle replacement.	15 - 20	2000	18	13	15	1	$23,000
15	EIFS - replace	An exterior insulating finishing system (EIFS) is installed on the walls of the first two floors. While it appears to an early version of a drained system, this could not be confirmed.	The EIFS was installed in 2000. There are numerous small signs that the EIFS is approaching the end of its life. There are some surface cracks. They occour on inside corners or in the decorative grooves. There are examples of small areas of missing surface finish on outside corners. There are also areas in the field of the EIFS that are missing surface finish.	Fair	Replace the EIFS at the end of its service life	35 - 40	2000	18	17	35	1	$326,000
16	EIFS - repair				Hire an Engineer to assess EIFS. Budget for renewing the surface of the EIFS to extend its life. Note that it is possible for a study to conclude that EIFS can't be repaired, but rather must be replaced	20 - 25	2000	18	2	30	1	$163,000
17	Parging	Typically the 0.5m-1m of exposed foundation wall is covered with cement based parging. Up to 2m of wall was parged along the entrance ramp to the basement level parking garage.	The parging is in fair condition. There are areas where the parging is missing.	Fair	Maintain parging with funds from the Operating Budget	1 - 1	2000	18	0	1	1	$0
18	Exterior Sealant	Sealant is installed where different cladding materials meet, including around windows, doors, and HVAC penetrations	Some caulking at some expansion joints appeared loose.	Fair	Replace loose beads of sealant from the Operating Budget Replace all sealant with the next major EIFS renewal. The budget for this is included	1 - 1	2000	18	0	1	1	$0
19	Skylights	Nine Skylights are installed into the shingled roof. Four Skylights are installed in inclined curbs on the flat roof. The skylights are wood framed with brake formed aluminum cladding. They are glazed with double glazed insulating glass (IG) units.	The skylights appear to be made by Velux. Velux is a large multi-national firm. Replacement parts like, the insulating glass, should be available.	Good	Repair problems as they arise from the Operating Budget. Budget to replace the Skyights as part of the next roof renewal projects.	20 - 30	2013	5	15	20	1	$27,000
20	Windows - complete replacement	The windows are aluminum framed fixed or casement windows. The are double glazed with insulating glass (IG) units. They appear to have a low-e coating. The operable portions are provided with an insect screen.	The windows were installed in 2000. The operable units' hardware requires frequent maintenance. The Service Company reports that they can no longer service this hardware.	Fair	Remove and replace the entire window (both fixed and operable sections)	30 - 40	2000	18	17	30	2	$212,000
21	Windows - operator replacement				Repair and replace Operator hardware as part of the ongoing Maintenace activities	20 - 30	2000	18	2	20	2	$0

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
22	Windows - glass replacement				Localized glass replacement is part of the normal maintenance activities. AS windows age more and more windows (and patio doors) will need glass replacement. This item is to allow for a larger scale glass replacement project.	20 - 30	2000	18	12	20	1	$28,000
23	Sliding Doors	The sliding doors are Aluminum framed. There are two, three and four panel doors. Each panel contains a single double glazed insulating glass (IG) units. The IG's appear to have a low-e coating. The operable portions are provided with an sliding insect screen.	The sliding doors were installed in 2000. The sliding doors operate satisfactorily for their age. No seal failures were observed or reported. The lack of a sill extension means that smooth surfaced, metal flashing forms part of the sill assembly.	Fair	Repair problems as they arise from the Operating Budget. Budget to replace the Sliding Doors at the end of their service life.	30 - 40	2000	18	17	30	2	$424,000
24	Entrance Doors	The entrance doors are aluminum framed. The primary and secondary doors are singled glazed. They are arranged to form a vestibule entry.	The entrance doors were made in 2000. The doors appear to operate satisfactorily.	Fair	Repair problems as they arise from the Operating Budget. Budget to replace the Entrance Doors at the end of their service life.	20 - 30	2000	18	2	20	1	$5,000
25	Overhead Doors	There are two overhead doors. One overhead door allows access to and from the parking garage. This door consists of four horizontal panels. The panels are steel skinned. They are likely foam filled. A second, smaller, overhead door allows access to and from the garbage room. It is a single panel overhead door.	The overhead doors were likely installed in 2000. The doors looks their age, but appear functional.	Fair	Budget to replace the overhead door to the parking garage	20 - 30	2000	18	5	20	1	$8,000
26	Other Doors	Stairwell and storage locker doors are generally commercial steel doors. They are generally equipped with closers.	The stairwell and storage locker doors appeared to be in good condition.	Good	Maintain these doors, including regularly painting them with funds form the Operating Budget.	1 - 1	2000	18	0	1	1	$0
27	Floors - Concrete	The basement parking garage has a concrete slab floor.	The Basement floor is uneven and appears poorly drained. Near column 6, parking garage slab floor slopes towards this point. Water pooling with nowhere to drain in that location presents a hazard to the residents and to the adjacent electrical room. The floor is showing signs of wear. There is scaling in the driving lane.	Fair	Investigate solutions to the water pooling near column 6. This may involve redesigning the drain system for the garage. Results from this investigation will determine the subsequent course of action and associated cost. There is 'placeholder allowance' for this work. It is a guess. Discuss options for floor surface.	1 - 1	2000	18	0	1	1	$0
28	Floors - wood	There is maple flooring in the lobby and hallways. It has a clear gloss finish	The flooring appears to be in good condition. No abnormal signs of wear were observed.	Good	Budget for the regular refinishing of these floors.	10 - 15	2012	6	2	10	1	$6,000
29	Floors- rubber	There is a rubber floor in the stairwells	The rubber floor was likley installed as part of the conversion in 2000. It appeared to be in good condition	Good	Budget for the eventual replacement of these floors.	20 - 30	2000	18	12	20	1	$34,000
30	Walls - Paint	The walls are painted drywall or painted concrete in the ground and basement corridors, the elevator lobbies, and the stairwells.	The painted walls appeared to be in good condition	Good	Budget for the regular painting of the walls	10 - 15	2012	6	2	10	1	$14,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
31	Ceilings - Paint	The ceilings in the garage, locker areas, lobby, stairwells and the corridors are painted drywall. The hallways celing areas include painted piping .	The painted ceilings appeared to be in good condition	Good	Budget for the regular painting of the ceilings including the exposed piping	10 - 15	2012	6	4	10	1	$3,000
32	Service & Locker Rooms	Generally, the finishes within the service and locker rooms consist of exposed or painted concrete, concrete block, or drywall.	The finishes appeared to generally good.	Fair	Regularly painting these areas with funds from the operating budget. Service rooms can be painted when walls and/or celings are painted.	1 - 1	2000	18	0	1	1	$0
33	Common Areas - Furnishings	There is a mailbox in the lobby. Metal mailboxes for each suite are built into a birch plywood cabinet.	The mailbox and surrounding millwork looked to be in good condition	Good		1 - 1	2000	18	0	1	1	$0
34	Doors - Suites	Suite doors are wood veneered. They likely have a solid (stave) core. Generally they had a clear finish.	The suite doors appeared to be in good condition	Good	Regularly painting these areas with funds from the operating budget. Lockers can be painted when people move. Service rooms can be painted when walls and/or celings are painted.	1 - 1	2000	18	0	1	1	$0
35	Doors - Common Areas	The majority of the common area doors (corridors, stairwells, service, etc.) are painted metal doors in painted metal frames; doors in circulation routes have glazed vision panels. The doors of the residential floors are stained wood.	The common area doors appeared to be in good condition.	Good		1 - 1	2000	18	0	1	1	$0
36	Asphalt Paving	An asphalt paved parking area is on the east side of the building. It includes a storm sewer grate. There is also an asphalt paved driveway on the west side of the building that provides access from Aberdeen to the basement parking garage.	The parking lot's pavement's surface was intact, with only a few long and several smaller cracks. There were several long parallel cracks in the driveway parallel to the direction of travel along the western (bikepath) side of the driveway,	Fair	Seal cracks and repair degraded asphalt. Budget to repave the driveway.	15 - 30	2000	18	7	15	1	$32,000
37	Unit stone Paver Walkway	There are area of unit stone pavers on the walkways outside the front entrance and the side entrance	The unit paver walkways appeared to be in good condition. The unit pavers were all in place and generally level with each other.	Good	Budget to renew the walkway	15 - 30	2000	18	5	15	1	$2,000
38	Concrete Curbs	Cast-in-place concrete curbs are installed at the perimeter of the parking area, along the entrance ramp, and along the Third Avenue interlocking walkway.	The curbs are In fair condition. Some of the curb at the side entrance is missing.	Fair	Repair the curbs with funds from the operating budget.	1 - 1	2000	18	0	1	1	$0
39	Garage Entrance - Ramp	There is a concrete surfaced ramp from grade to the basement level parking garage. The ramp has chevron patterned grooves in it for drainage.	The concrete surface appears included some cracks. Generally the concrete was the same level on both sides of the crack.	Fair	Budget for a major renewal of the ramp	20 - 30	2000	18	7	20	1	$21,000
40	Garage Entrance - Ramp - Retaining Wall	There is a concrete retaining wall alongside the entrance ramp to the basement level parking garage	The retaining wall appeared to be in fair condtion. The wall is generally straight, but it's likley less straight than when it was built. There are two significant vertical cracks in the wall.	Poor	Hire an Engineer to monitor the wall by examining the cracks. Fund this from the operating Budget	2 - 3	2000	18	0	2	1	$0
41	Garage Entrance - Ramp - Railing	There is a painted steel railing along the top of the retaining wall.	There was widespread surface corrosion on horizontal surfaces, both of the railing and its base plate.	Fair	Paint the railing with funds from the Operating Budget Replace the railing at the end of its service life.	25 - 30	2000	18	7	25	1	$2,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
42	Front Entrance Pillars	There are two pillars at the entrance to the parking lot	The parging on these pillar is in poor condition. The corners are cracked. Additionally the paint is peeling.	Poor	Re-parge the pillars. Budget includes an allowance to rebuild the substructure.	10 - 15	2012	6	4	10	1	$11,000
43	Soft Landscaping	The soft landscaping includes the sod, shrubs, and other plantings as well as any grading to provide adequate site drainage.	The landscaping appeared to be in good condition	Good	Maintain the landscaping with funds from the Operating Budget.	1 - 1	2000	18	0	1	1	$0
44	Make Up Air Unit (MUA)	The common corridors of the condonimium are supplied with make up air, heated in winter, by a Make Up Air Unit located on the roof. The cooling for this unit has been abandoned.	The unit appears to be original to the 2002 renovations. It showed signs of rust on its casing and its hardware. The p-trap connection was missing for the condensate. The exterior duct insulation was in good condition and the duct supports are no longer supporting the duct.	Good	Replace at failure or end of service life. Regular maintenance will prolong the life of the equipment. Duct supports should be repaired under maintenance budget.	25 - 30	2002	16	9	25	1	$51,000
45	Exhaust Fans	Service spaces such as elevator machanical rooms, bike storage, electrical rooms, storage and service spaces are exhausted by fans of various sizes and configurations ranging in HP from 1/16HP to 1HP.	The fans appear to be original to the 2002 renovations and show normal signs of wear. No issues were reported or observed.	Good	Replace at failure or end of service life. Regular maintenance will prolong the life of the equipment.	10 - 15	2002	16	5	10	1	$16,000
46	Garage Exhaust Fans	The parking garage is exhausted through a series of propeller fans located on the south side of the building.	The fans appear to be original to the 2002 renovations and show normal signs of wear. No issues were reported or observed.	Good	Replace at end of service life.	10 - 15	2002	16	1	10	1	$9,000
47	Hazardous Gas Detection (CO)	The parking garage is monitored for hazardous gases by sensors located throughout the the structure. The main controls for the sensors are located in the storage room, central to the parking garage.	The sensors and controls appear to be original to the 2002 renovations and show normal signs of wear. No issues were reported or observed.	Good	Replace at end of service life. Continue with regular calibration and inspections.	10 - 15	2002	16	1	10	1	$8,000
48	Garage and Sprinkler Room Unit Heaters	The main parking garage area is heated by gas-fired unit heaters located on the west side of the structure. A secondary gas fired unit heater system provides air into the fire protection piping entry room.	The garage unit heaters appear to be original to the 2002 renovations and show normal signs of wear. No issues were reported or observed.	Good	Replace at failure or end of service life. Regular maintenance will prolong the life of the equipment.	15 - 20	2002	16	1	15	1	$38,000
49	Ductwork	Ductwork distributes the air from the MUA to each of the common corridors.	Ducts where observed appear to be in good condition.	Good	Clean and inspect for leaks after 25yrs.	25 - 30	2002	16	9	25	1	$0
50	Domestic Water Piping	The building is supplied with domestic water by the city. The main entrance is located in the parking garage. The main consists of malleable iron and the majority of the piping throughout the building appears to be PEX and copper.	Piping where observed appears to be in good condition.	Good	Test the piping system at 75% of its service life. Replace at end of service life or when determined by testing.	40 - 50	2002	16	29	40	1	$62,000
51	Sanitary Drainage piping	Sanitary drainage piping throughout the building consists of black ABS piping, above and below grade. Some cast iron piping may still remain.	Piping where observed appears to be in good condition.	Good	Inspect the piping system with a camera at 75% of its service life. Replace at end of service life or when determined by testing.	40 - 50	2002	16	29	40	1	$60,000
52	Natural Gas Piping	The building is supplied with natural gas from the local utility. The main gas meter is located in the basement and the individual gas meters located on each floor.	Piping where observed appears to be in good condition.	Good	Replace gas piping in garage and on roof at end of service life. (interior piping has a service life similar to that of the building)	50 - 60	2002	16	34	50	1	$28,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
53	Sprinkler System	The building is protected by a wet pipe sprinkler system. The system includes piping, valves, and sprinkler heads.	System where observed appears to be in good condition. The elevator machine room door hits the sprinkler piping and may cause damage to the door or piping.	Good	Test the piping system at 75% of its service life. Replace at end of service life or when determined by testing. The piping needs to be protected to avoid premature failure using funds from the maintenance budget.	40 - 50	2002	16	24	40	1	$156,000
54	Fire hose Cabinets	The building has fire hose cabinets at each floor fed by a standpipe from the parking garage.	System where observed appears to be in good condition.	Good	Replace the cabinets at end of their service life. Continue with regular inspections and testing.	10 - 15	2002	16	0	10	1	$4,000
55	Standpipe	The standpipe feeds the firehose cabinets located in the corridor on each floor.	Piping where observed appears to be in good condition.	Good	Test the piping system at 75% of its service life. Replace at end of service life or when determined by testing.	45 - 50	2002	16	29	45	1	$15,000
56	Sump Pumps / Pits	The parking garage has a main sump pit, containing 3 pumps (sanitary,storm, elevator), and 1 potential secondary/smaller pit located near column #8 that may contain an abandoned pump.	The main sump pit appears to have been installed after 2013. A secondary pump/pit has been sealed closed.	Good	Replace the unit at failure or at end of service life. Regular maintenance will prolong the life of the equipment. Refer to M14 for abandonned subgrade piping.	10 - 15	2013	5	5	10	1	$13,000
57	Irrigation	The exterior gardens and landscaping were served by an irrigation system.	The irrigation system has been abandoned.	N/A	Abandon the the system components in place. Replacement of the controller will be necessary if recommissioning is desired.		2002	16		0	1	$0
58	Abandoned sub grade piping	Various locations in the parking garage appear to have subgrade drainage systems which have been abandoned.	1) Near column 8, a round cover is sealed above an abandoned sump pit. 2) Near column 6, parking garage slab floor slopes towards this point. Water pooling with nowhere to drain in that location presents a hazard to the residents and to the adjacent electrical room.	Unknown	Investigate the use and necessity of this sump pit near column 8. Either the system should be redesigned to recommission the sump pit or the Sanitary piping should be rerouted, if the if pit is to remain decommissioned. Investigate why the floor slopes towards column 6. This may require excavation. Results from this investigation will determine the subsequent course of action and associated cost.		2002	16		0	1	$7,500
59	Pipe Testing	Inspect and test piping systems, including camera inspection where required, to determine the condition of the pipes.	Interior of piping was not observed.	Unknown	Test the piping system at 75% of service life or when problems start to occur.					0		$5,000
60	Main Switchboard	A Federal Pioneer (manufacturer), 600V, 400A 1-section switchboard is located in the main electrical room. The switchboard is supplied from the utility transformer and is used to supply the entire building with power.	Hydro Ottawa transformer (PT1599) and switchgear (SW1600) were reported to be serviced in the summer of 2016.	Good	Replace the main switchboard and incoming electrical service (hydro transformer secondary cables) at end of typical service life. Coordinate replacement of incoming service and maintenance of utility switchgear and transformer with Hydro Ottawa.	45 - 50	2002	16	29	45	1	$42,000
61	Unit Transformers	Three, Marcus (manufacturer), 100kVA, 600-120/240V, step-down transformers are located in the main electrical room. The transformers are supplied from the main switchboard by three dedicated supplies and are used to feed the unit meter centres.	No deficiencies were observed or reported.	Good	Replace the unit transformers and supply conductors at end of typical service life.	40 - 45	2002	16	24	40	1	$48,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
62	Unit Meter Centres	Three, Federal Pioneer (manufacturer), 120/240V, 600A meter centres are located in the main electrical room. The meter centres are supplied from the unit transformers by three dedicated supplies. The meter centres are used to feed the ten individual units on each floor (1, 2, 3).	No deficiencies were observed or reported.	Good	Replace the unit meter centres and supply conductors at end of typical service life.	40 - 45	2002	16	24	40	1	$48,000
63	Common 600V Splitter	A Hydel (manufacturer) 600V, 225A, splitter is used to supply all common loads throughout the building. It supplies a local motor starter, the elevator controls and the 120/208V distribution. The elevator maintenance room has two loose disconnects to power elevator loads.	No deficiencies were observed or reported.	Good	Replace the common load 600V splitter trough and associated meter, disconnects, motor controls and supply conductors at end of typical service life. The elevator disconnects and associated supply have been included in this replacement to prevent service failures to the elevator.	40 - 45	2002	16	24	40	1	$12,000
64	Common Transformer	A Square D (manufacturer), 45kVA, 600-120/208V step-down transformer is located in the main electrical room. The transformer is supplied from the common 600V splitter trough and is used to supply all common 120V loads throughout the building.	No deficiencies were observed or reported.	Good	Replace the transformer and supply conductors at end of typical service life.	40 - 45	2002	16	24	40	1	$8,000
65	Common 120V Panels	Three Federal Pioneer (manufacturer), 120V panels of various sizes are located in the main electrical room. The panels are supplied from the common step-down transformer and are used to supply all common 120V power throughout the building.	The 24-circuit panel appears to be supplied from panel A through a contactor. This makes all power from this panel only suitable for exterior lighting and is likely causing the controls issue of the door openers on the front door.	Good	Replace the panels and associated supply and load conductors at end of typical service life.	40 - 45	2002	16	24	40	1	$34,000
66	Corridor/ Lobby Lighting	The unit corridors and main lobby are illuminated by two-lamp, compact fluorescent, wall sconces.	The housing is reported to be no longer available for purchase.	Good	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Early replacement should be considered to update to LED fixtures as this will save on consumption and maintenance costs. Review the save on energy incentive offers at time of replacement to reduce cost.	25 -	2002	16	9	25	1	$12,000
67	Stairwell Lighting	The stairwells are illuminated by two-lamp, compact fluorescent, wall sconces.	The housing is reported to be no longer available for purchase.	Good	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Early replacement should be considered to update to LED fixtures as this will save on consumption and maintenance costs. Review the save on energy incentive offers at time of replacement to reduce cost.	25 -	2002	16	9	25	1	$6,000
68	Basement Lighting	The garage is illuminated by surface mounted, high pressure sodium luminaires. The service/storage areas are illuminated by surface mounted, 1'x4', 2-lamp, fluorescent luminaires.	No deficiencies were observed or reported.	Fair	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Early replacement should be considered to update to LED fixtures as this will save on consumption and maintenance costs. Review the save on energy incentive offers at time of replacement to reduce cost.	20 -	2002	16	4	20	1	$23,000

CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
69	Exterior Lighting	The building exterior is illuminated by high pressure sodium wall packs around the perimeter of the building.	Some of the remote heads are beginning to show visible wear.	Fair	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Early replacement should be considered to update to LED fixtures as this will save on consumption and maintenance costs. Review the save on energy incentive offers at time of replacement to reduce cost.	20 -	2002	16	4	20	1	$6,000
70	Emergency Lighting	The building is illuminated by remote head lighting supplied from emergency battery units.	Some of the luminaires are beginning to show visible wear.	Fair	Replace the emergency lighting in bulk at end of typical service life. Replace the associated battery units at failure out of the maintenance budget.	10 - 15	2002	16	0	10	1	$8,000
71	Exit Signs	The building is equipped with single-face, red lettered, "EXIT" signs for emergency egress signage.	No deficiencies were observed or reported.	Fair	Replace the luminaires in bulk at end of typical service life. A bulk replacement will require an update to the new running figure style of exit sign.	20 -	2002	16	4	20	1	$4,000
72	Fire Alarm Control Panel	A Mircom (manufacturer), Series 1000 model, single-stage, addressable fire detection and alarm system is used in the building. The fire alarm control panel is located in the main lobby by the front door.	No deficiencies were observed or reported.	Good	Replace the fire alarm control panel at end of typical service life.	20 -	2002	16	4	20	1	$17,000
73	Fire Alarm Devices	The fire detection and alarm system provides detection using pullstations, heat detectors and smoke detectors and notification using horns.	No deficiencies were observed or reported.	Good	Replace the fire detection and alarm devices and associated conductors in bulk, in conjunction with every second panel replacement. This will occur with the 2042 fire panel replacement, but not the 2022 fire panel replacement.	40 -	2002	16	24	40	1	$22,000
74	Door Entry System	A phone entry system is located at the front door and used to communicate with a registered telephone for each suite.	No deficiencies were observed or reported.	Good	Replace the door entry system at end of typical service life.	15 - 20	2016	2	13	15	1	$3,000
75	Door Controls	The door controls consist of barrier free door openers used to open the vestibule doors, excluding the entry side of the lobby door.	The door openers were reported to only work when the exterior lighting is on. The door may be powered from an exterior lighting circuit and should be moved to an appropriate 24/7 power circuit.	Good	Replace the door controls at end of typical service life or run until failure.	15 - 20	2002	16	1	15	1	$6,000
76	CCTV System	A four camera system is currently installed in the main electrical room to monitor the entrances to the building.	No deficiencies were observed or reported.	Fair	Replace the security system at end of typical service life to prevent the use of obsolete technology and ensure system quality.	15 -	2002	16	1	15	1	$12,000
77	Loose Controls	Loose disconnects and startes can be found throughout the basement for mechanical loads.	No deficiencies were observed or reported.	Good	Replace the controls in conjunction with the mechanical equipment replacements.	25 - 40	2002	16	9	25	1	$6,000
78	Electric Heaters	Wall mounted electric heaters are used at building entrances for supplementary heat.	No deficiencies were observed or reported.	Good	Run electric heaters until failure and replace.	20 - 30	2002	16	4	20	1	$3,000
79	Elevators - B44 Safety Code	Periodically, TSSA dictates that remedial work be carried out on elevators.	Refer to the elevator report in Appendix D.	NA	A contingency for future mandatory work as required by the B44 Safety Code.	5 - 5	2017	1	4	5	1	$2,000
80	Elevators - Modernization	There is one elevator in the building which provides access to all floors.	Refer to the elevator report in Appendix D.	Good	Complete modernization of the existing elevators including B44 Code upgrades.	20 - 20	2000	18	5	20	1	$17,000
81	Elevators - Cab Finishes	Cab finishes include laminate panelling, stainless steel walls and door, suspendedd ceiling and ceramic floor.	Refer to the elevator report in Appendix D.	Good	An allowance to modernize cab finishes.	25 - 25	2000	18	7	25	1	$170,000

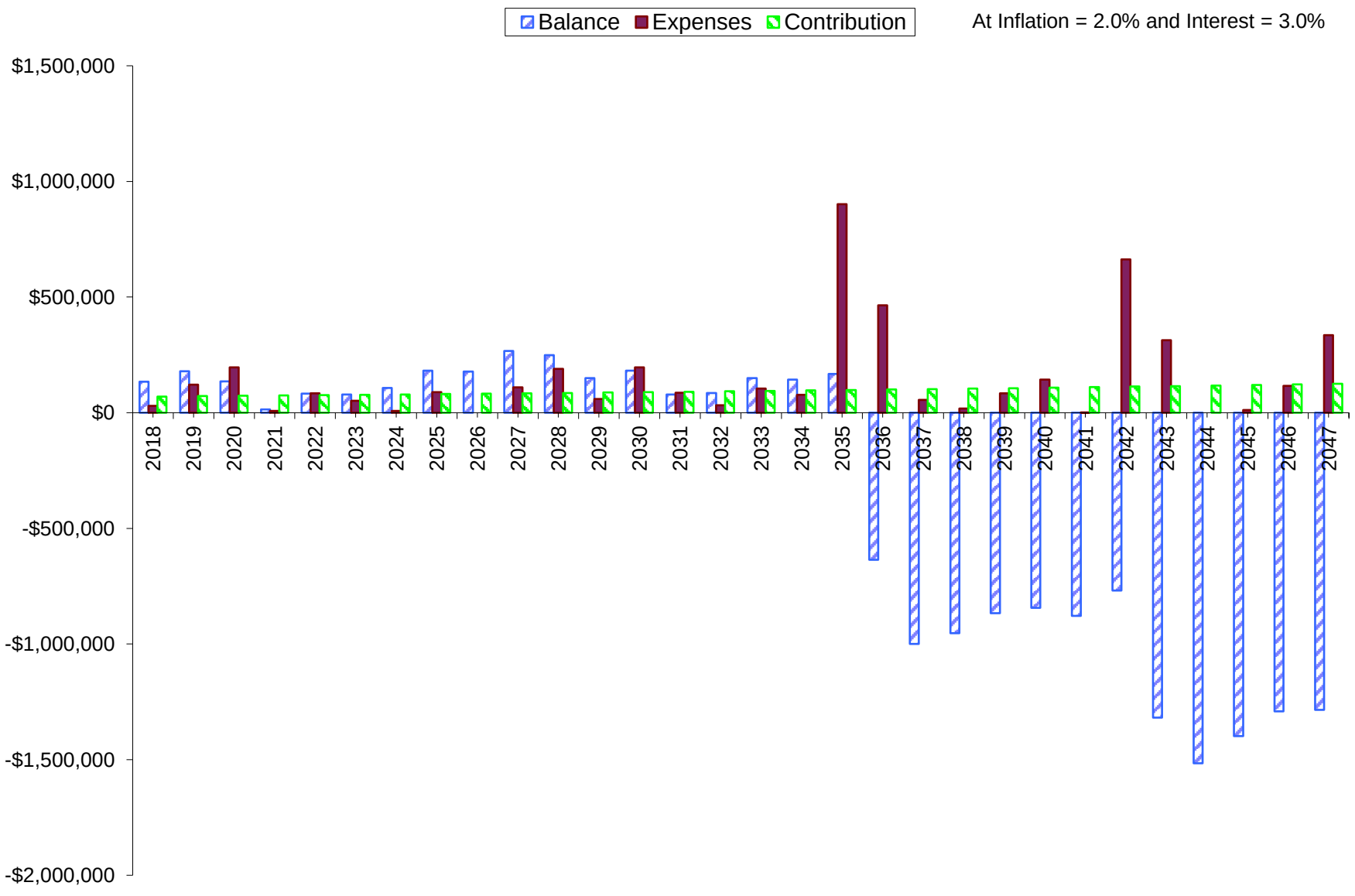
CCC 634
Final
October 30, 2017

Item No.	Component	Description	Observations	Condition	Recommendations	Typical Service Life	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
82	Reserve Fund Study	Condominiums are required to complete Reserve Fund Studies every 3 years - alternating between reviews with and without site visits		NA	Budget for a Study every three years. The cost is an average of the cost for the two differrent types of studies.	3	2014	4	0	3	1	$7,000

APPENDIX B

Current Contribution

CCC 634
30 Year Reserve Fund Cash Flow Chart
Current Plan - Final - October 30, 2017



Actual annual values for contribution, forecast expenditures, and balance can be found in the Cash Flow Table and Plan

CCC 634
30 Year Reserve Fund Cash Flow Table
Current Plan - Final - October 30, 2017

Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2018 Fiscal Year	134,000
Minimum Reserve Fund Balance	(1,516,227)

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2018	134,000	70,184			29,000	4,638	179,822
2019	179,822	71,588	2.0%		121,080	4,652	134,982
2020	134,982	73,019	2.0%		195,596	2,211	14,616
2021	14,616	74,480	2.0%		7,429	1,444	83,111
2022	83,111	75,969	2.0%		83,347	2,383	78,116
2023	78,116	77,489	2.0%		51,892	2,727	106,441
2024	106,441	79,039	2.0%		7,883	4,261	181,857
2025	181,857	80,619	2.0%		89,597	5,321	178,199
2026	178,199	82,232	2.0%			6,579	267,011
2027	267,011	83,876	2.0%		109,949	7,619	248,558
2028	248,558	85,554	2.0%		190,163	5,888	149,836
2029	149,836	87,265	2.0%		59,682	4,909	182,328
2030	182,328	89,010	2.0%		196,577	3,856	78,617
2031	78,617	90,790	2.0%		86,672	2,420	85,156
2032	85,156	92,606	2.0%		31,667	3,469	149,564
2033	149,564	94,458	2.0%		104,978	4,329	143,374
2034	143,374	96,348	2.0%		76,876	4,593	167,439
2035	167,439	98,275	2.0%		901,755		(636,042)
2036	(636,042)	100,240	2.0%		464,180		(999,982)
2037	(999,982)	102,245	2.0%		55,359		(953,096)
2038	(953,096)	104,290	2.0%		17,831		(866,638)
2039	(866,638)	106,376	2.0%		83,362		(843,624)
2040	(843,624)	108,503	2.0%		143,777		(878,898)
2041	(878,898)	110,673	2.0%		1		(768,226)
2042	(768,226)	112,887	2.0%		662,676		(1,318,015)
2043	(1,318,015)	115,144	2.0%		313,356		(1,516,227)
2044	(1,516,227)	117,447	2.0%				(1,398,780)
2045	(1,398,780)	119,796	2.0%		11,948		(1,290,932)
2046	(1,290,932)	122,192	2.0%		116,649		(1,285,388)
2047	(1,285,388)	124,636	2.0%		335,635		(1,496,387)

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

APPENDIX C

Proposed Contribution Scenario

APPENDIX C

Proposed Contribution Scenario

SCENARIO 1

30-Year Detailed Cash-Flow Plan

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 634
Scenario 1
Final - October 30, 2017

Starting Balance	134,000	179,822	149,229	61,205	184,856	237,746	326,790	465,865	566,227	726,032	781,890	760,920	874,730	865,048	960,711
Total Expenses inflated at 2% annually	29,000	121,080	195,596	7,429	83,347	51,892	7,883	52,840	0	109,949	190,163	59,682	187,700	86,672	31,667
Interest at 3% annually	4,638	4,863	3,110	3,636	6,245	8,343	11,714	15,253	19,097	22,285	22,800	24,172	25,711	26,982	30,723
Annual Reserve Contribution	70,184	85,624	104,462	127,443	129,992	132,592	135,244	137,949	140,708	143,522	146,392	149,320	152,307	155,353	158,460
Other Contribution	0	0	0	0											
Ending Balance	179,822	149,229	61,205	184,856	237,746	326,790	465,865	566,227	726,032	781,890	760,920	874,730	865,048	960,711	1,118,227

Item	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
1	Foundation -	10,000														
4	Roof -flat											175,535				
5	Roof - sloped														46,570	
6	Balconies		31,620										38,545			
7	Balcony - Railings													31,706		
8	Terraces								41,353							
9	Terraces - Railings													16,487		
10	Metal Flashing															
11	Metal Siding															
12	Vinyl Siding													35,511		
13	Soffits - Aluminum														6,468	
14	Rainware														29,753	
15	EIFS - replace															
16	EIFS - repair		15,000	169,585												
19	Skylights															
20	Windows - complete replacement															
21	Windows - operator replacement			1	1											
22	Windows - glass replacement													35,511		
23	Sliding Doors															
24	Entrance Doors			5,202												
25	Overhead Doors						8,833									
28	Floors - wood			6,242										7,609		
29	Floors- rubber													43,120		
30	Walls - Paint			14,566										17,755		
31	Ceilings - Paint					3,247										3,958
42	Front Entrance Pillars					11,907										14,514
44	Make Up Air Unit (MUA)										60,950					
45	Exhaust Fans						17,665									
46	Garage Exhaust Fans		9,180										11,190			
47	Hazardous Gas Detection (CO)		8,160										9,947			
48	Garage and Sprinkler Room Unit		38,760													
50	Domestic Water Piping															
51	Sanitary Drainage piping															
52	Natural Gas Piping															
53	Sprinkler System															
54	Fire hose Cabinets	4,000										4,876				
55	Standpipe															
56	Sump Pumps / Pits						14,353									

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 634
Scenario 1
Final - October 30, 2017

\\mh.local\data\offices\ottawa\proj\2170065\09 Final Report\Copy of CCC 634 Final Report R1.xls

Starting Balance	1,118,227	1,209,275	1,334,858	630,304	352,165	484,118	661,671	781,660	897,835	1,116,985	673,937	576,079	797,342	1,017,194	1,141,533
Total Expenses inflated at 2% annually	104,978	76,876	901,755	464,180	55,359	17,831	83,362	94,306	1	662,676	313,356	0	11,948	116,649	335,635
Interest at 3% annually	34,397	37,598	29,042	14,519	12,359	16,933	21,330	24,820	29,776	26,467	18,473	20,297	26,816	31,902	32,410
Annual Reserve Contribution	161,629	164,862	168,159	171,522	174,953	178,452	182,021	185,661	189,374	193,162	197,025	200,966	204,985	209,085	213,266
Other Contribution															
Ending Balance	1,209,275	1,334,858	630,304	352,165	484,118	661,671	781,660	897,835	1,116,985	673,937	576,079	797,342	1,017,194	1,141,533	1,051,575
Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
1 Foundation -															
4 Roof -flat											236,247				
5 Roof - sloped														62,677	
6 Balconies							46,986								
7 Balcony - Railings															
8 Terraces								55,655							
9 Terraces - Railings															
10 Metal Flashing					40,791										
11 Metal Siding	20,188														
12 Vinyl Siding															
13 Soffits - Aluminum														8,705	
14 Rainware														40,044	
15 EIFS - replace			456,479												
16 EIFS - repair															
19 Skylights	36,338														
20 Windows - complete replacement			148,426	151,394											
21 Windows - operator replacement								1	1						
22 Windows - glass replacement															
23 Sliding Doors			296,851	302,788											
24 Entrance Doors								7,730							
25 Overhead Doors											13,125				
28 Floors - wood								9,276							
29 Floors- rubber															
30 Walls - Paint								21,644							
31 Ceilings - Paint										4,825					
42 Front Entrance Pillars										17,693					
44 Make Up Air Unit (MUA)															
45 Exhaust Fans	21,534										26,250				
46 Garage Exhaust Fans							13,641								
47 Hazardous Gas Detection (CO)							12,125								
48 Garage and Sprinkler Room Unit		52,166													
50 Domestic Water Piping															110,102
51 Sanitary Drainage piping															106,551
52 Natural Gas Piping															
53 Sprinkler System										250,916					
54 Fire hose Cabinets						5,944									
55 Standpipe															26,638
56 Sump Pumps / Pits	17,496										21,328				

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 634
Scenario 1
Final - October 30, 2017

Starting Balance	134,000	179,822	149,229	61,205	184,856	237,746	326,790	465,865	566,227	726,032	781,890	760,920	874,730	865,048	960,711
Total Expenses inflated at 2% annually	29,000	121,080	195,596	7,429	83,347	51,892	7,883	52,840	0	109,949	190,163	59,682	187,700	86,672	31,667
Interest at 3% annually	4,638	4,863	3,110	3,636	6,245	8,343	11,714	15,253	19,097	22,285	22,800	24,172	25,711	26,982	30,723
Annual Reserve Contribution	70,184	85,624	104,462	127,443	129,992	132,592	135,244	137,949	140,708	143,522	146,392	149,320	152,307	155,353	158,460
Other Contribution	0	0	0	0											
Ending Balance	179,822	149,229	61,205	184,856	237,746	326,790	465,865	566,227	726,032	781,890	760,920	874,730	865,048	960,711	1,118,227
Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
60 Main Switchboard															
61 Unit Transformers															
62 Unit Meter Centres															
63 Common 600V Splitter															
64 Common Transformer															
65 Common 120V Panels															
66 Corridor/ Lobby Lighting										14,341					
67 Stairwell Lighting										7,171					
68 Basement Lighting					24,896										
69 Exterior Lighting					6,495										
70 Emergency Lighting	8,000										9,752				
71 Exit Signs					4,330										
72 Fire Alarm Control Panel					18,401										
73 Fire Alarm Devices															
74 Door Entry System														3,881	
75 Door Controls		6,120													
76 CCTV System		12,240													
77 Loose Controls										7,171					
78 Electric Heaters					3,247										
79 Elevators - B44 Safety Code					10,824					11,951					13,195
80 Elevators - Modernization						11,041									
81 Elevators - Cab Finishes								11,487							
82 Reserve Fund Study	7,000			7,428			7,883			8,366					

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 634
Scenario 1
Final - October 30, 2017

\\mh.local\data\offices\ottawa\proj\2170065\09 Final Report\Copy of CCC 634 Final Report R1.xls

Starting Balance	1,118,227	1,209,275	1,334,858	630,304	352,165	484,118	661,671	781,660	897,835	1,116,985	673,937	576,079	797,342	1,017,194	1,141,533
Total Expenses inflated at 2% annually	104,978	76,876	901,755	464,180	55,359	17,831	83,362	94,306	1	662,676	313,356	0	11,948	116,649	335,635
Interest at 3% annually	34,397	37,598	29,042	14,519	12,359	16,933	21,330	24,820	29,776	26,467	18,473	20,297	26,816	31,902	32,410
Annual Reserve Contribution	161,629	164,862	168,159	171,522	174,953	178,452	182,021	185,661	189,374	193,162	197,025	200,966	204,985	209,085	213,266
Other Contribution															
Ending Balance	1,209,275	1,334,858	630,304	352,165	484,118	661,671	781,660	897,835	1,116,985	673,937	576,079	797,342	1,017,194	1,141,533	1,051,575
Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
60 Main Switchboard															74,585
61 Unit Transformers										77,205					
62 Unit Meter Centres										77,205					
63 Common 600V Splitter										19,301					
64 Common Transformer										12,867					
65 Common 120V Panels										54,687					
66 Corridor/ Lobby Lighting															
67 Stairwell Lighting															
68 Basement Lighting										36,994					
69 Exterior Lighting										9,651					
70 Emergency Lighting						11,888									
71 Exit Signs										6,434					
72 Fire Alarm Control Panel										27,343					
73 Fire Alarm Devices										35,386					
74 Door Entry System														5,223	
75 Door Controls		8,237													
76 CCTV System		16,473													
77 Loose Controls															
78 Electric Heaters										4,825					
79 Elevators - B44 Safety Code					14,568					16,084					17,758
80 Elevators - Modernization											16,406				
81 Elevators - Cab Finishes															
82 Reserve Fund Study	9,421		9,998		10,610					11,259			11,948		

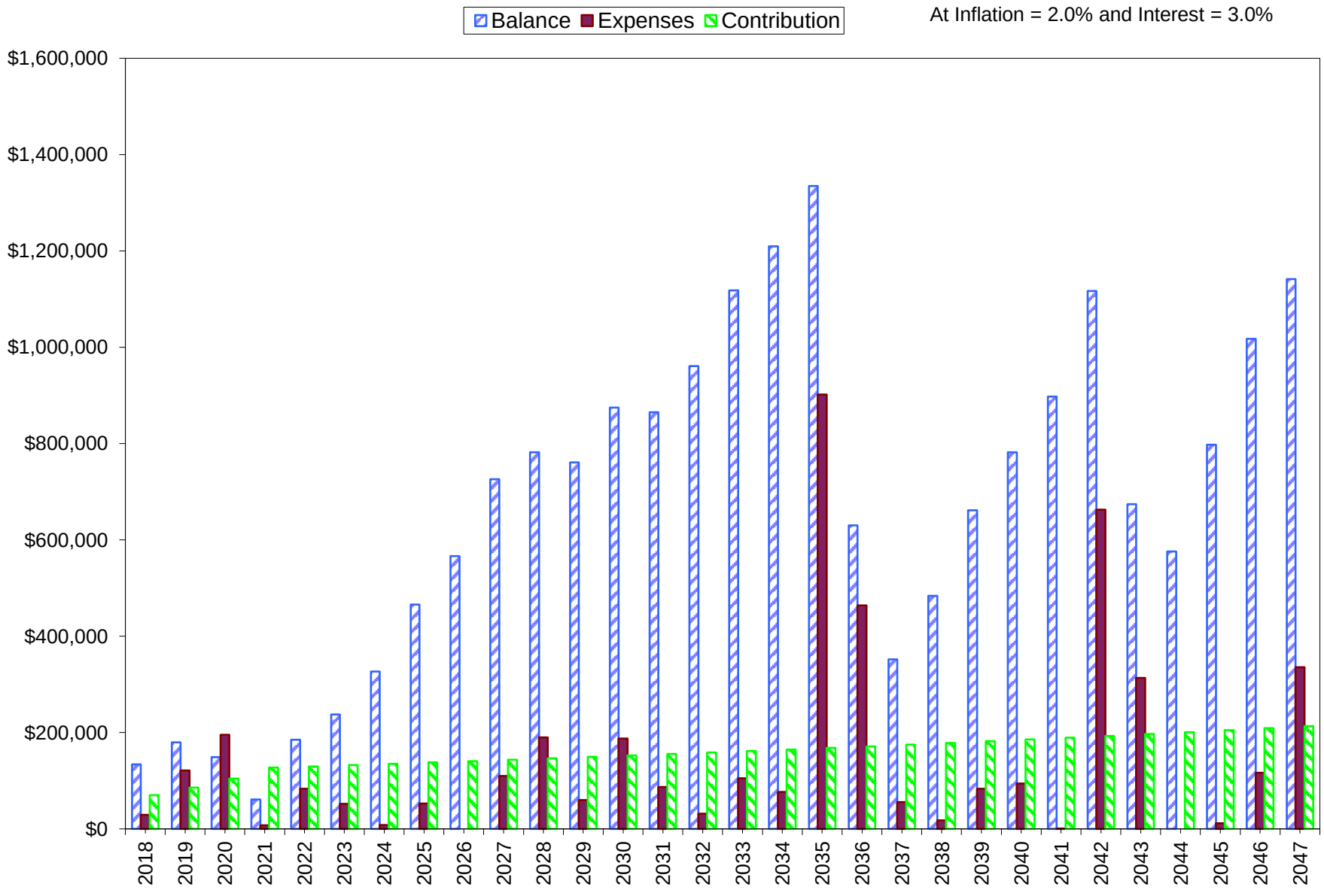
CCC 634
30 Year Reserve Fund Cash Flow Table
Scenario 1 - Final - October 30, 2017

Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2018 Fiscal Year	134,000
Minimum Reserve Fund Balance	61,205

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2018	134,000	70,184			29,000	4,638	179,822
2019	179,822	85,624	22.0%		121,080	4,863	149,229
2020	149,229	104,462	22.0%		195,596	3,110	61,205
2021	61,205	127,443	22.0%		7,429	3,636	184,856
2022	184,856	129,992	2.0%		83,347	6,245	237,746
2023	237,746	132,592	2.0%		51,892	8,343	326,790
2024	326,790	135,244	2.0%		7,883	11,714	465,865
2025	465,865	137,949	2.0%		52,840	15,253	566,227
2026	566,227	140,708	2.0%			19,097	726,032
2027	726,032	143,522	2.0%		109,949	22,285	781,890
2028	781,890	146,392	2.0%		190,163	22,800	760,920
2029	760,920	149,320	2.0%		59,682	24,172	874,730
2030	874,730	152,307	2.0%		187,700	25,711	865,048
2031	865,048	155,353	2.0%		86,672	26,982	960,711
2032	960,711	158,460	2.0%		31,667	30,723	1,118,227
2033	1,118,227	161,629	2.0%		104,978	34,397	1,209,275
2034	1,209,275	164,862	2.0%		76,876	37,598	1,334,858
2035	1,334,858	168,159	2.0%		901,755	29,042	630,304
2036	630,304	171,522	2.0%		464,180	14,519	352,165
2037	352,165	174,953	2.0%		55,359	12,359	484,118
2038	484,118	178,452	2.0%		17,831	16,933	661,671
2039	661,671	182,021	2.0%		83,362	21,330	781,660
2040	781,660	185,661	2.0%		94,306	24,820	897,835
2041	897,835	189,374	2.0%		1	29,776	1,116,985
2042	1,116,985	193,162	2.0%		662,676	26,467	673,937
2043	673,937	197,025	2.0%		313,356	18,473	576,079
2044	576,079	200,966	2.0%			20,297	797,342
2045	797,342	204,985	2.0%		11,948	26,816	1,017,194
2046	1,017,194	209,085	2.0%		116,649	31,902	1,141,533
2047	1,141,533	213,266	2.0%		335,635	32,410	1,051,575

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

CCC 634
30 Year Reserve Fund Cash Flow Chart
Scenario 1 - Final - October 30, 2017



Actual annual values for contribution, forecast expenditures, and balance can be found in the Cash Flow Table and Plan

CCC 634
Contribution Table
Scenario 1 - Final - October 30, 2017

Year	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Total Contribution
2018	70,184			70,184
2019	85,624	22.0%		85,624
2020	104,462	22.0%		104,462
2021	127,443	22.0%		127,443
2022	129,992	2.0%		129,992
2023	132,592	2.0%		132,592
2024	135,244	2.0%		135,244
2025	137,949	2.0%		137,949
2026	140,708	2.0%		140,708
2027	143,522	2.0%		143,522
2028	146,392	2.0%		146,392
2029	149,320	2.0%		149,320
2030	152,307	2.0%		152,307
2031	155,353	2.0%		155,353
2032	158,460	2.0%		158,460
2033	161,629	2.0%		161,629
2034	164,862	2.0%		164,862
2035	168,159	2.0%		168,159
2036	171,522	2.0%		171,522
2037	174,953	2.0%		174,953
2038	178,452	2.0%		178,452
2039	182,021	2.0%		182,021
2040	185,661	2.0%		185,661
2041	189,374	2.0%		189,374
2042	193,162	2.0%		193,162
2043	197,025	2.0%		197,025
2044	200,966	2.0%		200,966
2045	204,985	2.0%		204,985
2046	209,085	2.0%		209,085
2047	213,266	2.0%		213,266

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

APPENDIX D

Elevator Report

Rooney, Irving & Assoc. Ltd.
613 726 2049
rmcgregor@rooneyirving.ca

ELEVATOR RESERVE FUND STUDY

95 Beech Street, Ottawa, Ontario

Date of Report
Apr-17

1.0 PURPOSE

On April 24, 2017, a study of the elevator equipment located at 95 Beech Street, Ottawa, Ontario was undertaken. This was done to determine the condition of the elevator equipment, evaluate the elevator service contractor's quality of maintenance, determine the capital costs likely to be encountered by the Owner and to itemize any obvious maintenance deficiencies.

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 confirm that the elevator equipment is generally of good quality, meets code and is suitable for intended use.

Subject to the resolution of concerns raised in Section 5 of this report, 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 terminate 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.

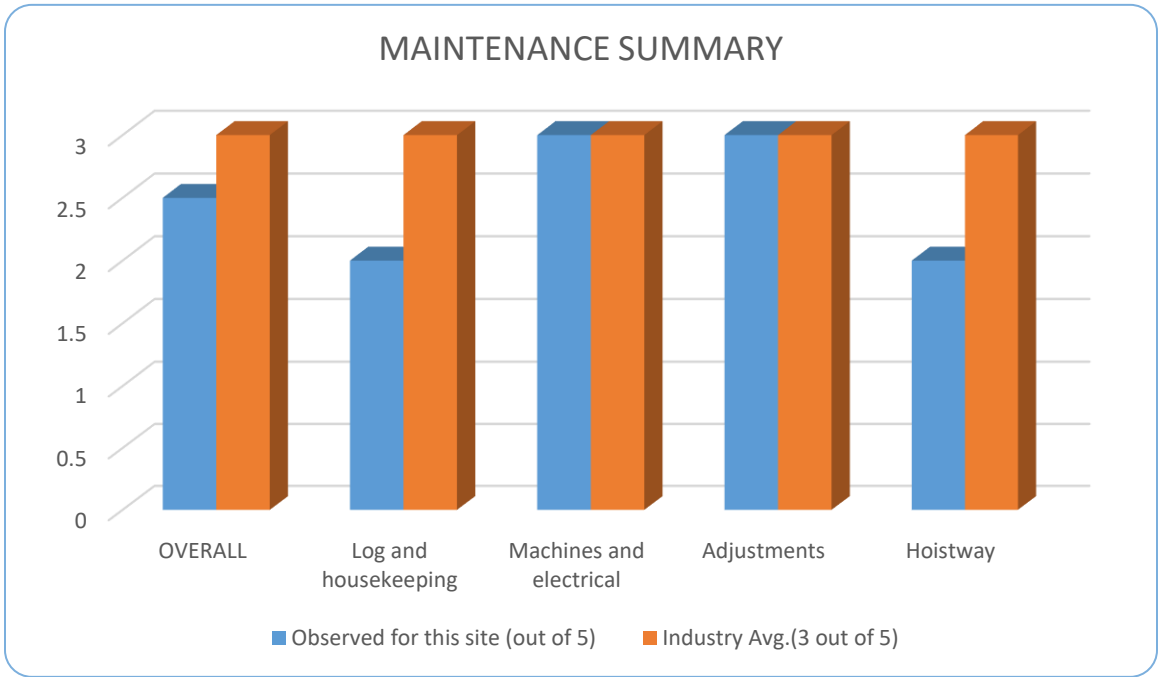
If the elevator equipment is properly maintained under the terms of full maintenance contract, it should continue to operate in a safe and acceptable manner for another five (5) to seven (7) years. At such time the existing controller, oil tank, valve, motor and pump may require replacement. A Modernization typically also involves the replacement of all operating buttons and fixtures as well as replacement of all wiring. This upgrading cost for the existing elevators include all associated work to ensure the elevators fully comply with the latest edition of the CSA Safety Code for Elevator. An elevator modernization project is predicted to cost $150,000.

The interior of the car cab remains in good condition now with only minor scratches and other blemishes noted. Normally, cab interiors are renewed periodically for aesthetic reasons. We recommend allowing funds for cab work in approximately five to seven years. A full cab modernization could cost $15,000 if done with similar materials.

Periodically the Technical Standards and Safety Authority (TSSA) dictates remedial work that must be carried out on various types of elevators. As these rulings become enforced, the cost to ensure the elevator complies with the Rulings is the responsibility of the Owner. We recommend that a contingency fund of $1,500 every five years should be established to cover the cost of any future mandatory work for this site.

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 complete the deficiencies.

Below is a visual synopsis of the overall quality of maintenance based on our opinion and observations.



3.0 DESCRIPTION OF VERTICAL TRANSPORTATION SYSTEM

The vertical transportation system consists of a single twin-post roped hydraulic passenger elevator.

3.1 Technical Data

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

Category	Description
Building Designation	1
Installation Number	76394
Class	Passenger
Capacity	2,100 lbs.
Speed	150 fpm
Floors Served	B, G, 1, 2, 3 front opening
Car Door Opening	36" wide x 84" high one-speed, side opening
Door Protection	Multibeam Infra-red detector
Door Operator	Otis
Machine	Otis Submerged, 40 HP
Motor	US Motors Submersible Hydraulic, Frame 160ZBO, Type IMH, 3460 RPM
Pump	Allweiler Type SUB 210-40
Valve	Maxton
Electrical Controller	Otis 211, 40 HP, 600 volts / 3 phase / 60 hz
Drive	Twin post Roped Hydraulic
Manufacturer	Otis Elevator
Installation Date	Circa 2000
Maintenance Contractor	Otis Elevator

3.2 Existing Conditions

The design of these types of hydraulic elevators are referred to as “twin-post hole-less roped hydraulic”. This means no elevator hydraulic cylinders are located beneath the ground. They are a very effective design for this type of rise because all areas of the cylinders can be inspected and are not directly exposed to below ground elements.

The elevator system is not equipped with emergency recall or in-car emergency service operation; however, it is equipped with a battery lowering system. In the event of a power failure in the building, the elevator is designed to automatically lower in a predetermined manner and the doors to open to allow passengers to egress.

The electrical controller that governs the movement of the elevator is micro-processor based. The main advantage of microprocessor based controllers is their ability to more efficiently dispatch grouped elevators. A disadvantage is that the system can be more difficult for contractors, other than the original manufacturer, to service. The controller, door operator and other electrical equipment can be considered proprietary in nature.

The existing car cab finishes consist of laminate panelling and stainless steel walls, brushed stainless-car front including door, a suspended ceiling and hard ceramic flooring. The finishes remain in good condition at this time with only minor blemishes noted. The cab and fixtures meet all the requirements of CSA B44 Code, Appendix E - Elevator Requirements for Persons with Physical Disabilities.

3.3 Compliance to A17.1/CSA-B44 Safety Code for Elevators

The elevator was installed in compliance with the then-existing CAN/CSA-B44- Safety Code for Elevators. Since the date of installation, there have been numerous revisions to the Code. Listed below are the readily-identifiable variances relating to the current code for newly installed and modernized elevators. The Code is not retroactive, unless mandated by Director's Ruling, therefore compliance with these items is not mandatory. However, they are listed here as an option to improve the safety of the existing elevator.

1. Provide GFIC 110 V receptacles in the elevator machine room.
2. Provide machine room cooling to limit temperature to 32°C.
3. Properly complete required tasks at annual intervals. Log all supplementary maintenance work.
4. Log all malfunction calls.
5. Properly complete required tasks at 60 month intervals.
6. Provide code issue data plate at the controller.
7. Provide temperature and humidity range data plates at the controller.
8. Make operative the hoistway access.
9. Provide visual signal to indicate activation of car alarm.
10. Provide cab communication to code.
11. Provide in car fire service to code.
12. Provide smooth and quiet car door operation.
13. Provide 110 V GFIC receptacle at car top.
14. Provide door restrictors to code.
15. Do not store parts or supplies on car top.
16. Provide code-compliant railings on car top including 5-inch kick plate.
17. Provide required door operator data tag information.
18. Provide guards on hoistway door sheaves.
19. Provide increased lighting in the pit.
20. Clearly label the manual lowering valve.

4.0 MEASURED PERFORMANCE

The parameters defined below were measured. Those requiring adjustment are highlighted in red and are reflected in the maintenance deficiency section of this report.

TABLE 1 – ELEVATOR PERFORMANCE

Parameter	Required	Elev. 1
Car Speed UP	*150 fpm ±10%*	158
Car Speed DOWN	*150 fpm ±15%*	113
Flight Time UP	*≤ 15.3 sec*	15.9
Flight Time DOWN	*≤ 15.3 sec*	15.8
Aver. Accel UP	*0.04 g*	0.03
Max Jerk	*≤ 15 f/s_3*	15.8
Door Close Force	*≤ 30 lbs*	25

Car Speed: *The normal maximum running speed of the elevator, measured in feet per minute.*

Flight Time: *The time elapsed for an elevator to serve two consecutive floors, measured from the time the elevator doors begin to close until they are 3/4 open at the next floor.*

Average Acceleration: *The average acceleration experienced in the car when approaching top speed, measured as gravity - g. The acceleration measurement is compared to a suggested value which is dependent on the type of elevator system - hydraulic, geared or gearless.*

Maximum Jerk: *The maximum change in acceleration experienced in the car over the ride including start, acceleration, deceleration and stop. Jerk is measured in feet per second (cubed). The Jerk measurement is compared to a suggested value which is dependent on the type of elevator system - hydraulic, geared or gearless.*

Door Stall Force: *The force exerted by the elevator car door, during a door close cycle but after the door has been manually brought to a stop. The force is measured while the door is approximately 1/3 closed. The measured force is compared to the maximum force allowed by The CSA Safety Code for Elevators – 30 lbs force.*

5.0 MAINTENANCE

The elevator equipment is maintained by Otis Elevator, presumably under the terms of their full parts and labour contract. As all major components of the elevator system are covered under the terms of a full maintenance program, no major capital expenditures should arise to repair these components. Exceptions to full maintenance coverage detailed in the contract, such as vandalism, miss-use etc. should be noted. We caution that most elevator contractor's maintenance contracts employ an "evergreen" clause that will result in the Owner being contractually obligated for subsequent five year terms, should cancellation notice be given less than 90 days in advance of the fifth anniversary of the contract term.

In general, the work of the contractor as evidenced by the condition and operation of the equipment can be termed as requiring improvement.

5.1 Maintenance Logs

The machine room safety logs are currently up-to-date except for the issues noted below. These logs are required in the Province of Ontario to document safety work completed on elevator installations and the applicable legislation puts the onus of completion of the logs on the property owner.

The status of the logs are as follows:

Task	Record
Routine Visits	2016 visits: Feb., May, Aug., Nov. 2017 visits: Jan. Contractor's plan is for quarterly visits
Callback and repair log	Log indicates a reasonable level of calls, if accurate.
Annual Work (CAT 1)	Performed May 2016 Some tasks overdue

5.2 Maintenance Deficiencies

Listed below are deficiencies that should be corrected by the maintenance contractor under the terms of a full-service maintenance contract. We recommend 60 days as the timeframe for corrective action. If the contractor had any technical questions or concerns on any item, they should be directed to contractor@rooneyirving.ca

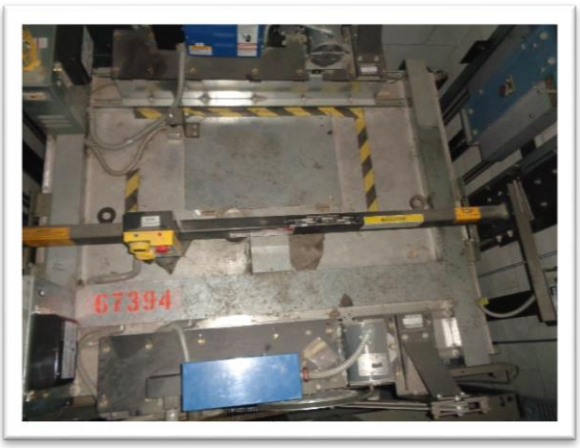
Contractor's Attestation as Complete

Initial / Date

Deficiencies:

1. Provide up-to-date wiring diagram, suitably protected.
2. Perform annual maintenance of battery lowering device and verify in log books.
3. Do not store parts or supplies on car top.
4. Clean the dust and dirt from the controller.
5. Clean the machine room.
6. Clean the pit.
7. Adjust door gibs or rollers or other reason for door scraping on sill.

APPENDIX A – IMAGES

Image 1 **Battery Lowering device**	
Image 2 **Pit**	
Image 3 **Car top**	

APPENDIX B – PROJECTED CAPITAL COST TABLE

Year / Predicted Work	0-5	6-10	11-15	16-20	21-25
Future mandatory work required by B44 Safety Code	$1,500	$1,500	1,500	1,500	1,500
Replace cab interior finishes (if not implementing full modernization)	$15,000				
Complete modernization of existing elevators including B44 Code upgrades, cab interiors and hydraulic equipment		$150,000			

Notes of Costs:
HST not included;
Based on present-day dollars;
Work not the responsibility of the elevator trade, such as air conditioning, not included.

- End of report -

APPENDIX E

Near Term Capital Forecast

CCC 634 RFS Summary 2018-2023

2018

1	Foundation -	Budget to investigate the dampness along the south wall and in the NE corner	10,000	
54	Fire hose Cabinets	Replace the cabinets at end of their service life. Continue with regular inspections and testing.	4,000	
70	Emergency Lighting	Replace the emergency lighting in bulk at end of typical service life. Replace the associated battery units at failure out of the maintenance budget.	8,000	
82	Reserve Fund Study	study	7,000	
				$ 29,000

2019

6	Balconies	Replace the fiberglass decks on the balconies. Budget to replace the aluminum columns. Replace the dented aluminum post.	32,000	
16	EIFS - repair	Study the EIFS	15,000	
46	Garage Exhaust Fans	Replace at end of service life.	10,000	
47	Hazardous Gas Detection (CO)	Replace at end of service life. Continue with regular calibration and inspections.	9,000	
48	Garage and Sprinkler Room Unit Heaters	Replace at failure or end of service life. Regular maintenance will prolong the life of the equipment.	39,000	
75	Door Controls	Replace the door controls at end of typical service life or run until failure.	7,000	
76	CCTV System	Replace the security system at end of typical service life to prevent the use of obsolete technology and ensure system quality.	13,000	
				$ 125,000

2020

16	EIFS - repair	Budget for renewing the surface of the EIFS to extend its life. Note that it is possible for the previous year's study to conclude that EIFS can't be repaired, but rather must be replaced	160,000	
21	Windows - operator replacement	Remove aluminum operable window from aluminum fixed frame and replace with a fibreglass framed operable window	52,000	
22	Windows - glass replacement	Replace the glass in the fixed windows	30,000	
24	Entrance Doors	Budget to replace the Entrance Doors at the end of their service life.	6,000	
25	Overhead Doors	Budget to replace the overhead door to the parking garage	9,000	
				$ 257,000

2021

21	Windows - operator replacement	Remove aluminum operable window from aluminum fixed frame and replace with a fibreglass framed operable window	53,000	
82	Reserve Fund Study	study	8,000	
				$ 61,000

2022

28	Floors - wood	Budget for the regular refinishing of these floors.	7,000	
30	Walls - Paint	Budget for the regular painting of the walls	16,000	
31	Ceilings - Paint	Budget for the regular painting of the ceilings including the exposed piping	4,000	
42	Front Entrance Pillars	Re-parge the pillars. Budget includes an allowance to rebuild the substructure.	12,000	
68	Basement Lighting	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Consider early replacement with LED fixtures to reduce costs.	25,000	
69	Exterior Lighting	Replace the luminaires in bulk at end of typical service life with modern, energy efficient equivalent. Consider early replacement with LED fixtures to reduce costs.	7,000	
71	Exit Signs	Replace the luminaires in bulk at end of typical service life. A bulk replacement will require an update to the new running figure style of exit sign.	5,000	
72	Fire Alarm Control Panel	Replace the fire alarm control panel at end of typical service life.	19,000	
78	Electric Heaters	Run electric heaters until failure and replace.	4,000	
79	Elevators - B44 Safety Code	A contingency for future mandatory work as required by the B44 Safety Code.	11,000	
				$ 110,000

2023

45	Exhaust Fans	Replace at failure or end of service life. Regular maintenance will prolong the life of the equipment.	18,000	
				$ 18,000

FORM 15
NOTICE OF FUTURE FUNDING OF THE RESERVE FUND
(UNDER SUBSECTION 94 (9) OF THE *CONDOMINIUM ACT, 1998*)

TO: All owners in Carleton Condominium Corporation No. 634

The board has received and reviewed a Comprehensive Reserve Fund Study dated October 30, 2017, prepared by Morrison Hershfield Limited. The Study is in accordance with the regulations made under the *Condominium Act, 1998*. The Study includes a proposed plan for the future funding of the reserve fund. The board has determined this plan will ensure that, the reserve fund will be adequate for the major repair and replacement of the common elements and assets of the corporation. The plan includes the funding for the exterior renewal project.

This notice contains:

1. A summary of the reserve fund study.
2. A summary of the proposed funding plan.
3. A statement indicating the areas, if any, in which the proposed funding plan differs from the reserve fund study.

At the present time:

In total, the average contribution to the reserve fund is;

- For the 2016-2017 fiscal year: $194.96 per unit per month

In the future:

Based on the proposed funding plan, the increase in total contribution per unit per month will be:

- For the 2018-2019 fiscal year: $42.89 more than the 2017-2018 fiscal year
- For the 2019-2020 fiscal year: $52.33 more than the 2018-2019 fiscal year
- For the 2020-2021 fiscal year: $63.84 more than the 2019-2020 fiscal year

The proposed funding plan will be implemented beginning on March 1, 2018
(set out the date of a day that *is more than 30 days after the day on which this notice is sent to the owners)*
Dated this 5 day of December, 2017

Carleton Condominium Corporation No. 634

.....
(signature)

Rick van den Berg
(print name)

.....
(signature)

TRACY TURNBULL
(print name)

(Affix corporate seal or add a statement that the persons signing have the authority to bind the corporation.)

SUMMARY OF RESERVE FUND STUDY

The following is a summary of the Comprehensive Reserve Fund Study, dated October 30, 2017, Carleton Condominium Corporation No. 634(known as the “Reserve Fund Study”).

Subsection 94 (1) of the *Condominium Act, 1998*, requires the corporation to conduct periodic studies to determine whether the amount of money in the reserve fund and the amount of contributions collected by the corporation are adequate to provide for the expected costs of major repair and replacement of the common elements and assets of the corporation. As a result, the corporation has obtained the Reserve Fund Study.

The estimated expenditures from the reserve fund for the next thirty (30) years are set out in the CASH FLOW TABLE. In this summary, the term “annual contribution” means the total amount to be contributed each year to the reserve fund, exclusive of interest earned on the reserve fund. The recommended annual total reserve fund contribution for the 2017-2018 fiscal year is $70,184 based on the estimated expenditures and the following:

Opening Balance of the Reserve Fund:	$134,000
Minimum Reserve Fund Balance during the projected period	$61,205
Assumed Annual Inflation Rate for Reserve Fund Expenditures:	2.0%
Assumed Annual Interest Rate for interest earned on the Reserve Fund:	3.0%

The Reserve Fund Study can be examined by contacting Capital Integral Property Management to make an appointment. As per subsection 55 (3) of the *Condominium Act, 1998,* the resident must provide reasonable notice in advance to arrange an appointment.

CCC 634
30 Year Reserve Fund Cash Flow Table
Scenario 1 - Final - October 30, 2017

Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2018 Fiscal Year	134,000
Minimum Reserve Fund Balance	61,205

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2018	134,000	70,184			29,000	4,638	179,822
2019	179,822	85,624	22.0%		121,080	4,863	149,229
2020	149,229	104,462	22.0%		195,596	3,110	61,205
2021	61,205	127,443	22.0%		7,429	3,636	184,856
2022	184,856	129,992	2.0%		83,347	6,245	237,746
2023	237,746	132,592	2.0%		51,892	8,343	326,790
2024	326,790	135,244	2.0%		7,883	11,714	465,865
2025	465,865	137,949	2.0%		52,840	15,253	566,227
2026	566,227	140,708	2.0%			19,097	726,032
2027	726,032	143,522	2.0%		109,949	22,285	781,890
2028	781,890	146,392	2.0%		190,163	22,800	760,920
2029	760,920	149,320	2.0%		59,682	24,172	874,730
2030	874,730	152,307	2.0%		187,700	25,711	865,048
2031	865,048	155,353	2.0%		86,672	26,982	960,711
2032	960,711	158,460	2.0%		31,667	30,723	1,118,227
2033	1,118,227	161,629	2.0%		104,978	34,397	1,209,275
2034	1,209,275	164,862	2.0%		76,876	37,598	1,334,858
2035	1,334,858	168,159	2.0%		901,755	29,042	630,304
2036	630,304	171,522	2.0%		464,180	14,519	352,165
2037	352,165	174,953	2.0%		55,359	12,359	484,118
2038	484,118	178,452	2.0%		17,831	16,933	661,671
2039	661,671	182,021	2.0%		83,362	21,330	781,660
2040	781,660	185,661	2.0%		94,306	24,820	897,835
2041	897,835	189,374	2.0%		1	29,776	1,116,985
2042	1,116,985	193,162	2.0%		662,676	26,467	673,937
2043	673,937	197,025	2.0%		313,356	18,473	576,079
2044	576,079	200,966	2.0%			20,297	797,342
2045	797,342	204,985	2.0%		11,948	26,816	1,017,194
2046	1,017,194	209,085	2.0%		116,649	31,902	1,141,533
2047	1,141,533	213,266	2.0%		335,635	32,410	1,051,575

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

SUMMARY OF PROPOSED PLAN

FOR FUTURE FUNDING OF THE RESERVE FUND

The following is a summary of the board's proposed plan for the future funding of the reserve fund.

The board of Carleton Condominium Corporation No. 634 has reviewed the Comprehensive Reserve Fund Study, dated October 30, 2017, prepared by Morrison Hershfield Limited for the corporation (known as the "Reserve Fund Study"). The Study has proposed a plan for the future funding of the reserve fund. The board has determined the plan will ensure that, in accordance with the regulations made under the *Condominium Act, 1998*, the reserve fund will be adequate for the major repair and replacement of the common elements and assets of the corporation.

The board has adopted the funding recommendations of the Reserve Fund Study and will implement them as set out in the Contribution Table.

The total annual Reserve Fund contribution recommended under the proposed funding plan for the current fiscal year (2017 - 2018 Fiscal Year) is $70,184 -- which is the same amount that has already been budgeted.

The Proposed Plan for Future Funding of the Reserve Fund can be examined by contacting Capital Integral Property Management to make an appointment. As per subsection 55 (3) of the *Condominium Act, 1998,* the resident must provide reasonable notice in advance to arrange an appointment.

CCC 634
Contribution Table
Scenario 1 - Final - October 30, 2017

Year	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Total Contribution
2018	70,184			70,184
2019	85,624	22.0%		85,624
2020	104,462	22.0%		104,462
2021	127,443	22.0%		127,443
2022	129,992	2.0%		129,992
2023	132,592	2.0%		132,592
2024	135,244	2.0%		135,244
2025	137,949	2.0%		137,949
2026	140,708	2.0%		140,708
2027	143,522	2.0%		143,522
2028	146,392	2.0%		146,392
2029	149,320	2.0%		149,320
2030	152,307	2.0%		152,307
2031	155,353	2.0%		155,353
2032	158,460	2.0%		158,460
2033	161,629	2.0%		161,629
2034	164,862	2.0%		164,862
2035	168,159	2.0%		168,159
2036	171,522	2.0%		171,522
2037	174,953	2.0%		174,953
2038	178,452	2.0%		178,452
2039	182,021	2.0%		182,021
2040	185,661	2.0%		185,661
2041	189,374	2.0%		189,374
2042	193,162	2.0%		193,162
2043	197,025	2.0%		197,025
2044	200,966	2.0%		200,966
2045	204,985	2.0%		204,985
2046	209,085	2.0%		209,085
2047	213,266	2.0%		213,266

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

DIFFERENCES BETWEEN THE RESERVE FUND STUDY AND THE PROPOSED PLAN FOR FUTURE FUNDING OF THE RESERVE FUND

There are no differences between the Plan for Future Funding of the Reserve Fund proposed by the board and the Reserve Fund Study.