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Comprehensive Reserve Fund Study

for

Carleton Condominium Corporation No.339

Final Report Prepared For:

Carleton Condominium Corporation No.339
% Mr. Yawar Khan,
Capital Integral Property Management

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C2997-REP.01

EXECUTIVE SUMMARY

The common elements of CCC 339 are in overall satisfactory condition. However, several elements will require either major repair or complete replacement within the next five years, due to normal life cycle renewal of aging common elements. Elements which will require such renewal work include replacement of the garage roof podium deck membrane including all landscaping elements, brick masonry veneer repairs, replacement of various exhaust fans, replacement of balcony waterproofing membranes, window replacement and wallpaper replacement.

Based on the predicted expenditures listed in the spreadsheet and the current reserve fund finances, the corporation is currently underfunded over the short term, such that a special contribution in the amount of $135,000 per year will be required during 2021/22 and 2022/23. However, regular reserve fund contributions need only increase by inflation during 2021/22 to 2027/28. After 2027/28, reserve fund contributions can remain frozen indefinitely at $176,447.

The following table lists the major common element renewal work budgeted over the next ten years, not including allowances for isolated repairs, or allowances for elevator TSSA work.

Item Description	Projected Years of Work
Replacement of Garage Ramp & Heating System	2020
Localized Window Replacement	2020-24
Podium Deck Membrane Replacement – Rear of Building	2021
Brick Masonry Veneer Repairs	2021
Replacement of Various Exhaust Fans	2021
Podium Deck Membrane Replacement – Front of Building	2022
Interlocking Paver Stone Walkways & Retaining Walls Replacement	2022
Replacement of Balcony Membranes	2023
Elevator Cab Interior Refurbishment	2023
Localized Window Replacement	2023-24
Terrace Roof System Replacement	2023
Wallpaper Replacement	2024
Exterior Painting	2025
Replacement of Common Electrical Panels	2025
Interior Painting	2026
Corridor Carpet Replacement	2026
Garage Ventilation Fan & Motor Replacement	2026
Replacement of Main & Secondary Electrical Distribution Panel	2026
Forced Flow and Baseboard Heater Replacement	2026
Parking Garage Slab-on-Grade Concrete Sealer	2027
Parking Garage Waterproofing Membrane at Base of Walls	2027
Sliding Glass Patio Door Replacement	2026-27
Overhead Parking Garage Door Replacement	2028
CCTV System Replacement	2028
Garage Space Heater Replacement	2029
Balcony Door Replacement	2030
Sump Pump Replacement	2030
Replacement of Smoke, Heat & Carbon Monoxide Detection System	2030

All of the above major capital expenditures reflect normal replacement of common elements as they age.

CONTENTS

1. INTRODUCTION

This Reserve Fund Study is a technical and financial assessment of the common elements of the condominium corporation for the purpose of:

- ❑ assessing the condition of the common elements
- ❑ forecasting and planning for major capital expenditures over the short and long term
- ❑ recommending annual reserve fund appropriations.

In this Reserve Fund Study, we outline our findings regarding the current condition and immediate maintenance and repair requirements for all of the common elements. In addition, we outline the repair and replacement work that we expect will be required over the 30-year period that we examine in this report, including all associated costs. Included in the repair/replacement data is an inventory of the quantities of all common elements that will be subject to replacement work over the life of the corporation. Finally, all anticipated expenditures over the next 30 years are outlined in a detailed spreadsheet, and we provide our recommendation for annual reserve fund appropriations. While this report includes our recommendations for the timing of repair/replacement work and for annual reserve fund contributions, these decisions are ultimately made by the Board of Directors of the condominium corporation.

2. DESCRIPTION OF COMPLEX

Carleton Condominium Corporation No. 339, also known as Somerset Court, is a 35-year old, 45-unit, five-storey, apartment complex located at 205-215 Somerset Street West in Ottawa, Ontario.

It is presumed that the building's structure consists of reinforced concrete slabs, shear walls, columns, foundation walls and footings. The building contains one level of underground parking. The area above the garage roof, which extends out past the exterior wall of the building, is landscaped and protected by a waterproofing membrane system. The exterior facades of the building are clad entirely with brick masonry veneer. Original windows consist of wood framed assemblies, though many windows have been replaced with vinyl-framed assemblies. Sliding glass patio doors and balcony doors complete the exterior facades. The roof is protected with a combination of an inverted roof membrane system, and sloped metal roofing. Many units have a reinforced concrete balcony slab, which are protected with a waterproofing membrane, while fifth floor terraces that are located above a heated space are protected with an inverted roof membrane system. Balcony guards consist of brick masonry and steel guardrails. Access to each unit is provided through common corridors which can be accessed by the building's two elevators and exit stairs.

The two main entrance vestibule areas are finished with marble tile floors. The corridor of each floor is finished with a combination of carpet on floors, wallpaper covering and painted wood trim on walls, and painted drywall on ceilings. The building is equipped with various service rooms, such as a mechanical and electrical rooms, storage rooms, a garbage/recycling room and locker rooms. Various mechanical and electrical systems exist throughout the building and include plumbing and drainage, ventilation, heating and cooling, fire protection, electrical distribution, lighting, fire alarm, door entry system, electric heating, building security system, and other miscellaneous system elements.

The common property elements also include all site services (such as water supply, electrical supply, sewer systems), a concrete ramp with heating system, grounds lighting, interlocking paver stone walkways and accessibility ramp, concrete and stone retaining walls, steel handrails, and soft landscaping.

3. DESCRIPTION OF WORK ACTIVITIES

3.1 Review of Background Information

The first step of a Reserve Fund Study is to become familiar with the complex, and reviewing all available background information about the corporation is a key part of this first step. Before each project begins, we review (as applicable) all drawings and specifications, the current budget, the Auditor's Reports from past years, the past Reserve Fund Study (if one exists), past consultants' reports prepared over the previous several years, the corporation's Declaration and By-laws, warranties for repair and replacement work completed, the repair and maintenance schedule and records, any lists that the Board may have prepared regarding concerns and/or planned repair/replacement work.

3.2 Condition Assessment and Forecasting of Renewal Work

After the background information is reviewed, we carry out visual inspections of readily accessible common elements. The main purpose of the site inspections is to determine the current condition of the common elements. Assessing the current conditions leads directly to determining the maintenance, repair and replacement work that will be required in the near future. In addition, the site assessment of the common elements provides key information regarding when repair and replacement work will be required over the medium to long term. Such information could include the type and quality of materials, the quality of maintenance, the past rate of deterioration, and the expected rate of deterioration in the future. Together, this information enables us to predict approximately when future repair and replacement work will be required. In addition to assessing when work will be required, the site inspections help establish what type of work will be required, what special conditions will affect the work, and how much the work should cost.

3.3 Calculation of Repair and Replacement Costs

After determining the major repair and replacement work to be required over the next 30 years, next we estimate the costs of all projected work. After determining the nature of each work item, the next step is to take an inventory of the common elements. This inventory work is accomplished by measuring the quantities of the common elements using the drawings and, where necessary, by taking site measurements. For each type of renewal work that is forecasted, the total quantity of the common element is determined (such as area of roofing or siding) so that the total value of this element can be determined later. For an Updated Study, the majority of the quantities would have been determined during completion of an earlier Study, so an Updated Study normally will require quantity calculations only for new findings and recommendations.

Once the type and quantities of the renewal work are known, the last step is to calculate the costs of all renewal work. For most items, the total construction costs are determined by multiplying the total quantity of the element by the expected unit price for the work of concern. For example, if the area of the flat roof at the corporation is 500 m^2 and the typical unit price for roof replacement is \$200/m^2, then the total estimated costs for roof replacement will be \$100,000. While this seems simple, the key part of reliable cost estimation is that the unit price must be an accurate reflection of what the costs will be for the particular work of concern and at that particular condominium corporation.

To ensure that the unit prices used in the calculations are appropriate, we compare the work at the complex to a data base listing of unit prices that we have compiled from many projects that we have been involved with over several years of experience. This list was compiled, and is regularly updated, using actual contract prices and job specific cost estimates for all types of work that are typically required at a condominium complex. If there is a unique type of repair work for which costs must be estimated, we determine the general nature of the work and employ the assistance of an experienced contractor to estimate the costs of the work that we have laid out. All major capital expenditures outlined in the spreadsheet are estimated according to the current year's costs. In addition, all budget estimates account for HST at its current rate.

3.4 Development of the Spreadsheet

The main purpose of the spreadsheet is to determine the recommended annual contributions that should be made to the reserve fund. The spreadsheet assists with this recommendation by providing a vehicle for which all important data can be combined into a calculation of all future costs and contributions.

Reserve Fund Data and Calculations:

The first step in preparing the spreadsheet is to enter all start-up financial information, such as year reserve fund balance and the current annual contributions. Since the spreadsheet also requires an amount input as the recommended future contributions, we set that amount to equal the current contributions; simply as an initial trial figure.

Next, we input all budgeted expenditures into the spreadsheet, with each figure placed according to the work to be performed and the year the work is expected to be required. To make the spreadsheet easier to follow, all costs included in the spreadsheet are in today's dollars, with inflation accounted for only after the total yearly expenditures are calculated. (The figure below the first double-line is the total yearly expenditures before inflation, while the next figure down is the total after accounting for inflation.)

With the above data entered, the formulae within the spreadsheet automatically calculates the cash flow for the corporation. For each year, the total amount of money remaining in the reserve fund is shown in two ways. The second figure from the bottom is the amount remaining in future dollars - that is, the "actual" amount remaining in that year if all assumptions are correct. To relate all of these figures to today's value of the funds, the bottom figure represents today's equivalent of that future amount, with inflation removed. (The earned interest for each year is calculated using iteration formulae by applying the interest rate to the average reserve fund balance over each year.)

As stated previously, the current contributions are first tried as the future contributions. If this funding level sufficiently covers all anticipated expenditures, then contributions do not need to be increased. Where sufficient funds do not exist using the current contribution level, then the contributions must be increased to a level that does cover all anticipated costs. Sometimes contributions are immediately increased to the required level, while in other cases the increase may be phased in over a few years. Often a situation occurs where the contribution level is adequate, on average, but there are certain years when there are insufficient funds. In such cases, priorities have to be established that results in some work being delayed until there will be sufficient funds to pay for the work, but without increasing funding levels further.

In extreme cases, the corporation may be significantly short of funds and the only way to raise such funds in time is to recommend a special assessment. While a special assessment is a last resort, it is sometimes required. As with phasing in increases in contributions, it is sometimes possible to levy a special assessment that is collected gradually over a few years.

Explanation of Inflation and Interest Rates:

To ensure that the recommendation for annual contributions is as reliable as possible, inflation and earned interest are accounted for in the spreadsheet. Prior to 1992, inflation rates have been hard to predict, with inflation averaging 1.4% from 1952 to 1965, then averaging over 4% for several years before averaging over 10% from '74 to '82 and then back to averaging over 4% from '83 to '91 (when the GST was introduced). However, since 1991, inflation has averaged less than 2%, with only three years having inflation greater than 2.5% (including 2.9% in 2011). Based on this 20-year average of inflation under 2%, our standard approach is to assume an inflation rate of 2.0% for use in the spreadsheet. Even though inflation surpassed this level a few times in the last several years, inflation has averaged less than 2% over the past 20 years, so assumed inflation of 2.0% is used to account for typical trends over the long term. Furthermore, it is generally believed that inflation is slightly over-reported due to the review not fully reflecting our modern economy (with Statistics Canada currently reviewing and revising the formulae to determine the Consumer Price Index), so we believe that an assumed inflation rate of 2.0% should be slightly conservative over the long term.

Interest also is accounted for in the spreadsheet because unused reserve funds are invested, earning interest that is added to the reserve fund. Even on the low risk investments allowed by The Condominium Act, interest earned historically has generally been greater than inflation. As such, earned interest generally "should" be greater than 2% over the long term, even though, in recent years, interest earned by reserve funds has been less than inflation. Based on these factors, our standard approach is to assume that earned interest will also average 2.0%, as a balance between recent experience with low earned interest and the historical trend of interest being greater than inflation.

While an inflation rate of 2.0% and an interest rate of 2.0% may not apply over the long term, or may not even reflect the exact conditions that exist today, these rates should represent reasonable long term averages, and therefore, any variations in actual inflation and interest rates should not have a significant effect on the spreadsheet. Furthermore, with this Study being updated every three years, any effect caused by differing interest and inflation rates can be accounted for in the next Study Update. However, where desired, we will account for client requests to include rates more reflective of current rates.

3.5 Assumptions and Limitations

This report is based only upon visual inspections and a review of the available background information. No quantitative performance testing of any kind has been performed. Therefore, no review has been made regarding the specific performance level of the common elements, or whether individual building elements meet the Ontario Building Code requirements that applied at the time of construction. Furthermore, it is important to note that the review of drawings is not a review of the project design.

Because of the above limitations of this Study, the accuracy of the findings, cost estimates, repair forecasts, life expectancy projections, and our recommendations are limited to the information available at the time of preparing this report. In addition, the timing and costs for all expenditures are based on the assumption that all common elements will be well maintained over the life of the corporation and that all elements will perform according to normal standards. If the complex is not well maintained, the corporation is likely to suffer reduced building element performance and life expectancy, thereby increasing and accelerating repair and replacement costs.

4. FINDINGS AND RECOMMENDATIONS

In this section of the report, we outline our findings and recommendations regarding the common elements, with each category of common element discussed within separate subsections. Specifically, each subsection outlines the following information about the common elements:

- findings regarding their current condition
- quantities (as appropriate)
- description of the expected repair and replacement work that will be required
- estimates of when repair and replacement work will be required
- estimates of the costs of repair and replacement work
- advice regarding general repair or replacement procedures that should be followed.

4.1 Site Services

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Drain Covers	Good	N/A	repairs / adjustments included in replacement cost of other common elements			
Sewer System & Main Utilities	Assumed as Good	N/A	no major repairs expected during life of complex			
Grounds Lighting	Fair to Satisfactory	5	N/A	N/A	2021	$7,000
Exterior Building Lighting	Satisfactory	35	as required using general contingencies allowance			

Drain Covers, Sewer System and Main Utilities

The major site services contained within the limits of the corporation's property include the supply of all utilities as well as the storm and sanitary sewer systems. Unless conditions indicate that problems exist, such that there is the potential for eventual major repair or replacement, it is expected that these elements should last the life of the complex (i.e. potentially up to 100 years), without any major work required. Since there are currently no reported problems with the site services, no costs are budgeted specifically for major repair or replacement of these elements during the 30-year period examined in the spreadsheet. However, the sewer system should not be ignored based on the assumption that no problems will develop, since minor sewer problems are not completely uncommon. Instead, the sewer system should be inspected periodically (about every five years or so), using a remote camera to ensure that everything is functioning properly, and to ensure that minor sewer problems that could develop are detected early, so that major problems are averted or at least minimized. These inspections are

considered maintenance related, so they are commonly paid for with funds from the annual operating budget. Therefore, no costs have been allocated in the spreadsheet for periodic inspection or occasional flushing of the sewers. If sewer inspections eventually reveal problems, then costs to conduct any anticipated major repair or replacement work should be budgeted in the spreadsheet during future Study Updates.

Typical sewer problems that can develop include minor sumps (i.e. sags that cause ponding in the sewer lines, thereby impeding proper flow) or breaks in the sewer line. Sumps are generally addressed through regular pumping of problem areas. It is especially important to consider that if inspections are not conducted, major problems may develop that go unnoticed. These problems could increase to the point that major repairs are required, instead of only minor repairs had the problems been detected earlier.

Grounds Lighting

Grounds lighting consists of five bollards, and these are in fair to satisfactory condition. The grounds lighting should be replaced in conjunction with the garage roof podium deck membrane replacement work in 2021, so we budgeted $7,000 for this work.

Exterior Building Lighting

Exterior building light fixtures should provide reliable service for many years. However, periodic replacement of these fixtures will likely be required throughout their service life, the costs of which should be paid for out of the general contingencies allowance.

4.2 Parking Garage

<table>
<tr><th rowspan="2">Item Description</th><th rowspan="2">General Condition</th><th rowspan="2">Estimated Quantities</th><th colspan="2">Major Repair</th><th colspan="2">Complete Renewal</th></tr>
<tr><th>Year</th><th>Costs</th><th>Year</th><th>Costs</th></tr>
<tr><td>Slab-on-Grade Concrete Sealer</td><td>Satisfactory</td><td>1,400 m^2</td><td colspan="2">as required using general contingencies allowance</td><td>2027, 2037 2047</td><td>$35,000 (each time)</td></tr>
<tr><td>Parking Garage Structure</td><td>Satisfactory</td><td>N/A</td><td>2027 & 2042</td><td>$17,000 (each time)</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Concrete Ramp</td><td>Very Good</td><td>52 m^2</td><td colspan="2" rowspan="2">as required using general contingencies allowance</td><td>2020 & 2045</td><td>$82,000 (each time)</td></tr>
<tr><td>Podium Deck Membrane & Landscaping</td><td>Satisfactory</td><td>30 m^2</td><td>2021

2022</td><td>$150,000

$200,000</td></tr>
</table>

Slab-On-Grade Concrete Sealer

The concrete slab-on-grade garage floor is in satisfactory condition, though isolated areas of pithing was observed. To prolong the life of the concrete slab, we recommend that a concrete sealer be applied every ten years or so. Therefore, we budgeted $35,000 to apply a concrete sealer over the entire slab in 2027, and every ten years thereafter. In the interim, minor repairs and regular maintenance should be carried out, as required, using funds from the general contingencies allowance.

Parking Garage Structure

The parking garage structure itself is in satisfactory condition, though isolated areas of pithing and exposed reinforcing steel was observed. Throughout the life of the concrete, localized concrete repairs will occasionally be required to repair localized deteriorated areas of concrete caused by exposure to moisture and winter de-icing salts, such as the base of walls and the roof deck. As such, any minor concrete repairs should be performed using funds from the general contingencies allowance. Furthermore, we budgeted $17,000 in 2027 and 2042, to apply a waterproof membrane at the base of all walls and columns inside the garage.

Podium Deck Membrane

The parking garage structure consists of a combination of reinforced concrete walls, columns and roof slab. Portions of the parking garage roof that extend out beyond the footprint of the building are protected by a waterproofing membrane. Above the waterproofing membrane, the podium roof deck is finished with various landscape elements that include grounds lighting, interlocking paver stone ramps and walkways, concrete and stone retaining walls, concrete steps, steel handrails, and the landscaped grounds. Based on the previous Reserve Fund Study completed by Keller Engineering, a Podium Membrane and Roof Condition Assessment report was prepared in 2016 which forecasted that the podium deck membrane would require replacement around 2019 to 2021. Based on this information, the fact that the podium deck membrane has reached the end of its anticipated service life, and because we observed leak areas within the parking garage, we recommend the podium deck membrane be replaced as soon as possible. As such, we budgeted $150,000 to replace the podium deck membrane at the rear of the building in 2021, and $200,000 to replace the podium deck membrane at the front of the building in 2022. Budgeted costs include replacement of landscaping above the podium roof deck membrane.

Concrete Ramp

The exterior concrete parking garage ramp is in very good condition as it was redone in 2020 at a cost of $82,000. Normally, a ramp with heating cables will provide about 25 years of service before replacement is required. Therefore, another $82,000 is budgeted for replacement of the concrete ramp in 2045.

4.3 Landscaped Grounds

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Drainage Patterns	Good	no major costs expected during life of complex				
Trees, Shrubs and Sod	Good	N/A	as required using general contingencies allowance		N/A	N/A
Interlocking Paver Stone	Satisfactory	150 m^2 - rear 80 m^2 – front			2021 2022	$24,000 $8,000
Retaining Walls	Fair	110 m^2			2022	$70,000
Concrete Stairs	Satisfactory	N/A			N/A	N/A
Steel Handrails	Satisfactory	N/A			N/A	N/A

Drainage Patterns and Trees, Shrubs and Sod

The landscaped grounds are in good condition. All maintenance costs for the landscaping should be covered by the annual operating budget, including tree pruning, isolated sod and topsoil replacement. Isolated replacement of damaged landscaping elements and/or replacement of trees and shrubs should be covered using funds from the general contingencies allowance.

Interlocking Paver Stones

The unit paver stone ramp, walkways and rear terraces are in overall satisfactory condition. Replacement of the unit paver stones will be completed in conjunction with replacement of the podium deck membrane. As such, we budgeted $24,000 to replace the unit paver stones at the rear of the building in 2021, and $8,000 to replace unit paver stones at the front of the building in 2022. The new unit pavers stones will provide 40 to 50 years before replacement will again be required, so no further funds are provided in the spreadsheet for their replacement. Any re-leveling or as required repair/replacement work should be covered by the general contingencies allowance.

Retaining Walls

Retaining walls at the front of the building consist of a combination of precast concrete units, cast-in-place concrete, and natural stone. The cast-in-place concrete walls appear to be in satisfactory condition and should provide many more years of reliable service. However, the precast concrete and stone retaining walls are only in fair condition. The precast concrete walls are leaning, while the stone retaining walls have many loose and/or missing stones. Therefore, in conjunction with replacement of the podium deck membrane in 2022, we budgeted $70,000 to replace the precast concrete and stone retaining walls.

Concrete Stairs

There are cast-in-place concrete stairs that link the public sidewalk to the interlocking paver stone walkways at the front of the building. There is also a cast-in-place exit stair at the southeast end of the building. The concrete stairs are in satisfactory condition and should continue to provide reliable service throughout the lifetime of the building. However, localized concrete repairs will occasionally be required, and these should be performed using funds from the general contingencies allowance.

Steel Handrails

Steel handrails are provided on each side of the concrete stairs and ramp, as well as the concrete stairs at the west elevation near the garage ramp. The steel handrails are in mostly satisfactory condition, though minor surface corrosion was observed. The steel handrails should be painted periodically to prevent corrosion. If well maintained, the steel handrails should provide reliable service for another 30+ years.

4.4 Foundation Walls

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Foundation Walls and Parging	Satisfactory	N/A	2024	$30,000	N/A	N/A

The cast-in-place foundation walls and foundation wall parging is generally in satisfactory condition, so only isolated minor repairs are expected in the foreseeable future. However, the parging over the foundation walls near the parking garage ramp is deteriorated in will require repairs soon. Therefore, we budgeted $30,000 to undertake parging repairs in 2024. Any other minor parging repairs that may be required should be covered using funds from the corporation's general contingencies allowance.

4.5 Balconies and Guardrails

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Concrete Balconies	Satisfactory	N/A	2023, 2038	$5,000 (each time)	N/A	N/A
Balcony Waterproofing Membrane	Fair	175 m^2	as required using general contingencies allowance		2023, 2038	$20,000 (each time)
Guardrails (steel and brick masonry)	Fair to Satisfactory	N/A			N/A	N/A

Concrete Balconies

The cast-in-place concrete balconies are in satisfactory condition and should last the life of the complex. However, localized minor concrete repairs will be required throughout the service life of the balconies. Concrete repairs to balcony slabs should be carried out during balcony slab waterproofing work, so we included an allowance of $5,000 during the waterproof membrane replacement work to account for minor balcony concrete repairs.

Balcony Waterproof Membrane

The elastomeric waterproofing membrane on balcony slabs is in fair condition and should be replaced soon. Therefore, we budgeted $20,000 to replace balcony waterproofing membranes in 2023. Elastomeric membranes should provide fifteen years of service before replacement is again required. Therefore, $20,000 is budgeted to replace balcony waterproofing membrane a second time in 2038.

Guardrails

Balcony guardrails consist of steel railings and brick masonry. Overall, the steel railings are in satisfactory condition, while the brick masonry is in fair condition. The brick masonry will be repaired as part of the brick masonry repair programs in 2021, 2031 and 2041, while the steel railings should only require repainting until complete replacement will likely be required in about 30+ years. Budget prices to repaint steel railings are included in the "Exterior Painting and Caulking" section of this Study.

4.6 Cladding

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Brick Masonry Veneer	Mostly Satisfactory	N/A	2021 2031, 2041	$40,000 $15,000 (each time)	N/A	N/A

Brick Masonry Veneer

The brick masonry veneer is mostly in satisfactory condition. However, several areas of spalled bricks were observed, including at parapet walls, near balcony scuppers, and at balcony privacy walls. In addition, extensive brick spalling was observed at the east façade, though the full extent of brick deterioration could not be determined without conducting a full investigation. Therefore, we recommend a detailed brick masonry assessment be conducted in 2020, with engineering fees estimated to be around $8,000. Upon completion of the assessment, brick repairs should be completed in 2021 to address deficiencies. Since the extent of required brick repairs cannot be fully determined until the condition of the brick masonry is further assessed, an allowance of $40,000 is provided for brick repairs. In the end, repair costs could end up being higher or lower, depending on the findings. Furthermore, since the brick masonry veneer will require on-going maintenance repairs throughout the lifetime of the complex, we budgeted allowances of $15,000 for further as-required brick masonry repairs in 2031 and 2041.

4.7 Exterior Painting and Caulking

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Painting	Satisfactory	N/A	as required using general contingencies allowance		2025, 2033 2041, 2049	$20,000 (each time)
Caulking	Satisfactory to Good	1,970 m			2036	$50,000

Painting

Painted common elements include exterior service doors, steel handrails, steel balcony railings, and wood windows. Since wood windows are being replaced with new vinyl windows, painting of windows will no longer be required. In general, the paint finish on the service doors, steel handrails and steel balcony railings is in mostly satisfactory condition. Therefore, we budgeted $20,000 to paint all exterior elements in 2025. Normally, exterior painting repainting is required every eight years or so. As such, we budgeted $20,000 for exterior painting in 2033, 2041, and 2049.

Caulking

Exterior caulking is in satisfactory to good condition since much of the caulking is being replaced in conjunction with window replacement. Normally, caulking will provide reliable service for approximately 10 to 15 years before renewal is required. As such, we budgeted $50,000 to replace all caulking in 2036.

4.8 Windows and Doors

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Windows	Fair to Very Good	595 m^2	as required using general contingencies allowance		2020 2021, 2022 2023, 2024 2050	$73,000 $52,000 (each time) $100,000
Sliding Glass Patio Doors	Fair to Satisfactory	24: 2-panels 21: 3-panels			2027, 2028	$120,000 (total cost)
Balcony Doors	Satisfactory	13			2030	$20,000
Building Entrance Doors	Satisfactory	4			2042	$14,000
Unit Entrance Doors	Satisfactory	45			2035	$90,000
Stairwell and Service Doors	Satisfactory	N/A			2040	$24,000
Overhead Parking Garage Door	Satisfactory	1			2028, 2043	$10,000 (each time)

Windows

The original wood framed windows are in fair condition and are being replaced with new vinyl framed assemblies. The total cost to replace all windows with new vinyl framed windows is estimated to be $385,000. It was reported that $105,000 worth of window replacement was completed in 2019/20, and that $73,000 worth of windows will be competed during 2020/21. Therefore, to account for replacement of remaining wood framed windows, we budgeted $52,000 per year in 2021, 2022, 2023 and 2024. The new windows should provide 25 to 30 years of reliable service before replacement will again be required. Therefore, $100,000 is budgeted in 2050 to start the next cycle of window replacement.

Sliding Glass Patio Doors

The sliding glass patio doors are in fair to satisfactory condition. Based on Keller's Study, patio doors at upper units were replaced in 1995, while patio doors at lower units are original. Since sliding glass patio doors typically provide a service life of around 25 to 30 years, the sliding glass patio doors are at or near the end of their service life and should be replaced soon. Therefore, we budgeted a total of $120,000 to replace the sliding glass patio doors during 2027 and 2028.

Balcony Doors

There is a total of 13 balcony doors throughout the building, and it is assumed that the balcony doors are in satisfactory condition. Balcony doors can provide 40 to 50 years of reliable service before replacement is required. Therefore, we budgeted $20,000 in 2030 to replace the balcony doors.

Building Entrance Doors

The two main entrances to the building are equipped with two sets of doors each. Each door consists of solid wood with an ornate glazing inset and sidelites. The doors are original to the building and, if maintained, should provide a full 50 to 60 years of service. As such, $14,000 is budgeted to replace the building entrance doors in 2042.

Unit Entrance Doors

The unit entrance doors to individual apartments are in good condition for their age. Interior wood entry doors of this type normally provide a 50 year service life, depending on initial quality, use, and how well the doors are maintained. Since the doors have been maintained over the years, the doors should provide reliable service until 2035, when we budgeted $90,000 to replace all unit entrance doors. In the interim, isolated hardware replacement that may be required should be carried out using funds from the general contingencies allowance.

Stairwell and Service Doors

Stairwell doors, as well as interior and exterior service doors are original and in satisfactory condition. Normally, service doors will provide 50 to 60 years of service depending on how often the doors are used. As such, we budgeted $24,000 to replace the stairwell doors and service doors in 2040.

Overhead Garage Door

The overhead garage door was reportedly replaced in 2012, and the door is in satisfactory condition. Usually, overhead garage doors will provide service for 15 years or so before replacement is required. As such, $10,000 is budgeted to replace the overhead door in 2028 and again in 2043.

4.9 Roofing

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Main Flat Roof System (Inverted)	Very Good	725 m^2	as required using general contingencies allowance		2048	$240,000
Balcony Terrace Roof System (Inverted)	Assumed to be Satisfactory	45 m^2			2023	$10,000
Steel Sloped Roof System	Satisfactory	530 m^2			2035	$140,000
Ice Guards	Satisfactory	20 m			2035	$15,000

Main Roof System

Since the main flat roof is an inverted system, we could not visually assess the roof membrane to confirm its condition. However, based on audited financial statements, the main flat roof system was replaced in 2018 at a cost of $231,000, and is therefore assumed to be in very good condition. Normally, an inverted roof membrane can provide around 30 years of service before replacement is required, so we budgeted $240,000 to replace the inverted roof system in 2048.

Balcony Terrace Roof Systems

The balcony terraces on the fifth floor are protected with an inverted membrane roof system. The age of the roof systems is unknown, so it is assumed that they are original and are nearing the end of their service life. Therefore, we budgeted $10,000 to replace the terrace roof systems in conjunction with balcony membrane replacement in 2023. The new balcony terrace roof systems should provide 30+ years of reliable service before replacement will again be required.

Slope Steel Roofing System

The sloped portion of the roof is protected with a standing seam steel roof system. The steel roofs appear to be in satisfactory condition, and no issues were reported. Steel roof systems normally provide 50 years of service before replacement is required, so we budgeted $140,000 to replace the steel roof system in 2035.

In order to maintain the roofs in satisfactory condition such that they provide reliable service throughout their life, the roofs should be inspected every spring to look for and repair minor wear and tear issues, before these issues result in leaks and/or major repairs. Hiring a contractor to conduct these basic inspections and repairs will be fairly inexpensive, and the preventative work will extend the service life of the roofs and will likely prevent most major problems.

Ice Guards

Ice guards are provided at strategic areas of the sloped roof. The ice guards are in satisfactory condition and should provide reliable service until the steel sloped roof is replaced in 2035, when we budgeted $15,000 to replace the ice guards.

4.10 Eavestrough System

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Eavestrough Systems	Satisfactory	160 m	as required using general contingencies allowance		2035	$10,000

Eavestrough System

The eavestrough system is in satisfactory condition and should provide many more years of reliable service. In conjunction with replacement of the steel roofing system and ice guards in 2035, we budgeted $10,000 to replace the eavestrough system

4.11 Interior Finishes

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Wallpaper	Fair	610 m^2	as required using general contingency allowance		2024	$30,000
Interior Painting	Satisfactory	N/A			2026, 2041	$25,000 (each time)
Corridor Carpets	Satisfactory	285 m^2			2026, 2041	$30,000 (each time)
Marble Tile Flooring	Satisfactory	8 m^2			2047	$2,000
Mailboxes	Satisfactory	N/A			2020	$5,000

Wallpaper

The wallpaper covering is in fair condition, with some wallpaper seams starting to separate and peel. As such, we budgeted $30,000 to replace the wallpaper in 2024.

Interior Painting

The paint finish on door frames, baseboards, ceilings and stairwells is in overall satisfactory condition and should provide reliable service for another six to eight years. As such, we budgeted $25,000 to paint all interior elements in 2026. Interior painting should be performed every 15 years, so we budgeted another $25,000 to repaint interior elements a second time in 2041.

Corridor Carpets

Based on Keller's Study, corridor carpets were replaced in 2012. The carpets were noted to be in satisfactory and should provide a full 15 year service life. Therefore, we budgeted $30,000 to replace the carpets in 2026. Replacement of the corridor carpets will likely be required every 15 years in conjunction with interior repainting. Therefore, we budgeted another $30,000 to replace the carpets again in 2041.

Marble Tile Flooring

The marble tile flooring in the entrance vestibules is in satisfactory condition and should provide good service for another 25 to 30 years. Therefore, we budgeted $2,000 to replace the vestibule marble tiles in 2047.

Mailboxes

It was reported that the Board may be considering replacing mailboxes, so we provided an allowance of $5,000 in 2020 to replace the mailboxes.

4.12 Mechanical and Electrical Systems

The building's mechanical and electrical systems were inspected by LRL Associates Ltd. and an inventory, condition assessment and replacement costs of all condominium owned mechanical and electrical systems are outlined in their report included in Appendix "A", with all costs listed in the reports and included in the spreadsheet.

4.13 Elevators

The building's passenger elevators were inspected by Rooney, Irving and Associates Engineers and an assessment of the current condition of the elevator systems are outlined in Appendix "B", with all associated replacement costs listed in the report and included in the spreadsheet. It should be noted that the Board has decided to advance the timing for replacement of the elevator interior cab finishes. It was reported that they have received an estimate of $60,000 to replace the interior cab finishes, and this work is now budgeted for 2023.

4.14 General Contingencies Allowance

In order to cover regular repair costs that are difficult to predict and budget for, an annual contingency allowance is budgeted in the reserve fund. The contingency allowance is intended to cover isolated and unpredictable costs relating to important reserve fund repair and replacement work. Based on past reserve fund expenditures and the upcoming major renewal work, an annual contingency allowance of $5,000, starting in 2020, is budgeted throughout the 30-year forecast of this Study. It is recommended that the actual amount of funds used for contingencies be monitored over the next few years to determine if the amount budgeted actually reflects the corporation's requirements. If it is deemed that the contingency allowance is either too high or too low, then adjustments can be made to the contingency contribution level during future updates.

4.15 Engineering Fees

Potential costs for engineering fees also are included in the spreadsheet. Engineering fees related to the major repair or replacement of common elements should be paid out of the reserve fund, since such fees are directly related to the common element renewal. To account for such costs, a ballpark cost estimate of such fees is included in the spreadsheet for repair items where the services of an engineer are likely to be used. **It is very important to note that the budgeted amounts are only very rough "guesstimates" of fees, based on what the scope of work might be, but actual scopes of work are likely to vary from that assumed.** Therefore, the Board should not expect quotations for services to match the estimates provided, even for work due within the next few years. The intent of including engineering fees is only to ensure that there is some allowance for such fees, because ignoring engineering fees in budgeting could cause the corporation to be underfunded over the long term.

Budgeted amounts for engineering fees are as follows:

- 2020 $8,000 for a detailed assessment of the brick masonry veneer
- 2021 $20,000 for specifications, tendering and site review of the podium deck membrane replacement
- 2022 $15,000 for site review of the podium deck membrane replacement.
- 2026 $15,000 for electrical engineering fees towards replacement of the electrical distribution system.

- ❑ 2035 $10,000 for specifications, tendering and site review of the sloped steel roof replacement.
- ❑ 2038 $9,000 for electrical engineering fees towards replacement of the main fire alarm panel.
- ❑ 2042 $12,000 for elevator engineering fees towards the elevator modernization
- ❑ 2043 $10,000 for mechanical engineering fees towards replacement of the corridor MAU.
- ❑ 2045 $25,000 for specifications, tendering and site review of the parking garage ramp replacement.
- ❑ 2048 $20,000 for specifications, tendering and site review of the flat roof replacement.
- ❑ 2048 $8,000 for mechanical engineering fees towards replacement of the fire pump replacement.

4.16 Reserve Fund Study Updates

The Condominium Act requires full Reserve Fund Study Updates (updates based on inspection) be completed no later than every six years, with a Spreadsheet Update (update without inspection) within three years of completing the Full Study Update. In essence, two types of Reserve Fund Study Updates will be required at maximum six-year intervals, with types of the study required alternating. The estimated $11,000 costs for a full Study Update are budgeted in the spreadsheet at six-year intervals in 2020, 2026, 2032, 2038, 2044 and 2050. To reflect the need for a Spreadsheet Update within three years of completing a full Study Update, we have budgeted an estimated $6,000 for a Spreadsheet Update every three years after each full Study Update, in 2023, 2029, 2035, 2041 and 2047.

5. CONCLUSIONS AND SUMMARY COMMENTS

The common elements of CCC 339 are in overall satisfactory condition. However, several elements will require either major repair or complete replacement within the next five years, due to normal life cycle renewal of aging common elements. Elements which will require such renewal work include replacement of the podium deck membrane including all landscaping elements, brick masonry veneer repairs, replacement of various exhaust fans, replacement of balcony waterproofing membranes, window replacement, and wallpaper replacement.

Based on the predicted expenditures listed in the spreadsheet and the current reserve fund finances, the corporation is currently underfunded over the short term, such that a special contribution in the amount of $135,000 per year will be required during 2021/22 and 2022/23. However, regular reserve fund contributions need only increase by inflation during 2021/22 to 2027/28. After 2027/28, reserve fund contributions can remain frozen indefinitely at $176,447.

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APPENDIX A:

MECHANICAL AND ELECTRICAL REPORT

Reserve Fund Study

Mechanical & Electrical

CCC339
205-215 Somerset Street West
Ottawa, Ontario

Prepared for:

Paterson Group
154 Colonnade Road
Ottawa, Ontario
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TABLES

APPENDICES

1 INTRODUCTION

LRL Associates (LRL) Ltd. has been retained by Paterson Group Inc. to prepare a Reserve Fund Study (RFS) of the mechanical and electrical elements for the building located at 205-215 Somerset Street West, Ottawa, Ontario. The construction of this building consists of 5 floor 45-unit apartment building and one level underground parking level. Construction was completed in 1985 (35 years old).

The report will identify Mechanical & Electrical items that will need replacement or repairs in the 30-year period of this study.

2 ASSESSMENT METHOD

This RFS is based on a visual inspection of various mechanical & electrical systems carried out on May 25, 2020. The survey consisted of non-intrusive visual observations only. Only areas which were readily accessible and easily visible components and systems of the subject property have been evaluated. Where items were inaccessible or otherwise not inspected, observations made shall be considered representative. No operational or other testing was conducted and therefore, where visual inspection provides insufficient information for full evaluation typical of equipment, material and systems, working lifespan will be considered.

The normal life expectancy of the mechanical and electrical systems and components is based on manufacturer's published data and accepted industry standards. Expected service life will vary depending on maintenance, proactive repairs and other practices and possible partial replacement of the equipment over the period of this study. Therefore, the life expectancy of this equipment could be extended beyond its normal life expectancy indicated.

Opinions of anticipated costs will be provided for material, physical deficiencies and not specifically for repairs or improvements that could be classified as cosmetic or decorative works, part or parcel to a building renovation program or routine or timely preventive maintenance, or any combination thereof, unless otherwise indicated.

Opinions of anticipated costs where provided are limited to construction related costs; the types commonly provided by contractors who perform the work. Business related, design, management fees, professional services and other indirect costs are all excluded, unless otherwise indicated. HST has been included in the replacement cost for convenience.

For some physical deficiencies, determining the appropriate suggested remedy or scope may necessitate further study/research or design, testing, exploratory probing, and exploration of various repair schemes, or a combination thereof, all of which are outside the scope of this report. Where possible and appropriate, the anticipated cost of this work will be indicated. Otherwise the scope of the evaluation will be specifically limited.

3 MECHANICAL SYSTEMS

3.1 Plumbing & Drainage

3.1.1 System Descriptions:

- An electric domestic hot water tank is provided in the janitor room to provide hot water to public/common areas.
- A domestic water meter is provided in the water entry room in the basement parking garage.
- Water service enters the building in the water entry room in the basement parking garage.
- A sump pit is provided for the elevator and are pumped to municipal sanitary sewer.
- Sanitary drains from the building drain to municipal sanitary sewer by gravity.
- Roof drains from the building drain to municipal storm sewers by gravity.
- A sump pit is provided for storm drains including, ramp and foundation drains and are pumped to municipal storm sewer.
- A sump pit is provided for the parking garage area drains and are pumped to municipal storm sewer.
- Each unit is equipped with their own hot water tank and is excluded from this report.

3.1.2 Field Observations & Recommendations:

a. The existing plumbing fixtures in public/common areas are in good working condition.

b. Based on our visual inspection, the plumbing and drainage systems appear to be operating as intended and no deficiencies were noticed.

c. Copper piping for plumbing building systems typically have a life span of 50 years. Ultrasonic testing of plumbing pipes should be implemented in the next 5 years to determine the remaining pipe wall thickness and internal condition of the buildings piping.

d. Cast-iron piping for building drainage systems typically have a life span of 50 years. CCTV and flushing of the drainage pipes should be implemented for in the next 5 years to determine the internal condition of the buildings drainage piping.

3.1.3 Summary of Anticipated Costs – Plumbing & Drainage:

Table 1 Summary of Anticipated Costs Plumbing & Drainage Items

Item	Number of Units	Replacement Cost/Unit	Average Life Expectancy (years)	Estimated Replacement Year(s)	Total Replacement Cost
Hot Water Tank	1	$3,500	15	2027 & 2042	$3,500 (each time)
Sump Pumps	2	$9,000	25	2030	$18,000
Elevator Sump Pumps	1	$9,000	25	2041	$9,000
Domestic water piping replacement - copper	1	$20,000	50	2035	$20,000
Drainage piping replacement - PVC	1	$30,000	50	2035	$30,000
Non-Destructive Testing - Plumbing	1	$7,500	50	2025	$7,500
CCTV and Flushing - Drainage	1	$9,500	50	2025	$9,500

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance, minor repairs, air filters and motors replacement should be covered by the annual operating/maintenance budget.

3.2 Ventilation

3.2.1 System Description:

- Two gas-fired “AAON” Make-up air (MAU) units are provided for heating, cooling and corridor pressurization of the common element hallways.
- A “KeepRite” gas-fired 1000BTU Make-up air (MAU) unit is provided for the heating of the parking garage
- Three “Delhi” exhaust fans interlocked with motorized air intake damper and CO detection system are provided for the garage ventilation.
- An exhaust fan is provided for the elevator room.
- An exhaust fan is provided for the utility room.
- Two “Greenheck” exhaust fans are provided for the garbage room and chutes.
- An exhaust fan is provided for the hydro vault.

3.2.2 Field Observations & Recommendations:

a. Based on our visual inspection, the ventilation systems appear to be operating as intended and no deficiencies were noticed.

b. It was observed that one of the “Greenheck” garbage room fans located on the roof have been disconnected. This fan is scheduled to be reconnected.

3.2.3 Summary of Anticipated Costs – Ventilation:

Table 2 Summary of Anticipated Costs Ventilation Items						
Item		**Number of Units**	**Replacement Cost/Unit**	**Average Life Expectancy (years)**	**Estimated Replacement Year(s)**	**Total Replacement Cost**
Corridor Gas-fired MAU		2	$50,000	25	2043	$100,000
Parking Gas-fired MAU		1	$45,000	25	2044	$45,000
Elevator Room Exhaust Fan		1	$2,000	25	2021 & 2046	$2,000 (each time)
Utility Room Exhaust Fan		1	$2,000	25	2021 & 2046	$2,000 (each time)
Hydro Vault Exhaust Fan		1	$10,000	25	2021 & 2046	$10,000 (each time)
Greenheck garbage room and chutes Exhaust Fan		2	$3,000	25	2041	$6,000
Garage Ventilation	**Fan**	3	$5,000	30	2026	$15,000
	Motor	3	$1,000	15	2026 & 2041	$3,000 (each time)

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance, minor repairs, air filter and motor replacement should be covered by the annual operating/maintenance budget.

3.3 Heating and Cooling

3.3.1 System Description:

- The building heating is provided by electrical heaters.
- Air conditioning is provided to the suites by DX AC systems. Condensers on roof top was replaced in 2017/2018 at a total cost of $225,000.

3.3.2 Field Observations & Recommendations:

a. Based on our visual inspection, the heating and cooling systems appear to be operating as intended and no deficiencies were noticed.

3.3.3 Summary of Anticipated Costs - Heating and Cooling:

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance, minor repairs, air filter and motor replacement should be covered by the annual operating/maintenance budget.

3.4 Fire Protection

3.4.1 System Descriptions:

- A 100GPM fire pump is provided in the water entrance room for the sprinkler protection of the building
- A 1HP “Contractor” air compressor and valve for the dry sprinkler system are provided for the garage area.
- A wet sprinkler system is provided for the garbage room and chute and throughout the building.
- Fire hose cabinets are provided on every floor, including the basement and underground parking area.
- ABC type fire extinguishers are provided throughout the building.

3.4.2 Field Observations & Recommendations:

a. Existing portable fire extinguishers should be maintained according to the requirements of NFPA 10. These costs should be included in the regular operating/maintenance budget. Portable fire extinguishers should be tested yearly as per NFPA 10.

b. Based on our visual inspection, the fire protection systems appear to be operating as intended and no deficiencies were noticed.

c. Existing sprinkler systems should be maintained according to the requirements of NFPA 25. These costs should be included in the regular operating/maintenance budget.

3.4.3 Summary of Anticipated Costs – Fire Protection:

Table 3 Summary of Anticipated Costs Fire Protection Items

Item	Number of Units	Replacement Cost/Unit	Average Life Expectancy (years)	Estimated Replacement Year(s)	Total Replacement Cost
Dry Sprinkler Air Compressor	1	$3,000	20	2040	$3,000
Wet Sprinkler System	1	$110,000	55	2040	$110,000
Fire Pump	1	$60,000	30	2048	$60,000

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4 ELECTRICAL SYSTEMS

4.1 Electrical Distribution

4.1.1 System Description:

- The electrical service entrance Hydro vault owned by Hydro Ottawa rated at 13,200 volt is located in the basement parking garage.
- The electrical service entrance is rated at 1600 Amp, 120/208V, 3-phase, 4 wire and enters in the main electrical room in the basement level.
- A hydro meter is provided in the main electrical room to meter common elements while suite meters are located in 4 separate electrical room/closets on every second floor. A total of 45 suite meter and one common elements meter are provided for the building.
- A secondary switchboard provides 1200Amp power to two-meter banks on the east riser.
- A secondary switchboard provides 800Amp power to two-meter banks on the west riser.
- Electrical panels in the electrical room provide electrical distribution to common elements.

4.1.2 Field Observations & Recommendations:

a. Circuit breaker replacement in distribution panels, minor repairs and regular maintenance should be included in the annual operating/maintenance budget.

b. It is recommended that the electrical systems be maintained regularly. Preventative maintenance should be performed according to the manufacturer's recommendations to ensure that the systems remain in good working condition at all times.

c. It is recommended to conduct regular testing of the electrical equipment. Test should include infrared scan, arch flash testing, and hot spot tests. The costs associated to these tests should be included in the yearly maintenance budget.

d. Based on our visual inspection, the electrical distribution systems appear to be operating as intended.

4.1.3 Summary of Anticipated Costs - Electrical Distribution:

Table 4 Summary of Anticipated Costs Electrical Distribution Items

Item	Number of Units	Replacement Cost/Unit	Average Life Expectancy (years)	Estimated Replacement Year(s)	Total Replacement Cost
Main Distribution Panel	1	$80,000	40	2026	$80,000
Common Elements Panels	7	$5,000	40	2025	$35,000
Secondary Distribution Panel	pkg	$90,000	40	2026	$90,000
Meter Center	pkg	$70,000	50	2031	$70,000

All components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4.2 Lighting

4.2.1 System Description:

- Interior lighting consists of LED, and fluorescent fixtures.
- Emergency lighting and emergency exit signs are provided throughout the building.
- Exterior lighting consists of LED wall mounted fixtures and one pole mounted fixture located in the visitor parking area.

4.2.2 Field Observations & Recommendations:

a. Based on our visual inspection, the lighting systems appear to be operating as intended and no deficiencies were noticed.

b. It is recommended to keep an inventory or replacement bulbs and tubes for regular replacement of defective lamps.

c. It is recommended to complete testing of the emergency lighting to meet OBC requirements (30 minute test).

4.2.3 Summary of Anticipated Costs - Lighting:

All components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4.3 Fire Alarm

4.3.1 System Description:

- A “Siemens TXL1000” main fire alarm panel is provided in the main electrical room in the basement.
- A carbon monoxide detection system is provided for the garage area.
- A combination of smoke/heat detectors are provided throughout the utility rooms and public areas.
- Fire alarm bells and horns are provided throughout the building.
- Manual pull stations are provided throughout the building.

4.3.2 Field Observations & Recommendations:

a. Based on our visual inspection, the fire alarm systems appear to be operating as intended and no deficiencies were noticed.

b. Regular testing of the fire alarm system should be performed as part of the maintenance of the building and costs related to the tests should be included in the annual operating/maintenance budget.

4.3.3 Summary of Anticipated Costs - Fire Alarm Systems:

Table 5 Summary of Anticipated Costs Fire Alarm Items					
Item	**Number of Units**	**Replacement Cost/Unit**	**Average Life Expectancy (years)**	**Estimated Replacement Year(s)**	**Total Replacement Cost**
Main Fire Alarm Panel and devices	1	$75,000	30	2038	$75,000
Smoke and Heat Detectors	pkg	$12,000	20	2030	$12,000
Carbon Monoxide Detection System	pkg	$10,000	20	2030	$10,000

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4.4 Door Entry System

4.4.1 System Description:

- A garage door opener is provided to permit access to the parking garage.
- A door entry system is provided to permit access to the main entrance vestibule.

4.4.2 Field Observations & Recommendations:

a. Based on our visual inspection, the door entry system appears to be operating as intended and no deficiencies were noticed.

4.4.3 Summary of Anticipated Costs - Door Entry Systems:

Table 6 Summary of Anticipated Costs Door Entry Items					
Item	**Number of Units**	**Replacement Cost/Unit**	**Average Life Expectancy (years)**	**Estimated Replacement Year(s)**	**Total Replacement Cost**
Garage Door Motor	1	$1,000	15	2025 & 2040	$1,000 (each time)
Door Entry System	2	$5,000	25	2041	$10,000

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4.5 Electric Heating

4.5.1 System Description:

- A electric forced flow heater is provided in the main entrance vestibule heating purposes.
- "Westcan" 2KW electric space heaters are provided in the parking garage area for heating purposes.
- Baseboard heaters are provided in the common areas and below the windows on each floor for heating purposes and controlled by a local thermostat.
- A force flow heater is provided in the penthouse elevator mechanical room for heating purposes and controlled by a local thermostat.
- A force flow heater is provided in the penthouse mechanical room for heating purposes and controlled by a local thermostat.
- A garage ramp "Pyrotenax" electric heating system is provided for snow melting is currently being replaced.
- A new electrical panel was added as part of the garage ramp snow melt system.
- A "Raychem" roof snow melting system is provided on the roof.

4.5.2 Field Observations & Recommendations:

a. Based on our visual inspection, the electric heating systems appear to be operating as intended and no deficiencies were noticed.

4.5.3 Summary of Anticipated Costs - Electric Heating Systems:

Table 7 Summary of Anticipated Costs Electric Heating Items

Item	Number of Units	Replacement Cost/Unit	Average Life Expectancy (years)	Estimated Replacement Year(s)	Total Replacement Cost
Forced Flow Heater	4	$2,000	20	2026 & 2046	$8,000 (each time)
Garage Space Heaters	4	$2,500	20	2029 & 2049	$10,000 (each time)
Baseboard Heaters	8	$1,000	20	2026 & 2046	$8,000 (each time)
Pyrotenax Ramp Heating	1	$74,000	25	2020 & 2045	$74,000
Electrical Panel for Ramp snow melt system	1	$4,000	40	2060	$4,000
Raychem Snow melting	pkg	$10,000	25	2044	$10,000

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

4.6 Building Security Camera System (CCTV)

4.6.1 System Description:

- The building is monitored by an digital system with a monitoring station in the basement mechanical room.
- A total of 6 cameras provide coverage throughout the building as well as the parking garage and front entrance vestibule area.

4.6.2 Field Observations & Recommendations:

a. Based on our visual inspection, the building security camera system appears to be operating as intended and no deficiencies were noticed.

4.6.3 Summary of Anticipated Costs – Building Security Systems:

Table 8 Summary of Anticipated Costs Building Security Camera System Items

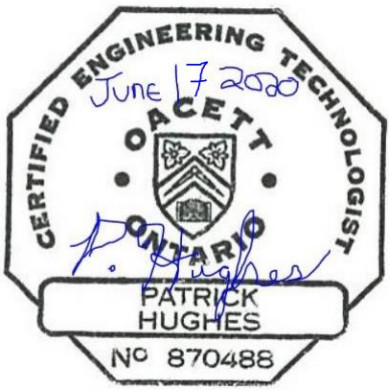
Item	Number of Units	Replacement Cost/Unit	Average Life Expectancy (years)	Estimated Replacement Year(s)	Total Replacement Cost
Digital Security System with Cameras	Lump	$20,000	15	2028 & 2043	$20,000 (each time)

All other components of the system have a remaining estimated service life of more than 30 years. However, preventative maintenance and minor repairs should be covered by the annual operating/maintenance budget.

5 CONCLUSIONS AND RECOMMENDATIONS

Based on our evaluation, and detailed in this report, we have found that in general the building is in good condition and typical for a building this age.

Prepared by:



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SITE VISIT PHOTOGRAPHS

Our File Ref.: 200007.01
Client: Paterson Group
Project: CCC 339
Site Location: 205-215 Somerset Street West

Photograph No. 1 Date: 5/25/2020 Description Water meter located in water entry room in parking garage.	

Photograph No. 2 Date: 5/25/2020 Description Sprinkler system complete located in water entry room in parking garage.	

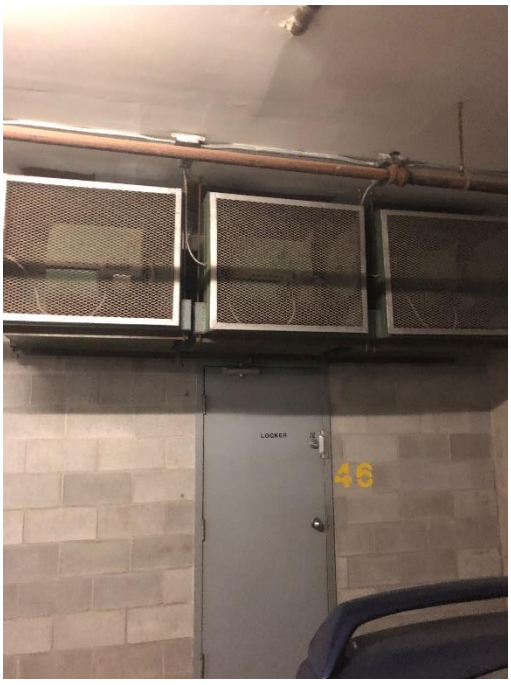
Photograph No. 3	
Date: 5/25/2020	
Description 1hp compressor provided for dry sprinkler system for the parking garage and is located in the water entry room in the parking garage.	

Photograph No. 4	
Date: 5/25/2020	
Description 4 inch water entry, provides water to sprinkler system and domestic cold water and is located in water entry room in parking garage.	

Photograph No. 5 Date: 5/25/2020 Description Typical: Aaon Make up Air unit located on roof provides corridor pressurization.	

Photograph No. 6 Date: 5/25/2020 Description Typical: Greenheck exhaust fan provided for garbage room that is disconnected located on roof.	

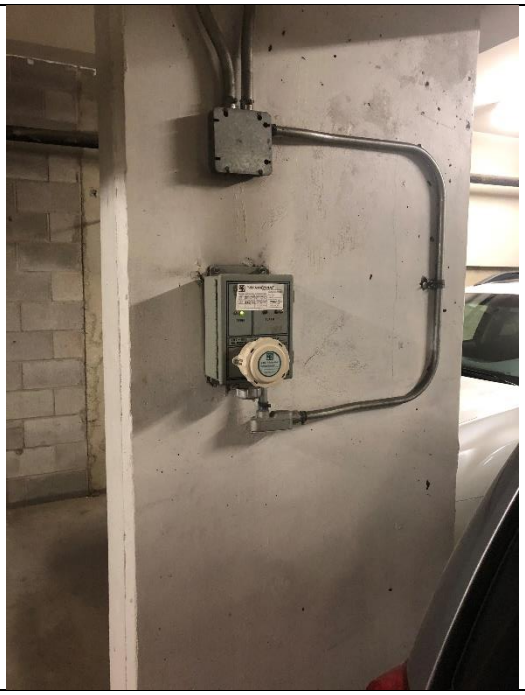
Photograph No. 7 Date: 5/25/2020 Description Typical Westcan 2KW electric force flow heaters located in parking garage.	

Photograph No. 8 Date: 5/25/2020 Description Typical Delhi Industries exhaust fan located in parking garge.	

Photograph No. 9	
Date: 5/25/2020	
Description Emergency lighting battery located in parking garage.	

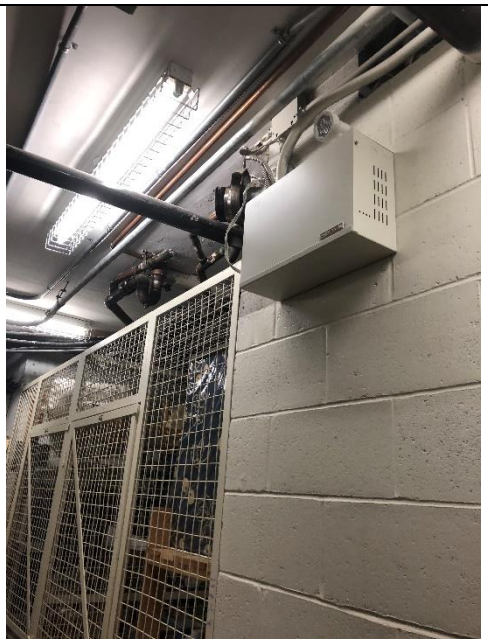
Photograph No. 10	
Date: 5/25/2020	
Description Typical Emergency lighting remote heads located in parking garage.	

Photograph No. 11	

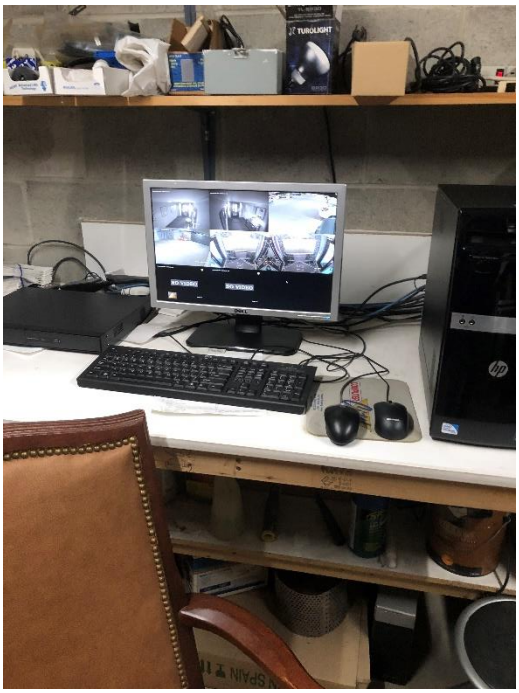
Date: 5/25/2020 Description CO detection system located in parking garage is interlocked with exhaust system.	

Photograph No. 12 Date: 5/25/2020 Description Greenheck exhaust fan located in elevator room.	

Photograph No. 13	

Date: 5/25/2020	
Description Typical Emergency lighting c/w battery unit located in storage lockers. A mix of Cast-iron and copper piping is provided for drainage piping.	

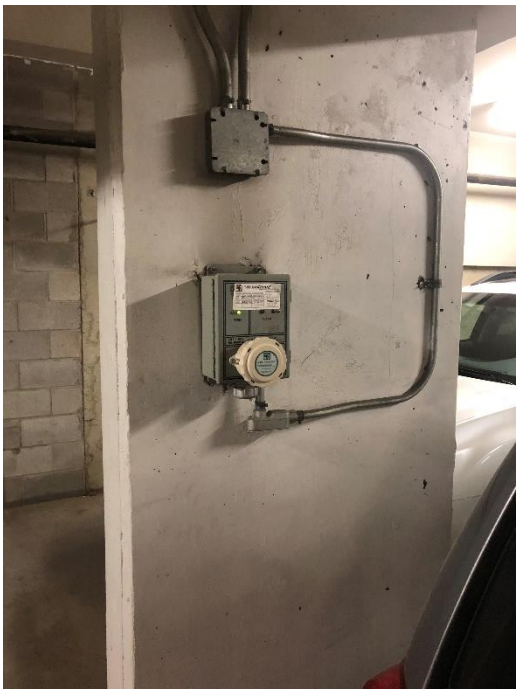
Photograph No. 14	
Date: 5/25/2020	
Description Electric force flow heaters are provided at entrance doors.	

Photograph No. 15	
Date: 5/25/2020	
Description Building security camera system.	

Photograph No. 16	
Date: 5/25/2020	
Description Main electrical switchboard and common element panels located in main electrical room in the basement. A Delhi exhaust fan is provided for the electrical room for ventilation.	

Photograph No. 17	
Date: 5/25/2020	
Description Main Hydro meter located in main electrical room. In basement.	

Photograph No. 18	
Date: 5/25/2020	
Description Common element electrical “Panel A” is missing knock out breaker cover plate.	

Photograph No. 19	
Date: 5/25/2020	
Description CO detection system located in parking garage is interlocked with exhaust system.	

Photograph No. 20	
Date: 5/25/2020	
Description Siemens fire alarm annunciator panel located in main lobby vestibule.	

Photograph No. 21	
Date: 5/25/2020	
Description Building entry system located in main entrance vestibule.	

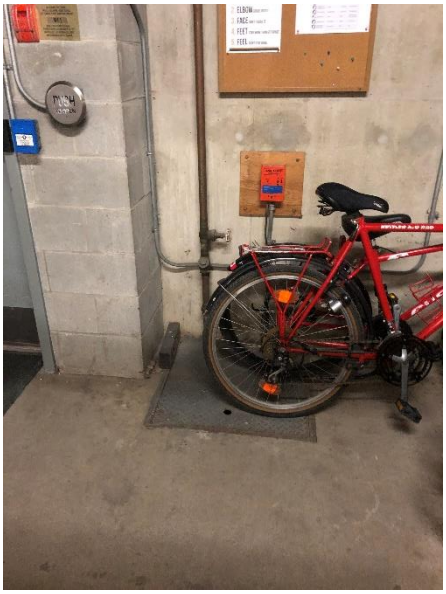
Photograph No. 22	
Date: 5/25/2020	
Description Typical electrical meter center distribution closets located on every second floor hallway.	

Photograph No. 23 Date: 5/25/2020 Description Typical baseboard heaters located in stairwell.	

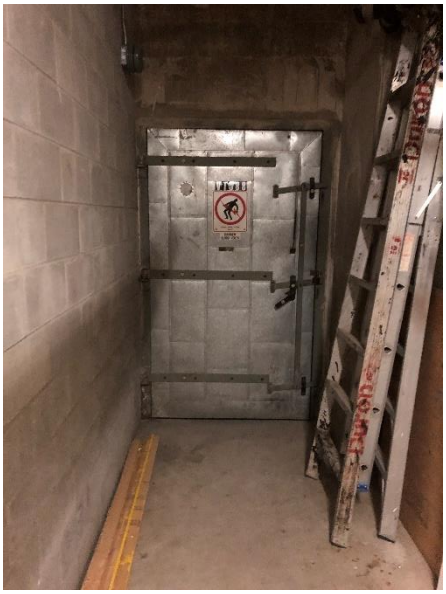
Photograph No. 24 Date: 5/25/2020 Description Fire hose cabinets with type ABC fire extinguishers.	

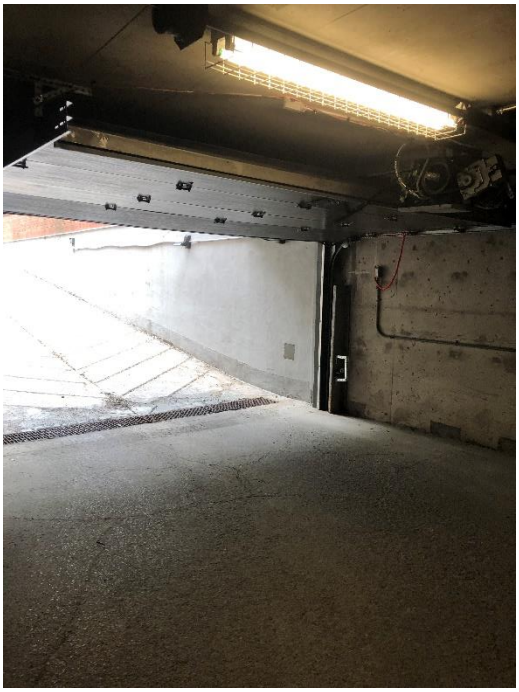
Photograph No. 25	
Date: 5/25/2020	
Description Typical electric snow melting equipment control located in stairwell.	

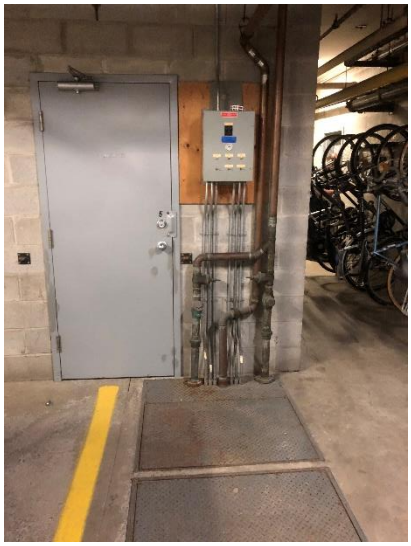
Photograph No. 26	
Date: 5/25/2020	
Description Electrical snow melting cable located on roof.	

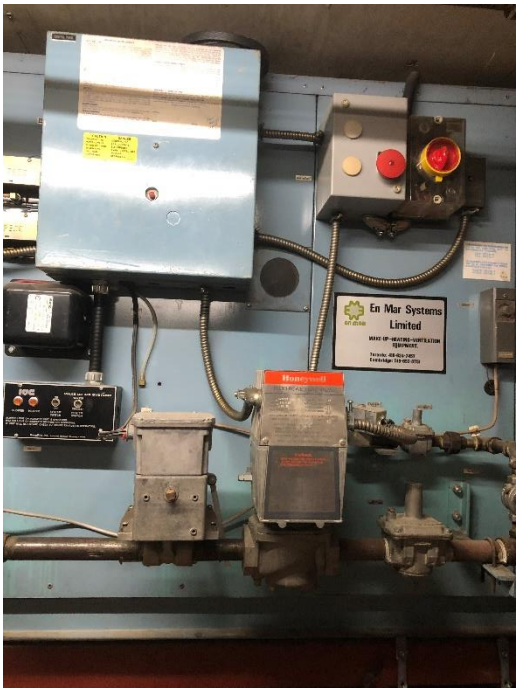
Photograph No. 27	
Date: 5/25/2020	
Description Sump pit for elevator located in parking garage.	

Photograph No. 28	
Date: 5/25/2020	
Description Electric heating ramp system located within parking garage.	

Photograph No. 29 Date: 5/25/2020 Description 15,000V Main electrical hydro vault located in basement.	

Photograph No. 30 Date: 5/25/2020 Description Garage door motor.	

Photograph No. 31	
Date: 5/25/2020	
Description A Sanitary Sump pump pit located near the water entry room in parking garage.	

Photograph No. 32	
Date: 5/25/2020	
Description Keeprite 1,000 BTU gas fire MAU unit located in basement mechanical room.	

Photograph No. 33	
Date: 5/25/2020	
Description Electric Spacesaver domestic hot water tank and exhaust fan located in janitor room in basement.	

Photograph No. 34	
Date: 5/25/2020	
Description Typical Thermal Zone condenser units located on roof.	

Photograph No. 35 Date: 5/25/2020 Description Typical electrical baseboard heater located below windows are provided for auxiliary heating.	

Photograph No. 36 Date: 5/25/2020 Description Typical electrical force flow heating located in stairwell. It was noted that storage of bicycle leaning on force flow heater is creating a potential fire hazard. Area in front of heater should be clear of any obstructions.	

APPENDIX B:

ELEVATOR SYSTEMS REPORT

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

ELEVATOR RESERVE FUND STUDY

205-215 Somerset Street West, Ottawa, Ontario

Date of Report
March 2020

1.0 PURPOSE

On March 12, 2020, a study of the elevator equipment located at CCC No. 339, 205-215 Somerset Street West, Ottawa, Ontario was undertaken for the Paterson Group. This was conducted 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

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

Complete modernization – If the elevator equipment is properly maintained under the terms of full maintenance contract, we estimate the remaining useful life as twenty-one (21) years. At such time the existing controllers, oil tanks, valves, motors, and pumps 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 elevator system includes all associated work to ensure the elevators comply with the latest edition of the CSA Safety Code for Elevators. Elevator modernization is predicted to cost $330,500. This includes the price of a cab modernization.

Cab interior upgrade – Normally, cab interiors are renewed periodically for aesthetic reasons. We recommend allowing funds for cab work in approximately eleven (11) years. A cab modernization could cost $40,000 if undertaken with similar materials.

Contingency fund – 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 that the elevator complies with the Rulings is the responsibility of the Owner. We recommend that a contingency fund of $2,500 is established every five (5) years to cover the cost of any future mandatory work for this site.

WEST Elevator (215 Somerset W) Repair of pit steel corrosion – During this review, we noted water pooling in the elevator pits. This will lead to corrosion of the pit steel and other elevator components. We recommend the water infiltration issue be mitigated to prevent deterioration of the pit steel.

Machine room fire extinguisher – We recommend a type ABC type fire extinguisher be mounted and maintained in the machine room. The estimated cost for a mounted fire extinguisher is $50.

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

3.0 DESCRIPTION OF VERTICAL TRANSPORTATION SYSTEM

The vertical transportation system consists of two simplex inground hydraulic passenger elevators.

3.1 Technical Data

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

Category	Description
Building Designation	EAST Elevator (205 Somerset W) WEST Elevator (215 Somerset W)
Installation Number	38316 (EAST), 38317 (WEST)
Class	Passenger
Capacity	2,500 lb
Speed	150 fpm
Floors Served	6
Car Door Opening	42" wide x 84" high Single-speed, side-opening
Door Protection	Multibeam infrared detector
Door Operator	GAL
Power Unit	iTi Hydraulik Submerged remote IMO pump, Imperial AC motor 40 HP, 208 volt, 3 phase
Valve	Maxton
Electrical Controller	GAL 10 GX
Drive	Inground with PVC protection
Manufacturer	Dover Elevator / iTi Hydraulik / GAL
Installation Date	circa 1986
Modernization Date	circa 2016
Maintenance Contractor	Elevation Elevator

3.2 Existing Conditions

The elevator system was manufactured and installed by Dover Elevator circa 1986 and modernized circa 2016 using iTi Hydraulik and GAL equipment.

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

The elevators are of in-ground cylinder design. This type of cylinder is prone to attack by electrical or corrosive chemical elements contained in the soil near the elevator. These mechanisms have led to the failure by leakage of elevator cylinders. The elevators have been equipped with PVC cylinder protection - a modern requirement of the Safety Code. PVC cylinder protection is meant to prevent failure of buried hydraulic cylinders by protecting the cylinder from corrosive elements.

The GAL elevator control system provided would most likely be considered non-proprietary by any elevator service contractor and therefore the building owner has free choice of maintenance supplier.

We noted that the elevator system has been equipped with Firefighter's Emergency Operation – automatic emergency recall and in-car emergency service operation. This system was not tested as part of this review. The elevator system does appear to be equipped with a battery-lowering unit. This will cause the elevator to lower to the ground floor and open the door so that passengers are not trapped in the instance of a power outage.

The existing car cab finishes consist of raised laminate walls, metal pan ceiling, and hard ceramic flooring. The finishes remain in good condition at this time. The cabs and fixtures meet most of 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 system was installed in compliance with the then-existing A17.1/CSA-B44- Safety Code for Elevators. Since the date of installation, there have been few revisions to the Code. No readily-identifiable variances were noticed for the existing elevators 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. The provision of a communications failure status light at lobby would bring the units to Code.

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.

Parameter	Required	EAST Elev. 205 Somerset W	WEST Elev. 215 Somerset W
Car Speed UP	*150 fpm ±10%*	160	161
Car Speed DOWN	*150 fpm ±15%*	121	152
Flight Time UP	*≤ 12.7 sec*	12.2	14.7
Flight Time DOWN	*≤ 12.7 sec*	16.0	17.2
Average Accel UP	*0.03 g*	0.04	0.05
Max Jerk	*≤ 15 f/s^3*	9	8
Door Stall Force	*≤ 30 lb*	25	25
Levelling Accuracy	*1/4"*	1/4"	1/4"

Table Definitions

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 lb of force.*

Levelling Accuracy: *Observed accuracy of floor landing at the time of our review. Note that this accuracy can easily vary, even within a given day.*

5.0 MAINTENANCE

The elevator equipment is maintained by Elevation Elevator, presumably under the terms of their full parts and labour contract. As most major components of the elevator system are generally covered under the terms of a full maintenance program, no major capital expenditures should be incurred to repair these components. Exceptions to full maintenance coverage detailed in the contract, such as vandalism, misuse, 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.

5.1 Maintenance Logs

The machine room safety logs are currently up-to-date with the exception of 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:

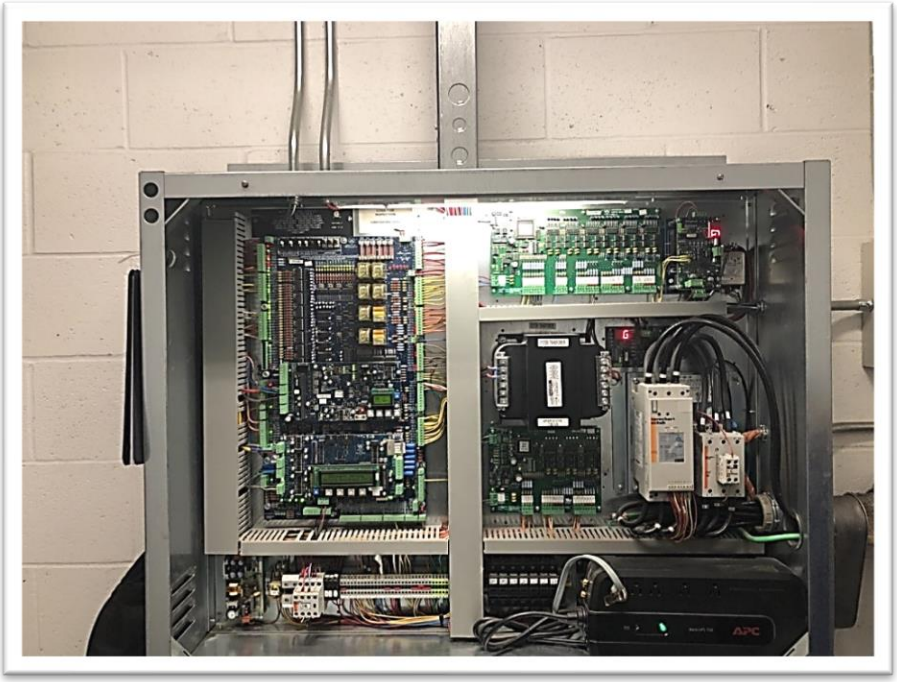
Task	Record
Routine Visits	12 of last 12 planned visits logged Contractor's plan is for monthly visits
Callback and repair log	Log indicates a reasonable level of calls, if accurate
Annual Work (CAT 1)	Last recorded May 12, 2019
Five-year Work (CAT 5)	Last recorded March 12, 2016
Fire Service Testing	Up to date
Auxiliary Power Testing	Up to date

5.2 Maintenance Deficiencies

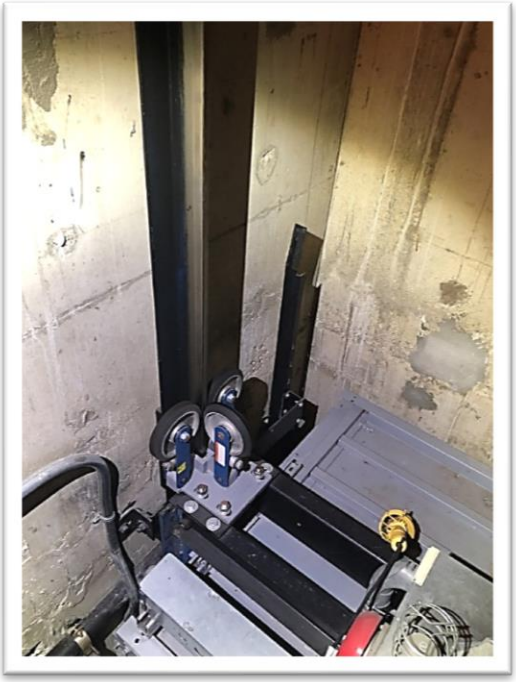
Listed below are deficiencies that should be corrected by the maintenance contractor under the terms of a full-service maintenance contract. We recommend 60 days as the timeframe for corrective action. The contractor is to attest to the completion of each deficiency by initialing and dating where indicated.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

Deficiencies	Date Corrected; Initials
Common to Both Elevators	
1. Adjust to decrease flight times in the DOWN direction.	
EAST Elevator	
2. Correct the pit light switch; faulty and only working intermittently.	
WEST Elevator	
3. Correct the hydraulic fluid leak down the cylinder.	

APPENDIX A – IMAGES

IMAGE 1 – Power unit	
IMAGE 2 – Controller	

APPENDIX A – IMAGES, CONTINUED

IMAGE 3 – Car top	
IMAGE 4 – Pit	

APPENDIX B – PROJECTED CAPITAL COST TABLE

Year / Predicted Work	0-5	6-10	11-15	16-20	21-25	26-30
Future mandatory work required by B44 Safety Code	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Replace cab interior finishes (if not implementing full modernization)			$40,000			
Complete modernization of existing elevators, including B44 Code upgrades and cab interiors					$330,500	

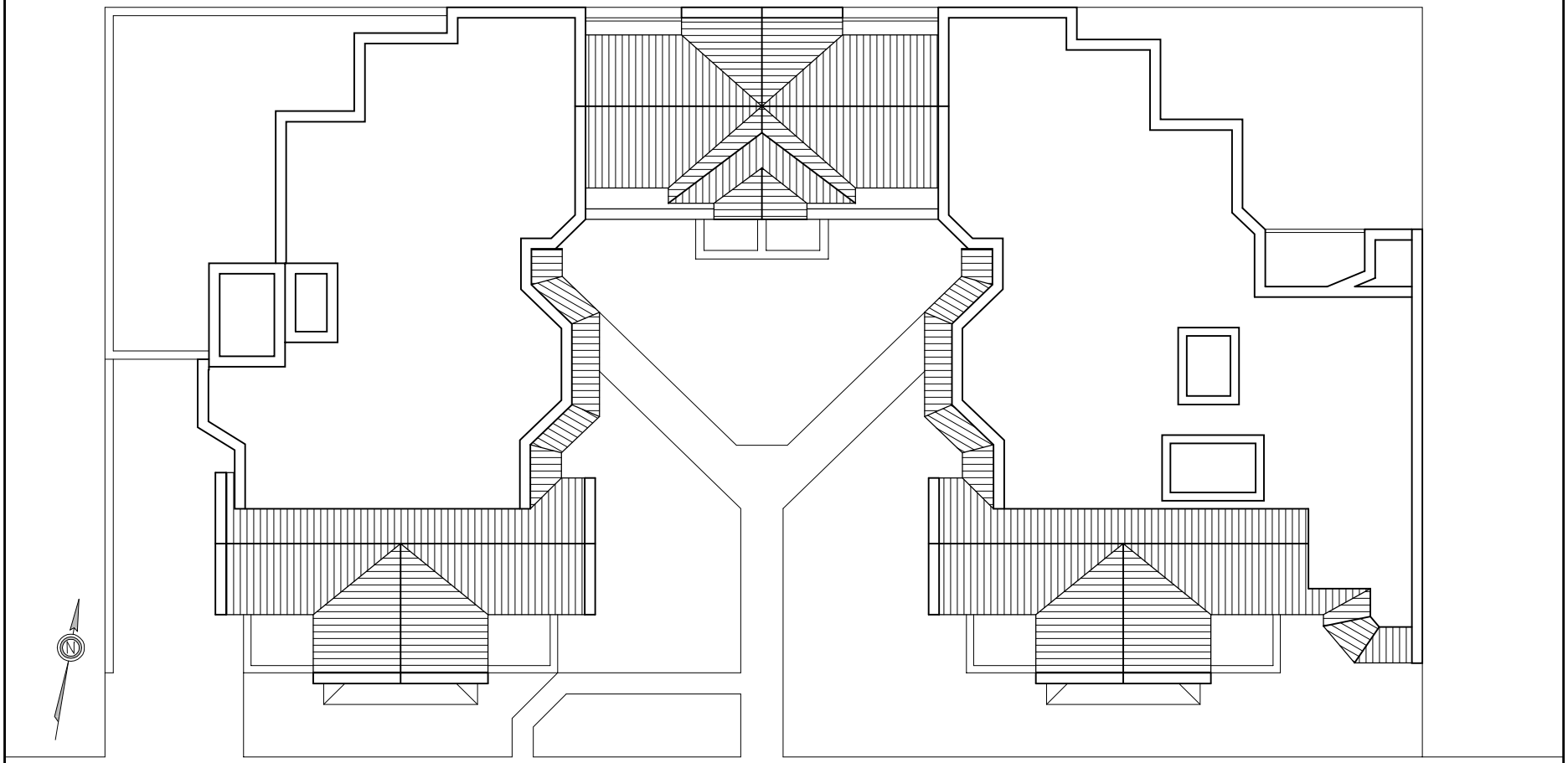
Notes of Costs:

- HST not included;
- Based on present-day dollars;
- Work which does not fall under the responsibility of the elevator trade, such as air conditioning, not included.

-END OF REPORT-

APPENDIX C:

SITE PLAN FOR CCC 339



SOMERSET STREET WEST

CCC 339 - SITE PLAN

APPENDIX D:

PHOTOGRAPHIC CATALOGUE

Photo D.1 – Partial view of the front building elevation.

Photo D.2 – Example of a leak through the podium deck membrane into the parking garage.

Photo D.3 – Showing precast concrete retaining walls that are leaning.

Photo D.4 – Showing balcony waterproofing membrane that is peeling.

Photo D.5 – Showing numerous spalled brick at a parapet wall.

Photo D.6 – Showing spalled bricks near a balcony scupper.

Photo D.7 – Showing a spalled bricks at a balcony privacy wall.

Photo D.8 – Showing numerous spalled bricks at the east elevation.

APPENDIX E:

RESERVE FUND STUDY SPREADSHEET

CCC 339: RESERVE FUND SPREADSHEET

SPREADSHEET ESSENTIALS:

- THE END OF THE FISCAL YEAR IS JUNE 30 OF EACH YEAR
- THE PROJECTED RESERVE FUND BALANCE AS AT JUNE 30, 2020 IS: $320,228
- FOR THIS FISCAL YEAR (2020/21), RESERVE FUND CONTRIBUTIONS ARE: $153,608
- FOR NEXT FISCAL YEAR (2021/22), WE RECOMMEND CONTRIBUTIONS OF: $156,680 (2% increase)
- SPECIAL CONTRIBUTIONS ARE REQUIRED DURING 2021 AND 2022, IN THE AMOUNT OF: $135,000 (per year for 2 years)
- FROM 2020/21 TO 2027/28, ONLY REGULAR INFLATIONARY INCREASES SHOULD BE REQUIRED
- FROM 2027/28 ONWARD, CONTRIBUTIONS CAN REMAIN FROZEN AT: $176,447

SPREADSHEET ASSUMPTIONS:

2.0% IS THE ASSUMED INFLATION RATE FOR EXPENDITURES & CONTRIBUTIONS

2.0% IS THE ASSUMED RATE OF INTEREST EARNINGS FOR RESERVE FUND INVESTMENTS, BASED ON THE AVERAGE BALANCE FOR EACH YEAR

- INFLATION AND INTEREST RATES ARE ASSUMED TO BE CONSTANT OVER THE 30-YEAR PERIOD EXAMINED IN THIS SPREADSHEET

	AGE OF COMPLEX (start of fiscal year)	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	FISCAL YEAR	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36
ITEM	WORK DESCRIPTION / CALENDAR YEAR	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
4.1	Grounds Lighting		$7,000														
4.2	Parking GarageSlab-on-Grade Concrete								$35,000								
4.2	Parking Garage Structure								$17,000								
4.2	Parking Garage Podium Deck Membrane		$150,000	$200,000													
4.2	Parking Garage Ramp & Heating System	$82,000															
4.3	Interlocking Paver Stone Walkways		$24,000	$8,000													
4.3	Retaining Walls			$70,000													
4.4	Foundation Walls & Parging					$30,000											
4.5	Balcony Membranes & Concrete Slabs				$25,000												
4.6	Brick Masonry Veneer		$40,000										$15,000				
4.7	Exterior Painting						$20,000								$20,000		
4.7	Caulking																
4.8	Windows	$73,000	$52,000	$52,000	$52,000	$52,000											
4.8	Sliding Glass Patio Doors								$60,000	$60,000							
4.8	Balcony Doors											$20,000					
4.8	Building Entrance Doors																
4.8	Unit Entrance Doors																$90,000
4.8	Stairwell and Service Doors																
4.8	Overhead Parking Garage Door									$10,000							
4.9	Main Flat Roof System																
4.9	Balcony Terrace Roof System				$10,000												
4.9	Steel Sloped Roof System																$140,000
4.9	Ice Guards																$15,000
4.10	Eavestrough System																$10,000
4.11	Wallpaper					$30,000											
4.11	Interior Painting							$25,000									
4.11	Corridor Carpets							$30,000									
4.11	Marble Tile Flooring																
4.11	Mailboxes	$5,000															
4.12/M3.1	Plumbing & Drainage Systems						$17,000		$3,500			$18,000					$50,000
4.12/M3.2	Ventilation Systems		$16,000					$18,000									
4.12/M3.4	Fire Protection Systems																
4.12/E4.1	Electrical Distributions						$35,000	$170,000					$70,000				
4.12/E4.3	Fire Alarm Systems											$22,000					
4.12/E4.4	Door Entry Systems						$1,000										
4.12/E4.5	Electrical Heating Systems	$74,000						$16,000			$10,000						
4.12/E4.6	Building Securtiy Camera System (CCTV)									$20,000							
4.13	Elevator Modernization/Cab Refurbishment				$60,000												
4.13	Elevator Allowance for TSSA Update			$2,800					$2,800					$2,800			
4.14	General Contingencies Allowance	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
4.15	Engineering Fees	$15,290	$20,000	$15,000				$15,000									$10,000
4.16	Reserve Fund Study Updates	$11,000			$6,000			$11,000			$6,000			$11,000			$6,000
N/A	EXPENDITURES, BEFORE INFLATION	$265,290	$314,000	$352,800	$158,000	$117,000	$78,000	$290,000	$123,300	$95,000	$21,000	$65,000	$90,000	$18,800	$25,000	$5,000	$326,000
N/A	EXPENDITURES, AFTER INFLATION	$265,290	$320,280	$367,053	$167,671	$126,645	$86,118	$326,587	$141,633	$111,308	$25,097	$79,235	$111,904	$23,843	$32,340	$6,597	$438,753
N/A	ANNUAL CONTRIBUTIONS	$153,608	$156,680	$159,814	$163,010	$166,270	$169,595	$172,987	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447
N/A	SPECIAL CONTRIBUTIONS		$135,000	$135,000													
N/A	EARNED INTEREST	$5,341	$4,032	$3,095	$2,381	$2,782	$4,082	$3,456	$2,326	$3,382	$5,637	$8,262	$10,063	$12,460	$15,708	$19,197	$18,651
N/A	REMAINING FUND: FUTURE DOLLARS	$213,887	$189,319	$120,175	$117,894	$160,302	$247,861	$97,717	$134,857	$203,378	$360,366	$465,840	$540,446	$705,510	$865,325	$1,054,372	$810,717
N/A	REMAINING FUND: 2020 DOLLARS	$213,887	$185,607	$115,508	$111,094	$148,094	$224,495	$86,770	$117,401	$173,581	$301,538	$382,151	$434,661	$556,290	$668,924	$799,082	$602,374

OTHER SPREADSHEET INFORMATION:

- ALL COSTS LISTED IN THE ROWS BESIDE WORK DESCRIPTIONS (I.E. ABOVE THE FIRST DOUBLE-LINE) ARE THE ACTUAL COST ESTIMATES OUTLINED IN THE MAIN BODY OF THE REPORT
- INFLATION IS ACCOUNTED FOR ONLY AFTER YEARLY EXPENDITURES ARE TOTALLED
- ALL COSTS LISTED IN THE SPREADSHEET ARE IN 2020 DOLLARS AND INCLUDE HST
- DUE TO THE YEAR END DATE, ALL EXPENDITURES ARE ASSUMED TO OCCUR IN THE FIRST CALENDAR YEAR OF EACH FISCAL YEAR (FOR EXAMPLE, ALL EXPENDITURES PROJECTED TO OCCUR IN 2020 ARE BUDGETED FOR FISCAL YEAR 2020/21)
- HOWEVER, DUE TO JUNE 30 YEAR END, IN REALITY, LARGER PROJECTS ARE LIKELY TO OCCUR OVER TWO FISCAL YEARS, SUCH AS 2021 PODIUM WORK LIKELY STARTING IN 2021/22 AND COMPLETED DURING 2022/23

51	52	53	54	55	56	57	58	59	60	61	62	63	64	65			
2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51			
2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	TOTALS	ITEM	WORK DESCRIPTION
															$7,000	4.1	Grounds Lighting
	$35,000										$35,000				$105,000	4.2	Parking GarageSlab-on-Grade Concrete
						$17,000									$34,000	4.2	Parking Garage Structure
															$350,000	4.2	Parking Garage Podium Deck Membrane
									$82,000						$164,000	4.2	Parking Garage Ramp & Heating System
															$32,000	4.3	Interlocking Paver Stone Walkways
															$70,000	4.3	Retaining Walls
															$30,000	4.4	Foundation Walls & Parging
		$25,000													$50,000	4.5	Balcony Membranes & Concrete Slabs
					$15,000										$70,000	4.6	Brick Masonry Veneer
					$20,000								$20,000		$80,000	4.7	Exterior Painting
$50,000															$50,000	4.7	Caulking
														$100,000	$381,000	4.8	Windows
															$120,000	4.8	Sliding Glass Patio Doors
															$20,000	4.8	Balcony Doors
						$14,000									$14,000	4.8	Building Entrance Doors
															$90,000	4.8	Unit Entrance Doors
				$24,000											$24,000	4.8	Stairwell and Service Doors
							$10,000								$20,000	4.8	Overhead Parking Garage Door
												$240,000			$240,000	4.9	Main Flat Roof System
															$10,000	4.9	Balcony Terrace Roof System
															$140,000	4.9	Steel Sloped Roof System
															$15,000	4.9	Ice Guards
															$10,000	4.10	Eavestrough System
															$30,000	4.11	Wallpaper
					$25,000										$50,000	4.11	Interior Painting
					$30,000										$60,000	4.11	Corridor Carpets
											$2,000				$2,000	4.11	Marble Tile Flooring
															$5,000	4.11	Mailboxes
					$9,000	$3,500									$101,000	4.12/M3.1	Plumbing & Drainage Systems
					$9,000		$100,000	$45,000		$16,000					$204,000	4.12/M3.2	Ventilation Systems
				$110,000								$60,000			$170,000	4.12/M3.4	Fire Protection Systems
															$275,000	4.12/E4.1	Electrical Distributions
		$75,000													$97,000	4.12/E4.3	Fire Alarm Systems
				$1,000	$10,000										$12,000	4.12/E4.4	Door Entry Systems
								$10,000	$80,000	$16,000			$10,000		$216,000	4.12/E4.5	Electrical Heating Systems
							$20,000								$40,000	4.12/E4.6	Building Securtiy Camera System (CCTV)
						$375,000									$435,000	4.13	Elevator Modernization/Cab Refurbishment
	$2,800										$2,800				$14,000	4.13	Elevator Allowance for TSSA Update
$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$155,000	4.14	General Contingencies Allowance
		$9,000				$12,000	$10,000		$25,000			$28,000			$159,290	4.15	Engineering Fees
		$11,000			$6,000			$11,000			$6,000			$11,000	$96,000	4.16	Reserve Fund Study Updates
$55,000	$42,800	$125,000	$5,000	$140,000	$129,000	$426,500	$145,000	$71,000	$192,000	$37,000	$50,800	$333,000	$35,000	$116,000	$4,247,290	N/A	EXPENDITURES, BEFORE INFLATION
$75,503	$59,930	$178,531	$7,284	$208,033	$195,521	$659,360	$228,650	$114,199	$314,996	$61,916	$86,710	$579,761	$62,155	$210,118	N/A	N/A	EXPENDITURES, AFTER INFLATION
$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	$176,447	N/A	N/A	ANNUAL CONTRIBUTIONS
															$270,000	N/A	SPECIAL CONTRIBUTIONS
$17,398	$19,946	$21,505	$23,627	$25,494	$25,497	$20,942	$15,959	$16,383	$15,943	$16,023	$18,410	$15,614	$13,010	$14,088	N/A	N/A	EARNED INTEREST
$929,058	$1,065,521	$1,084,941	$1,277,731	$1,271,639	$1,278,062	$816,090	$779,846	$858,478	$735,872	$866,425	$974,572	$586,873	$714,176	$694,592	$694,592	N/A	REMAINING FUND: FUTURE DOLLARS
$676,768	$760,955	$759,632	$877,074	$855,777	$843,235	$527,879	$494,544	$533,734	$448,536	$517,758	$570,965	$337,085	$402,161	$383,464	**$383,464**	N/A	REMAINING FUND: 2020 DOLLARS