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Reserve Fund Review

for
Carleton Condominium Corporation No. 81

Final Report Prepared For

Carleton Condominium Corporation No. 81
% Mr. John Miles, Vice-President of the Board of Directors

November 21, 2013

Project L2117

EXECUTIVE SUMMARY

Overall, the common elements of CCC 81 are generally in fair to satisfactory condition. However, substantial replacement work will be required over the next several years, due to normal life cycle renewals of aging common elements. Elements which will require such renewal work include elevators, parking garage concrete and traffic membrane, swimming pool coating, windows, sliding glass patio doors, building entrance doors and various mechanical/electrical system elements.

In particular, three major changes to reserve fund budgeting occur with this Reserve Fund Review, as follows:

1. After receiving new information from a contractor performing concrete work in the garage that the garage traffic membrane is much older than previously thought, we conducted a detailed condition assessment of the parking garage in 2013. The findings of that assessment indicate that major repairs are required over the next couple of years, instead of major renewal waiting until 2025.
2. With windows and patio doors due for replacement shortly, the Board commissioned a detailed review of glazing replacement options and costs. Based on the Board's desires and the glazing review's findings, glazing replacement will proceed in one phase in 2017 and costs will be higher than previously estimated.
3. Various revisions occurred to budgeting for mechanical elements.

In order to ensure that there are adequate funds in the reserve to pay for replacement of the windows and doors when they are due, a special assessment will be required over the next four years (during 2014 to 2017) in the amount of \$528,099 per year.

Based on the predicted expenditures listed in the spreadsheet and taking into account the special assessment, the corporation will still require a major increase in reserve fund contributions in order to pay for all foreseeable expenditures over the 30-year horizon of this Study. Accordingly, the Board of Directors has decided to increase annual contributions from \$225,884 in 2013 to \$415,884, each year, during 2014 to 2017. After 2017, the corporation should have adequate reserve funding, so annual contributions can be reduced to \$375,884 per year indefinitely. However, this position will be reviewed during each Study Update to determine appropriate funding requirements.

The following table lists the major common element renewal work scheduled for completion over the next 30 years, not including allowances for parking garage concrete repairs, traffic membrane repairs at Level 2 of the parking garage, common element furnishing replacements and elevator repair work required by the B44 safety code.

<u>Item Description</u>	<u>Projected Years of Work</u>
Parking Garage Level 2 - Traffic Membrane Repairs	2013
Parking Garage Ramp Repairs	2013
Exterior Painting (partial of balcony railings)	2013
Pool Area Finishes: Women's Change Room Tile Replacement	2013
Lobby Furniture Addition	2013
Domestic Hot Water Boiler Replacement (2 units)	2013
Corridor Pressurization Fan Replacement (1 unit)	2013
Wall Exhaust Fan Replacement (8 units)	2013
Electrical 1 Room Exhaust Fan Replacement (1 unit)	2013
Laundry Exhaust Fan Replacement (1 unit)	2013
Laundry Exhaust Fan Motor Replacement (1 unit)	2013

Item Description - ContinuedProjected Years of Work

Garage Unit Heater Replacement (9 units)	2013
Elevator Modernization	2013
Parking Garage Concrete Repairs	2014
Parking Garage Level 2 - Traffic Membrane Replacement	2014
Parking Garage Ramp Replacement (remaining area)	2014
Parking Garage Exterior Wall Repairs and Recoating	2014
Asphalt Paved Driveway Reconstruction	2014
Exterior Painting (remainder of balcony railings)	2014
Swimming Pool Coating	2014
Various Exhaust Fan Motor Replacement (13 units)	2014
Vinyl Tile Replacement (at garbage chutes)	2015
Corridor Pressurization Fan Motor Replacement (1 unit)	2015
Garage Exhaust Fan Motor Replacement (1 unit)	2015
Mechanical Penthouse Exhaust Fan Replacement (1 unit)	2015
Chiller Room Exhaust Fan Replacement (1 unit)	2015
Elevator Room Exhaust Fan Replacement (1 unit)	2015
Chilled Water Circulation Pump Replacement (3 units)	2015
Various Fan Coil Unit Replacement (6 units)	2015
Electrical Distribution Equipment Replacement	2016
Window Replacement	2017
Sliding Glass Patio Door Replacement	2017
Building Entrance Door Replacement	2017
Pool Area Finishes: Mosaic Floor Tile Replacement	2017
Overhead Garage Door Replacement (2 of 3 doors)	2018
Pool Area Finishes: Men's Change Room Tile Replacement	2018
Exterior Painting (all painted elements)	2019
Apartment Roof System Replacement	2019
Swimming Pool Roof Membrane Replacement	2019
Swimming Pool Sloped Metal Roof Replacement	2019
Carpet Replacement	2019
Wall Paper Replacement	2019
Metal Siding Replacement	2020
Pool Area Finishes: Stipple Ceiling Repainting	2020
Party Room and Library Modernization	2020
Jockey Pump Replacement (2 units)	2020
Garage Exhaust Fan Replacement (1 unit)	2020
Chilled Water Circulation Pump Motor Replacement (1 unit)	2020
Pool Circulation Pump Replacement (1 unit)	2020
Pool Filter Replacement (1 unit)	2020
Door Entry System Replacement (1 unit)	2020
Balcony Slab Waterproofing Replacement	2021 - 2022
Precast Concrete Panel Cladding Repairs	2021
Exterior Caulking Replacement (not at windows or doors)	2021
Overhead Garage Door Replacement (1 of 3 doors)	2022
Fire Alarm Panel and Annunciator Replacement	2022
Cooling Coil on Main Duct Replacement (1 unit)	2023
Visitor Parking - Traffic Membrane Replacement	2024
DHW Circulation Pump Motor Replacement (1 unit)	2024
DCW Booster Pump Motor Replacement (1 unit)	2024
Wall Thickness Test of DHW Storage Tanks	2024
Exterior Painting (all painted elements)	2025

Item Description - ContinuedProjected Years of Work

Interior Service Door Replacement	2025 - 2029
Exterior Service Door Replacement	2025
Office, Guest Suite and Laundry Room Modernization	2025
Elevator Sump Pump Motor Replacement (1 unit)	2025
DHW Storage Tank Replacement (2 units)	2025
Barrier-Free Automatic Door Operator Replacement	2025
Parking Garage Level 2 - Traffic Membrane Replacement	2029
Parking Garage Exterior Wall Recoating	2029
Asphalt Paved Driveway Overlay	2029
Swimming Pool Coating	2029
Grounds Lighting and Wiring Replacement	2030
Parking Garage Roof Membrane & Landscaping Replacement	2030
Metal Railing Replacement (not at balconies)	2030
Concrete Walkway Replacement	2030
Building Entrance Paver Stone Replacement	2030
Unit Entrance Door Replacement	2030
Pool Area Finishes: Stipple Ceiling Repainting	2030
Pool Area Finishes: Wall Covering Replacement	2030
Standpipe Booster Pump Replacement (1 unit)	2030
Corridor Pressurization Fan Motor Replacement (1 unit)	2030
Garage Exhaust Fan Motor Replacement (1 unit)	2030
Dehumidifier Replacement	2030
Exterior Painting (all painted elements)	2031
Chiller Replacement (1 unit)	2032
Cooling Tower Replacement (1 unit)	2032
Overhead Garage Door Replacement (2 of 3 doors)	2033
Heating Coil on Main Duct Replacement (1 unit)	2033
Carpet Replacement	2034
Wall Paper Replacement	2034
DHW Circulation Pump Replacement (1 unit)	2034
DCW Booster Pump Replacement (1 unit)	2034
Chilled Water Circulation Pump Motor Replacement (1 unit)	2035
Pool Circulation Pump Replacement (1 unit)	2035
Balcony Slab Waterproofing Replacement	2036 - 2037
Metal Railing Replacement (at balconies only)	2036 - 2037
Precast Concrete Panel Cladding Repairs	2036
Exterior Caulking Replacement (all caulking)	2036 - 2037
Exterior Painting (all painted elements)	2037
Overhead Garage Door Replacement (1 of 3 doors)	2037
Electrical 2 Room Exhaust Fan Replacement (1 unit)	2037
Domestic Hot Water Boiler Replacement (2 units)	2038
Corridor Pressurization Fan Replacement (1 unit)	2038
Emergency Power Generator c/w ATS Replacement (1 unit)	2038
Garage Unit Heater Replacement (9 units)	2038
Parking Garage Ramp Reconstruction	2039
Visitor Parking - Traffic Membrane Replacement	2039
DHW Circulation Pump Motor Replacement (1 unit)	2039
Pool Area Finishes: Stipple Ceiling Repainting	2040
Lobby Modernization	2040
Elevator Sump Pump Replacement (1 unit)	2040
Elevator Sump Pump Motor Replacement (1 unit)	2040

<u>Item Description - Continued</u>	<u>Projected Years of Work</u>
Jockey Pump Replacement (2 units)	2040
Pool Filter Replacement (1 unit)	2040
Barrier-Free Automatic Door Operator Replacement	2040
Exterior Painting (all painted elements)	2043
Wall Exhaust Fan Replacement (8 units)	2043
Electrical 1 Room Exhaust Fan Replacement (1 unit)	2043
Laundry Exhaust Fan Replacement (1 unit)	2043
Laundry Exhaust Fan Motor Replacement (1 unit)	2043

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

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1. INTRODUCTION

The Condominium Act defines three types of Reserve Fund Study, with a 'Comprehensive Study' and an 'Updated Study Based on a Site Inspection' as the formal names for what are commonly known as a "new" Reserve Fund Study and a Reserve Fund Study Update, respectively. Whether the report is a "new" Study or a Study Update, completion of the Study involves site inspections, cost estimates for major repair and replacement work, spreadsheet analyses, and finally, preparation of a full Reserve Fund Study report. The main difference between the two reports is that an Updated Study typically is a reassessment of previous findings by a firm familiar with the property and the previous Study. As such, the Updated Study normally requires less field work and may require only limited quantity take-offs. Overall, a 'Comprehensive Study' and an 'Updated Study Based on a Site Inspection' result in essentially the same type of report, in that they both present a complete review of the corporation's common elements and reserve fund needs. Due to the importance of completing a detailed review of a corporation's reserve fund needs, The Condominium Act requires that a "new" Study or a detailed Study Update must be completed at least every six years.

To ensure independent review of the Study on a regular basis, The Condominium Act also specifies that an 'Updated Study Not Based on a Site Inspection' must be performed within three years of completing either a 'Comprehensive Study' or an 'Updated Study Based on a Site Inspection'. This interim Study, which our firm calls a 'Reserve Fund Review', is intended to provide an interim update of the corporation's requirements for annual reserve fund appropriations. Updating the corporation's reserve funding plan on a regular basis is intended to keep a condominium's reserve fund planning current; to help avert the need for large special assessments or other dramatic funding changes.

A Reserve Fund Review is not intended as a detailed Study Update. Instead, this Review is simply an interim report intended to bridge the gap between the previous detailed Reserve Fund Study and the next detailed Study Update. As such, portions of this report refer back to the previous Comprehensive Study, and it is recommended that readers have a copy of the previous Comprehensive Study available when reviewing this report.

2. PURPOSE & SCOPE OF WORK

This Reserve Fund Review is a technical and financial assessment of the common elements of the condominium corporation to:

- briefly re-assess the condition of common elements
- update our forecasted timing for major capital expenditures over the short and long term
- recommend annual reserve fund appropriations.

Overall, this Review provides the Board of Directors with an assessment report on the reserve fund which qualifies as an 'Updated Study Not Based on a Site Inspection' as defined by The Condominium Act; except that we perform site inspections to complete our Review even though current site inspections are not a requirement of the Act.

In this Reserve Fund Review, we outline our recommendations for revising the major capital replacement plan that was established by the previous Reserve Fund Study. For all common elements, we discuss the current condition of the affected common elements and our new recommendations for repair/replacement work over the 30-year term covered by this Reserve Fund Review. Furthermore, we include an updated spreadsheet and we present our recommendation for annual reserve fund appropriations.

As for the scope of work, The Condominium Act only requires that an Updated Study Not Based on a Site Inspection be based on a verification of records of the corporation and interviews with those people considered appropriate (such as the Board or Directors, the Property Manager and/or service contractors). As such, persons completing the Study do not even need to visit the property to verify the condition of building elements. However, we do not agree with completing an Updated Study without visiting the site to verify the condition of key common elements and to update life expectancy projections. Therefore, we conduct site inspections of the property in completing this report, to verify current common element conditions for various common elements. As such, we call our reports a 'Reserve Fund Review' instead of an 'Update Not Based on a Site Inspection', since our report is based on a site inspection in addition to the other analysis required to provide a quality update of the previous Study. (The word 'Review' is used instead of Study, to differentiate this report from a detailed Study Update).

While we do conduct site inspections, this report is an interim review between detailed Studies, so there are limits to these inspections to economize the project for the client. Our inspections include a walk-through of the property for a general visual inspection of the majority of the readily accessible common elements. To ensure that information is obtained regarding common elements not inspected, we review background information and interview the Property Manager (and sometimes service contractors) regarding the recent performance of common elements not inspected on site.

3. DESCRIPTION OF COMPLEX

Carleton Condominium Corporation No. 81 is a 38-year old, 94-unit, 14-storey residential condominium apartment building located at 370 Dominion Avenue, in Ottawa, Ontario. The building structure consists of reinforced concrete slabs, shear walls, foundation walls, columns and footings. The building includes two levels of above grade parking and an indoor swimming pool. The area above the parking garage roof and swimming pool roof is protected by a waterproof membrane system. The parking garage roof is generally landscaped and the swimming pool roof is covered with precast paver stones. The exterior facades of the building consist of precast concrete panels with steel stud back up walls, aluminum windows and sliding glass patio doors. The residential condominium apartment building and penthouse roofs are protected by inverted waterproof membrane systems. The building also includes concrete balconies with steel guard rails.

The building's services include the typical provisions for electricity, heating and ventilation, communications, and life safety systems. In addition, the building contains two elevators. The building is also equipped with various service, storage and amenity rooms, such as the mechanical and electrical rooms, mail room, storage rooms, garbage/recycling room, laundry room, male and female saunas, party room, male and female change rooms, swimming pool, library, office, guest suite and superintendent's apartment. The main entrance vestibule walls are finished with wood slats and the floors are finished with ceramic tile. The ground floor lobby floors are finished with tile, the ceilings are finished with wood slats, and the walls are finished with wood slats and wallpaper. Typical corridors which provide access to units, are finished with carpet, wallpaper and stipple finish ceilings.

The common property elements also include all site services (such as water supply, electrical supply, sewer systems), landscaped elements such as interlocking paver stone, exposed aggregate stone, precast concrete stone, exposed aggregate stone planters, asphalt pavement, exterior concrete at visitor parking, a pergola and a brick masonry barbeque.

4. FINDINGS AND RECOMMENDATIONS

For most of the common elements inspected, the projected nature and timing of major repair and replacement work remains generally as outlined in our latest Reserve Fund Study, dated September 22, 2010. Therefore, this report does not include a detailed outline of all common element findings and recommendations, since this information is contained in the previous Study and is still valid. Instead, this report provides a detailed discussion only where significant changes in recommendations or budget costs, or where we obtained updated information from the Board of Directors relating to a change in the condition of the common elements that would affect the recommended nature and/or timing of the repair/replacement work.

All cost estimates were updated as applicable for all work included in the spreadsheet, with the estimated dollar amounts calculated in 2013 dollars and also including the HST.

The common elements for which we are revising our recommendations are discussed below.

Grounds Lighting:

The grounds lighting budget amount has been revised from \$4,000 to \$8,000, to account for replacement of isolated electrical wiring with the grounds lighting replacement in 2030. The property will be 55 years old in 2030, so it is likely that occasional wiring will need replacing at that time.

Parking Garage - Level 1 and 2:

As outlined in our parking garage condition assessment survey report, dated October 17, 2013, substantial repair and replacement work is needed in the parking garage. As such, in 2014, \$130,000 is budgeted to repair localized concrete, \$170,000 is budgeted to replace the traffic membrane at Level 2 and \$10,000 is budgeted to repair the traffic membrane at Level 1. Once the 2014 work is complete, the traffic membrane and concrete should provide approximately 15 years of reliable service before membrane replacement will likely be required again. As such, in 2029, we budgeted another \$25,000 for concrete repairs, \$170,000 to replace the traffic membrane at Level 2 and \$10,000 to repair the traffic membrane at Level 1. In between these major rehabilitation programs, \$10,000 is budgeted every five years for isolated repairs to the traffic membrane and concrete.

In 2013, localized concrete repair and membrane replacement work was undertaken at Level 2 of the parking garage. It cost \$9,370 to perform that work and this amount has been included in the spreadsheet.

Parking Garage Roof Membrane & Landscaping:

The budget amount for replacement of the roof membrane and landscaping has been revised from \$210,000 to \$280,000, to reflect the current market pricing for replacement of this element.

Parking Garage Ramp:

Significant repair and reconstruction of the parking garage ramp occurred during 2010 and 2011, but there is still an approximate 30 m² area where ramp pavement and waterproofing replacement is needed. As such, we budgeted \$15,000 to perform that remaining ramp work in 2014. Once all outstanding ramp work is complete, the ramp pavement and waterproofing should provide about 25 years of reliable service before another major reconstruction will likely be required. As such, we budgeted \$110,000 to replace all ramp pavement and waterproofing a second time in 2039.

In 2013, miscellaneous repairs were performed at the top of the parking garage ramp. It cost \$1,209 to perform that work and this amount has been included in the spreadsheet.

Visitor Parking - Traffic Membrane:

The timing for replacement of the visitor parking traffic membrane has been revised from 2020 to 2024 and 2035 to 2039, to coincide with parking garage repair and ramp reconstruction work. In addition, the traffic membrane budget amount has been revised from \$14,000 to \$25,000, to reflect the current market pricing for replacement of this element.

Parking Garage - Exterior Concrete Wall & Coating:

The exterior concrete wall along Level 1 of the parking garage varies from poor to satisfactory condition. Localized concrete is deteriorated and the wall coating requires renewal. As such, we budgeted \$45,000 to repair damaged concrete and apply a new wall coating in 2014. The wall coating should last 15 years before refinishing will likely be required again. As such, we budgeted \$20,000 to apply a new wall coating in 2029.

Metal Railings (not at balconies):

The budget amount for replacement of metal railings on the parking garage roof has been revised from \$40,000 to \$60,000, to reflect the current market pricing for replacement of this element.

Asphalt Paved Driveway:

The driveway pavement reconstruction budget amount has been revised from \$7,000 to \$15,000 (in 2014), to reflect the current market pricing for replacement of this element. Furthermore, the timing for a second renewal of the driveway pavement has been revised from 2039 to 2029; in the form of an overlay of new pavement rather than another reconstruction. An estimated \$7,000 is budgeted to perform the overlay work in 2029.

Concrete Walkway:

The concrete walkway along the north side of the building was not included in our previous Study. As such, to coincide with the interlocking paver stone work, we budgeted \$7,000 to replace the concrete walkway in 2030.

Interlocking Paver Stones (at building entrance):

Replacement costs for entrance paver stones has been revised from \$4,000 to \$8,000, to reflect the current market pricing for replacement of this element.

Balcony Guardrails:

Replacement costs for the balcony guardrails has been revised from \$260,000 to \$370,000, to reflect the current market pricing for replacement of this element.

Precast Concrete Panel Cladding:

Isolated precast concrete panels are beginning to display minor deterioration. As such, to coincide with the caulking replacement programs, we budgeted \$30,000 to repair damaged concrete panels in 2021 and again in 2036.

Exterior Painting:

In 2013, occasional repainting of balcony guardrails was performed at an approximate cost of \$10,000, so this amount has been included in the spreadsheet. Since there is still outstanding painting work needed, we budgeted \$30,000 to refinish all remaining painted elements at CCC 81 in 2014. Exterior painting should be performed every five or six years. Therefore, \$40,000 is budgeted to repaint all painted elements again in 2019, 2025, 2031, 2037 and 2043.

Exterior Caulking:

The timing for replacement of exterior caulking has been revised from 2021 and 2022 to 2021, since it is more likely that this work will be performed in one year. In addition, budget costs for replacement of the exterior caulking has been revised from \$56,000 to \$96,000 (during 2036 and 2037), to reflect the current market pricing for replacement of this element.

Windows, Sliding Glass Patio Doors and Building Entrance Doors:

The budget amount for replacement of windows, sliding glass patio doors and building entrance doors has been revised from \$1,320,000 to \$3,200,000, to reflect costs from the glazing study performed by another engineering firm (exp.), dated February 20, 2013, and to reflect an added contingency allowance desired by the Board.

Based on the substantial budget cost increase and recommendations from the exp. glazing study, the timing for replacements of the windows, sliding glass patio doors and building entrance doors has been delayed two years, from 2015 to 2017. Furthermore, the Board has decided to replace these elements all in 2017, instead of over a four-year period, as budgeted in our previous Study.

Interior Service Doors:

Interior service doors were not included in our previous Study. Normally, interior service doors will provide at least 50 years of reliable service. Furthermore, these types of doors are often replaced gradually on an as-required basis, rather than in one large replacement program. As such, we budgeted a total of \$80,000 to gradually replace interior service doors during 2025 to 2029.

Swimming Pool Sloped Metal Roof:

The timing for replacement of the sloped metal roof has been revised from 2020 to 2019, to coincide with the other roof replacement work.

Swimming Pool Floor, Wall and Ceiling Finishes:

In 2013, the floor tile in the women's change room was replaced at a cost of \$3,536, so this amount has been included in the spreadsheet. Normally, floor tile can provide about 40 to 45 years of reliable service before replacement is required. Therefore, we budgeted \$4,000 to replace the men's change room tile in 2018.

The timing for replacement of mosaic tile surrounding the swimming pool has been revised from 2015 to 2017. In addition, the budget amount has been revised from \$2,000 to \$25,000, to reflect actual costs for the women's change room tile replacement.

The stipple ceiling in the swimming pool area is in satisfactory condition, so we budgeted \$7,000 to refinish the ceiling in 2020. Repainting of the ceiling will likely be required every ten years, so another \$7,000 is budgeted to refinish the ceiling in 2030 and 2040.

The wall covering in the swimming pool area was replaced in 2010 at a cost of \$6,000. Normally, wall coverings of this type will require replacement every 20 years or so. As such, we budgeted another \$6,000 to replace the wall covering again in 2030.

Lobby, Party Room, Library, Office, Guest Suite & Laundry Modernizations:

Our previous Study did not include costs for complete modernization of the party room, library, office, guest suite or laundry room finishes. Instead, we budgeted separate replacement of interior finishes, equipment and furnishings within those rooms. Normally, it is easier to completely modernize all finishes at once within these type of common rooms/areas. As such, in 2020, we budgeted \$15,000 to modernize the party room and \$10,000 to modernize the library. In 2025, \$10,000 is budgeted to modernize the office, \$20,000 to modernize the guest suite and \$10,000 to modernize the laundry room. The modernizing programs account for replacement of all interior finishes, equipment and furnishings.

The lobby was completely modernized in 2011 at an approximate cost of \$90,000. Remodelling and updating of the entrance lobby finishes will likely not be required or desired for many more years. Accordingly, we budgeted \$100,000 to remodel the building's main entrance lobby a second time in 2040.

In 2013, lobby furniture was added at a cost of \$7,470, so this amount has been included in the spreadsheet.

Carpet:

Interior carpet is in overall satisfactory condition. As such, the timing for replacement of the carpet has been delayed four years, from 2015 to 2019 and 2030 to 2034. In addition, the budget amount has been revised from \$70,000 each year, to \$115,000 each year, to reflect the estimated costs for replacement of this element.

Vinyl Tile:

The budget amount for replacement of vinyl tile flooring has been revised from \$12,000 each year, to \$2,000 each year. This change is made because our previous Study accounted for replacement of all vinyl tile, but now only accounts for garbage chute room vinyl tile, and all other vinyl tile replacements are now included in modernizations of their respective common rooms.

Wallpaper:

The timing for replacement of wallpaper has been revised from 2023 to 2019, to coincide with the carpet replacement program. Furthermore, the Board has decided that wallpaper will be replaced every time carpet is replaced, so we added another wallpaper replacement in 2034. Lastly, the wallpaper budget amount has been revised from \$90,000 each year, to \$150,000 each year, to reflect the estimated costs for replacement of this element.

Mechanical and Electrical Systems

It should be noted that the building's mechanical and electrical systems were inspected by Levac Robichaud Leclerc and Associates Ltd. in the previous Study, but they have since changed their company name to LRL Associates Ltd. (LRL). Therefore, we will be referring to Levac Robichaud Leclerc and Associates Ltd. as LRL in this Study Update.

Plumbing and Drainage:

The two domestic hot water (DHW) boilers were replaced in 2013 at a cost of \$28,500. Normally, DHW boilers require replacement every 25 years, so we budgeted \$30,000 to replace the two DHW boilers a second time in 2038.

In 2013, there were additional costs incurred associated with the two new domestic hot water tanks. It cost \$9,508 to perform that work and this amount has been included in the spreadsheet.

The Board wanted to know a more accurate life expectancy of the domestic hot water storage tanks. As such, LRL recommended that a non-destructive test of the storage tanks be performed to determine the wall thickness in order to more accurately determine the remaining service life. An estimated \$1,500 is budgeted to have a contractor perform the test in 2024.

The domestic hot water (DHW) storage tank was not included in the previous LRL Study. There used to be two tanks, but one tank has been removed, so there is now only one tank. Normally, DHW storage tanks will provide about 50 years of reliable service before replacement will likely be required. As such, an estimated \$52,000 is budgeted to replace the DHW storage tank in 2025.

The Board reported that pipe risers to individual kitchen and bathroom drains are often blocked, so we suggested that a mechanical engineer be hired to investigate the issue. An estimated \$10,000 is budgeted for the investigation in 2014.

Heating and Air Conditioning:

Five of the six fan coil units were not included in the previous LRL Study. As such, we budgeted \$24,000 to replace all six fan coil units in 2015. These fan coil units normally provide 30 years of service, so no further replacements are budgeted in the spreadsheet of this Study.

The cooling coil on the main duct for corridor pressurization was not included in the previous LRL Study. Normally, the cooling coil will provide about 50 years of reliable service before replacement is required. As such, we budgeted \$9,000 to replace the cooling coil in 2023.

Fire Alarm System:

The timing for replacement of the fire alarm panel and annunciator has been revised from 2013 and 2038, to 2022 and 2047. The reason for the revision is because LRL was previously under the impression that the fire alarm panel and annunciator was last replaced in 1988, but in fact it was replaced in 1997.

Emergency Power System:

The emergency power generator c/w ATS budget replacement cost has been revised from \$35,000 to \$130,000, to reflect the estimated cost for replacement of this element.

Door Entry System:

The timing for replacement of the door entry system has been revised from 2013 to 2020. The reason for the revision is because LRL was previously under the impression that the door entry system was last replaced in 1983, but in fact it was replaced in 1990.

Electric Heating:

One of the nine garage unit heaters was not included in the previous LRL Study. As such, the garage unit heaters replacement costs have been revised from \$12,000 to \$15,000.

The electric heating coil on the main duct for corridor pressurization in the mechanical penthouse was not included in the previous LRL Study. Normally, the heating coil will provide about 30 years of reliable service before replacement is required. As such, we budgeted \$9,000 to replace the cooling coil in 2033 (assuming the existing coil is ten years old).

Elevators:

The elevator budget amount has been revised from \$340,000 to \$375,000, to reflect actual pricing for replacement of this element, including some additional work that was needed.

General Contingency Allowance:

Based on our projection of requirements for miscellaneous spending on repairs that are not just basic maintenance, a general contingencies allowance of \$6,000 per year is recommended to remain constant throughout the 30-year period of this Study.

Professional Fees:

Budgeted amounts for professional fees have been revised, as required, to reflect inflationary increases and the above changes in timing for replacement of the common elements.

Reserve Fund Study Updates:

Budgeted amounts for Reserve Fund Study Updates are estimated at \$11,000 in 2016, 2022, 2028, 2034 and 2040, while amounts for Reserve Fund Reviews are budgeted for \$4,300 in 2013, 2019, 2025, 2031, 2037 and 2043.

General Comments:

Aside from the above comments, all of the other common elements are performing as anticipated in the previous Study, so the timing for repair and replacement work for items not described above remains unchanged from the previous report. However, inflation has caused a change in the estimated value of all projected repair and replacement work. These updated cost estimates are reflected in the Reserve Fund Spreadsheet included in Appendix A.

5. CONCLUSIONS & SUMMARY COMMENTS

Overall, the common elements of CCC 81 are generally in fair to satisfactory condition. However, substantial replacement work will be required over the next several years, due to normal life cycle renewals of aging common elements. Elements which will require such renewal work include elevators, parking garage concrete and traffic membrane, swimming pool coating, windows, sliding glass patio doors, building entrance doors and various mechanical/electrical system elements.

In particular, three major changes to reserve fund budgeting occur with this Reserve Fund Review, as follows:

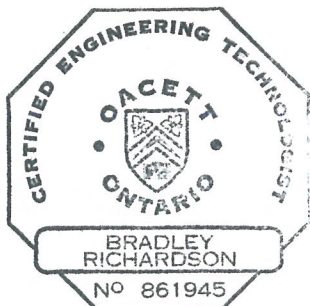
1. After receiving new information from a contractor performing concrete work in the garage that the garage traffic membrane is much older than previously thought, we conducted a detailed condition assessment of the parking garage in 2013. The findings of that assessment indicate that major repairs are required over the next couple of years, instead of major renewal waiting until 2025.
2. With windows and patio doors due for replacement shortly, the Board commissioned a detailed review of glazing replacement options and costs. Based on the Board's desires and the glazing review's findings, glazing replacement will proceed in one phase in 2017 and costs will be higher than previously estimated.
3. Various revisions occurred to budgeting for mechanical elements.

In order to ensure that there are adequate funds in the reserve to pay for replacement of the windows and doors when they are due, a special assessment will be required over the next four years (during 2014 to 2017) in the amount of \$528,099 per year.

Based on the predicted expenditures listed in the spreadsheet and taking into account the special assessment, the corporation will still require a major increase in reserve fund contributions in order to pay for all foreseeable expenditures over the 30-year horizon of this Study. Accordingly, the Board of Directors has decided to increase annual contributions from \$225,884 in 2013 to \$415,884, each year, during 2014 to 2017. After 2017, the corporation should have adequate reserve funding, so annual contributions can be reduced to \$375,884 per year indefinitely. However, this position will be reviewed during each Study Update to determine appropriate funding requirements.

BR

Bradley Richardson, C.E.T.



Ch

Christopher Lyons, A.Sc.T



Steve Laviolette

Steven Laviolette, P.Eng.



APPENDIX A: RESERVE FUND SPREADSHEET

CCC 81: RESERVE FUND SPREADSHEET

SPREADSHEET ESSENTIALS:

- THE END OF THE FISCAL YEAR IS DECEMBER 31 OF EACH YEAR
- THE RESERVE FUND BALANCE AS AT DECEMBER 31, 2012 WAS:
- FOR 2013, RESERVE FUND CONTRIBUTIONS ARE:
- FROM 2014 TO 2017, A MAJOR INCREASE IN RESERVE FUND CONTRIBUTIONS IS REQUIRED.
- SO THE BOARD HAS DECIDED TO INCREASE CONTRIBUTIONS TO:
- AFTER 2017, WE RECOMMEND REDUCING AND FREEZING CONTRIBUTIONS INDEFINITELY TO:
- IN ADDITION, A SPECIAL ASSESSMENT IS RECOMMENDED DURING 2014 TO 2017, WORTH:

\$790,688
\$225,884

\$415,884 per year
\$375,884 per year
\$2,112,396 (total)

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 AT START OF FISCAL YEAR		38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
WORK DESCRIPTION	CALENDAR YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Grounds Lighting																	
Parking Garage Concrete Repairs			\$130,000														
Parking Garage Level 1 - Concrete Slab Repairs			\$10,000					\$10,000					\$10,000				
Parking Garage Level 2 - Traffic Membrane		\$9,370	\$170,000					\$10,000					\$10,000				
Parking Garage Roof Membrane & Landscaping																	
Parking Garage Ramp		\$1,209	\$15,000											\$25,000			
Visitor Parking - Traffic Membrane																	
Parking Garage Exterior Wall & Wall Coating			\$45,000														
Metal Railings (not at balconies)																	
Asphalt Paved Driveway			\$15,000														
Concrete Walkway																	
Interlocking Paver Stones (at building entrance)										\$180,000	\$180,000						
Balcony Slab Waterproofing																	
Balcony Guardrails										\$30,000							
Precast Concrete Panel Cladding									\$45,000								
Metal Siding														\$40,000			
Exterior Painting		\$10,000	\$30,000					\$40,000									
Exterior Caulking										\$7,000							
Windows						\$2,550,000											
Sliding Glass Patio Doors & Building Entrance Doors						\$650,000											
Interior Service Doors														\$16,000	\$16,000	\$16,000	\$16,000
Exterior Service Doors														\$8,000			
Overhead Garage Doors							\$15,000				\$10,000						
Unit Entrance Doors																	
Apartment Roof System								\$190,000									
Swimming Pool Roof Membrane & Landscaping								\$30,000									
Swimming Pool Sloped Metal Roof								\$6,000									
Swimming Pool Coating			\$50,000														
Swimming Pool Floor, Wall & Ceiling Finishes		\$3,536				\$25,000	\$4,000		\$7,000								
Lobby, Party Room, Library & Office Modernizations		\$7,470							\$25,000					\$10,000			
Guest Suite and Laundry Room Modernizations														\$30,000			
Carpet								\$115,000									
Vinyl Tile				\$2,000													
Wallpaper								\$150,000									
Common Equipment Furnishings Allowance				\$12,000										\$12,000			
Plumbing and Drainage		\$38,008												\$3,500	\$52,500		
Fire Protection									\$5,500								
Ventilation Systems		\$25,000	\$6,500	\$7,000					\$4,000								
Heating and Air Conditioning				\$42,000					\$1,000			\$9,000					
Pool Equipment									\$4,000								
Electrical Distribution					\$64,000												
Fire Alarm System												\$16,000					
Emergency Power System																	
Door Entry System									\$17,000								
Barrier-Free Automatic Door Operators															\$17,000		
Electric Heating		\$15,000															
Elevators		\$375,000		\$2,500					\$2,500						\$2,500		
General Contingency Allowance		\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Professional Fees		\$23,108	\$28,000				\$114,000		\$32,000	\$9,000	\$12,000	\$10,000					\$11,000
Reserve Fund Study Updates		\$4,300			\$11,000			\$4,300						\$4,300			
EXPENDITURES, BEFORE INFLATION		\$518,001	\$505,500	\$71,500	\$81,000	\$3,345,000	\$25,000	\$593,300	\$126,000	\$235,000	\$233,000	\$15,000	\$54,500	\$198,300	\$22,000	\$22,000	\$33,000
EXPENDITURES, AFTER INFLATION		\$518,001	\$515,610	\$74,389	\$85,958	\$3,620,736	\$27,602	\$668,152	\$144,734	\$275,340	\$278,457	\$18,285	\$67,764	\$251,492	\$28,459	\$29,029	\$44,414
ANNUAL CONTRIBUTIONS		\$225,884	\$415,884	\$415,884	\$415,884	\$415,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884
SPECIAL ASSESSMENT			\$528,099	\$528,099	\$528,099	\$528,099											
EARNED INTEREST		\$13,023	\$14,662	\$28,069	\$46,087	\$28,647	\$5,706	\$6,387	\$5,899	\$9,368	\$11,557	\$16,387	\$23,442	\$28,285	\$33,622	\$41,314	\$49,001
REMAINING FUND: FUTURE DOLLARS		\$511,594	\$954,629	\$1,852,293	\$2,756,405	\$108,299	\$462,287	\$176,406	\$413,454	\$523,366	\$632,351	\$1,006,337	\$1,337,899	\$1,490,576	\$1,871,622	\$2,259,792	\$2,640,263
REMAINING FUND: 2013 DOLLARS		\$511,594	\$935,911	\$1,780,366	\$2,597,422	\$100,052	\$418,708	\$156,643	\$359,937	\$446,688	\$529,123	\$825,547	\$1,076,023	\$1,175,309	\$1,446,825	\$1,712,640	\$1,961,754

OTHER SPREADSHEET INFORMATION:

- ALL COSTS ARE CALCULATED IN 2013 DOLLARS AND INCLUDE HST.
- 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

54 2029	55 2030	56 2031	57 2032	58 2033	59 2034	60 2035	61 2036	62 2037	63 2038	64 2039	65 2040	66 2041	67 2042	68 2043	TOTALS	WORK DESCRIPTION
	\$8,000														\$8,000	Grounds Lighting
\$25,000															\$155,000	Parking Garage Concrete Repairs
\$10,000					\$10,000					\$10,000					\$60,000	Parking Garage Level 1 - Concrete Slab Repairs
\$170,000					\$10,000					\$10,000					\$389,370	Parking Garage Level 2 - Traffic Membrane
	\$280,000														\$280,000	Parking Garage Roof Membrane & Landscaping
										\$110,000					\$126,209	Parking Garage Ramp
										\$25,000					\$50,000	Visitor Parking - Traffic Membrane
\$20,000															\$65,000	Parking Garage Exterior Wall & Wall Coating
	\$60,000														\$60,000	Metal Railings (not at balconies)
\$7,000															\$22,000	Asphalt Paved Driveway
	\$7,000														\$7,000	Concrete Walkway
	\$8,000														\$8,000	Interlocking Paver Stones (at building entrance)
							\$180,000	\$180,000							\$720,000	Balcony Slab Waterproofing
							\$185,000	\$185,000							\$370,000	Balcony Guardrails
							\$30,000								\$60,000	Precast Concrete Panel Cladding
															\$45,000	Metal Siding
		\$40,000						\$40,000						\$40,000	\$240,000	Exterior Painting
							\$48,000	\$48,000							\$103,000	Exterior Caulking
															\$2,550,000	Windows
															\$650,000	Sliding Glass Patio Doors & Building Entrance Doors
\$16,000															\$80,000	Interior Service Doors
															\$8,000	Exterior Service Doors
															\$50,000	Overhead Garage Doors
	\$140,000			\$15,000				\$10,000							\$140,000	Unit Entrance Doors
															\$190,000	Apartment Roof System
															\$30,000	Swimming Pool Roof Membrane & Landscaping
															\$6,000	Swimming Pool Sloped Metal Roof
\$50,000															\$100,000	Swimming Pool Coating
	\$13,000										\$7,000				\$59,536	Swimming Pool Floor, Wall & Ceiling Finishes
											\$100,000				\$142,470	Lobby, Party Room, Library & Office Modernizations
															\$30,000	Guest Suite and Laundry Room Modernizations
					\$115,000										\$230,000	Carpet
											\$2,000				\$4,000	Vinyl Tile
					\$150,000										\$300,000	Wallpaper
						\$12,000									\$36,000	Common Equipment Furnishings Allowance
					\$17,500				\$30,000	\$500	\$1,000				\$143,008	Plumbing and Drainage
	\$21,000														\$32,000	Fire Protection
\$2,500								\$2,000	\$9,000			\$5,500			\$72,000	Ventilation Systems
			\$230,000		\$1,000									\$16,000	\$283,000	Heating and Air Conditioning
\$48,000					\$1,500						\$3,000				\$56,500	Pool Equipment
															\$64,000	Electrical Distribution
															\$16,000	Fire Alarm System
									\$130,000						\$130,000	Emergency Power System
															\$17,000	Door Entry System
											\$17,000				\$34,000	Barrier-Free Automatic Door Operators
				\$9,000					\$15,000						\$39,000	Electric Heating
	\$2,500					\$2,500					\$2,500				\$390,000	Elevators
\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$186,000	General Contingency Allowance
\$18,000	\$52,000		\$10,000		\$5,000		\$30,000	\$20,000	\$9,000	\$10,000	\$9,000				\$391,108	Professional Fees
		\$4,300			\$11,000			\$4,300			\$11,000				\$80,800	Reserve Fund Study Updates
\$322,000	\$648,000	\$50,300	\$246,000	\$30,000	\$324,500	\$23,000	\$479,000	\$495,300	\$199,000	\$171,500	\$164,000	\$6,000	\$6,000	\$66,300	\$9,309,001	EXPENDITURES, BEFORE INFLATION
\$442,037	\$907,356	\$71,841	\$358,376	\$44,578	\$491,834	\$35,558	\$755,335	\$796,659	\$326,481	\$286,991	\$279,929	\$10,446	\$10,655	\$120,093	N/A	EXPENDITURES, AFTER INFLATION
\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	\$375,884	N/A	ANNUAL CONTRIBUTIONS
															\$2,112,396	SPECIAL ASSESSMENT
\$52,670	\$47,698	\$46,364	\$50,549	\$55,093	\$58,382	\$61,828	\$62,681	\$55,865	\$53,242	\$55,714	\$58,707	\$64,554	\$73,236	\$80,991	N/A	EARNED INTEREST
\$2,628,780	\$2,143,006	\$2,493,413	\$2,561,470	\$2,947,869	\$2,890,301	\$3,292,455	\$2,975,686	\$2,810,776	\$2,713,421	\$2,858,028	\$3,012,690	\$3,442,682	\$3,881,149	\$4,217,931	\$4,217,931	REMAINING FUND: FUTURE DOLLARS
\$1,913,467	\$1,530,454	\$1,745,787	\$1,758,272	\$1,983,832	\$1,906,951	\$2,129,689	\$1,867,049	\$1,623,175	\$1,653,914	\$1,707,899	\$1,765,021	\$1,977,389	\$2,185,523	\$2,328,597	\$2,328,597	REMAINING FUND: 2013 DOLLARS