

FINAL

Depreciation Report

The Palisades Strata Corporation LMS 2472

1200/1288 Alberni Street, Vancouver, BC

Presented to:

**The Owners of The Palisades
Strata Corp. LMS 2472**

c/o Jaclyn Jeffrey, Strata Manager
FirstService Residential
600 – 777 Hornby Street
Vancouver, BC V6Z 1S4

Report No. 5130402.00

October 24, 2013

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1. INTRODUCTION

Per our Proposal dated September 7, 2012 and authorization provided by Jaclyn Jeffrey of FirstService Residential (previously Crosby) on February 5, 2013, this letter report and attachments comprise your Depreciation Report.

To the best of our knowledge, this document was prepared in general compliance with Section 6.2 (Depreciation Report) of the Strata Property Regulation B.C. Reg. 43/2000 with Amendments July 1, 2000 and December 13, 2011. This report is subject to the limitations identified in Appendix E.

Project Team and Qualifications

As per section 6.2 of the Act, clause 1d, the report must provide the name of the person from whom the depreciation report was obtained and a description of:

- (i) their qualifications
- (ii) the error and omission insurance, if any, carried by that person, and
- (iii) the relationship between that person and the strata corporation

(i) Morrison Hershfield Limited (MH) prepared this report. MH is a prominent, privately held, multi-disciplinary engineering and management firm. Our mandate is to provide services and solutions that will assist our clients in achieving their objectives in a cost effective, efficient, professional and friendly manner. The firm was established in 1946 and has a broad range of engineering, architectural and specialist skills that are used to serve clients in the public and private sectors.

Depreciation Report projects at MH are carried out by the Buildings, Technology and Energy division. This group encompasses a staff of approximately 400 people across North America. We have worked on many types of buildings and structures for a diverse array of clients and have helped owners retrofit their buildings/structures and plan funds for future maintenance/capital works, since our inception in 1946. The team at Morrison Hershfield has the expertise to complete assessments on mechanical, electrical, life safety, building envelope and structural systems. Interrelationships between different building systems are understood and technically integrated solutions are provided to clients. We ensure consistency in assessments across large and diverse portfolios and across disciplines to assist our clients in making well-informed decisions.

This Depreciation Report has been prepared and/or reviewed by various personnel. The visual review of the building, mechanical and electrical systems, and site was conducted during our review on April 16, 2013. The following are the reviewers, their qualifications and the respective disciplines for which each was responsible:

- Jeremy Takada Balden, ASCT of MH is a building science consultant experienced in the design, construction and assessment of both low-rise and high-rise construction. Mr. Takada Balden addressed the building and site elements and prepared the report including the Reserve Fund Tables, except for the sections noted below;

- Tom Miller, P. Eng. of MH is a senior mechanical engineer with experience in building systems design, telecommunications design and inspections, building condition/reserve fund assessments and custom design work. Mr. Miller addressed the mechanical systems and drafted these sections of the report;
- Alex Rubin of MH is an electrical designer with over 20 years of experience in design, review and assessment of electrical systems. Mr. Rubin addressed the electrical systems and drafted these sections of the report;
- Jacquelyn White, P.Eng. of MH is project manager in facility assessment with over ten years of experience in the design, review and assessment of buildings. Ms. White has been performing depreciation report/reserve fund studies since the late 1990's while working in Ontario. Ms. White reviewed the report for compliance with contractual requirements.
- Matthew Shaw, B.Sc. of KJA Consultants is a mechanical consultant with experience in the construction, modernization and review of elevator systems. Mr. Shaw prepared the elevator section of the report.

(ii) We confirm that we carry professional liability insurance in the amount of \$2,000,000 per claim.

(iii) Morrison Hershfield is not associated with Strata Corporation LMS 2472 beyond being retained to perform professional services. We are not aware of any conflicts of interest.

MH submitted a draft report on August 9, 2013. We met with the Strata Council on October 10, 2013 to review the draft, and changes requested are identified in Appendix H. We received authorization to finalize the report on October 24, 2013 from Jaclyn Jeffrey of FirstService Residential.

2. PHYSICAL ASSESSMENT

This study is based on a review of relevant documents provided by LMS 2472, and a visual review of the common elements as described in the Building Data Sheet (Appendix A). The following documents were reviewed:

- Mechanical drawings, prepared by VEL Engineering, dated January 1995.
- Electrical drawings, circa 1995.
- Various recent financial documents provided by the Strata.

The visual reviews were completed on April 16, 2013 by Jeremy Takada Balden, Tom Miller, and Alex Rubin of MH. We were accompanied by building manager Hamid, who provided access to all areas of the facility including suites 2504 & 3002 (1200) and PH2 (1288). We accessed the main roofs and balconies/decks at the suites listed.

Current condition and recommendations by component are included in the attached Tables (Appendix C). The component inventory excludes capital expenses less than \$35,000. As identified in the startup questionnaire (Appendix B), these smaller items will be covered out of the operating budget. Following accounting standards, we identify a fiscal year by the year in which it ends. For example, the 2012/2013 fiscal year is referred to throughout as 2013. To maintain consistency in calculations, a component's year of acquisition is also shown as the fiscal year rather than the calendar year.

In summary, we recommend planning for the following major projects and studies:

Short Term (within two years)	Middle Term (within six years)
Projects	Projects
<ul style="list-style-type: none"> • Replace fire alarm panel as required 	<ul style="list-style-type: none"> • Parkade traffic membrane renewal • Elevator door operator replacement
Studies	Studies
<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Depreciation Report update

We would be pleased to provide a proposal to perform any of the additional investigations identified. We also provide full engineering design, tender, construction management and contract administration services for major repair or replacement projects required at your site, and welcome the opportunity to provide engineering services to assist you with these undertakings.

3. FINANCIAL ANALYSIS

The Strata Corporation's annual contributions to the Reserve Fund Account should be established by the Strata Council.

Three funding scenarios were presented for review and discussion in the draft report. The final funding Scenarios are detailed and summarized in Appendix D.

We recommend you review this deprecation report with your accountants as another step to confirm it meets the needs of your Corporation and is in keeping with their accepted principles.

4. CLOSURE

Thank you for trusting Morrison Hershfield to complete this study. At a minimum, you are required to complete a Depreciation Update within three years of the date of this study. Circumstances that could accelerate this timeline are discussed in Appendix E. Please contact us at any time if you wish to update this study or to pursue the recommended investigations and/or capital projects.

If you have any questions, please contact the undersigned.

Yours truly,

MORRISON HERSHFIELD LIMITED



Jeremy E. Takada Balden, ASCT.
Building Science Consultant



Jacquelyn White, P.Eng.
Project Manager, Principal



Appendix A: Building Data Sheet

BUILDING DATA SHEET

Strata Name:	LMS 2472 – Palisades		
Address:	1200 & 1288 Alberni Street, Vancouver, BC	Constructed:	1996
Units:	272	Stories:	31 (1200); 22 (1288)
Amenity Facilities:	Meeting rooms, gyms (2), library/lounge, concierge desk	Garage:	5 level underground
		Other Details:	2 exterior water features; 1 interior lobby water feature
Common Elements: <ul style="list-style-type: none">• Structural systems• Parking garage• Exterior walls, all components up to the back-side of the interior gypsum wall board• Windows, to the interior unfinished surface• Roofing systems• Building common areas (lobbies, corridors, service rooms)• Mechanical systems (components that serve more than one unit)• Electrical systems (components that serve more than one unit)• Elevators (5)• Common area landscaping		Shared Facilities:	

Appendix B: Completed Start Up Questionnaire

Strata Corp. LMS 2472
MH Project No. 5130402.00

DEPRECIATION REPORT PROJECT START-UP QUESTIONNAIRE

Please complete the following questionnaire at your earliest convenience so that we may commence preparation of the Depreciation Report. We will conduct our site visits once we receive a completed questionnaire.

General Information

Current Fiscal Year	<u>2012/2013</u>
Current Fiscal Year Start Date (year/month/date)	<u>2012/Sept/01</u>
Present Contribution to Reserve Fund	<u>64,916 /year</u>
Reserve Fund Balance at Current Fiscal Year Start Date	<u>394,832.18</u>
Operating Budget for Current Fiscal Year	<u>1,152,589</u>

Minimum Expense Cost for Reserve Fund

It has been our experience that most Strata Corporations choose to cover small capital expenditures out of the operating budget. Please indicate a threshold dollar value for items to be covered by the operating budget – it will be assumed by MH that expenses greater than this amount will be budgeted for in the Reserve Fund.

Threshold value of expense for operating budget \$ 35,000
The strata council typically budgets 35,000 for "non annual".
Minimum Balance *Amounts over this ~~strata~~ would go to an agm.*

Any of the sample funding scenarios that will be presented to the client will consider a Reserve Fund to be adequate where the closing balance in every year of the study is positive.

We request that the council direct us regarding a minimum balance to be maintained during the study period. In the absence of direction, we will maintain a balance equal to 25% of the operating budget as per the strata act.

Minimum Balance Year 1-10	\$ <u> </u>
Minimum Balance Year 11-20	\$ <u> </u>
Minimum Balance Year 21-30	\$ <u> </u>

Please maintain 25%.

We assume that the above values shall not be adjusted for future value. Example, if you indicate \$250,000 as the minimum balance throughout the study period, we will not inflate this value to future dollars.



Strata Corp. LMS 2472
MH Project No. 5130402.00

**DEPRECIATION REPORT
PROJECT START-UP QUESTIONNAIRE**

Interest and Inflation Rates

For the preparation of this Reserve Fund Study, we propose to use an **Inflation Rate of 2.0 percent** and an **Interest rate of 2.0 %**. Please advise if the strata would like us to use different rates.

Interest Rate _____ %

Inflation Rate _____ %

Repair History

Please provide details of any reserve fund elements replaced or repaired since the last Reserve Fund Study (or since original construction):

Roof Replacement membranes in 2006 (both bldgs.)

Roof Repairs

Complete Window Replacement window frames are original

Window Repairs on going as needed. (broken glass seals).

Recaulking 2009

Exterior Wall Repairs wall facing hotel in 2009 - painted

Thermopane replacement (avg. per year)

Boilers N/A only clean

Pipe Replacement NO

Hot water tanks 2007 / 2008

Other common area carpet 2012.

membranes between towers (in pond) replaced 2011
Ceilings painted 2010.

Suite doors refinished 2010.

Electrical stack in west tower (only 1/2) replaced in 2010.



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**DEPRECIATION REPORT
PROJECT START-UP QUESTIONNAIRE**

Current Year Reserve Fund Expenses

List estimated expenditures that have been, or will be, charged to the Reserve Fund in the Current Fiscal Year, and estimated date of expense:

none.

Correction:

Per MH meeting with Palisades council (October 10, 2013), the following expenditures were charged in 2013:

- Depreciation Report

- Water system work



Appendix C: Condition Assessment

Depreciation Report
Palisades, LMS 2472, Vancouver, BC
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Row	COMPONENT		CONDITION ASSESSMENT			RECOMMENDATION			LIFECYCLE DATA					
	ID	Location / Type	Description & History	Condition	Actual or Estimated Year of Acquisition	Recommendation	Type	Priority	Age in 2013	Typical Life Cycle	Estimated Remaining Life	Years Over Which Project is Phased	Include Y/N	Recommended Budget in 2013 Dollars
1	STRUCTURE													
2	A1010 Standard Foundations-concrete	Garage walls	The foundation walls of the parking garage are cast-in-place concrete supported on strip footings.	Good	1996	The concrete substructure is expected to last the life of the building. We recommend a regular allowance to address cracking and leakage into the parkade.	Repair Allowance	3 - Renewal	17	5	3	1	N	\$6,000
3	A1010 Standard Foundations-concrete	Garage walls	Some areas of the garage walls (particularly near the garage entry) are painted yellow for safety. Photo A01.	Good	2005	Repaint walls as required.	Repair Allowance	3 - Renewal	8	12	6	1	N	\$11,000
4	B1010 Superstructure	Parkade	Based on our limited visual review, the main structural components appear to consist of a combination of cast-in-place concrete floors, walls and columns.	Good	1996	Interior structural components (i.e. protected from weather) are expected to last the life of the building. No major capital repairs are anticipated.			17					
5	PARKING GARAGE													
6	A1030 Slab on Grade	Parkade	Level P5 of the parking garage consists of a slab on grade. Some cracks were noted.	Good	1996	Slab on grade typically last the life of the building with minor repairs to seal cracking and correct any settlement problems, should they arise. Annual maintenance should include cleaning and repainting of lines and numbers as required. No major anticipated capital expenses.			17					
7	B1010 Suspended Slabs	Suspended Slab	P1-P4 and the slab above the parkade, which acts as the podium level of the complex, are constructed from reinforced suspended concrete slabs. Some signs of water staining were noted, but the age of the staining was not determined (Photo A02).	Good	1996	The concrete suspended slab is expected to last the life of the building. We recommend a regular allowance to address cracking and leakage into the parkade through the slab.	Repair Allowance	3 - Renewal	17	5	3	1	N	\$8,000
8	B1010 Suspended Slabs	Parkade Traffic Membrane	P1-P4 have a liquid urethane traffic membrane installed on the suspended slab. Some damage and past repairs were noted (Photo A03).	Fair	1996	Urethane traffic membrane typically has a life span of 10-15 years. Localized areas of damage can be fixed.	Replacement	3 - Renewal	17	15	5	4	Y	\$545,000
9	ENVELOPE													
10	B1010 Floor Construction	Balconies	Some units at 1200 Alberni are provided with balconies (not over living space). The balcony pedestrian wear assembly consists of tile on reinforced concrete; we assume some form of waterproofing membrane exists below the tiles. The undersides of the balconies are painted. The railings are mounted to the top of the balconies. Photo A04.	Good	1996	Replace pedestrian wear surface at balconies.	Replacement	3 - Renewal	17	20	7	1	N	\$30,000
11	B2010 Exterior Walls	Guardrails	All balconies and roof decks are fitted with top-mounted painted aluminum guardrails with glass infill panels.	Good	1996	Replace guardrails at the end of their service life. Regular maintenance should include replacing loose or corroded fasteners and damaged glass panels.	Replacement	3 - Renewal	17	35	18	1	Y	\$51,000
12	B1020 Roof Construction	Flat Roofing	There are areas of flat roofing on the main tower roofs and penthouse residential roof decks (over living space). The flat roofing assembly consists of gravel ballast (non-residential) or concrete pavers (residential & common decks), filter fabric, insulation, and a waterproofing membrane on concrete (Photo A05). We understand the flat roofing assemblies were renewed in 2006.	Good	2006	The waterproofing membrane has an expected lifespan of 30 years or more with regular maintenance, after which time replacement is recommended.	Replacement	3 - Renewal	7	30	23	1	Y	\$644,000
13	B1020 Roof Construction	Roof Anchors	Engineered roof anchors are provided at flat roof areas.	Good	1996	Replace anchors at the end of their service life.	Replacement	3 - Renewal	17	40	23	1	N	\$21,000
14	B1020 Roof Construction	Podium	Where the suspended slab extends beyond the building perimeter, a waterproofing membrane is provided directly over the reinforced concrete slab. Above the waterproofing membrane is landscaping, paving, or water features.	Good	1996	Complete replacement of the waterproofing and all overburden (paving, retaining walls, landscaping, etc.) at the end of its service life.	Replacement	3 - Renewal	17	40	23	1	Y	\$1,361,000
15	B2010 Exterior Walls	Metal Panel Cladding	There is metal cladding used on the towers, including the pergola at the top of 1288 Alberni, and at the main entry columns and soffit. The cladding was in good condition. Photo A06.	Good	1996	The metal panels are expected to last the life of the building. A periodic repair allowance has been provided.	Repair Allowance	3 - Renewal	17	8	5	1	N	\$8,000
16	B2010 Exterior Walls	Metal Clad Screens	There are metal clad wind screens at the elevator penthouse on each tower (Photo A07).	Good	1996	The metal cladding is expected to last the life of the building. A repair allowance has been provided.	Repair Allowance	3 - Renewal	17	8	5	1	N	\$6,000
17	B2010 Exterior Walls	Stucco	There is a small area of stucco cladding at the inside face of the parapet of the towers' roofs (Photo A08).	Good	1996	Since the amount of stucco is relatively small and hidden, we do not anticipate replacement within the life of the complex. A repair allowance to address localized damage is recommended instead.	Repair Allowance	3 - Renewal	17	10	7	1	N	\$8,000
18	B2010 Exterior Wall	Sealant	Sealant is installed between dissimilar building elements (e.g., window frame to cladding) across the complex.	Good	2009	Replace exterior sealants including sealant at wall penetrations such as hose bibs, mechanical vents etc.	Replacement	3 - Renewal	4	12	8	1	Y	\$141,000
19	B2020 Exterior Windows	Windows and Glazed Doors	The windows throughout the complex are double glazed thermally broken aluminum units, installed in window wall configuration. Window operations are casement and fixed. Units are provided with aluminum framed sliding doors to access balconies incorporating a double glazed thermally broken full length lite. Over time, the gaskets and insulated glazing units (IGUs) will begin to fail and clouding will occur between the sheets of glass; some of this clouding was noted during our review (Photo A09).	Fair	1996	Review the windows and glazed doors for locations where the gaskets, weatherstripping, or IGUs have failed. Replace as required.	Repair Allowance	3 - Renewal	17	35	0	18	Y	\$38,000
20	B2020 Exterior Windows	Windows and Glazed Doors	See above.	Good	1996	Replace windows, window wall, and doors at the end of their service life. (Includes spandrel sections and swing doors.)	Replacement	3 - Renewal	17	35	18	2	Y	\$13,249,000
21	B2020 Exterior Glazing	Curtain Wall & Structural Glazing	Structural glazing (Photo A10) and glazed curtain wall assemblies (Photo A11), complete with glazed doors, are provided at ground level common areas and at the tower penthouses.	Good	1996	Review the windows and glazed doors for locations where the gaskets, sealant, weatherstripping, or IGUs have failed. Replace as required.	Repair Allowance	3 - Renewal	17	40	0	23	Y	\$26,000
22	B2020 Exterior Glazing	Curtain Wall & Structural Glazing	See above.	Good	1996	Replace the structurally glazed and curtain wall assemblies at the end of their service life.	Replacement	4 - Renewal	17	40	23	2	Y	\$1,361,000



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23	B2030 Exterior Doors	Metal Swing Doors	The building has pressed metal doors which provide egress from stair hallways to the outside, at grade and at roof level. These door have a welded metal frame and have a painted finish.	Good	1996	Review the doors for poorly functioning hardware and locations where the painted finish has been damaged. Repair and repaint as required.	Repair Allowance	3 - Renewal	17	5	5	1	N	\$1,000
24	INTERIORS													
25	C1020 Interior Doors	Suite Doors	Each unit in the towers has a stained wood entrance door. We understand they were refinished in 2010.	Good	2010	Review the doors for damage to the units themselves or damaged hardware. Repair or replace as required.	Replacement	4 - Discretionary	3	20	7	20	Y	\$143,000
26	C1020 Interior Doors	Fire Doors	Fire-rated metal swing doors are installed at stairwell access on each floor. The doors in the parking garage are glazed with wired glass.	Good	1996	A budget has been provided to replace doors as required.	Replacement	3 - Renewal	17	25	8	25	N	\$20,000
27	C1030 Fittings	Lobbies	The main lobbies of each tower are furnished with tile flooring, rugs, plants, furniture, wood wall panelling, art, and mirrors. A concierge desk and mailboxes are provided. There is an indoor water feature at 1288 Alberni. The lobbies are in good condition.	Good	1996	Refurbish lobbies.	Replacement	4 - Discretionary	17	20	10	1	Y	\$53,000
28	C3000 Interior Finishes	Library	In 1288 Alberni, there is a library/lounge room at the garden entrance, with carpet, furniture, and shelving. Photo A12.	Good	1996	Refurbish library and its contents.	Replacement	4 - Discretionary	17	20	10	1	N	\$11,000
29	C3000 Interior Finishes	Meeting Rooms	There are several meeting rooms in the complex, typically furnished with tables and chairs. Flooring is carpet.	Good	1996	Refurbish meeting rooms and their contents.	Replacement	4 - Discretionary	17	20	10	1	N	\$16,000
30	C3000 Interior Finishes	Fitness Rooms	The fitness rooms in the towers feature painted walls and ceilings, with vinyl tile flooring. The finishes were in good condition.	Good	1996	Refurbish fitness room finishes.	Replacement	4 - Discretionary	17	15	7	1	N	\$21,000
31	C3000 Interior Finishes	Fitness Rooms	There are fitness machines, weights, and other exercise equipment in the fitness rooms.	Good	1996	A budget has been provided to replace equipment as required.	Replacement	4 - Discretionary	17	5	3	1	N	\$6,000
32	C3000 Interior Finishes	Stairwell Paint	The tower stairwells are unpainted except for yellow caution strips on the nosing of each stair. In the parking garage, stairwell walls are painted.	Good	1996	Repaint nosings and walls at stairwells as required.	Replacement	3 - Renewal	17	25	8	1	N	\$32,000
33	C3010 Wall Finishes	Hallway Finishes	The common residential hallway walls have a wallpaper finish.	Good	1996	Replace wallpaper at hallways as required.	Replacement	3 - Renewal	17	20	7	2	Y	\$223,000
34	C3020 Floor Finishes	Hallway Carpet	The hallways of the towers have carpet installed on the floor. We understand carpet was replaced in 2012.	Excellent	2012	The lifespan of carpet depends on the use. Areas with high traffic will require frequent replacement.	Replacement	3 - Renewal	1	10	9	2	Y	\$112,000
35	C3010 Wall Finishes	Storage Rooms	There are four storage rooms in the parking garage; MH did not review the storage rooms.	Not Applicable	1996	Capital expenditures are not typically anticipated at storage rooms.			17					
36	C3030 Ceiling Finishes	Painted Ceiling, all common areas	The ceilings of the lobby and the hallways are painted.	Excellent	2010	Painted finish can typically last between 10-15 years, longer in locations that do not see wear.	Replacement	4 - Discretionary	3	15	12	2	Y	\$46,000
37	SITE													
38	G2000 Site Improvements	Concrete Stairs & Walls	There are concrete stairs and walls at the parking garage entry.	Good	1996	Repair damaged concrete as required.	Repair Allowance	3 - Renewal	17	15	5	1	N	\$6,000
39	G2000 Site Improvements	Metal Guardrails at Grade	Metal guardrails with glass panels are provided at the walkway between towers above the parking garage.	Good	1996	The at-grade metal elements are expected to last the life of the complex. Repair damaged metal and glass panels as required.	Repair Allowance	3 - Renewal	17	15	10	1	N	\$8,000
40	G2020 Parking Lots	Garage Doors	There are 3 motorized security garage doors in the parking garage.	Good	1996	Garage doors have a typical lifespan of 8-15 years.	Replacement	3 - Renewal	17	10	4	1	N	\$24,000
41	G2030 Pedestrian Paving - Concrete	Walkways/Drive Aisle	There are several concrete walkways around the site. There is a paved concrete drive aisle/drop-off in front of the parking garage between the buildings.	Good	1996	Repair damaged concrete as required.	Repair Allowance	3 - Renewal	17	15	5	1	N	\$8,000
42	G2050 Landscaping	Benches	There are wood benches around the garden.	Good	1996	Replace benches at the end of their service life.	Repair Allowance	3 - Renewal	17	15	9	1	N	\$6,000
43	G2050 Landscaping	Trellis	There is a painted steel trellis in the garden. Photo A13.	Good	1996	Repaint trellis as required.	Replacement	4 - Discretionary	17	10	5	1	N	\$4,000
44	G2050 Landscaping	Water Features	There are water features between the buildings and on Bute Street.	Good	1996	Replace water feature components as required. Base waterproofing below the water features is included in the podium replacement budget.	Replacement	3 - Renewal	17	40	23	1	Y	\$53,000
45	MECHANICAL SYSTEMS													
46	D202001 - Domestic Water Distribution: Pipes & Fittings	Water entry mechanical room, common to both buildings / Pipe & Fittings	City water supply for both towers is an 8" water main which enters the building in the water entry and sprinkler room. The water main splits into a 6" line for sprinkler service and a 6" line for domestic water. Almost all portions of the domestic pipes were well insulated, leaving very little exposed pipe for visual inspection. The steel water main piping generally appears to be in good condition.	Good	1996	For now, perform localized repairs as needed at a cost below the threshold of this report. Statistical median life of 30 years is assumed for INITIAL funding purposes ONLY (see related item below).	Replacement	3 – Renewal	17	30	13	1	N	\$21,000
47	D202001 - Domestic Water Distribution: Pipes & Fittings	Water distribution piping to both towers / Pipe & Fittings	Domestic cold and hot water is distributed to the suites via horizontal copper mains and risers. The system in the West Tower is split into 3 pressure zones, Floors 3-9, 10-17 and 18-25. In the East Tower there are 4 zones, Floors 3-10, 11-16, 17-22 and 23-33. Each tower has one pair of main boosted risers, with PRVs at Floors 10, 16, and 22. The supply to the Floor 3-10 zone is unboosted. There are four sets of sub-risers that run through each suite. The condition of this piping is difficult to assess as most of it is inaccessible and well insulated.	Good	1996	For now, perform localized repairs as needed at a cost below the threshold of this report. Statistical median life of 30 years is assumed for INITIAL funding purposes ONLY (see related item below).	Replacement	3 – Renewal	17	30	13	1	Y	\$750,000
48	D202001 - Domestic Water Distribution: Pipes & Fittings	Water distribution piping within the suites	Piping within suites that runs to the fixtures from the sub-risers is polybutylene. The pipe is mostly 3/4" and is flexible, thus there are very few inline fittings. Refer to photo M03.	Good	1996	The polyB pipe also has a median life of 30 years. Replacement becomes imminent when the compression style fittings start having chronic failures.	Replacement	3 – Renewal	17	30	13	1	Y	\$1,500,000

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49	D202003 - Domestic Water Distribution: Equipment; Booster Pumps	Water Entry Rooms / Pumps	The building is provided with a duplex booster pump system complete with control panel. One pump is 20 hp and the other is 30 hp. The pumps and pump motors appear to be of different age (indicating replacement of the motors). Refer to photo M08.	Good	1996	Ensure that manufacturer's recommended maintenance is being performed, including investigation and repair(s) of the root cause of the visible corrosion and vaporized lubricant. Cost reflects replacement of pumps over 3 years (1 pump/yr), as they fail completely.	Replacement	3 – Renewal	17	20	5	3	N	\$28,000
50	D202003 - Domestic Water Distribution: Equipment; DHW Heat exchangers	Boiler Room / DHW exchangers	Domestic hot water is provided by two bronze shell and tube double wall steam to hot water heat exchangers. One serves the un-boosted lower floors and the other serves the boosted upper levels DHW supply. Refer to photos M04 and M05. The pipe weld in the end flange of the Upper level exchanger (M05) appears to excessively corroded.	Fair	1996	These double wall exchangers have a relatively short life span on DHW service. Budget for replacement after 15-20 years is recommended.	Replacement	3 – Renewal	17	20	3	1	N	\$28,000
51	D202003 - Domestic Water Distribution: Equipment; DHW Storage Tanks	Boiler Room / DHW Storage	Storage for the domestic hot water for the lower levels is provided by two steel, glass-lined, 80 gallon tanks (photo M07) They appear to be in good condition.	Good	1996	These glass lined steel tanks typically last only 12-18 years.	Replacement	3 – Renewal	17	18	2	1	N	\$4,000
52	D202003 - Domestic Water Distribution: Equipment; DHW Storage Tanks	Boiler Room / DHW Storage	Storage for the domestic hot water for the boosted upper levels system is provided by two 75 gallon ASME cement lined steel tanks. They all appear to be in good condition. Refer to photos M06 and M07.	Good	1996	These tanks are storage only. These are ASME rated heavy steel construction with cement lining, and typically have a life expectancy of 35+ years.	Replacement	3 – Renewal	17	35	18	1	N	\$19,000
53	D203001 - Sanitary Waste: Waste Pipes & Fittings	Throughout Building / Pipe & Fittings	The building's sanitary pipes are "hubless" cast iron pipes with mechanical compression fittings (photo M09). The visible portions of the pipes in the parking garage appear to be in good condition.	Good	1996	Cast Iron pipes can last anywhere from 50 to 80 years. Expect replacement of individual compression fittings, at a cost below the threshold of this report, as they age.			17					
54	D203004 - Sanitary Waste: Equipment, Sump Pumps	Sump in parkade level P5	There is a single sump pump for below grade sanitary loads.The pump is a 7.5 hp Myers submersible and is provided with float switches and a controller.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.	Replacement	3 – Renewal	17	20	3	1	N	\$4,000
55	D204001 - Storm Water: Waste Pipes & Fittings	Throughout Building / Pipe & Fittings	The building's storm water pipes are "hubless" cast iron pipes with mechanical compression fittings (photo M10). The visible portions of the pipes in the parking garage appear to be in good condition.	Good	1996	Cast Iron pipes can last anywhere from 50 to 80 years. Expect replacement of individual compression fittings, at a cost below the threshold of this report, as they age.			17			1		
56	D204004 - Storm Water: Equipment, Sump Pumps	Sump in parkade level P5	There is a duplex sump pump system for the storm-water system. The pumps are 7.5 HP each and are provided with float switches and duplex control.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.	Replacement	3 – Renewal	17	20	3	1	N	\$9,000
57	D30 - HVAC													
58	D304007 - Parkade Ventilation; supply and Exhaust Fans	Serving Parkade Area all 5 levels	There are 5 supply fans and 5 exhaust fans providing ventilation in the parkade. All are propeller type, 25,000 cfm ea, with 3 or 5 hp motors (photo M11). They appear to be in good condition.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace units as they fail.	Replacement	3 – Renewal	17	25	8	2	N	\$21,000
59	D304007 - Misc. Small Exhaust Fans	Throughout Building	There are approximately 18 small exhaust fans with fractional hp motors (1/12 to 1/4 hp) that serve storage room, machine rooms, common wash rooms, janitors rooms , etc. Some are run conituously, some on thermostats, and some on a switch. All are currently functional and in good condition (photo M12).	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace units as they fail.	Replacement	3 – Renewal	17	25	8	1	N	\$11,000
60	D304008 - Corridor Make-Up Air Units	West Tower Roof	Make up air for corridor pressurization is provided by an ICE gas fired roof top unit, with a 7.5 hp fan supplying 7,750 cfm and a 500 mbh input gas burner (photo M13). The unit just received a new heat exchanger (see photo M14) and appears to be in generally good condition.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). The life of this unit has been extended by the replacement of the heat exchanger. The whole unit should be OK for at least another 16 years of service.	Replacement	3 – Renewal	17	30	16	1	Y	\$42,000
61	D304008 - Corridor Make-Up Air Units	East Tower Roof	Make up air for upper levels corridor pressurization is provided by an ICE gas fired roof top unit, with a 5 hp fan supplying 4,800 cfm and a 350 mbh input gas burner (photo M15 & 16) This unit is also getting a new burner installed shortly. Unit appears to be in fair to good condition.	Fair	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). The life of this unit has been extended by the replacement of the heat exchanger. The whole unit should be OK for at least another 16 years of service.	Replacement	3 – Renewal	17	30	16	1	Y	\$35,000
62	D304008 - Corridor Make-Up Air Units	East Tower Level 2 ceiling	Make up air for the lower levels corridodr pressuruization is provided by an indoor fan unit with a steam coil, located in the 2nd level ceiling space. The unit is functional but is hard to access for maintenance.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). The steam coil will likely have some corrosion due to the moistue in the 100% outside air. Replace at end of life.	Replacement	3 – Renewal	17	25	8	1	N	\$24,000
63	D305003 - Roof-top penthouse cooling units DX	West Tower Roof	There are 6 cooling-only 3 ton cap. roof-top units providiing cooling and ventilation to the penthouses. Most appear to be in good condition. Refer to photo M17 .	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.	Replacement	3 – Renewal	17	25	8	1	Y	\$63,000
64	D305003 - Roof-top penthouse cooling units DX	Eest Tower Roof	There are 6 cooling-only 3 ton cap. roof-top units providiing cooling and ventilation to the penthouses. Most appear to be in good condition. Refer to photo M18.	Good	1996	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.	Replacement	3 – Renewal	17	25	8	1	Y	\$63,000
65	D40 - Fire Protection													
66	D401002 - Sprinkler Water Supply Equipment and Piping; Alarm Valves and Appurtenances	Water Entry Room / Major Valves	The buildings are fully sprinklered and supplied with both a wet and 4 separate dry-pipe sprinkler systems. The dry-pipe valves covers the parkade areas and the wet-pipe covers all other areas of the building. The components of the alarm valve assembly, such as the isolation valves, tamper switches, pressure and paddle type alarm switches appear to be in good condition (maintenance tags indicate that the components are properly maintained as well).	Good	1996	Perform the maintenance and testing of the system as required by code (by sprinkler maintenance and testing contractor). For funding purposes, an allowance has been recommended for overhaul of the 4 dry valve assemblies and the related active trim components in the system.	Repair Allowance	3 – Renewal	17	25	13	13	N	\$14,000



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Row	COMPONENT		CONDITION ASSESSMENT			RECOMMENDATION			LIFECYCLE DATA				Include Y/N	Recommended Budget in 2013 Dollars
	ID	Location / Type	Description & History	Condition	Actual or Estimated Year of Acquisition	Recommendation	Type	Priority	Age in 2013	Typical Life Cycle	Estimated Remaining Life	Years Over Which Project is Phased		
67	D401002 - Sprinkler Water Supply Equipment and Piping; Sprinkler Pipes and Fittings	Throughout buildings	Sprinkler pipes are black steel with grooved mechanical fittings. They appear to be in good condition with only minor external surface corrosion (photo M17). Full system replacement can be performed on a system by system basis.	Good	1996	Perform manufacturer's recommended maintenance and testing per code (by maintenance and testing contractor). The rubber portions of the grooved mechanical fittings will likely start failing first; perform localized repairs or replacements of these components as needed at individual costs below the threshold of this report. The pipes themselves may last 50+ years. A repair allowance has been recommended at 30 years of age.	Repair Allowance	3 – Renewal	17	30	13	1	N	\$28,000
68	D401002 - Sprinkler Water Supply Equipment and Piping; Sprinkler Pipes and Fittings	Water Entry Room / Fire Pump	The building's fire sprinkler system is provided with an 60 hp electric fire pump, fire pump control panel and jockey pump (photo M09). They all appear to be in good condition and properly maintained.	Good	1996	Continue to perform manufacturer's recommended maintenance and testing per code (by maintenance and testing contractor). Because electrical fire pumps typically run for only a few hours every year (for the required testing), they can expect to last much longer than other pumps with proper maintainence. An overhaul of the pump's internals, seal, etc. may be required after 30 years. An allowance for this is recommended.	Repair Allowance	3 – Renewal	17	30	13	1	N	\$14,000
69	D402001 -Standpipe Equipment and Piping	Throughout Exit Stairs	Black steel, w/ grooved mechanical fittings. Note that these pipes remain dry except in the case of an actual fire; as such, these pipes are much less susceptible to corrosion and can easily last for 40+ years.	Good	1996	None.			17					
70	ELECTRICAL SYSTEMS													
71	D5010 - Electrical Service and Distribution	High Voltage Switchgear	BC Hydro provides service to the building from two different circuits. 12.5 KV medium voltage switch gear consists of two disconnect switches, two load breakers for each circuit and main disconnect switch. Photo E01.	Good	1996	Replace switchgear and disconnect switches.	Renewal	4 – Discretionary	17	30	13	1	Y	\$116,000
72	D5010 - Electrical Service and Distribution	Main high-voltage transformer	2000 kVA 12.5 input and 347/600V output transformer, manufactured by Hammond. Located in the main electrical room. The transformer winding temperature was noted to be approximately 60deg.C which is well below the alarm point for transformers of this type. Photo E02.	Good	1996	Replace transformer.	Renewal	4 – Discretionary	17	30	13	1	Y	\$116,000
73	D5010 - Electrical Service and Distribution	Main building switch gear	2500A, 347/600V, 3-phase, 4-wire main switch gear, is housing 200A fire pump breaker, 1200A miscellaneous building loads breaker, 600A residential West tower breaker, 400A and 600A residential East tower loads breakers.	Good	1996	Replace switchgear and breakers.	Renewal	4 – Discretionary	17	30	13	1	Y	\$47,000
74	D5010 - Electrical Service and Distribution	Residential distribution	Residential East tower power distribution system consists of two 600-120/208V step down transformers 450kVA and 300kVA, panels 1600A 120/208V CDP-9 (lower floors) and 1200A 120/208V CDP-8 (top floors).	Good	1996	Replace transformers and panels.	Renewal	4 – Discretionary	17	30	13	1	Y	\$58,000
75	D5010 - Electrical Service and Distribution	Residential distribution	Residential West tower power distribution system consists of 600A, 347/600V distribution panel, two 600-120/208V step down transformers 300kVA each, and two panels 1200A, 120/208V each CDP-7 (lower floors) and CDP-6 (top floors).	Good	1996	Replace transformers and panels.	Renewal	4 – Discretionary	17	30	13	1	Y	\$58,000
76	D5010 - Electrical Service and Distribution	Building distribution	Common building power loads are fed via 1200A, 600V distribution panel, 400A, 600V CDP-1, 600A, 600V CDP-2, 600A, 600V CDP-3 (emergency), 400A, 600V CDP-4, miscellaneous 600-120/208V step down transformers and 120/208V electrical panels located throughout the both towers.	Good	1996	Replace transformers and panels.	Renewal	4 – Discretionary	17	30	13	1	Y	\$81,000
77	D5010 - Electrical Service and Distribution	Emergency distribution	Emergency building power loads are fed via two automatic transfer switches; 150A - fire pump, and 600A - lighting & elevators. Photo E03.	Good	1996	Replace transfer switches.	Renewal	4 – Discretionary	17	30	13	1	Y	\$18,000
78	D5010 - Electrical Service and Distribution	Electrical equipment	Electrical equipment is in good condition but requires regular maintenance.	Good	2010	With proper maintenance may survive the life of the building. The infrared scan, maintenance and cleaning is recommended every 5 years.	Repair Allowance	4 – Discretionary	3	5	2	1	N	\$12,000
79	D5010 - Electrical Service and Distribution	Residential metering centers	Metering center with combos of electrical meter and breaker dedicated for each unit.	Good	1996	Replace metering center (excluding electrical meters).	Renewal	4 – Discretionary	17	30	13	1	Y	\$70,000
80	D5010 - Electrical Service and Distribution	Residential load centers	268 - 120/240V, 125A, and 4 - 120/240V, 200A load centers. Photo E04.	Good	1996	Replace load centers inside apartment units.	Renewal	4 – Discretionary	17	30	13	1	Y	\$158,000
81	D5020 - Lighting and Branch Wiring	Building indoor lighting	Majority of lighting system consists of CFL (compact fluorescent light), metal halide and T8 fluorescent tube lighting fixtures.	Good	1996	Replace lighting fixtures.	Replacement	4 – Discretionary	17	20	3	1	Y	\$58,000
82	D5030 - Communications and Security	Security system	Enter panels are located at main and garage entrances of the building. Support panels are located in the security room. 13 cameras are installed throughout the building. Photo E05.	Good	2010	Replace security equipment. Equipment has a typical lifespan of 15 years.	Replacement	4 – Discretionary	3	15	12	1	N	\$18,000
83	D5030 - Communications and Security	Telephone and TV cable	Located in the telephone room.	Good	1996	Maintenance and replacement of the equipment by service provider. No capital expenses anticipated.			17					



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Row	COMPONENT		CONDITION ASSESSMENT			RECOMMENDATION			LIFECYCLE DATA					
	ID	Location / Type	Description & History	Condition	Actual or Estimated Year of Acquisition	Recommendation	Type	Priority	Age in 2013	Typical Life Cycle	Estimated Remaining Life	Years Over Which Project is Phased	Include Y/N	Recommended Budget in 2013 Dollars
84	D5040 - Other Electrical Systems	Back up power	The diesel stand-by generator is manufactured by Katolight and rated at 400kW, 500kVA, 600V. Photo E06.	Good	1996	Replace generator.	Replacement	4 – Discretionary	17	35	18	1	Y	\$174,000
85	D5040 - Other Electrical Systems	Fire alarm panel	Edwards fire alarm panels are located in the main lobby of each building with support panels in the electrical room. Photos E07, E08.	Good	1996	Fire alarm panels have a typical lifespan of 15 years.	Replacement	4 – Discretionary	17	15	2	1	Y	\$58,000
86	ELEVATORS													
87	D1010- Passenger Elevators	Code Changes	N/A	Not Applicable	1996	Budget for code upgrades.	Contingency	3 - Renewal	17	5	3	1	N	\$16,000
88	D1010- Passenger Elevators	Vandalism	No current vandalism noted.	Not Applicable	1996	Budget for vandalism repairs.	Contingency	4 - Discretionary	17	5	3	1	N	\$11,000
89	D1010- Passenger Elevators	Car Door Restrictor	There is currently no car door restrictor provided.	Not Applicable	1996	While not mandatory on existing installations, car door restrictors are recommended.	Upgrade	4 - Discretionary	17	99	2	1	N	\$16,000
90	D1010- Passenger Elevators	Barrier-free Access	The equipment does not meet barrier-free access requirements.	Not Applicable	1996	While not presently required, new barrier-free panel equipment and a voice synthesizer for floor annunciation is recommended.	Upgrade	4 - Discretionary	17	99	3	1	N	\$42,000
91	D1010- Passenger Elevators	Door Operator Replacement	The existing door operators on cars A2, A3, B1, and B2, while functional, have reached the end of their design lifespan and represent dated technology.	Fair	1996	Replace door operators with closed-loop door operators.	Replacement	3 - Renewal	17	99	5	1	Y	\$42,000
92	D1010- Passenger Elevators	Equipment Guarding	N/A	Not Applicable	1996	While not presently required, machine guarding upgrades are recommended.	Upgrade	4 - Discretionary	17	99	10	1	N	\$63,000
93	D1010- Passenger Elevators	Car Top Railings	There are no car top railings.	Not Applicable	1996	While not presently required, car top railings are recommended.	Upgrade	4 - Discretionary	17	99	10	1	N	\$21,000
94	D1010- Passenger Elevators	Major Control Modernization	The major control components are in good working order.	Good	1996	Modernize controls as required.	Replacement	3 - Renewal	17	99	25	1	Y	\$788,000
95	OTHER PROFESSIONAL SERVICES													
96	Depreciation Report Updates		Legislation requires updates every 3 years.	Not Applicable	2013	Update depreciation report.	Study	Not Applicable	0	3	3	1	N	\$12,000
97	Miscellaneous Engineering Reviews		Periodic reviews of the building envelope and mechanical systems are prudent.	Not Applicable	2013	Budget for miscellaneous engineering reviews, and reviews prior to any major renewal.	Study	Not Applicable	0	5	5	1	N	\$7,000



Appendix D: Capital Plan and Funding Scenarios

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Component			Recommendation	Capital Plan / Reserve Fund Expenditure Forecast																													
Row	ID	Location / Type	Recommendation	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
				\$3,242	\$3,242	\$61,242	\$61,242	\$3,242	\$181,492	\$139,492	\$258,142	\$525,142	\$66,392	\$119,392	\$10,392	\$33,392	\$3,005,392	\$10,392	\$10,392	\$87,392	\$68,392	\$6,857,780	\$6,688,780	\$341,530	\$144,530	\$144,530	\$2,939,900	\$687,650	\$795,150	\$7,150	\$141,650	\$141,650	\$63,150
37	SITE																																
38	G2000 Site Improvements	Concrete Stairs & Walls	Repair damaged concrete as required.																														
39	G2000 Site Improvements	Metal Guardrails at Grade	The at-grade metal elements are expected to last the life of the complex. Repair damaged metal and glass panels as required.																														
40	G2020 Parking Lots	Garage Doors	Garage doors have a typical lifespan of 8-15 years.																														
41	G2030 Pedestrian Paving - Concrete	Walkways/Drive Aisle	Repair damaged concrete as required.																														
42	G2050 Landscaping	Benches	Replace benches at the end of their service life.																														
43	G2050 Landscaping	Trellis	Repaint trellis as required.																														
44	G2050 Landscaping	Water Features	Replace water feature components as required. Base waterproofing below the water features is included in the podium replacement budget.																								\$53,000						
45	MECHANICAL SYSTEMS																																
46	D202001 - Domestic Water Distribution: Pipes & Fittings	Water entry mechanical room, common to both buildings / Pipe & Fittings	For now, perform localized repairs as needed at a cost below the threshold of this report. Statistical median life of 30 years is assumed for INITIAL funding purposes ONLY (see related item below).																														
47	D202001 - Domestic Water Distribution: Pipes & Fittings	Water distribution piping to both towers / Pipe & Fittings	For now, perform localized repairs as needed at a cost below the threshold of this report. Statistical median life of 30 years is assumed for INITIAL funding purposes ONLY (see related item below).														\$750,000																
48	D202001 - Domestic Water Distribution: Pipes & Fittings	Water distribution piping within the suites	The polyB pipe also has a median life of 30 years. Replacement becomes imminent when the compression style fittings start having chronic failures.														\$1,500,000																
49	D202003 - Domestic Water Distribution: Equipment; Booster Pumps	Water Entry Rooms / Pumps	Ensure that manufacturer's recommended maintenance is being performed, including investigation and repair(s) of the root cause of the visible corrosion and vaporized lubricant. Cost reflects replacement of pumps over 3 years (1 pump/yr), as they fail completely.																														
50	D202003 - Domestic Water Distribution: Equipment; DHW Heat exchangers	Boiler Room / DHW exchangers	These double wall exchangers have a relatively short life span on DHW service. Budget for replacement after 15-20 years is recommended.																														
51	D202003 - Domestic Water Distribution; Equipment; DHW Storage Tanks	Boiler Room / DHW Storage	These glass lined steel tanks typically last only 12-18 years.																														
52	D202003 - Domestic Water Distribution; Equipment; DHW Storage Tanks	Boiler Room / DHW Storage	These tanks are storage only. These are ASME rated heavy steel construction with cement lining, and typically have a life expectancy of 35+ years.																														
53	D203001 - Sanitary Waste: Waste Pipes & Fittings	Throughout Building / Pipe & Fittings	Cast Iron pipes can last anywhere from 50 to 80 years. Expect replacement of individual compression fittings, at a cost below the threshold of this report, as they age.																														
54	D203004 - Sanitary Waste: Equipment, Sump Pumps	Sump in parkade level P5	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.																														
55	D204001 - Storm Water: Waste Pipes & Fittings	Throughout Building / Pipe & Fittings	Cast Iron pipes can last anywhere from 50 to 80 years. Expect replacement of individual compression fittings, at a cost below the threshold of this report, as they age.																														
56	D204004 - Storm Water: Equipment, Sump Pumps	Sump in parkade level P5	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.																														
57	D30 - HVAC																																
58	D304007 - Parkade Ventilation; supply and Exhaust Fans	Serving Parkade Area all 5 levels	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace units as they fail.																														
59	D304007 - Misc. Small Exhaust Fans	Throughout Building	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace units as they fail.																														
60	D304008 - Corridor Make-Up Air Units	West Tower Roof	Perform manufacturer's recommended maintenance (by maintenance contractor). The life of this unit has been extended by the replacement of the heat exchanger. The whole unit should be OK for at least another 16 years of service.																	\$42,000													
61	D304008 - Corridor Make-Up Air Units	East Tower Roof	Perform manufacturer's recommended maintenance (by maintenance contractor). The life of this unit has been extended by the replacement of the heat exchanger. The whole unit should be OK for at least another 16 years of service.																	\$35,000													
62	D304008 - Corridor Make-Up Air Units	East Tower Level 2 ceiling	Perform manufacturer's recommended maintenance (by maintenance contractor). The steam coil will likely have some corrosion due to the moistue in the 100% outside air. Replace at end of life.																														
63	D305003 - Roof-top penthouse cooling units DX	West Tower Roof	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.									\$63,000																					
64	D305003 - Roof-top penthouse cooling units DX	Eest Tower Roof	Perform manufacturer's recommended maintenance (by maintenance contractor). Replace at end of life.									\$63,000																					



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Component			Recommendation	Capital Plan / Reserve Fund Expenditure Forecast																															
Row	ID	Location / Type	Recommendation	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042		
				\$3,242	\$3,242	\$61,242	\$61,242	\$3,242	\$181,492	\$139,492	\$258,142	\$525,142	\$66,392	\$119,392	\$10,392	\$33,392	\$3,005,392	\$10,392	\$10,392	\$87,392	\$68,392	\$6,857,780	\$6,688,780	\$341,530	\$144,530	\$144,530	\$2,939,900	\$687,650	\$795,150	\$7,150	\$141,650	\$141,650	\$63,150		
95	OTHER PROFESSIONAL SERVICES																																		
96	Depreciation Report Updates		Update depreciation report.																																
97	Miscellaneous Engineering Reviews		Budget for miscellaneous engineering reviews, and reviews prior to any major renewal.																																



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30 Year Reserve Fund Cash Flow Table
Scenario 1 - FINAL
Current Contribution

Assumed Interest Rate	2.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2013 Fiscal Year	\$394,832
Present Annual Contribution to the Reserve Fund	\$64,916
Minimum Reserve Fund Balance	(\$30,861,492)

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance	Annual Average Contribution Per Unit
2013	\$394,832	\$64,916			\$3,242	\$8,513	\$465,020	\$239
2014	\$465,020	\$66,214	2.0%		\$3,306	\$9,929	\$537,857	\$243
2015	\$537,857	\$67,539	2.0%		\$63,716	\$10,795	\$552,476	\$248
2016	\$552,476	\$68,889	2.0%		\$64,990	\$11,089	\$567,464	\$253
2017	\$567,464	\$70,267	2.0%		\$3,509	\$12,017	\$646,239	\$258
2018	\$646,239	\$71,673	2.0%		\$200,381	\$11,638	\$529,168	\$264
2019	\$529,168	\$73,106	2.0%		\$157,090	\$9,744	\$454,927	\$269
2020	\$454,927	\$74,568	2.0%		\$296,523	\$6,879	\$239,851	\$274
2021	\$239,851	\$76,059	2.0%		\$615,287	\$0	(\$299,377)	\$280
2022	(\$299,377)	\$77,581	2.0%		\$79,344	\$0	(\$301,140)	\$285
2023	(\$301,140)	\$79,132	2.0%		\$145,538	\$0	(\$367,546)	\$291
2024	(\$367,546)	\$80,715	2.0%		\$12,921	\$0	(\$299,751)	\$297
2025	(\$299,751)	\$82,329	2.0%		\$42,349	\$0	(\$259,771)	\$303
2026	(\$259,771)	\$83,976	2.0%		\$3,887,794	\$0	(\$4,063,589)	\$309
2027	(\$4,063,589)	\$85,655	2.0%		\$13,711	\$0	(\$3,991,646)	\$315
2028	(\$3,991,646)	\$87,368	2.0%		\$13,986	\$0	(\$3,918,263)	\$321
2029	(\$3,918,263)	\$89,116	2.0%		\$119,970	\$0	(\$3,949,117)	\$328
2030	(\$3,949,117)	\$90,898	2.0%		\$95,765	\$0	(\$3,953,984)	\$334
2031	(\$3,953,984)	\$92,716	2.0%		\$9,794,599	\$0	(\$13,655,867)	\$341
2032	(\$13,655,867)	\$94,570	2.0%		\$9,744,290	\$0	(\$23,305,586)	\$348
2033	(\$23,305,586)	\$96,462	2.0%		\$507,496	\$0	(\$23,716,621)	\$355
2034	(\$23,716,621)	\$98,391	2.0%		\$219,060	\$0	(\$23,837,290)	\$362
2035	(\$23,837,290)	\$100,359	2.0%		\$223,441	\$0	(\$23,960,372)	\$369
2036	(\$23,960,372)	\$102,366	2.0%		\$4,635,926	\$0	(\$28,493,932)	\$376
2037	(\$28,493,932)	\$104,413	2.0%		\$1,106,042	\$0	(\$29,495,561)	\$384
2038	(\$29,495,561)	\$106,502	2.0%		\$1,304,528	\$0	(\$30,693,587)	\$392
2039	(\$30,693,587)	\$108,632	2.0%		\$11,965	\$0	(\$30,596,920)	\$399
2040	(\$30,596,920)	\$110,804	2.0%		\$241,780	\$0	(\$30,727,897)	\$407
2041	(\$30,727,897)	\$113,020	2.0%		\$246,616	\$0	(\$30,861,492)	\$416
2042	(\$30,861,492)	\$115,281	2.0%		\$112,145	\$0	(\$30,858,356)	\$424
TOTALS		\$2,633,517						

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

Depreciation Report
Palisades, LMS 2472, Vancouver, BC

30 Year Reserve Fund Cash Flow Table
Scenario 2 - FINAL
Moderate Increases & Assessments

Assumed Interest Rate	2.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2013 Fiscal Year	\$394,832
Present Annual Contribution to the Reserve Fund	\$64,916
Minimum Reserve Fund Balance	\$288,300

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance	Annual Average Contribution Per Unit
2013	\$394,832	\$64,916			\$3,242	\$8,513	\$465,020	\$239
2014	\$465,020	\$77,899	20.0%		\$3,306	\$10,046	\$549,659	\$286
2015	\$549,659	\$93,479	20.0%		\$63,716	\$11,291	\$590,713	\$344
2016	\$590,713	\$112,175	20.0%		\$64,990	\$12,286	\$650,184	\$412
2017	\$650,184	\$134,610	20.0%		\$3,509	\$14,315	\$795,600	\$495
2018	\$795,600	\$161,532	20.0%		\$200,381	\$15,524	\$772,274	\$594
2019	\$772,274	\$193,838	20.0%		\$157,090	\$15,813	\$824,835	\$713
2020	\$824,835	\$197,715	2.0%		\$296,523	\$15,509	\$741,535	\$727
2021	\$741,535	\$201,669	2.0%		\$615,287	\$10,695	\$338,612	\$741
2022	\$338,612	\$205,703	2.0%		\$79,344	\$8,036	\$473,006	\$756
2023	\$473,006	\$209,817	2.0%		\$145,538	\$10,103	\$547,388	\$771
2024	\$547,388	\$214,013	2.0%		\$12,921	\$12,959	\$761,439	\$787
2025	\$761,439	\$218,293	2.0%		\$42,349	\$16,988	\$954,372	\$803
2026	\$954,372	\$222,659	2.0%	3,000,000	\$3,887,794	\$0	\$289,237	\$11,848
2027	\$289,237	\$227,112	2.0%		\$13,711	\$7,919	\$510,556	\$835
2028	\$510,556	\$231,655	2.0%		\$13,986	\$12,388	\$740,613	\$852
2029	\$740,613	\$236,288	2.0%		\$119,970	\$15,975	\$872,906	\$869
2030	\$872,906	\$241,013	2.0%		\$95,765	\$18,911	\$1,037,065	\$886
2031	\$1,037,065	\$245,834	2.0%	8,800,000	\$9,794,599	\$0	\$288,300	\$33,257
2032	\$288,300	\$250,750	2.0%	9,500,000	\$9,744,290	\$0	\$294,760	\$35,848
2033	\$294,760	\$255,765	2.0%	245,000	\$507,496	\$3,378	\$291,407	\$1,841
2034	\$291,407	\$260,881	2.0%		\$219,060	\$6,246	\$339,474	\$959
2035	\$339,474	\$266,098	2.0%		\$223,441	\$7,216	\$389,347	\$978
2036	\$389,347	\$271,420	2.0%	4,270,000	\$4,635,926	\$0	\$294,841	\$16,696
2037	\$294,841	\$276,849	2.0%	825,000	\$1,106,042	\$0	\$290,648	\$4,051
2038	\$290,648	\$282,386	2.0%	1,200,000	\$1,304,528	\$0	\$468,506	\$5,450
2039	\$468,506	\$288,033	2.0%		\$11,965	\$12,131	\$756,705	\$1,059
2040	\$756,705	\$293,794	2.0%		\$241,780	\$15,654	\$824,372	\$1,080
2041	\$824,372	\$299,670	2.0%		\$246,616	\$17,018	\$894,444	\$1,102
2042	\$894,444	\$305,663	2.0%		\$112,145	\$19,824	\$1,107,787	\$1,124
TOTALS		\$6,541,528		27,840,000				

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



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Palisades, LMS 2472, Vancouver, BC

30 Year Reserve Fund Cash Flow Table
Scenario 3 - FINAL
Special Assessments Only

Assumed Interest Rate	2.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2013 Fiscal Year	\$394,832
Present Annual Contribution to the Reserve Fund	\$64,916
Minimum Reserve Fund Balance	\$286,268

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance	Annual Average Contribution Per Unit
2013	\$394,832	\$64,916			\$3,242	\$8,513	\$465,020	\$239
2014	\$465,020	\$66,214	2.0%		\$3,306	\$9,929	\$537,857	\$243
2015	\$537,857	\$67,539	2.0%		\$63,716	\$10,795	\$552,476	\$248
2016	\$552,476	\$68,889	2.0%		\$64,990	\$11,089	\$567,464	\$253
2017	\$567,464	\$70,267	2.0%		\$3,509	\$12,017	\$646,239	\$258
2018	\$646,239	\$71,673	2.0%		\$200,381	\$11,638	\$529,168	\$264
2019	\$529,168	\$73,106	2.0%		\$157,090	\$9,744	\$454,927	\$269
2020	\$454,927	\$74,568	2.0%	50,000	\$296,523	\$6,879	\$289,851	\$458
2021	\$289,851	\$76,059	2.0%	540,000	\$615,287	\$405	\$291,028	\$2,265
2022	\$291,028	\$77,581	2.0%		\$79,344	\$5,803	\$295,067	\$285
2023	\$295,067	\$79,132	2.0%	55,000	\$145,538	\$5,237	\$288,899	\$493
2024	\$288,899	\$80,715	2.0%		\$12,921	\$6,456	\$363,149	\$297
2025	\$363,149	\$82,329	2.0%		\$42,349	\$7,663	\$410,793	\$303
2026	\$410,793	\$83,976	2.0%	3,680,000	\$3,887,794	\$0	\$286,974	\$13,838
2027	\$286,974	\$85,655	2.0%		\$13,711	\$6,459	\$365,377	\$315
2028	\$365,377	\$87,368	2.0%		\$13,986	\$8,041	\$446,801	\$321
2029	\$446,801	\$89,116	2.0%		\$119,970	\$8,627	\$424,574	\$328
2030	\$424,574	\$90,898	2.0%		\$95,765	\$8,443	\$428,151	\$334
2031	\$428,151	\$92,716	2.0%	9,560,000	\$9,794,599	\$0	\$286,268	\$35,488
2032	\$286,268	\$94,570	2.0%	9,650,000	\$9,744,290	\$0	\$286,548	\$35,826
2033	\$286,548	\$96,462	2.0%	410,000	\$507,496	\$1,621	\$287,134	\$1,862
2034	\$287,134	\$98,391	2.0%	120,000	\$219,060	\$4,536	\$291,001	\$803
2035	\$291,001	\$100,359	2.0%	115,000	\$223,441	\$4,589	\$287,508	\$792
2036	\$287,508	\$102,366	2.0%	4,540,000	\$4,635,926	\$0	\$293,948	\$17,068
2037	\$293,948	\$104,413	2.0%	1,000,000	\$1,106,042	\$0	\$292,319	\$4,060
2038	\$292,319	\$106,502	2.0%	1,200,000	\$1,304,528	\$0	\$294,293	\$4,803
2039	\$294,293	\$108,632	2.0%		\$11,965	\$6,853	\$397,812	\$399
2040	\$397,812	\$110,804	2.0%	15,000	\$241,780	\$6,646	\$288,482	\$463
2041	\$288,482	\$113,020	2.0%	130,000	\$246,616	\$4,434	\$289,320	\$893
2042	\$289,320	\$115,281	2.0%		\$112,145	\$5,818	\$298,274	\$424
TOTALS		\$2,633,517		31,065,000				

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



Depreciation Report
Palisades, LMS 2472, Vancouver, BC

Summary of Funding Scenarios
FINAL

Current Fiscal Year 2013
 from September 1, 2012 to August 31, 2013

Number of Units
 272

Minimum Balance

The Strata Council has directed that the Minimum Balance be maintained at \$288,000 (25% of current operating budget).

Scenario 1

This Scenario is based on the last approved funding plan, and represents a reserve fund contribution of approximately 2.8% of the current operating budget.

This Scenario shows contribution increases due to inflation only. The Reserve Fund Balance falls below zero, showing there will not be sufficient funds available to meet the anticipated expenditures for the 30-year period addressed by this study. For details, please see the 30 Year Reserve Fund Cash Flow Table for Scenario 1.

	2013	2014	2015	2016
Annual Reserve Contribution*	\$64,916	\$66,214	\$67,539	\$68,889
% Increase	n/a	2.0%	2.0%	2.0%
Average Increase per Unit	n/a	\$4.77	\$4.87	\$4.97
Average Annual Contribution per Unit	\$238.66	\$243.44	\$248.30	\$253.27

Scenario 2

This Scenario shows contribution increases of 20% per year, including inflation, for 6 years, followed by increases due to inflation only thereafter. The Reserve Fund Balance remains positive over the next thirty years, with a minimum balance of approximately \$288,300 in fiscal year 2031. For details, please see the 30 Year Reserve Fund Cash Flow Table for Scenario 2.

	2013	2014	2015	2016
Annual Reserve Contribution*	\$64,916	\$77,899	\$93,479	\$112,175
% Increase	n/a	20.0%	20.0%	20.0%
Average Increase per Unit	n/a	\$47.73	\$57.28	\$68.73
Average Annual Contribution per Unit	\$238.66	\$286.39	\$343.67	\$412.41
Total Other Contributions**	\$0	\$0	\$0	\$0
Average Other Contribution per Unit	\$0.00	\$0.00	\$0.00	\$0.00

Scenario 3

This Scenario shows contribution increases due to inflation only. The Reserve Fund Balance remains positive over the next thirty years, with a minimum balance of approximately \$286,268 in fiscal year 2031. For details, please see the 30 Year Reserve Fund Cash Flow Table for Scenario 3.

	2013	2014	2015	2016
Annual Reserve Contribution*	\$64,916	\$66,214	\$67,539	\$68,889
% Increase	n/a	2.0%	2.0%	2.0%
Average Increase per Unit	n/a	\$4.77	\$4.87	\$4.97
Average Annual Contribution per Unit	\$238.66	\$243.44	\$248.30	\$253.27
Total Other Contributions**	\$0	\$0	\$0	\$0
Average Other Contribution per Unit	\$0.00	\$0.00	\$0.00	\$0.00

*Annual Reserve Contribution refers to the amount contributed each year to the reserve fund from the monthly common expenses.

** Total Other Contributions refers to other contributed amounts including special assessments or surplus funds transferred from other sources (i.e. operating budget or contingency fund).



Appendix E: General Depreciation Report Information

DEPRECIATION REPORT GENERAL INFORMATION

The objective of this study is to provide the Strata Council with sufficient information to enable you to:

- a) Set up a schedule for the anticipated repair and replacement of common element items.
- b) Set up a special account for major repair items and replacement of common elements and assets of the Corporation.
- c) To determine the annual contributions necessary to maintain an adequate balance for the 30 year period of this study.
- d) Satisfy the legislation regarding the *Strata Property Act 1999 with Amendments July 1, 2000 and December 13, 2011* that requires a depreciation report be completed.

Limitations and Assumptions

This report is intended for the sole use of LMS 2472, and must not be distributed or used by others without our knowledge. It is based on the documents and information provided to us and the findings at the time of our on-site investigation.

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

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

Some of the findings herein are based on a random sampling visual review of the surface conditions, discussions with the Strata Council and/or their designated representatives, and review of relevant documents. Observations were made only of those areas that were readily accessible during our review. Deficiencies existing but not recorded in this report were not apparent given the level of study undertaken. Components not included have not been reviewed, and if their conditions need to be known, further study will be required.

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

In issuing this report, MH does not assume any of the duties or liabilities of the designers, builders or owners of the subject property. Owners, prospective purchasers, tenants or others who use or rely on the contents of this report do so with the understanding as to the limitations of the documents reviewed and the general visual inspection undertaken, and

understand that MH cannot be held liable for damages they may suffer in respect to the purchase, ownership, or use of the subject property.

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

Report Format

A description of the table contents and our approach to assigning ratings is described below:

COLUMN	DESCRIPTION
Component ID	The component number, as per the ASTM Unifomat II Classification for Building Elements (E1557-09)
Location / Type	Where appropriate, we have provided a location or other modifier as needed to assist in identifying the specific component is provided. This may refer to an elevation, floor number, room, or material type.
Description & History	A brief description of the component, deficiencies observed by MH (if any), and problems or previous repairs reported by site staff.
Condition Rating	<p>We have also provided an overall condition rating for each component, as follows:</p> <p>Excellent Functioning as intended; as new condition.</p> <p>Good Functioning as intended; limited (if any) deterioration observed.</p> <p>Fair Function and operation exhibiting wear or minor deterioration, normal maintenance frequency.</p> <p>Poor Function and operation failing; significant deterioration and distress observed; increased maintenance attention has been required.</p> <p>NR Not Reviewed –applicable to concealed systems, such as buried services, or where access was not provided to MH to review a component</p> <p>NA Not Applicable – applicable to Studies/Reports/Surveys.</p>

COLUMN	DESCRIPTION												
Year of Acquisition	This is assigned based on available data from drawings or reports, readily accessible nameplate information on equipment, or interviews with site staff. Where the year is not known, MH provides an estimate based on observed condition. Year reflects the fiscal year in which the component was acquired, not necessarily the calendar year.												
Recommendation	Our recommended approach for reserve fund budgeting.												
Type	<p>We have categorized the type of expense as follows</p> <table border="0"> <tr> <td data-bbox="626 657 812 699">Replacement</td><td data-bbox="812 657 1443 741">Replace like with like, allowing for changing contemporary standards.</td></tr> <tr> <td data-bbox="626 741 812 783">Repair</td><td data-bbox="812 741 1443 846">For repairs, typically to extend the life of a component, restore functionality, or for partial replacements of isolated failures.</td></tr> <tr> <td data-bbox="626 846 812 888">Contingency</td><td data-bbox="812 846 1443 993">For repairs likely to be required where the timing and scope cannot be assessed without additional study; or where failure is unpredictable.</td></tr> <tr> <td data-bbox="626 993 812 1035">Study</td><td data-bbox="812 993 1443 1119">Further study is required to assign more accurate repair/replacement costs or timing for a Contingency item.</td></tr> <tr> <td data-bbox="626 1119 812 1161">Upgrade</td><td data-bbox="812 1119 1443 1455"> <p>Replace to a higher standard (more efficient, higher quality, etc).</p> <p>Our report may identify upgrades which we believe are worth exploring. In such cases, we have included 0% responsibility since we understand upgrades may not be funded out of the Reserve Fund, and the costs are not considered within the cash-flow.</p> </td></tr> <tr> <td data-bbox="626 1455 812 1497">New</td><td data-bbox="812 1455 1443 1581">For new components added to the Depreciation Report, typically to reflect changing legislation.</td></tr> </table>	Replacement	Replace like with like, allowing for changing contemporary standards.	Repair	For repairs, typically to extend the life of a component, restore functionality, or for partial replacements of isolated failures.	Contingency	For repairs likely to be required where the timing and scope cannot be assessed without additional study; or where failure is unpredictable.	Study	Further study is required to assign more accurate repair/replacement costs or timing for a Contingency item.	Upgrade	<p>Replace to a higher standard (more efficient, higher quality, etc).</p> <p>Our report may identify upgrades which we believe are worth exploring. In such cases, we have included 0% responsibility since we understand upgrades may not be funded out of the Reserve Fund, and the costs are not considered within the cash-flow.</p>	New	For new components added to the Depreciation Report, typically to reflect changing legislation.
Replacement	Replace like with like, allowing for changing contemporary standards.												
Repair	For repairs, typically to extend the life of a component, restore functionality, or for partial replacements of isolated failures.												
Contingency	For repairs likely to be required where the timing and scope cannot be assessed without additional study; or where failure is unpredictable.												
Study	Further study is required to assign more accurate repair/replacement costs or timing for a Contingency item.												
Upgrade	<p>Replace to a higher standard (more efficient, higher quality, etc).</p> <p>Our report may identify upgrades which we believe are worth exploring. In such cases, we have included 0% responsibility since we understand upgrades may not be funded out of the Reserve Fund, and the costs are not considered within the cash-flow.</p>												
New	For new components added to the Depreciation Report, typically to reflect changing legislation.												

COLUMN	DESCRIPTION
Priority	<p>A Priority Rating is provided to each Recommendation to assist you with budgeting of expenses, and to assess where deferral of an expense may be appropriate.</p> <ol style="list-style-type: none"> 1 Immediate: items that require immediate repair or replacement because of either a code deficiency, legislative requirement or a safety concern 2 Restore Functionality: items that currently show signs of failure, requiring repair or replacement to restore functionality in the near future. 3 Future Renewal: items that will require future repair or replacement to maintain functionality (life cycle replacement). Most Reserve Fund Expenses will fall under this category. 4 Discretionary Renewal: items where the timing, scope of work and phasing is at the owner's discretion. This is typically limited to cosmetic issues.
Age in Current Fiscal Year	<p>The age at the time of the assessment. Where the exact age is unknown, MH provides an estimate based on observed condition.</p>
Typical Lifecycle	<p>Standard lifespan, assuming normal maintenance, based on our experience and manufacturer's recommendations. A piece of equipment may have a typical lifespan for complete replacement, as well as a typical lifespan for a recommended repair with a much shorter frequency.</p> <p>A lifecycle of 99 shows a one-time project.</p>
Remaining Life Expectancy	<p>Remaining life of component and/or time to the next major repairs. Based on Age subtracted from Typical Lifespan, but confirmed and adjusted as needed depending on observed condition.</p> <p>A negative value is used to show phased projects already partially complete.</p>
Years Over Which Project is Phased	<p>Normally projects are completed in one year. Larger projects may be phased over several consecutive years.</p>

COLUMN	DESCRIPTION
Percent Responsibility	<p>Our understanding of the Corporation's responsibility for shared facilities.</p> <p>Most common elements are budgeted for at 100%, but any exceptions are noted in this column.</p>

COLUMN	DESCRIPTION
Recommended Budget	<p>This represents our opinion of probable cost, in current fiscal year dollars, including consulting services (design, tendering and construction review) and contingencies where we believe it is appropriate. The cost for these services can vary significantly depending on the size, scope and degree of complexity of the project. Applicable taxes are also included.</p> <p>Opinions of probable cost are provided only as an indication of possible cost of remedial work. The repair or replacement costs are based on published construction cost data, recent bid prices on similar work, information provided by the owner, and our professional judgment. More precise opinions of probable cost would require more detailed investigation to define the scope of work.</p> <p>The costs in this report are typically referred to as Class D estimates ($\pm 50\%$), defined by the Budget Guidelines for Consulting Engineering Services as: "A preliminary estimate which, due to little or no site information, indicates the approximate magnitude of cost of the proposed project, based on the client's broad requirements. This overall cost estimate may be derived from lump sum or unit costs for a similar project. It may be used in developing long term capital plans and for preliminary discussion of proposed capital projects."</p> <p>The opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified.</p> <p>All opinions of probable cost assume that regular annual maintenance and repairs will be performed to all elements at the facility.</p> <p>We recommend that costs for consulting services, including design, tendering and construction review, be included in the reserve fund plan. The cost for these services can vary significantly depending on the size, scope and degree of complexity of the project. We have included a variable allowance for consulting fees and contingencies where we believe it is appropriate, and the 5 percent GST. All costs in the Condition Assessment and Reserve Fund Expenditure Forecast tables are identified in CURRENT FISCAL YEAR Canadian dollars.</p>

COLUMN	DESCRIPTION
Capital Plan	The tables show MH's opinion of the probable cost to carry out the recommendations (in current fiscal year dollars) during the planning horizon. The repairs and replacements we have forecasted do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated.

The **Physical Analysis Summary Table** and **Reserve Fund Expenditure Forecast Table** in Appendices C and D show MH's opinion of the probable cost to carry out the recommendations (in current fiscal year dollars) during the depreciation planning period. The repairs and replacements we have forecasted do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated.

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

Financial Terms, Assumptions and Calculations

Inflation

The Government of Canada and the Bank of Canada inflation-control policy is aimed at keeping inflations at agreed to target values. At present the target range is 1 to 3 per cent, with the Bank's monetary policy aimed at keeping inflation at the 2 per cent target midpoint. This policy has continued to be renewed since implementation in 1991, and currently extends to December 31, 2016.

The total annual estimated expenditures are shown in the Capital Plan in current fiscal year dollars. The expenditures shown in the Cash Flow Table are inflated annually by the inflation percentage show.

In the startup questionnaire, MH requested confirmation of the inflation rate to be used over the course of the study. This may not be the actual current inflation rate, but is a reasonable estimate to begin the long term planning.

Interest

In the startup questionnaire, MH requested confirmation of the interest rate to be used over the course of the study. This may not be the actual rate of interest on the Corporation's current investments, but is a reasonable estimate to begin the long term planning.

The interest earned on the Reserve Fund for each year is based on a **Mid-Year Interest Calculation** in accordance with generally accepted accounting practice. Over the 30-year period, the calculated interest is lower than calculating Simple Interest, therefore it is a more conservative method for calculating interest.

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

$$Interest = InterestRate \times (StartingBalance - \frac{Expenses}{2} + \frac{AnnualContribution}{2})$$

Starting Balance

MH requested information regarding the Reserve Fund balance at the start of the current fiscal year in the startup questionnaire. Where appropriate documents are provided, we confirm the opening balance against the financial statements. We assume the Strata Council confirms the starting balance is correct to the best of their knowledge prior to authorizing us to finalize the report.

Contributions

MH requested information regarding the present annual contribution to the Reserve Fund in the startup questionnaire. Where appropriate documents are provided, we confirm the contribution amount against the most recent Notice of Future Funding provided to the Owners. We assume the Strata Council confirms the current annual contribution is correct to the best of their knowledge prior to authorizing us to finalize the report.

Future annual contributions are calculated based on the estimates of life expectancy and opinions of probable cost, Minimum Reserve Fund Balance, and the assumptions for inflation and interest. Sample annual contributions that would result in an adequate Reserve Fund are indicated in the attached Cash Flow Scenarios.

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

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

Minimum Reserve Fund Balance

The Act indicates that the Reserve Fund must be adequate to provide sufficient funds for the expected costs of major repair and replacement of the common elements and assets of the Corporation. However, “adequate” is not defined by the Act. Any of the scenarios provided consider a Reserve Fund to be adequate where the closing balance in every year of the study is positive.

MH requests information regarding the desired minimum balance in the startup questionnaire. We assume the Strata Council confirms the minimum balance of the approved scenario is acceptable even if it contradicts original directions provided in the completed questionnaire

Requirements Under the Act

Contributions

The Annual Reserve Contribution for the first year of this study was provided by the Strata. Future annual contributions are calculated based on the estimates of life expectancy and opinions of probable cost, Minimum Reserve Fund Balance, and the assumptions for inflation and interest.

Contributions may be limited by the Strata Act as provided by Section 6.1, which indicates that the amount of the annual contribution to the contingency reserve fund must be determined as follows:

- (a) if the amount of money in the contingency reserve fund at the end of any fiscal year after the first annual general meeting is less than 25% of the total annual budgeted for the contribution to the operating fund for the fiscal year that has just ended, the annual contribution to the contingency reserve fund for the current fiscal year must be at least the lesser of:
 - i. 10% of the total amount budgeted for the contribution to the operating fund for the current fiscal year; and
 - ii. The amount required to bring the contingency reserve fund to at least 25% of the total amount budgeted for the contribution to the operating fund for the current fiscal year.
- (b) if the amount of money in the contingency reserve fund at the end of any fiscal year after the first annual general meeting is equal to or greater than 25% of the total annual budgeted for the contribution to the operating fund for the fiscal year that has just ended, additional contributions to the contingency reserve fund may be made as part of the annual budget approval process after consideration of the depreciation report, if any, obtained under section 94 of the Act.

Timing of Studies

The Depreciation Report is a dynamic document that will change over time as repairs/replacements are carried out on the common elements and interest/inflation rates change. The repairs and replacements we have forecasted do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated. Similarly, the opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified. As such, regular updates are necessary to re-assess your needs.

The Corporation is required to complete an update with site Inspection within three years of this study.

Glossary of Building Terms

The following is a list of terms and abbreviations which may have been used in the report produced for the noted project. All of the terms and abbreviations used are standard within the industry, but the glossary may be of some aid for those not familiar with construction terms.

Air Barrier:	An assembly of one or more materials, including joints, that prevents the continuous passage of air, and whatever it contains, between different environments under a difference of pressure.
Ampere (A):	The unit of measurement of electric current. The greater the amperage, the larger the size of the conductor required to carry the current.
Annunciator Panel:	A lighted panel that provides information about the location of an activated fire alarm in a building, typically located near the main entrance of a building.
Backflow Preventer:	A device used in plumbing systems to prevent potentially contaminated water from moving back into the clean water supply.
Bitumen:	The term covering numerous mixtures of hydrocarbons such as those found in asphalt and mineral pitch.
Built-Up Roof:	Waterproof membrane constructed of multiple felt layers mopped down with bitumen.
Caulking:	Material with widely different chemical compositions used to make a seam or joint air-tight or watertight.
CCTV:	Closed Circuit Television, a video camera system that transmits video images to specific monitors as opposed to broadcasting the signal over air waves. Typically used in security applications.
CFM	Cubic feet per minute, the common unit of air flow measurement.
Cladding:	Any material that covers an interior or exterior wall.
Control Joint:	Also Movement Joint, a continuous joint in a structure or element, used to regulate the amount of cracking and separation resulting from relative movement.
Condenser:	A device used to remove heat from refrigerating equipment by circulating hot refrigerant gas through coils in the unit and blowing outdoor air across the coils with a fan. Cooling the gas causes it to condense back into a liquid.
Cooling Tower:	A device used to cool condenser water in a chiller by evaporation. Condenser water is sprayed into the top of the cooling tower. The droplets fall through the tower as air is blown upward through the tower, partly evaporating the droplets, which cools the remaining water. Water leaving the cooling tower is typically 10 degrees cooler than when it entered.
Delamination:	A separation along a plane parallel to a surface.

Direct expansion:	A refrigeration method in which an air cooling coil contains refrigerant rather than a secondary coolant glycol or brine.
Drip Edge:	A projection detailed to direct water run-off away from the wall or window face below.
Efflorescence:	Deposits of salt, usually white, due to the migration of salt-laden (in solution) water through concrete or masonry units.
EPDM:	Synthetic rubber membrane usually applied in single-ply applications.
Exhaust Air:	Air mechanically removed from a building to reduce the concentration of moisture, cooking odours and other contaminants from the building.
Fan Coil Unit:	A device consisting of a fan and water coil that can heat an area by circulating hot water through the coil and cool by circulating chilled water through the coil.
Fire Detector:	A fire alarm system component which senses the presence of a possible fire through the presence of smoke particles or heat (i.e. smoke detector, heat detector).
Flashing:	A thin waterproof sheet material, flexible or rigid, used to direct water out of, or away from, the structure.
Glazing:	A generic term for the transparent, or sometimes translucent, material in a window or door. Often, but not always, glass.
Glazing Bead:	A molding or stop around the inside of a frame to hold the glass in place.
Glazing Unit:	That part of a window which includes more than one glazing layer sealed around the outside edge to prevent air or moisture from entering the airspace and eliminating dirt and condensation between glazings.
Heat Exchanger:	A device used to heat a fluid or gas with another fluid or gas without the two streams coming in direct contact with each other and mixing. For example a radiator heats air using hot water. The air and water circulate through the heat exchanger (the radiator) but do are prevented from coming in contact with each other by the radiator.
Heat Pump:	A mechanical device designed to provide both winter heating and summer cooling.
HID:	High Intensity Discharge, a generic term for mercury, vapour, metal halide and high pressure sodium light fixtures. Light in these fixtures is produces by an electric arc between two electrodes.
House Panelboard:	A panelboard which supplies power to common area loads
Hydronic Heating:	A means of heating a space through the use of hot water circulated through heating coils or a radiator in the space
Initiating Device:	A fire alarm system component which initiates a fire alarm (i.e. pull station).
Inverted Roof:	Where the roof membrane is located below the insulation and ballast (also Protected Membrane Roof).

Joist:	One of several parallel, horizontal and relatively closely spaced concrete, wood or steel members directly supporting a floor or roof slab or deck.
kVA:	Kilo-Volt-Ampere, the unit used to measure apparent power. This is what is charged by the utility.
kW:	Kilowatt, the unit used to measure real power. This is power that is actually used by the customer.
Lintel:	A horizontal structural support above an opening in a wall.
Makeup Air:	Fresh, outdoor air that is mechanically introduced to a building to make up for the air removed from buildings by exhaust systems.
Panelboard:	A component of an electrical distribution system which divides an electrical power feed into subsidiary circuits, while providing a protective fuse or circuit breaker for each circuit all contained in a common enclosure.
Refractory:	A ceramic insulating material used in boilers and similar equipment because it can withstand very high temperatures.
Retaining Wall:	A wall constructed to hold back earth, water or other backfill.
Riser:	Pipes or ductwork used to transport water, effluent, air or service cables vertically through a multi-storey building for distribution of services.
Roof Structural Deck:	An elevated platform consisting of a variety of materials such as wood planks or metal pans, often supported by structural joists, beams and columns made of steel or wood, all structurally designed to support loads such as a roofing system.
Scaling:	A degradation of the surface of a concrete element, consisting of local flaking or peeling away of the near-to-surface sand and cement portion of hardened concrete or mortar.
Sealant:	A flexible material used on the inside (or outside) of a building to seal gaps in the building envelope in order to prevent uncontrolled air infiltration and exfiltration.
Sealed Units:	Two pieces (lites) of glass sealed around the perimeter, increasing the thermal resistance of the window.
Shear Wall:	A wall that resists horizontal forces applied in the plane of the wall, usually due to wind or seismic effects (also Flexural Wall).
Signaling Device:	A fire alarm system component which visually or audibly alarms (i.e. bell, strobe).
Slab-on-Grade:	A concrete floor slab placed directly on compacted fill and deriving its support from this fill (also Slab-on-Ground).
Spall:	A fragment of concrete or masonry detached from a larger mass by a blow, weather action, internal pressure, or efflorescence within the mass (sub fluorescence).

Stucco:	A finish consisting of cement plaster, used for coating exterior building surfaces.
Switchboard:	A board or panel equipped with apparatus for controlling the operation of a system of electric circuits.
Terminal Board:	An insulating base on which terminals for wires or cables have been mounted
Thermographic Scanning:	Also known as infra-red scanning. A photograph that detects hot spots of electrical equipment or temperature differences at building surfaces.
Tuckpointing:	Also Repointing, the process of removing deteriorated mortar from the joints of masonry and replacing it with new mortar.
Uninterruptible Power Supply:	A power electronic device primarily used as a back-up power source for computers and computer networks to ensure on-going operation in the event of a power failure. Sophisticated units also have power conditioning and power monitoring features.
Vapour Barrier:	A material or combination of materials having a high resistance to water vapour diffusion, used to separate a high water vapour pressure environment from a low water vapour pressure environment.
Vent:	An opening placed in a facing wall or window assembly to promote circulation of air within a cavity behind the facing, usually to encourage drying of the cavity and/or to moderate the pressure across the facing.
Volt (V):	A unit of potential energy equal to the potential difference between two points on a conductor carrying a current of 1 ampere.
VRLA	Valve Regulated Lead-Acid, low maintenance batteries which use much less battery acid than traditional lead-acid batteries typically used in UPS applications.
Weather-strip	A strip of material placed around an operating window or door to reduce air leaks.
Weephole:	An opening placed in a wall or window assembly to permit the escape of liquid water from within the assembly. Weepholes can also act as vents.
Weeping Tiles:	Drainage pipes placed at the base of foundation walls.
Window:	<p>A manufactured assembly of a frame, sash, glazing and necessary hardware, made to fit an opening in a wall.</p> <ul style="list-style-type: none"> • <i>Window sill</i>: horizontal member at the base of a window opening • <i>Window head</i>: horizontal member at the top of a window opening • <i>Window jamb</i>: either of the vertical members at the sides of a window opening • <i>Mullion</i>: vertical member between glazed units

- *Rail*: horizontal member between glazed units
- *Glazing*: The glass portion of the window
- *IGU*: Insulated glazing unit. Double or triple panes of glass sealed together to provide insulation value. The still gas between the panes acts as the insulation.
- *Condensation track*: a channel at the interior sill level of the window intended to intercept small amounts of water condensing on the interior surface of the glass.

Appendix F: Photographs

Depreciation Report
Strata Plan LMS 2472 – Palisades, Vancouver



A01 – Painted walls in garage



A02 – Water staining at garage ceiling



A03 – Repairs at traffic membrane in garage



A04 – Typical balcony



A05 – Main roof, 1288 Alberni



A06 – Metal panel cladding

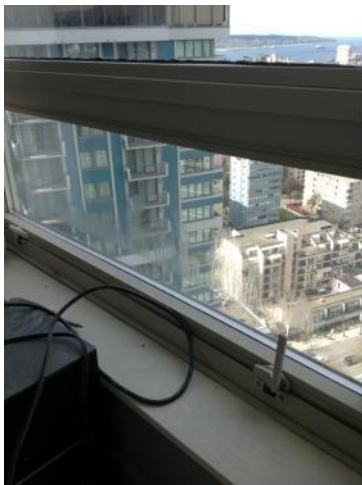
Depreciation Report
Strata Plan LMS 2472 – Palisades, Vancouver



A07 – Metal clad wind screen at elevator penthouse, 1288 Alberni



A08 – Stucco at parapet, 1200 Alberni



A09 – Clouding at IGU



A10 – Structural glazing at lobby, 1200 Alberni



A11 – Curtain wall, 1288 Alberni



A12 – Library room, 1288 Alberni

Depreciation Report
Strata Plan LMS 2472 – Palisades, Vancouver



A13 – Trellis at garden



E01 – HV switch gear



E02 – HV transformer



E03 – Transfer switch



E04 - Load centre



E05 – Enter panel



E06 - Generator



E07 – Fire alarm panel



E08 – Fire alarm support panel



M01 – City water meter & piping



M02 – Supply branch to fire suppression systems



M03 – Typical polybutylene piping within suites



M04 – DHW heat exchanger for Lower zone



M05 – DHW heat exchanger for Upper zone



M06 – Upper level DHW storage tanks



M07 – Lower level DHW storage tanks



M08 – DCW booster pumps



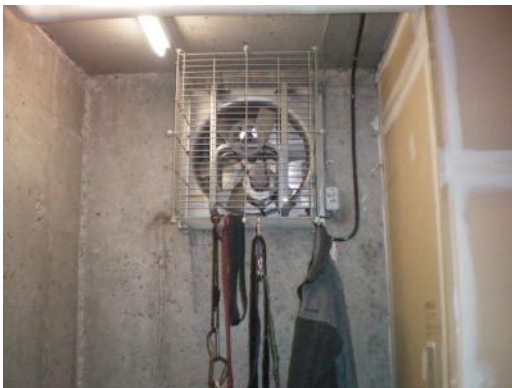
M09 – Fire pump



M10 – Cast iron sanitary piping in parkade



M11 – Typical exhaust fan in parkade



M12 – Typical small exhaust fan (elevator room)



M13 – Make up air unit on the West Tower



M14 – Burner removed from MAU on West Tower



M15 – Make up air unit for East Tower upper floors



M16 – East Tower MUA – inlet ductwork



M17 – Sprinkler piping in sprinkler valve room

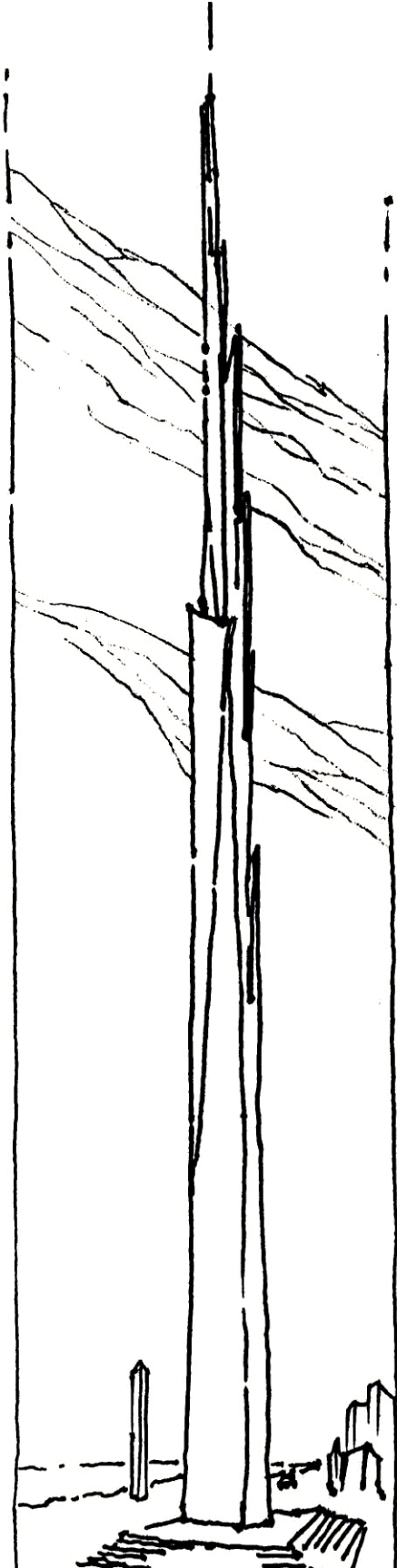


M18 – Cooling-only RTU for West Tower PH



M19 – Cooling-only RTU for East Tower PH

Appendix G: Elevator Report



**The Palisades
1200 & 1288 Alberni Street
Vancouver, BC**

Elevator Depreciation Study

217869 - V108992.doc
Prepared by KJA Consultants Inc.
For Morrison Hershfield Limited
Date of Inspection: April 16, 2013

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1. Inspection Summary

On April 16, 2013, we performed an Elevator Depreciation Study of the vertical transportation equipment located at The Palisades (1200 & 1288 Alberni Street) in Vancouver, BC. The purpose of the inspection was to review the condition of the major components and to provide recommendations for repairs, capital upgrades, and potential modernization work. KJA did not inspect or test the safety features of the equipment and did not check the equipment for compliance with requirements of the regulating authorities.

The elevating equipment at The Palisades consists of one group of three overhead geared traction passenger elevators in 1200 Alberni Street and one group of two overhead geared traction passenger elevators in 1288 Alberni Street. The elevators were installed by Fujitec circa 1996. The elevators are currently maintained by Fujitec.

We assume that the elevators are presently being maintained under the terms of a contractor prepared full service maintenance agreement. A typical contractor prepared agreement covers the replacement of major components in addition to the labour and materials necessary for ongoing repairs, adjustment, and preventative maintenance work. Entrances and cab finishes are excluded. This contract may contain an obsolescence clause, which states that the contractor can forward costs for parts no longer available from usual sources to the Owner. While this wording is quite common (when the agreement is written by the contractor) the costs forwarded to the Owners can be unpredictable. We are assuming that repairs required due to accidents or "Acts of God" (flood, fires, etc.) are covered by insurance.

The maintenance logs located in the machine room indicate that the contractor is visiting the site on a monthly basis. The annual and five-year maintenance tasks as required by the B44.2-07 code have not all been signed as complete; only the annual machine brake task is up to date. The last record of the other annual tasks being performed is in 2009 and there was no record of the five-year tasks ever being performed. All overdue tasks should be completed immediately.

The rotating mechanical and electrical equipment in the machine rooms appears to be operating well with no vibrations or unusual noises noted.

While we did not perform a detailed maintenance inspection, we did note the following which should be forwarded to the contractor for action:

1200 Alberni (Tower A):

- Car A2: It was noted that the hoist machine brake would intermittently produce excessive vibrations prior to start of travel. This was felt in the cab as excessive vertical vibrations and in-car noise. The brake lift and motor pre-torque operations should be reviewed.
- Car A2: The door operation is excessively noisy and the door equipment should be serviced as necessary to ensure smooth operation.

1288 Alberni (Tower B)

- Car B1 and B2: It was noted that the hoist machine brake would intermittently produce excessive vibrations prior to start of travel. This was felt in the cab as

- excessive vertical vibrations and in-car noise. The brake lift and motor pre-torque operations should be reviewed.
- Car B1: Two of the hoist ropes have only one rope clip on the car rope shackles. All other connections currently have two clips installed.
 - Car B1: The door operator covers should be replaced.
 - Car B2: The hoist machine shaft seal on the motor side is leaking oil. The oil should be cleaned up and the seal serviced as necessary.

Later in this report we have listed some upgrades that may be considered or required over the next 30 years. Short of these items, we do not anticipate any immediate major problems that would require capital expenditures.

2. Equipment Description

Tower A, 1200 Alberni, Passenger Elevators

Number of elevators	3
Building designation	A1 - A3
Installation number	16178 - 16180
Usage	passenger
Manufacturer	Fujitec
Date installed	circa 1996
Maintenance contractor	Fujitec
Capacity (lbs)	A1: 2500, A2,A3: 2000
Floors served	P5 - P1, G, 2 - 31
Contract speed (feet per minute)	500
Governor tripping speed (feet per minute)	625 (Hollister Whitney A97339)
Controller model	Fujitec Exceldyne A1: EXD-170, A2,A3: EXD-260
Machine type	Fujitec TM40A
Motor type	Fujitec A1: frame 2292DV1 22kW, A2,A3: frame 1992DV1 19kW AC
Drive method	geared traction (5 x 5/8" wire ropes)
Drive type	Fujitec SLI-360 881N1
Auxiliary brake	Hollister Whitney model 600, rope gripper
Roping ratio	1:1, single wrapped
Compensation	double jacketed chains
Door type	A1: single-speed centre-opening, A2,A3: single-speed side-opening
Door operator	A1: GAL MOVFR, A2,A3: GAL MOML
Car door restrictor	not provided
Hall door interlock	A1: GAL MOCPP, A2,A3: GAL MO
Hall door safety retainers	provided
Door protection	infrared multi-beam
Door width	A1: 42", A2,A3: 36"
Door height	84"
Cab dimensions (w x d x h)	A1: 77" x 51" x 101" ¹
.....	A2,A3: 65" x 51" x 101" ¹
Car guide	6" spring-loaded rollers
Counterweight guide	3" spring-loaded rollers
Car operating panels	main only
Arrival signal	in-car lanterns and dual gongs
Car / Hall position indicator:	digital / digital at G
Communication	corded handset phone
Firefighters' Emergency Operation	Phase I and II
Emergency power	provided
Security	fob proximity reader

¹ Height measurement is to underside of hanging ceiling. Height to underside of car top is 108".

Tower B, 1288 Alberni, Passenger Elevators

Number of elevators	2
Building designation	B1, B2
Installation number	16181, 16182
Usage	passenger
Manufacturer	Fujitec
Date installed	circa 1996
Maintenance contractor	Fujitec
Capacity (lbs)	B1: 2500, B2: 2000
Floors served	P5 - P1, G, 2 - 23
Contract speed (feet per minute)	500
Governor tripping speed (feet per minute)	625 (Hollister Whitney A97339)
Controller model	Fujitec Exceldyne B1: EXD-170, B2: EXD-260
Machine type	Fujitec TM40A
Motor type	Fujitec B1: frame 2292DV1 22kW, B2: frame 1992DV1 19kW AC
Drive method	geared traction (5 x 5/8" wire ropes)
Drive type	Fujitec SLI-360 881N1
Auxiliary brake	Hollister Whitney model 600, rope gripper
Roping ratio	1:1, single wrapped
Compensation	double jacketed chains
Door type	single-speed side-opening
Door operator	GAL MOML
Car door restrictor	not provided
Hall door interlock	GAL MO
Hall door safety retainers	provided
Door protection	infrared multi-beam
Door width	B1: 42", B2: 36"
Door height	84"
Cab dimensions (w x d x h)	B1: 77" x 51" x 101" ²
.....	B2: 65" x 51" x 101" ²
Car guide	6" spring-loaded rollers
Counterweight guide	3" spring-loaded rollers
Car operating panels	main only
Arrival signal	in-car lanterns and dual gongs
Car / Hall position indicator	digital / digital at G
Communication	corded handset phone
Firefighters' Emergency Operation	Phase I and II
Emergency power	provided
Security	fob proximity reader

² Height measurement is to underside of hanging ceiling. Height to underside of car top is 108".

3. Recommended or Required Work

The typical elevator “full maintenance” contract covers the replacement of major components in addition to the labour and materials necessary for ongoing repairs, adjustment and preventative maintenance work. Entrances, cab finishes and buried cylinders are normally excluded. As long as full maintenance is purchased the only additional costs to the Owner, during the first twenty to thirty years of use, should be for malicious damage and repairs to the elevator cabs and entrances. We are assuming that repairs required due to accidents or “Acts of God” (flood, fire, etc.) are covered by insurance.

The costs noted are budget figures only, are based on the current market and are in present dollars. The actual costs may vary depending on the time of tendering, the actual detailed scope of work and market conditions. The figures listed below do not include work required by other trades in conjunction with the elevator work.

A summary of potential **required** elevator upgrades and/or repairs outside of the scope of normal maintenance, as well as work that is **recommended** is as follows:

Required Short Term Work (Years 1 - 5):

Code Changes - Code requirements have become more onerous over the past decade and the interval between code changes has decreased. For that reason, we recommend budgeting funds at five year intervals to address code changes. Without being able to pinpoint these changes, it is reasonable to expect that they would require in the area of \$3,000 per device every five years.

Vandalism - We recommend budgeting funds to repair vandalism - principally damage to exposed finishes and fixtures. No precise figure can be assigned since much depends on the location and environment but we suggest allowing a figure of \$2,000 per unit every five years.

Required Mid Term Work (Years 6 - 15):

None

Required Long Term Work (Years 16 - 30):

None

Recommended Short Term Work (Years 1 - 5):

Car Door Restrictors - There is currently no car door restrictor provided. The addition of a car door restrictor would prevent the car door from being manually opened by more than 100 mm, except when the car is within the unlocking zone (extending at least 17 mm above and below the landing floor level, and possibly as much as 450 mm). This safety device reduces the risk of people falling down the hoistway while attempting to exit a stalled elevator.

The Safety Code for Elevators (CSA B44) requires a car door restrictor on all new installations. While it is not mandatory on existing installations, we believe it is a desirable safety enhancement. It is also possible that this Code requirement will be made retroactive at some point in the future. We recommend budgeting in the area of \$3,000 per elevator to perform this work within the next one to two years.

Barrier-Free Access Recommendations - The elevating equipment does not meet barrier-free access requirements, as listed in the Safety Code for Elevators (B44 Appendix E). It should be noted that it is not currently mandatory to modify existing buildings to comply with barrier-free access requirements, although in some provincial jurisdictions (Ontario, for example) the building codes have incorporated this requirement for new buildings. It is also probable that this requirement will be enforced for new buildings in other jurisdictions throughout Canada. To conform, the following would need to be provided:

- New car-operating panel equipment with all controls oriented according to the barrier-free access requirements;
- Provision of a voice synthesizer for floor annunciation.

The cost for this work would be in the area of \$8,000 per elevator and should be performed within the next two to three years.

Door Operator Replacement – Cars A2, A3, B1, and B2 - The existing door operator has reached the end of its design lifespan and represents dated technology. We recommend replacement with a new closed-loop door operator. A closed-loop door operator would provide feedback on the position and speed of the elevator doors. This allows the door operator to automatically adapt to the environment in which the elevator is operating, improving overall reliability. We recommend budgeting \$10,000 per elevator car entrance for this work. This should be performed within the next four to five years.

Recommended Mid Term Work (Years 6 - 15):

Equipment Guarding - There is a trend across Canada towards providing greater safety for workers on elevator equipment. These statutory requirements are as yet not definitively outlined.

It is expected that the requirements will detail machine guarding methods and list the equipment in the machine room that requires guarding, such as drive sheaves, machine brakes, commutators, selectors and governors and high voltage connections. We would expect that this work would be carried out by qualified, licenced elevator contractors.

While we cannot determine the timing or extent future regulations, we estimate the current cost of the likely scope of work to be in the range of \$15,000 per traction elevator, although this figure will decline with increased competition and installation experience. A budget figure of \$12,000 per traction elevator is recommended.

Car Top Railings - There has been a drive to provide top of car safety following an accident on a Toronto site. This will likely result in regulations requiring the installation of car top railings. There is no way of predicting when these regulations will be developed and applied but it is prudent to budget for the installation of these railings. A budget figure of \$4,000 per elevator is appropriate. It should be noted that if the ultimate design requirements include provision for ancillary devices such as collapsible railings and electrical interlocks this cost figure could be exceeded.

Recommended Long Term Work (Years 16 - 30):

Major Control Modernization - The typical elevator "full maintenance" contract covers the replacement of major components in addition to the labour and materials necessary for ongoing repairs, adjustment, and preventive maintenance work. Despite this, over time some components will require modernization. Certain elevator components may soon no longer be readily available. This will require that the maintenance contractor make arrangements to purchase parts from an external supplier or have parts manufactured and repaired locally. Although this is not the owner's direct concern, it will result in some delays and difficulties in implementing a proper maintenance program. Additionally, service personnel capable of performing the numerous adjustments necessary to keep the equipment operating will become increasingly difficult to find as newer equipment designs become more predominant.

Given the quality of the equipment and the decreased reliability likely to be provided by the system due to its type and vintage, we estimate that a major modernization will be required within the next 20 – 25 years. The scope of work would include replacement of the present controller with a newer microprocessor-based controller, replacement of the drive system with a newer solid state drive (such as SCR drive), fixture replacement and refurbishment of the geared machine, motor, and door equipment. The cost for this would be in the area of \$130,000 to \$150,000 per elevator.

Summary Table

Description	Car	Years 1 to 5	Years 6 to 15	Years 16 to 30
Required				
Code Changes	All	\$15,000	\$30,000	\$45,000
Vandalism	All	\$10,000	\$20,000	\$30,000
Recommended				
Car Door Restrictor	All	\$15,000		
Barrier-free Access	All	\$40,000		
Door Operator Replacement	A2, A3, B1, B2	\$40,000		
Equipment Guarding	All		\$60,000	
Car Top Railings	All		\$20,000	
Major Control Modernization	All			\$750,000

4. Photos



Photo 1 – B1 hoist machine



Photo 2 - A3 controller cabinet



Photo 3 – B2 rope gripper



Photo 4 – B1 hoist machine ring gear



Photo 5 - A2 car top



Photo 6 - A1 door operator



Photo 7 - B2 pit

Appendix H: Draft Changes

Draft Changes as per MH meeting with the Palisades council, October 10, 2013:

- The “Completed Start-up Questionnaire” (Appendix B) was updated to reflect that there were expenditures that were charged to the Reserve Fund in the Current Fiscal Year (the Depreciation Report and water system work).
- The report was paginated for ease of reference