2013 Depreciation Report

Fraserview Court, 4838 Fraser Street, Vancouver, BC

SUBMITTED TO The Owners, Strata Plan LMS1893

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1. Introduction

RDH Building Engineering Ltd. (RDH) was retained by The Owners, Strata Plan LMS1893 (the Owners) to prepare a Depreciation Report (the Report) for the common property components (the Assets) at the sectioned residential and commercial low-rise building located at 4838 Fraser Street, Vancouver, BC and known as Fraserview Court.

The purpose of the Report is to help the Owners, the strata council, and the management team to make informed decisions about the allocation of resources to the common property assets (such as roofs, cladding, and carpets).

The draft report was submitted to council and management on September 16, 2013 and presented to council and management on October 16, 2013. The Report was updated to reflect feedback from council and management, and the finalized version of the Report was issued on December 11, 2013.

The information provided in the Report satisfies the requirements stipulated in the Strata Property Act. In order to prepare the Report, RDH acknowledges that there is no relationship between the employees at RDH and the Strata Corporation. In addition to the requirements outlined in the legislation, RDH has developed an interactive software tool that enables the Owners to proactively manage their funding requirements and maintenance obligations.

This Report is provided as a PDF so that it can be readily printed and distributed. It represents a synopsis of many hundreds of pages of information. The supporting data are posted on a secure website at http://bams.rdhbe.com. The purpose of the website is to provide a tool to empower the strata council and management team to:

- Track and monitor the health of the assets
- Generate alternative funding scenarios
- Keep the data current as projects are completed

The data is owned by the strata corporation and can be printed and/or exported to spreadsheets as required.

As the physical and financial status of the commonly owned assets changes, the Report will require updating. The BC legislation requires updates to the Report to be performed every three years.

A glossary of terms is included in the appendices.

2. Evaluation of Assets

A Depreciation Report should include two key parts: a "physical" assessment and a "financial" assessment. Together these two sets of data provide the baseline of information regarding the current status of the assets on the site. Once the status of the assets has been determined, the data can be used to generate operational, tactical and strategic plans. The strategic plan is used to help guide the creation of possible funding scenarios. This process is summarized in the graphic below:

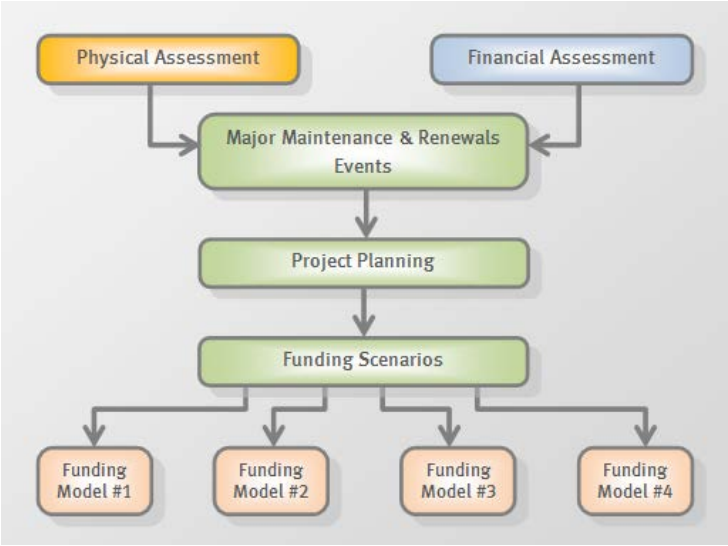


Fig. 2.1 Depreciation Report Process

The physical and financial assessments evaluate when major maintenance and renewals events are required, and how much they will cost. Tentative project plans are developed for the next year, 10 years and 30 years. Funding models are built based on the strategic plan (30 years). Owners will choose one model as the basis for the reserve fund contributions.

2.1. Physical Assessment

All assets are subject to physical deterioration as a result of the action of the elements, normal wear & tear, misuse & abuse and various other factors. Deterioration results in the need for maintenance, repair and renewal of assets. To this end, the physical assessment identifies the following:

- The inventory of common property assets.
- The effective age of the assets and the estimated remaining useful life of the assets.

The method of determining the physical health of the assets is based on discussions with facility representatives, a visual review of a representative sample of the assets in readily accessible locations, and review of readily available reference documents. No destructive testing was carried out on any of the assets, nor was the assets disassembled or subjected to confirmation of operational characteristics.

The table below contains a summary of some of the key physical parameters of Fraserview Court.

Table 2.1.1 Key Physical Parameters

Physical Parameters	
Date of Original Construction	1995
Gross Floor Area, including parkade (ft^2)	63,400
Stories Above Grade	4
Number of Units (total) ⇢ Residential Units ⇢ Commercial Units	36 31 5
Average Asset Age	13
Average Asset Remaining Service Life	19

Fig. 2.1.2 South Elevation.

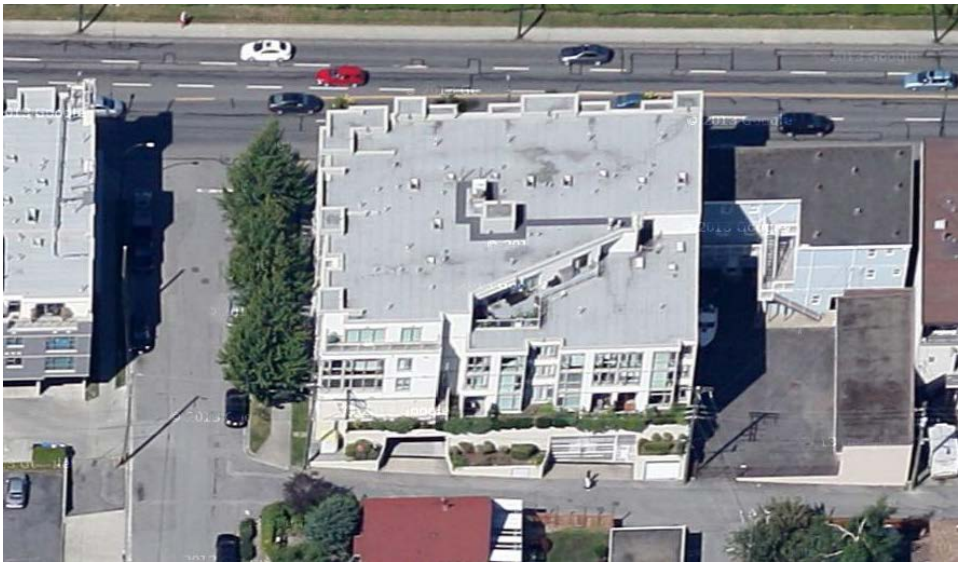


Fig. 2.1.3 Aerial photo of Fraserview Court (Imagery ©2013 Google)

With regards to governance, the strata has residential and commercial sections, however they operate together with one council and one budget. All costs are shared in accordance with unit entitlements. In light of this, the Depreciation Report has not differentiated between residential and commercial assets

Over time, all assets move through a series of life cycle stages. In this regard, Fraserview Court can be considered a "middle aged" building where the majority of the assets date from original construction, however some significant major maintenance activities or renewals projects have occurred. Some of these projects include:

Table 2.1.2 Summary of Completed Projects

Summary of Completed Projects – Listed by System	
Enclosure System ⇢ Comprehensive building rehabilitation (2008) ⇢⇢ SBS roofs and skylights ⇢⇢ Stucco, aluminum, and brick walls ⇢⇢ Stucco and aluminum soffits ⇢⇢ Aluminum windows, sliding doors, and storefront glazing ⇢⇢ Glazed aluminum guardrails ⇢⇢ Sealant ⇢⇢ Waterproofing at planters ⇢ Building Enclosure Condition Assessment (2006)	**Mechanical System** ⇢ Domestic water pipes replaced in localized areas and new access panels installed (2012) ⇢ Valve assembly reconfigured to have separate shut-offs for residential and commercial units. (approx. 2008) ⇢ Recirculation pumps replaced (2006) ⇢ Boiler and hot water tanks replaced (2006)
Electrical System ⇢ Enterphone replaced (approx. 2008) ⇢ Proximity access control installed (approx. 2008) ⇢ Security cameras installed (approx. 2003)	**Interior Finish System** ⇢ Hallways repainted and carpets replaced (2008) ⇢ Stairwell floors repainted (2008) ⇢ Lobby floor replaced (2006)
Sitework System ⇢ Planters repainted (2010) ⇢ Irrigation system installed (approx. 2005)	

RDH conducted site reviews on April 25, 2013 and September 12, 2013, to complete a visual evaluation on a representative sample of the common elements at Fraserview Court for the purpose of developing an inventory of common property assets and to estimate the useful remaining life of the assets. The condition of the property is consistent with its age. Listed below are examples of some of the observations that were identified during the review:

- We were advised that localized pinhole leaks, from domestic water pipes, have occurred.
- Delamination of parkade traffic membrane in localized areas.
- The fire proofing, located within the parkade, has come loose in localized areas
- The existing detailing at the wall to foundation interface, along the North Elevation, could be improved.
- The paint on stairwell floors is worn.

2.2. Financial Assessment

Owners will spend money for operating, reviewing, renewing and maintaining assets over their service lives. Sometimes more comprehensive renewal costs are also incurred. The financial assessment identifies the following:

- The current replacement costs of the assets and their future replacement costs.
- The status of the current Capital Reserve Fund (CRF) balance and how it relates to ongoing CRF requirements.
- The ability of the current budget to meet major maintenance and renewal needs.

Over the life of the assets, the costs associated with the stewardship of the assets can be distributed into three general categories: "Catch-up costs", "Keep-up costs" and "Get-ahead costs".

The Report is concerned primarily with the "Keep-up" costs. All costs are presented as “Class D” estimates. Soft costs, such as consulting fees and contingency allowances are not included.

Listed below is a summary of the key financial parameters of Fraserview Court, which are used to develop funding scenarios and the tactical and strategic plans.

Table 2.2.1 Key Financial Parameters

Financial Parameters	
Fiscal Year End	30 Apr
Building Reproduction Cost	$8,306,000
Operating Budget	$100,000
Annual Reserve Allocation	$10,000
Accumulated Reserve Balance*	$121,000

* The balance in the reserve fund varies each month as funds are allocated from the operating budget and withdrawn for capital renewal projects and major maintenance activities. Accumulated reserve balance is current as of December 2012.

3. Major Maintenance and Renewals

Maintenance includes work that is necessary to preserve the assets and to allow their continued use and function above a minimum acceptable level of performance. Maintenance reduces the risk that the assets fail to achieve their full service lives. Renewal includes the financial planning and logistics for the replacement of the assets as they reach the end of their useful service lives.

3.1. Maintenance Plan

The Strata Corporation's maintenance budget is $29,000 per year, which represents approximately 29% of the annual operating budget. The strata corporation has 6 line items in the budget that are devoted to maintenance of the different systems, including a line item of $12,000 for unspecified repairs and maintenance. The strata corporation has at least 2 maintenance service contracts, which cover the key systems, such as HVAC, elevators and landscaping services.

The figure below contains a summary distribution of the current annual maintenance costs for Fraserview Court.

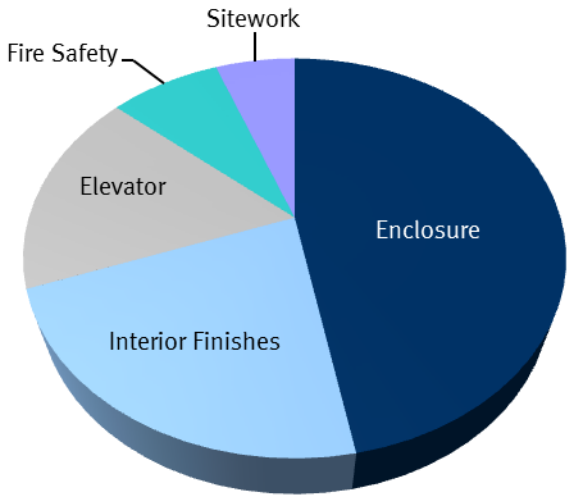


Fig. 3.1.1 Distribution of Annual Maintenance Costs

3.2. Renewals Plan

It is estimated that the Strata Corporation will need to spend approximately $2.4M in capital expenditures over the next 30 years. The following table indicates the distribution of the projected major maintenance and renewal costs within each system over the next 30 years. This will enable the Owners to better understand which asset groups will require the largest investment of the Owners' money over time.

Table 3.2.1 Costs Broken Down by System

System	Sample Assets*	Current Dollars (2013)	Future Dollars (2% escalation)
Enclosure	Roofs, windows, doors, etc.	$631,000	$911,000
Electrical	Lighting, etc.	$118,000	$169,000
Mechanical	Plumbing, drainage, ventilation, etc.	$656,000	$840,000
Elevator	Controls, cabs, etc.	$140,000	$174,000
Fire Safety	Controls, pumps, tanks, etc.	$71,000	$93,000
Interior Finishes	Flooring, painting, doors, etc.	$85,000	$114,000
Amenities	Furnishings, etc.	$15,000	$20,000
Sitework	Soft landscaping, paving, etc.	$36,000	$52,000
Totals (rounded)		**$1,752,000**	**$2,373,000**

* An inventory of assets, including photographs, is included in the appendices to the report.

The figure below contains a summary distribution of the major maintenance and renewal costs for the next 10 years. Of the estimated $2.4M in capital expenditures over the next 30 years, approximately $360,000 is expected over the next 10 years. For Fraserview Court, the majority of these costs are associated with the elevator system.

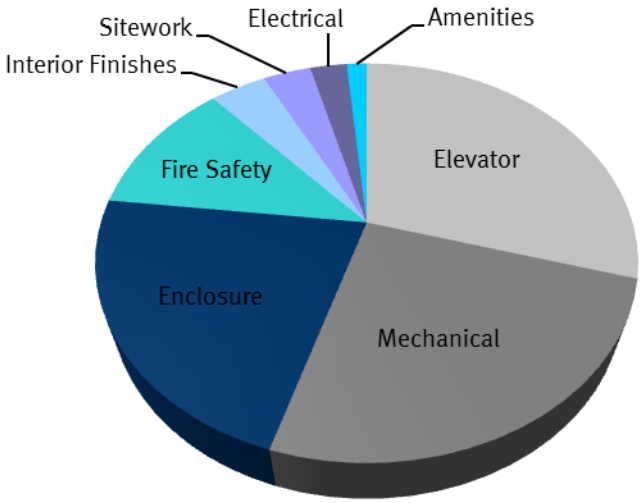


Fig. 3.2.1 Distribution of Major Maintenance and Renewal Costs Over the Next 10 years (2013 to 2022)

4. Project Planning

When making forecasts about future events and plans for these events, it is recommended that these are projected over three different planning horizons:

- **"Strategic"** (30 years): Since the average service life of many of the assets is approximately 25 years (such as roofs and boilers) it is recognized that a long-range view enables the Owners to anticipate the majority of the future renewal projects.
- **"Tactical"** (5-10 years): A five year outlook enables the Owners to break up the strategic plan into manageable stages and to thereby bridge the annual operating budget with the long-range strategic plan. Most Owners do not consider ownership of their real estate investment beyond a 5-year term and are therefore only concerned about special levies that may arise during this time period.
- **"Operational"** (1 year): The annual operating period encompasses one fiscal cycle (12 months). The reserve allocation in the operating budget should reflect the majority of the projects in the tactical plan (5 years) and ideally should also contemplate some elements of the strategic plan (30 years).

The following sections identify all capital expenditures that are projected for Fraserview Court with specific expenditures identified within the sections outlining the operation and tactical planning periods.

4.1. "Strategic" Planning Horizon

The chart below graphically illustrates the estimated major maintenance and renewal costs over the next 30 years and thereby provides a high-level overview of the longer term projected cash flow. The red bars indicate the years in which some renewal work is projected. Estimated maintenance costs (green bars) are generally more consistent from year-to-year.

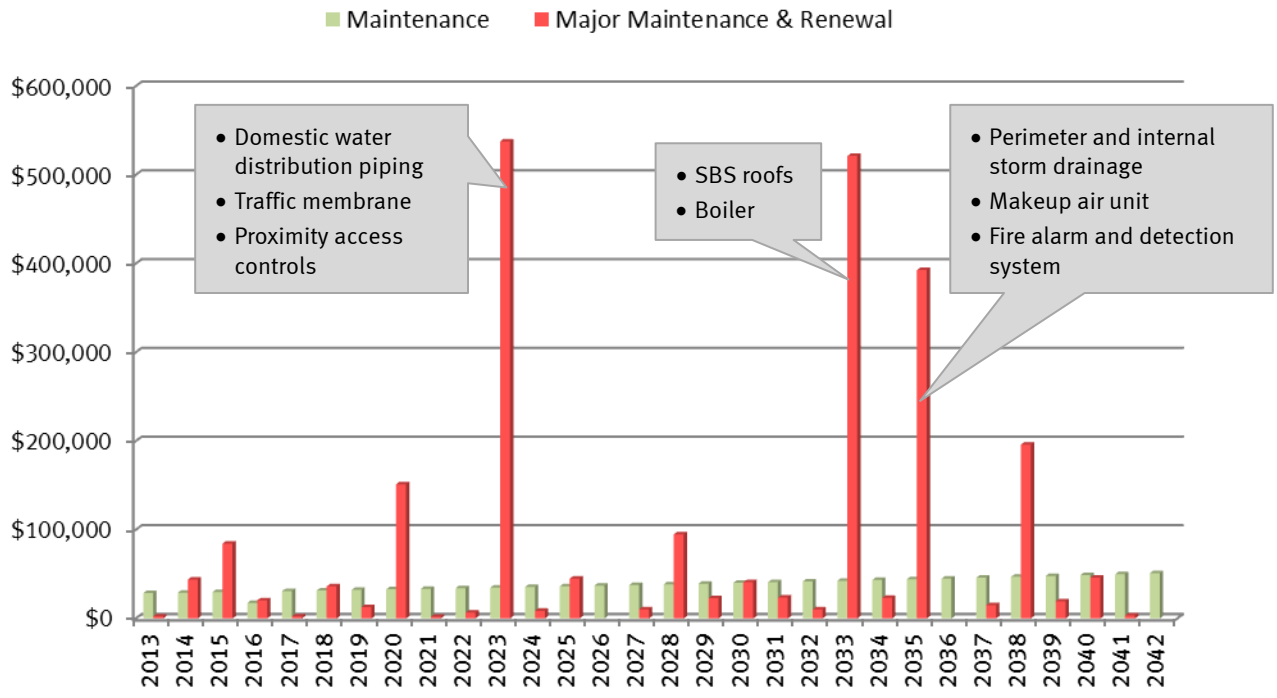


Fig. 4.1.1 30-Year Estimated Expenditure Forecast (with some key projects identified)

The fluctuation of major maintenance and renewal costs over the 30-year period is due to a variety of factors, such as:

- The different service lives for each of the range of assets in the asset inventory. For example, some assets may have a useful life of 5 years whereas other assets may have a useful life of 25 years.
- The different magnitude of renewal costs for each of the assets.
- The impact of different rehabilitation strategies to either replace assets or extend their useful service lives through major maintenance projects.
- The cumulative financial impact of inflation compounded annually over 30 years.

The actual timing of renewal projects will depend on the quality of maintenance and other factors, which either may result in earlier replacement or, in some cases, extend the life of the assets.

4.2. "Tactical" Planning Horizon

Although the tactical plan can be described as a single five year window the chart below provides the projected major maintenance and renewal costs for the next ten years so that the two five year windows can be reviewed. The bars indicate the years in which an event (or bundle of events) is most likely to occur as well as the total magnitude of major maintenance and renewal costs for that year.

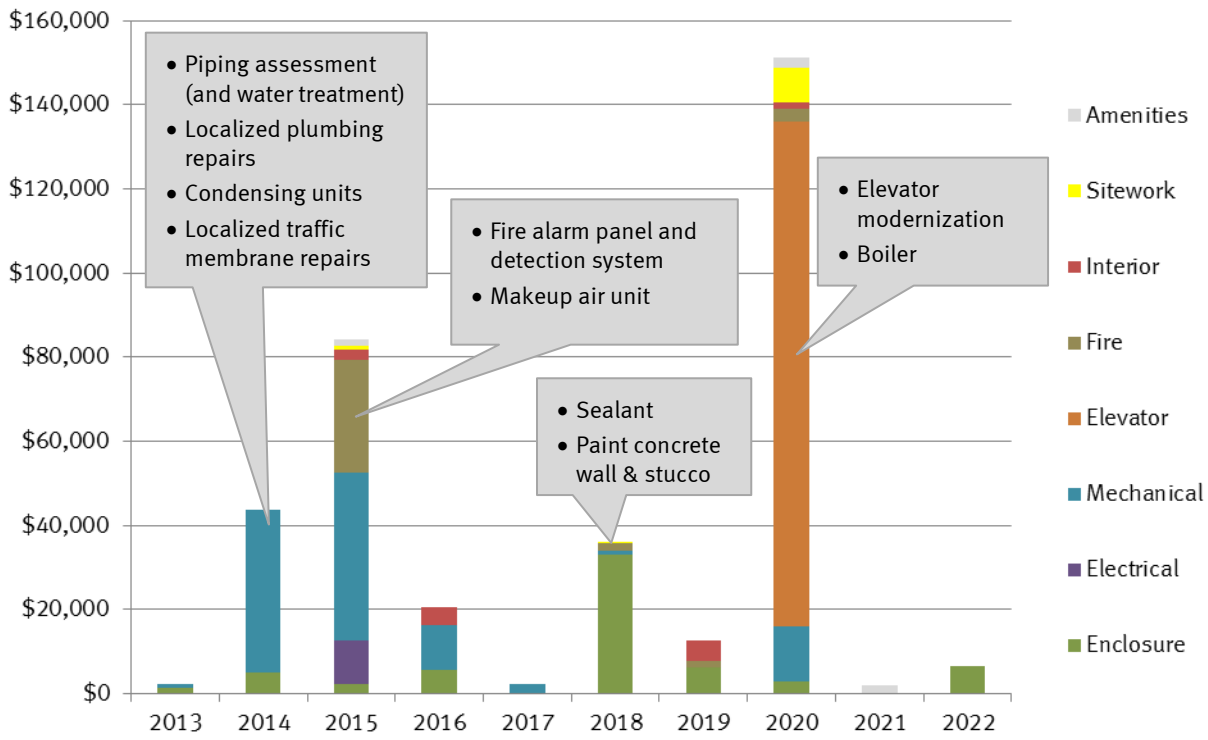


Fig. 4.2.1 10-Year Estimated Expenditure Forecast (with some key projects identified)

Listed below are some of the key major maintenance activities and asset renewal projects contemplated in the preceding bar graph:

Group 1: Major Maintenance

This group of projects are intended to preserve the assets to achieve their full design life. In accordance with the Strata Property Act, any maintenance "…that usually occurs less often than once a year" is a capital expense.

- Monitoring of the plumbing distribution system and commissioning of a review to determine the condition and remaining useful service life of the copper distribution piping. Review the costs and benefits of a water treatment system to mitigate further deterioration of the existing piping.
- Augering and hydro-flushing of drain lines, including in-camera scoping survey, as required.
- Cleaning of exterior stucco surfaces to remove atmospheric dirt, vegetative growth and other stains.
- Repainting of exposed metal frame of canopy assemblies.
- Repainting of interior walls and doors in high traffic area, as required.
- Repainting of painted concrete flooring, as required.
- Cleaning and renewal of acrylic stucco finish coat as required.
- Repointing of mortar joints in concrete masonry unit wall, as required.
- Updating of Depreciation Report every three years.

Group 2: Asset Renewal Projects
(Primarily Condition-Based)

Listed below are asset renewal projects that will require additional investigation to confirm condition and eventual replacement schedules. Some of these projects are also discretionary and could potentially be postponed for reasonable periods with manageable risk.

- Replacement of condensing units and fan coil units on split system AC.
- Replacement of elevator operator, provision of new infrared door detector, and upgrading of elevator cab and hall fixtures.
- Replacement of exterior sealant, as required.
- Replacement of operable vent gaskets at window wall.
- Replacement of exterior and interior light fixtures, as required.
- Cyclical replacement of miscellaneous HVAC instrumentation, as required.
- Cyclical replacement of cross connection & back flow prevention valves, as required.
- Cyclical replacement of domestic hot water storage tanks.
- Replacement of gas fired domestic hot water heater.
- Replacement of boiler controls, as required.
- Cyclical rebuild or replacement of make-up air units.
- Replacement of overhead door motors and operators, as required.
- Cyclical replacement of exit signs.
- Cyclical replacement of recirculating pumps, as required.
- Replacement of fire sprinkler compressor.
- Replacement of wood fencing.

⇢ Replacement of furnishings in common areas, as required. ⇢ Renovation of sections of the soft landscaping, as required.
Group 3: Asset Renewal Projects (Primarily Time-Based)
The following projects are considered those that can be reasonably predicted to coincide with the end of the useful service life of certain assets. These projects are non-discretionary and cannot be postponed without significant risk. ⇢ Cyclical replacement of gas detection sensors in parking garage. ⇢ Replacement of fire alarm annunciator panels and control panel (at end of technological life), excluding field wiring and field devices. ⇢ Modernization of elevator controls (at end of technological life), tank unit, and valve. ⇢ Cyclical replacement of heat detectors, smoke detectors, fire alarm speakers and related modules, excluding field wiring. ⇢ Cyclical replacement of fire extinguishers.

Some projects will require refinement through a normal design process to further define the scope and budget prior to tendering the renewal project. "Class D" estimates have been provided in the Report and a number of general assumptions about the potential scopes of work were made when costs associated with these projects were generated.

Implementation steps for any renewal event will vary and may include an investigation to confirm existing construction and any design requirements included in the project scope. Various options, such as phasing, product choice, and project bundling are also typically evaluated as part of the design requirements. Through this process, the scope of work will be finalized and the total project costs will be estimated for the Strata as a budget suitable for formal expenditure approval from the CRF. The costs associated with the investigation and design requirements are not included in the Report as the need and magnitude for this work varies with renewal activities and specific Owner needs.

4.3. "Operational" Planning Horizon

Replacement of the five condensing unit heat pumps in the parkade is potentially forecast for the next fiscal year. Consideration should also be given to commission a Condition Assessment for the domestic water piping in order to confirm the current condition and expected remaining lifespan.

4.4. Project Implementation Strategies

As renewal projects are implemented the Strata Corporation will need to engage consultants and contractors to confirm the appropriate scopes of work, to develop specifications and to coordinate and supervise the work.

The Owners will need to consider several implementation strategies including:

- **Targeted Projects.** These are projects that are localized to particular portions of the building. Different exposure conditions and wear patterns may require that only some sections of the building require renewal at one point in time. For example: the carpets at elevator landings would be replaced at a different time to the hallway carpets due to additional wear in high traffic locations.
- **Phased Projects.** These are projects that are carried out in multiple stages rather than as a single coordinated project. For example: the sealant could be renewed on one elevation in the first year and then on the other elevations in subsequent years. While phased projects can reduce the financial burden by spreading the costs over a longer period, the Owners will likely pay more over the long term due to the remobilization of contractors.

- **Comprehensive Projects.** These are projects that are implemented as one coordinated undertaking. Some of the major advantages of this approach are that the Owners can sometimes leverage the best economies of scale, shorten the overall duration and lower the overall costs. For example: the windows are replaced in all locations around the building at the same time.
- **Bundled Projects**. Often it makes sense to bundle or combine various projects due to proximity, availability of skills, and funding needs. The major advantage of project bundling is that the Owners can leverage economies of scale and lower the overall costs rather than if these projects were completed as several, individual projects. For example: parkade waterproofing is redone during landscape renovations.

5. Funding Scenarios

The physical assessment and financial assessment have together provided a baseline of information for the Owners and management team to evaluate the current funding levels and to consider an appropriate funding strategy based on their tolerance for risk and desired standard of care for the property. RDH provides the tools but the funding level that the Owners choose is up to them as long as it meets the minimum legislative requirements.

5.1. Alternative Funding Scenarios

To help the Owners make an informed decision about their funding level, BAMS software is used to generate some alternative funding scenarios to compare the financial impact of different funding levels over the next 30 years. These scenarios serve as a sensitivity analysis to determine the size of the special levies that may occur as a result of different allocations to the CRF.

While there are many different scenarios that can be generated, the table below compares the following alternatives:

Table 5.1.1 Comparison of Different Funding Scenarios

	"A" Statutory	"B" Current	"C" Alternative	"D" Progressive
Percent of Progressive Reserve	0% - 13%	13%	13% - 100%	100%
Reserve Allocation	$0 - $10,000	$10,000	$10,000 - $77,000	$77,000
Estimated Cost Per Suite				
- Per Month	$0 - $23	$23	$23 - $178	$178
- Per Year	$0 - $276	$276	$276 - $2,136	$2,136
Estimated Cost Per Square Foot				
- Per Month	$0 - $0.01	$0.01	$0.01 - $0.10	$0.10
- Per Year	$0 - $0.16	$0.16	$0.16 - $1.22	$1.22
Number of Special Levies (over next 30 years)	18	16	2	1
Value of Special Levies, approx. (over next 30 years)	$2.0M	$2.0M	$0.4M	$0.1M
Assumed Inflation Rate	2 %	2 %	2 %	2 %
Assumed Interest Rate	2 %	2 %	2 %	2 %

- **"A" "Statutory" Reserve Allocation.** This is the funding level that is required to meet the statutory requirements in BC. The Strata Property Act dictates that the reserve allocation will vary according to the reserve fund balance; therefore the reserve allocation is not linear. For comparison purposes, the table above shows the amount equal to 10% of the operating budget, this is the maximum that would be allocated to the reserve fund annually under this scenario.
- **"B" Current Reserve Allocation.** This is the funding level that was approved by the Owners at the last Annual General Meeting and represents the status quo.
- **"C" Alternative Reserve Allocation.** A stepped funding model that increases the funding level from Current to Progressive over five years. See Section 5.4 for a more detailed discussion and summary.
- **"D" Progressive Reserve Allocation.** This is the annual allocation that would have been set aside since the first year of operations to ensure that the reserve balance resulted in minimum special assessments over a 30-year period. In other

words, the progressive reserve is equivalent to a fully funded reserve balance. The "progressive" reserve allocation is an idealistic target that many strata corporations are not able to meet.

The funding scenarios are provided as a guide for the Owners. The Owners can use the BAMS software to create additional funding scenarios to assist in development of a scenario that is in alignment with their financial position. Based on the findings of the Report, the Strata Corporation is currently considered to be funding 13% of the progressive reserve level.

Although the Strata Corporation is meeting the statutory minimum contribution to the CRF, it is important to note that the statutory guideline is not a good measure of the financial preparedness of the corporation. If the Owners wish to avoid special levies, or to mitigate the financial hardship by reducing the number and size of the levies, then increases will need to be made over the upcoming years to move the current funding level from 13%.

5.2. Funding Scenario "A" –Statutory

The first scenario is the verification that there is currently enough money being committed to the CRF to meet BC legislation. It shows a variable annual reserve contribution over the 30-year planning horizon. Ten years of cash flow data are provided below for reference. Appendix D contains the full 30 years of cash flow data for each scenario or this information can be reviewed in the online BAMS software.

Table 5.2.1 Statutory Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$0	$0	$2,420	$2,300	$1,000	$120,120
2014	$120,120	$0	$0	$2,402	$43,800	$1,000	$77,722
2015	$77,722	$0	$6,123	$1,554	$84,400	$1,000	$0
2016	$0	$10,000	$11,500	$0	$20,500	$1,000	$0
2017	$0	$10,000	$0	$0	$2,400	$1,000	$6,600
2018	$6,600	$10,000	$20,368	$132	$36,100	$1,000	$0
2019	$0	$10,000	$3,600	$0	$12,600	$1,000	$0
2020	$0	$10,000	$142,200	$0	$151,200	$1,000	$0
2021	$0	$10,000	$0	$0	$2,000	$1,000	$7,000
2022	$7,000	$10,000	$0	$140	$6,500	$1,000	$9,640

The figure below graphically illustrates the annual contributions (blue bars), the closing balance in the CRF (the purple line) and the size of the special levies (red bars) resulting from this funding level meeting the minimum statutory requirements.

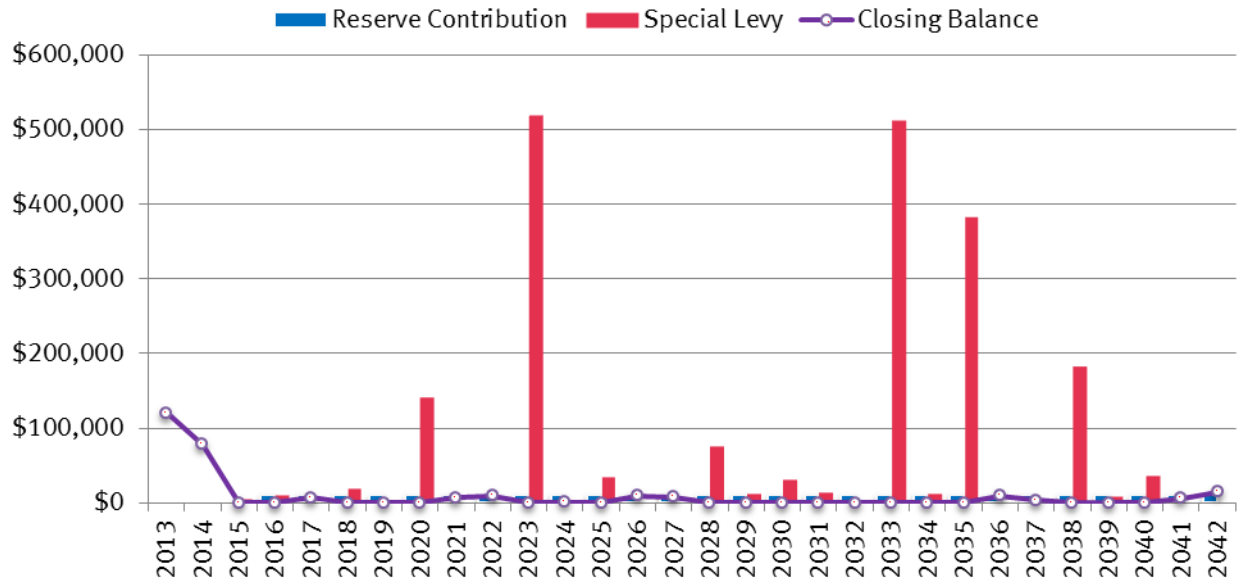


Fig. 5.2.1 Statutory Funding Model: Graphical Analysis

The BAMS software tool enables the strata council and management to explore alternate funding scenarios by adjusting the financial variables in the model (such as inflation rates and interest rates).

5.3. Funding Scenario "B" – Current (Status Quo)

Scenario "B" represents the current funding level approved by the Owners at the last general meeting (i.e., status quo) and is based on a fixed annual reserve contribution of **$10,000** and is summarized in the following cash flow table.

Table 5.3.1 Status Quo Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$10,000	$0	$2,420	$2,300	$1,000	$130,120
2014	$130,120	$10,000	$0	$2,602	$43,800	$1,000	$97,922
2015	$97,922	$10,000	$0	$1,958	$84,400	$1,000	$24,481
2016	$24,481	$10,000	$0	$490	$20,500	$1,000	$13,470
2017	$13,470	$10,000	$0	$269	$2,400	$1,000	$20,340
2018	$20,340	$10,000	$11,353	$407	$36,100	$1,000	$5,000
2019	$5,000	$10,000	$3,500	$100	$12,600	$1,000	$5,000
2020	$5,000	$10,000	$142,100	$100	$151,200	$1,000	$5,000
2021	$5,000	$10,000	$0	$100	$2,000	$1,000	$12,100
2022	$12,100	$10,000	$0	$242	$6,500	$1,000	$14,842

The Owners are currently accustomed to monthly reserve allocations of approximately **$23** per suite per month (averaged). If the Owners were to continue to fund the CRF at this level, the Owners will need to raise approximately $**2.0M** for special levies over the next **30** years.

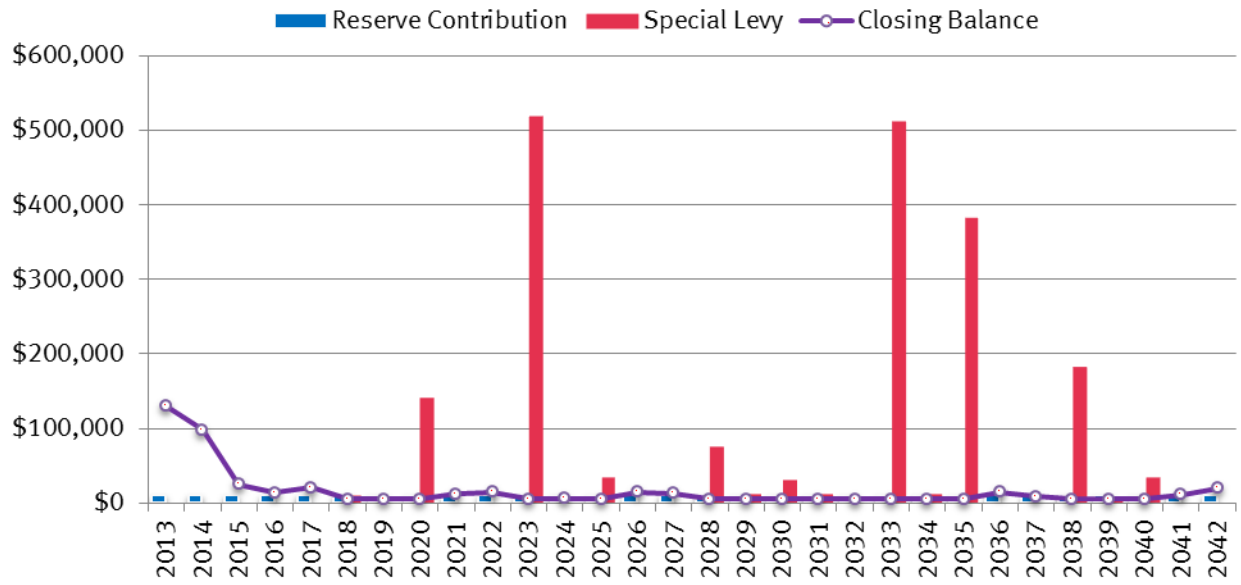


Fig. 5.3.1 Status Quo Funding Model: Graphical Analysis

The BAMS software tool enables the strata council and management to adjust the financial variables in this model (such as inflation rates and interest rates) and to generate additional models.

5.4. Funding Scenario "C" – Alternative

The Alternative scenario presented is based on a stepped funding model, starting with the current reserve allocation of **$10,000** in 2013, and increasing over the next five years to achieve the Progressive funding level of **$177,000** per year in 2018. Table 5.4.1 below contains a cash flow summary over the next ten years.

Table 5.4.1 Alternative Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$10,000	$0	$2,420	$2,300	$1,000	$130,120
2014	$121,000	$31,500	$0	$2,420	$39,200	$1,000	$114,720
2015	$121,000	$42,000	$0	$2,420	$78,600	$1,000	$85,820
2016	$121,000	$53,000	$0	$2,420	$13,100	$1,000	$162,320
2017	$121,000	$62,600	$0	$2,420	$2,200	$1,000	$182,820
2018	$121,000	$77,000	$0	$2,420	$41,600	$1,000	$157,820
2019	$157,820	$77,000	$0	$3,156	$31,300	$1,000	$205,676
2020	$205,676	$77,000	$0	$4,114	$139,400	$1,000	$146,390
2021	$146,390	$77,000	$0	$2,928	$1,800	$1,000	$223,518
2022	$223,518	$77,000	$0	$4,470	$6,500	$1,000	$297,488

While Scenario "C" does result in eliminating most of the smaller levies, it is still not adequate to offset all the special levies over the 30-year planning horizon. The figure below graphically illustrates the annual contributions (blue bars), the closing balance in the CRF (the purple line) and the size of the special levies (red bars) resulting from this funding level.

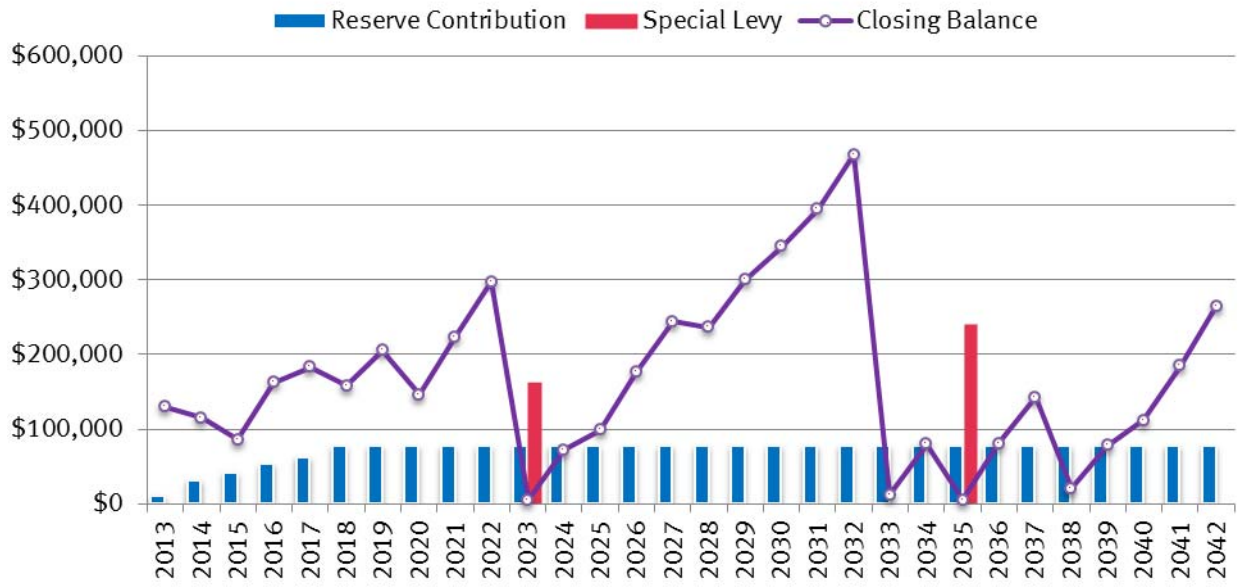


Fig. 5.4.1 Alternative Funding Model: Graphical Analysis

Table 5.4.2 below summarizes the yearly increases by total contribution and by average monthly suite contribution.

Table 5.4.2 Summary of Alternative Funding Model Steps

Fiscal Year	Annual Reserve Contribution (approx.)	Average Monthly Contribution per Suite	Yearly Increase
2013	$10,000	$23	-
2014	$31,500	$73	$50
2015	$42,000	$97	$25
2016	$53,000	$123	$25
2017	$62,600	$145	$25
2018 (and held until 2042)	$77,000	$178	$25

5.5. Funding Scenario "D" – Progressive

The next scenario is based on a fixed annual reserve contribution of approximately **$77,000** over the 30-year planning horizon. This represents a reserve contribution that is equivalent to approximately **$178** per suite per month (averaged), which is approximately nine times the current funding level.

Table 5.5.1 Progressive Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$77,000	$0	$2,420	$2,600	$1,000	$196,820
2014	$196,820	$77,000	$0	$3,936	$39,200	$1,000	$237,556
2015	$237,556	$77,000	$0	$4,751	$100,500	$1,000	$217,808
2016	$217,808	$77,000	$0	$4,356	$10,600	$1,000	$287,564
2017	$287,564	$77,000	$0	$5,751	$3,500	$1,000	$365,815
2018	$365,815	$77,000	$0	$7,316	$41,500	$1,000	$407,631
2019	$407,631	$77,000	$0	$8,153	$33,000	$1,000	$458,784
2020	$458,784	$77,000	$0	$9,176	$137,100	$1,000	$406,860
2021	$406,860	$77,000	$0	$8,137	$3,800	$1,000	$487,197
2022	$487,197	$77,000	$0	$9,744	$3,600	$1,000	$569,341

While Scenario "D" does result in eliminating most of the smaller levies, it is still not adequate to offset all the special levies over the 30-year planning horizon.

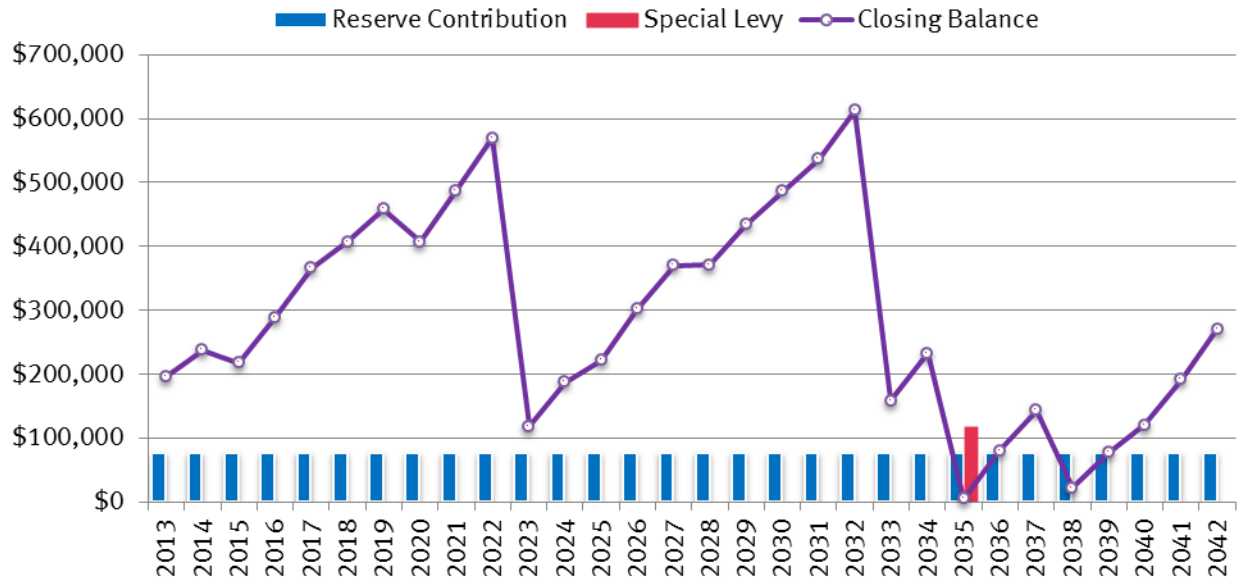


Fig. 5.5.1 Progressive Funding Model: Graphical Analysis

The BAMS software tool enables the strata council and management to adjust the financial variables in this model (such as inflation rates and interest rates) and to generate additional models.

5.6. Funding by Individual Owners

Notwithstanding which funding scenario may ultimately be selected by the Strata Corporation at the next general meeting, each owner can develop their own individual funding plans based on the renewal costs identified in the Report.

Since the Depreciation Report has identified approximately $2.4M in capital reserve and major maintenance projects over the next 30 years, each of the 36 unit owners can estimate their personal share based on unit entitlements.

6. Recommendations

The following key recommendations are presented for the Owners consideration. The goal is to help the Owners move to a more objective basis of allocating CRF contributions for Fraserview Court.

- **Plumbing Assessment & Mitigation Measures.** Conduct a Condition Assessment of the plumbing distribution system in order to confirm the current condition and the estimated remaining service life. Update the Depreciation Report accordingly. Review the costs and benefits of installing water treatment equipment to mitigate further deterioration of the system.
- **Assumptions.** Review the disclosures and disclaimers listed in the appendix of the Report. Understand how the assumptions can be updated over time as new information comes to light about the performance of the assets and as certain projects are completed. Seek clarification from RDH regarding any of the disclosures and disclaimers.
- **Funding Scenarios.** Review the alternative funding scenarios in the Report and develop scenarios for presentation to the Owners that are most likely to secure approval of the Owners.
- **Funding Levels.** Review the current annual reserve allocation levels relative to the funding levels illustrated in the Report.
- **Software Tool.** Utilize the web-based building asset management system on an ongoing basis to keep the data current and ensure that it is readily accessible to the council members and property manager.
- **Updates.** Plan for updates to the financial component of the Report at least once a year (such as reserve balances) and updates to the physical component of the Report in three years (such as remaining useful life of the assets). The online data can be updated at any time during the course of the year by authorized users.
- **Further Investigations.** Conduct additional condition investigations, as required, to refine the data.
- **Full System Maintenance Plan.** Review the adequacy of checklists and budgeting of routine maintenance to ensure that a program is implemented to achieve full service lives from the assets.

RDH is available to assist the Owners with all aspects of the Report and the on-line BAMS software. Please contact our office with any questions or if you should require further information.

Sincerely,

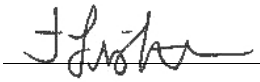
RDH Building Engineering Ltd.

Jason Dunn, B.Arch.Sc.

Project Manager

Rob Mathena, Dipl. T.

Senior Building Asset Management Technologist



Jesse Listoen, Dipl. T.

Building Asset Management Technologist

Appendix A

Glossary of Terms

Glossary

Annual Contribution – Funds allocated to the Reserve Fund each fiscal year. Sometimes referred to as the Annual Allocation. Determining the appropriate size of the Annual Allocation is aided with a Reserve Study (a Depreciation Report in B.C.).

Asset – An integrated assembly of multiple physical components, which requires periodic maintenance, repair and eventual renewal. Typical examples of assets are: roofs, boilers and hallway carpets.

Catch-up Costs - The costs associated with the accumulated backlog of deferred maintenance associated with the assets.

Classes of Cost Estimates - Until a project is actually constructed, a cost estimate represents the best judgement of the professional according to their experience and knowledge and the information available at the time. Its completeness and accuracy is influenced by many factors, including the project status and development stage. Estimates have a limited life and are subject to inflation and fluctuating market conditions. The precision of cost estimating is categorized into the following four classes and are as defined in guidelines prepared by the Association of Professional Engineers and Geoscientists of B.C. The percentage figures in parentheses refer to the level of precision or reliability of the cost estimates.

- **Class A Estimate** (±10-15%): A detailed estimate based on quantity take-offs from final drawings and specifications. It is used to evaluate tenders or as a basis of cost control during day-labour construction.
- **Class B Estimate** (±15-25%): An estimate prepared after site investigations and studies have been completed and the major systems defined. It is based on a project brief and preliminary design. It is used for obtaining effective project approval and for budgetary control.
- **Class C Estimate** (±25-40%): An estimate prepared with limited site information and based on probable conditions affecting the project. It represents the summation of all identifiable project elemental costs and is used for program planning, to establish a more specific definition of client needs and to obtain preliminary project approval.
- **Class D Estimate** (±50%): 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.

Closing Balance - Alternatively referred to as the Starting Balance. The balance of funds remaining in the reserve account at the end of a fiscal period (Fiscal year end, calendar year or study period). The Closing Balance becomes the Opening Balance for the subsequent fiscal period.

Contingency Costs - An allowance for unexpected or unforeseen costs that may impact monies required for projects to maintain or replace assets. (Not to be confused with costs of Renewal or Major Maintenance projects which are paid for out of the Reserve Fund (otherwise known the Contingency Reserve Fund.)

Current Dollars –dollars in the year they were actually received or paid, unadjusted for price changes.

Funding Model - A mathematical model used to establish an appropriate funding level for sustaining the assets in a building. Running a number of scenarios out of the funding model using different parameters

(such as inflation rates and interest rates) can serve as a sensitivity analysis to determine the financial impact of different funding levels.

Future Dollars - The projected cost of future asset renewal projects, which accounts for inflation and escalation factors.

Get Ahead costs - These are costs associated with adaptation of the building to counter the forces of retirement associated with different forms of obsolescence, such as:

- Functional obsolescence
- Legal obsolescence
- Style obsolescence

Some of the costs in this category are discretionary spending that result in either a change or an improvement to the existing strata building. This category includes projects to alter the physical plant for changes in use, codes and standards. Some typical examples include:

- Energy retrofits
- Code retrofits
- Hazardous material abatement
- Barrier free access retrofits
- Seismic Upgrades

Keep-up Costs - The monies required for renewal projects as each asset reaches the end of its useful service life. If an asset is not replaced at the end of its useful service life and is kept in operation, through targeted repairs, then these costs get reclassified into the "catch-up" category.

Major Maintenance – Any maintenance work for common expenses that usually occurs less often than once a year or that do not usually occur. Major maintenance provides for the preservation of assets to ensure that they achieve their full intended service life.

Opening Balance – Alternatively referred to as the Starting Balance. The amount of money in an account at the beginning of a fiscal period. Opening balances are derived from the balance sheet and are used in cash flow calculations in the Funding Model.

Operating Costs - Frequently recurring expenses that arise during the course of a single fiscal year and are paid from the operating budget as opposed to the Reserve Fund.

Operational Plan/Horizon (1 year) - The annual operating period encompasses one fiscal cycle (12 months). The Reserve Contribution in the operating budget should reflect the majority of the projects in the Tactical Plan (5 years) and ideally should also contemplate elements of the Strategic Plan (30 years).

Percent Funded - The ratio, at a particular point of time (typically the beginning of the fiscal year), of the actual or projected Reserve Fund balance to the accrued Reserve Fund balance, expressed as a percentage. For example: If the 100% funded balance is $100,000 and there is $76,000 in the Reserve Fund, the Reserve Fund is 76% funded.

Since funds can typically be allocated from one asset to another with ease, this parameter has no real meaning on an individual reserve component basis. The purpose of this parameter is to identify the relative strength or weakness of the entire Reserve Fund at a particular point in time. The value of this parameter is to provide a more stable measure of Reserve Fund strength, since cash in reserve may mean very different things to different governing bodies or owner groups.

- **Poor Level.** When the Percent Funded falls to 0% - 30%, the current reserves may be considered to be at a 'poor' level. At this funding level, Special Levies are common. This is also commonly known as the Unfunded or Special Levy Model. The Owner Group does not have a Reserve Fund balance that will cover expected renewal costs and the only recourse is to raise funds by Special Levies to cover those costs when they become due.
- **Fair Level.** If the Percent Funded level is 31 to 70% then the current reserve may be considered to be in a mid-range level.
- **Good Level.** If the Percent Funded level is 70% or higher this is likely to be considered 'strong' because cash flow problems are rare.

Renewal – The replacement of an Asset as it reaches the end of its useful service life.

Renewal Cost – The cost required to replace an Asset, which is paid from the Reserve Fund, Special Levy or combination thereof.

Reserve Contribution - The amount of money that is allocated to the Reserve Fund each fiscal year. Determining the appropriate size of the Reserve Contribution is aided with a Reserve Fund Study (Depreciation Report in B.C.).

Reserve Fund – Also known as the Contingency Reserve Fund. The account in which the accumulated Annual Contributions are deposited and from which costs are withdrawn for Renewal projects and Major Maintenance projects.

Reserve Income – The interest earned from investing the money deposited in the Reserve Fund.

Reserve Study - Also referred to as a Reserve Fund Study or Depreciation Report in BC.

- A long-range financial planning tool that identifies the current status of the owners' Reserve Fund and recommends a stable and equitable funding plan to offset the costs of anticipated future major expenditures associated with replacement of the assets and major maintenance.
- The purpose of the Reserve Study is to provide a plan for appropriate funding for renewal and major maintenance work.
- While Reserve Studies provide analysis of the timing, costs and funding for renewal projects, they should ideally be supported by a maintenance plan that assists the owners to plan for maintenance activities so that assets achieve their predicted service lives.

Special Levy - Also referred to as a "Special Assessment". A financial levy to be paid by the owner group to finance large-scale projects for major maintenance, repairs, renewal and rehabilitation of an asset, which occur as result of a shortfall in available funds and requires special decision making and approval procedures. A Reserve Study contains funding scenarios that assist the owners in long-range financial planning.

Strategic Horizon - The longest of the three planning horizons, which typically covers the full study period of 30 years and identifies the long-term needs of the assets.

Style Obsolescence - When an asset is no longer desirable because it has fallen out of popular fashion, its style is obsolete. Some assets, particularly interior furnishings, reflect fashion cycles and can become out-dated.

Tactical Plan/Horizon - A period of planning for asset Renewal projects and Major Maintenance projects, which typically extends five years from the current year.

Appendix B

Asset Inventory

Fraserview Court

Enclosure

Roofs & Decks

Encl 01 - Exposed SBS Membrane Roof

Location

Main roof at the building.

Description

SBS modified bitumen membrane at low-slope roof. Includes membrane at 4th floor roof decks with concrete pavers.

Information

Service Life:	25	Install Year:	2008
Chronological Age:	5	Next Event Year:	2033
Effective Age:	5		

Encl 02 - Protected SBS Balcony Membrane

Location

Ground level decks.

Description

Traffic-bearing surface over an SBS modified bitumen membrane.

Information

Service Life:	30	Install Year:	2008
Chronological Age:	5	Next Event Year:	2038
Effective Age:	5		

Encl 03 - Stucco Clad Soffit

Location

Underside of overhangs at ground level.

Description

Stucco cladding over supporting structure.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Encl 04 - Aluminum Panel Soffit

Location

Underside of overhang at entrance to rooftop mechanical room.

Description

Aluminum panel soffit.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Fraserview Court

Fall Protection

Encl 05 - Guardrail Glazed Aluminum

Location

Perimeter of roof decks and exterior walkway on east side of site.

Description

Aluminum Posts and glass infill panels functioning as a protective barrier to prevent accidental falls from one level to another.

Information

Service Life:	30	Install Year:	2008
Chronological Age:	5	Next Event Year:	2038
Effective Age:	5		

Walls

Encl 06 - Stucco Clad Wall - Drained

Location

South, east and west elevations of the building.

Description

Acrylic coated stucco applied on furring to create a drained cavity over the exterior sheathing membrane.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Encl 07 - Stucco-clad Concrete Walls

Location

Portion of walls at the south east corner of the building.

Description

Cast-in-place concrete wall with stucco parging on exterior side.

Information

Service Life:	75	Install Year:	2008
Chronological Age:	5	Next Event Year:	2083
Effective Age:	5		

Encl 08 - Profiled Sheet Metal Cladding Wall

Location

Above the masonry at the south and west elevations, and on rooftop elevator enclosure.

Description

Prefinished steel cladding fastened with framing and anchorage system, concealed fasteners, to create drainage over sheathing membrane.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Fraserview Court

Encl 09 - Concrete Masonry Unit Wall

Location

Lower level of walls at the south and west elevations.

Description

Split faced concrete block with mortar joints.

Information

Service Life:	75	Install Year:	1995
Chronological Age:	18	Next Event Year:	2070
Effective Age:	18		

Encl 10 - Coated Architectural Concrete Wall

Location

North elevation of the building, and parkade walls with planters on east elevation.

Description

Poured-in-place architectural concrete wall with paint coating.

Information

Service Life:	75	Install Year:	1995
Chronological Age:	18	Next Event Year:	2070
Effective Age:	18		

Glazing Systems

Encl 11 - Aluminum Storefront

Location

Residential entry lobby and commercial entrances.

Description

Aluminum framed, thermally broken, storefront system with insulating glazing units, and no operators.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Encl 12 - Aluminum Framed Window

Location

East, south and west elevations of the building.

Description

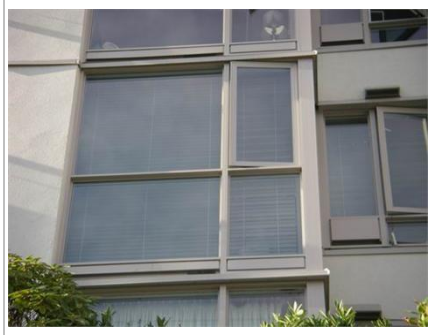
Aluminum framed, thermally broken windows with double insulating glazing units, and casement operators. Windows are arranged in punched configuration.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Fraserview Court

Encl 13 - Window Wall



Location

East, south and west elevations of the building.

Description

Aluminum framed, thermally broken, with insulated glazing units with casement operators. Arranged in window wall configuration.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Encl 14 - Unit Skylight

Location

3rd and 4th floor roofs.

Description

Individual unit skylights with double glazed insulating glazing units.

Information

Service Life:	25	Install Year:	2008
Chronological Age:	5	Next Event Year:	2033
Effective Age:	5		

Doors

Encl 15 - Metal Clad Swing Door

Location

Various points of entry around building exterior.

Description

Metal clad wood swing door without insulating glazing units.

Information

Service Life:	60	Install Year:	1995
Chronological Age:	18	Next Event Year:	2055
Effective Age:	18		

Encl 16 - Aluminum Framed Sliding Glass Door

Location

Access door to decks at penthouse suite 1 & 2.

Description

Sliding glass doors, double insulating glazing units, aluminum framing.

Information

Service Life:	30	Install Year:	2008
Chronological Age:	5	Next Event Year:	2038
Effective Age:	5		

Fraserview Court

Canopies

Encl 17 - Metal Frame and Glass Canopy

Location

Above commercial windows at ground level on the south and west elevation of the building.

Description

Canopy constructed with metal framing and single glazing.

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

At and Below Grade

Encl 18 - At Grade Waterproofing - Existing

Location

(Concealed asset). Below concrete paving at recessed areas around building perimeter.

Description

Waterproof membrane (Grace Bituthene 3000).

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Encl 19 - At Grade Waterproofing - New

Location

Along concrete walkway and stairs on east elevation at base of wall. Localized tie-in details with the existing at-grade waterproofing.

Description

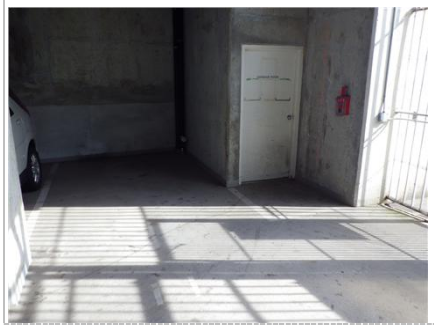
12" strip of waterproof membrane (Grace Bituthene 3000).

Information

Service Life:	40	Install Year:	2008
Chronological Age:	5	Next Event Year:	2048
Effective Age:	5		

Parking Garage

Encl 20 - Parking Slab with Traffic-bearing Membrane



Location

Parkade P1.

Description

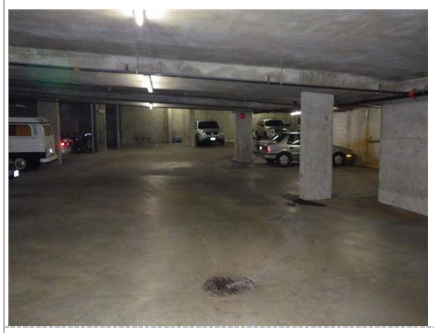
Urethane coating on concrete parking garage floor slab.

Information

Service Life:	75	Install Year:	1995
Chronological Age:	18	Next Event Year:	2070
Effective Age:	18		

Fraserview Court

Encl 21 - Slab-on-Grade



Location

Parkade P2.

Description

Concrete slab on grade.

Information

Service Life:	75	Install Year:	1995
Chronological Age:	18	Next Event Year:	2070
Effective Age:	18		

Encl 22 - Sectional Overhead Door - Metal

Location

At entrances to residential and commercial parking, and residential garbage room.

Description

Pre-finished metal sectional overhead garage door with motor drive and hardware.

Information

Service Life:	35	Install Year:	1995
Chronological Age:	18	Next Event Year:	2030
Effective Age:	18		

General & Inspections

Encl 23 - General & Inspections

Location

Various locations throughout the building.

Description

Miscellaneous interior and exterior components, such as service penetrations and interface details, not related to any particular assembly. Includes warranty reviews, general reviews, and updating of the Depreciation Report every 3 years.

Information

Service Life:	3	Install Year:	2013
Chronological Age:	0	Next Event Year:	2016
Effective Age:	0		

Encl 24 - Sealant

Location

At various joints and material interfaces around the building exterior.

Description

Sealant of various types located at joints between building enclosure assemblies, as well as around components and penetrations within building enclosure assemblies.

Information

Service Life:	10	Install Year:	2008
Chronological Age:	5	Next Event Year:	2018
Effective Age:	5		

Fraserview Court

Electrical

Power Supply

Elec 01 - Electrical Service - Switchgear & Distribution

Location

Distribution throughout the building. Main equipment in electrical room in commercial section of parkade P1 and main floor electrical closet.

Description

Federal Pioneer switchgear unit, 120/208V, 1200A. Asset includes main disconnect switch; downstream switchboards, panelboards, breakers, switches, disconnects and wiring to mechanical, lighting and power loads throughout the building and to individual suites through BC Hydro owned metering devices.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Elec 02 - Distribution Transformer - Exterior [PLACEHOLDER]

Location

Southeast corner of site.

Description

Pad mounted transformer. [Equipment is owned by BC Hydro].

Information

Service Life:	45	Install Year:	1995
Chronological Age:	18	Next Event Year:	2040
Effective Age:	18		

Light Fixtures

Elec 03 - Exterior Light Fixtures

Location

Various locations around building exterior, including at entrances and roof decks.

Description

A variety of fixture types, including wall mounted and recessed soffit pot lighting. A variety of lamp types for exterior direct and indirect lighting applications. A variety of light fixture controls, including switches and timers.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Fraserview Court

Elec 04 - Interior Light Fixtures

Location

Lobby entrance, hallways, service rooms, and washrooms.

Description

A variety of fixed surface fixtures and lamp types, including fluorescent and incandescent for interior direct and indirect lighting applications. A variety of light fixture controls, including switches and timers.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Security

Elec 05 - Enterphone System

Location

Entrance lobby.

Description

Viscount surface mounted enterphone panels with associated key pads and display panels.

Information

Service Life:	25	Install Year:	2008
Chronological Age:	5	Next Event Year:	2033
Effective Age:	5		

Elec 06 - Proximity Access Control

Location

Building entrances.

Description

Local proximity access control system components include fob/card devices for building occupants, fob/card readers, RTE sensors/buttons, electric strikes and door controllers. Network level components include door control panel, communication boards, backup batteries, RTE board, conduit, cable and connectors.

Information

Service Life:	15	Install Year:	2008
Chronological Age:	5	Next Event Year:	2023
Effective Age:	5		

Elec 07 - Security Surveillance

Location

Throughout parkade.

Description

Cameras, multiplexer, monitors and storage media to deter and track activity on and within building premises.

Information

Service Life:	15	Install Year:	2003
Chronological Age:	10	Next Event Year:	2023
Effective Age:	5		

Fraserview Court

Mechanical

Controls and End Devices

Mech 01 - Controls - HVAC Instrumentation

Location

Throughout the building interior.

Description

White Rodgers thermostats, programmable thermostats, flow gauges, thermometers, metering equipment, gauges, and other field devices to monitor and regulate pressure and temperature in the HVAC and plumbing distribution systems.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Mech 02 - Controls - Boiler Electronic

Location

Rooftop mechanical room.

Description

Tork time switch and Johnson Controls A419 electronic control panel to optimize boiler operation and efficiency.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	8	Next Event Year:	2020
Effective Age:	8		

Mech 03 - Gas Detection - Parking Garage

Location

Sensors at stalls 5, 16, and 30, and panels in P1 storage room.

Description

Armstrong (Manuf), 1022 M6 (Model) electronic sensing devices for detection of dangerous gases, carbon monoxide (CO), and propane produced by vehicles and to activate the exhaust fans accordingly.

Information

Service Life:	10	Install Year:	1995
Chronological Age:	18	Next Event Year:	2013
Effective Age:	10		

Fraserview Court

Mech 04 - Heat Tracing - Freeze Protection

Location

Exposed pipes throughout parkade and service rooms.

Description

Raychem high wattage heat trace controller for temperature maintenance of domestic hot water distribution systems (self regulating heater cable with parallel circuit heater strip and outer thermoplastic elastomer jacket).

Information

Service Life:	15	Install Year:	1995
Chronological Age:	18	Next Event Year:	2014
Effective Age:	14		

Plumbing & Drainage

Mech 05 - Fixtures - Taps & Sinks

Location

Washrooms.

Description

Sinks and other plumbing supply fixtures.

Information

Service Life:	25	Install Year:	1995
Chronological Age:	18	Next Event Year:	2017
Effective Age:	21		

Mech 06 - Fixtures - Toilets

Location

Commercial washrooms.

Description

6 LPF, floor mounted toilets.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2017
Effective Age:	16		

Mech 07 - Valves - Cross Connection & Backflow Prevention

Location

Throughout plumbing distrbution.

Description

Various types and sizes of backflow prevention valves, including vacuum breakers, double check, reduced pressure valves on systems. Valve assembly reconfigured to have separate shut-offs for residential and commercial units.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Fraserview Court

Mech 08 - Trapping Sump

Location

Parking garage P2.

Description

Fabricated steel trapping sump with backwater valve adjacent.

Information

Service Life:	50	Install Year:	1995
Chronological Age:	18	Next Event Year:	2045
Effective Age:	18		

Mech 09 - Piping - Domestic Water Distribution

Location

Throughout the building.

Description

Mixture of K and L copper for vertical/horizontal mains system and copper piping within the suites. Soldered connections. Some vertical circulation lines replaced. Recent issues with hoizontal mains, including pin hole leaks.

Information

Service Life:	28	Install Year:	1995
Chronological Age:	18	Next Event Year:	2023
Effective Age:	18		

Mech 10 - Drainage - Sanitary

Location

Throughout the building.

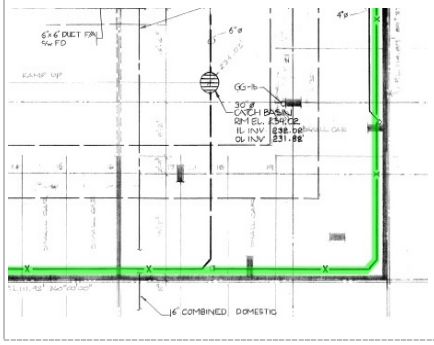
Description

DWV piping, cast iron with MJ connections, and System 15 PVC with glued joints, cast and copper p-traps and fittings.

Information

Service Life:	50	Install Year:	1995
Chronological Age:	18	Next Event Year:	2045
Effective Age:	18		

Mech 11 - Drainage - Perimeter and Foundation



Location

(Concealed Asset- picture indicates line of pipe beneath P2). Interior footing drain around building perimeter.

Description

Perforated piping (PVC) forming part of a sub-surface foundation and footing drainage system around perimeter of building.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Fraserview Court

Mech 12 - Drainage - Storm - Internal

Location

Throughout parkade.

Description

Trench drains, catch basins and associated piping systems for rainwater runoff. Roof drains may be included with the roof assets.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Mech 13 - Pumps - Pull Pit Sump Lift and Control Panel

Location

Stall 46.

Description

Northwest Tech-con, duplex, fractional HP, pull pit sump pump and control panel for sub-surface drainage.

Information

Service Life:	15	Install Year:	1995
Chronological Age:	18	Next Event Year:	2014
Effective Age:	14		

Mech 14 - Tank - DHW - Storage

Location

Rooftop mechanical room.

Description

Bradford White M3ST120R5, 119 gallon tanks, glass-lined hot water storage tanks connected to domestic boiler system.

Information

Service Life:	8	Install Year:	2006
Chronological Age:	7	Next Event Year:	2015
Effective Age:	6		

Mech 15 - Pump - DHW - Circulation and Recirculation

Location

Rooftop mechanical room.

Description

Taco and Armstrong, 1/16 HP, pipe-mounted bronze body domestic hot water circulation pumps. Circulating hot water from boilers to tanks and recirculating hot water from system.

Information

Service Life:	10	Install Year:	2006
Chronological Age:	7	Next Event Year:	2016
Effective Age:	7		

Fraserview Court

Mech 16 - Boiler - DHW - Heating - Gas Fired

Location

Rooftop mechanical room.

Description

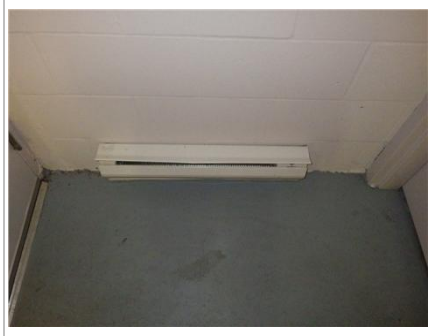
Laars MightyTherm coppertube natural gas fired, domestic service hot water heater. Atmospheric vented appliance with remote draft fan. Water Heater is connected to storage tanks.

Information

Service Life:	14	Install Year:	2006
Chronological Age:	7	Next Event Year:	2020
Effective Age:	7		

Heating & Cooling

Mech 17 - Baseboard - Electric



Location

Hallways and service rooms.

Description

Standard grade, wall mounted, electric convector baseboard heaters with electrical fins for localized space heating and integral thermostat control.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Mech 18 - Condensing Unit - Outdoor Section - Heat Pump

Location

Stall 23, P1.

Description

Lennox heat pump outdoor units, 3-5 tons and associated ceiling mounted indoor fan coil units for forced air conditioning and heating.

Information

Service Life:	15	Install Year:	1995
Chronological Age:	18	Next Event Year:	2014
Effective Age:	14		

Ventilation and Air-conditioning

Mech 19 - General Exhaust Fan

Location

Elevator room, Stall 8, Stall 43, garbage room, electrical room, washrooms, and commercial parking storage locker.

Description

Carnes fractional horesepower exhaust fan.

Information

Service Life:	12	Install Year:	1995
Chronological Age:	18	Next Event Year:	2016
Effective Age:	9		

Fraserview Court

Mech 20 - Outdoor Air Handler - Makeup Air - Gas

Location

Rooftop.

Description

Sterling DM25HGSS 6000/3300 CFM outdoor (rooftop) unit, belt-driven, centrifugal fan with two, speed motors, indirect natural gas fired heating to supply tempered make-up air to the interior spaces. MBH input: 250, MBH output: 192.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Other

Mech 21 - Overhead Gate Motor

Location

Parkade P1.

Description

Emerson 1/2 HP AC motor and commercial-grade overhead sectional door controlled by an electric operator.

Information

Service Life:	10	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	8		

Elevator

Hydraulic

Elev 01 - Hydraulic Elevator, Double Bottom

Location

Elevator machine room at bottom level.

Description

Dover elevator manufacturer, direct acting hydraulic unit with a buried cylinder (double bottom, PVC protected), Dover relay controller, submersed pump unit, Dover I-2 valve. 2100 lb capacity, 125/150 fpm rated speed (up/down respectively).

Information

Service Life:	25	Install Year:	1995
Chronological Age:	18	Next Event Year:	2020
Effective Age:	18		

Fraserview Court

Car Interiors

Elev 02 - Elevator Cabs & Hoistway

Location

Elevator cab and travelling hoistway.

Description

Single speed side opening doors, plastic car and hall pushbuttons, one (1) car operating panel, Dover door operator, mechanical safety edge with dual photo eyes door protection, plastic laminate cab interior, tile flooring, hands-free voice communication device in cabinet, no firefighter's emergency operation, no standby power, no seismic provisions.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2020
Effective Age:	13		

Fire Safety

Controls

Fire 01 - Fire Alarm Panel - Conventional

Location

Entrance lobby.

Description

Notifier microprocessor and supervised unit with annunciator and display.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Detection

Fire 02 - Fire Detection & Alarm

Location

Throughout building interior and parkade.

Description

Smoke detectors, heat detectors, flow switches, tamper switches, horns, pull stations and other fixed apparatus field devices to detect fire and smoke conditions and initiate timely response.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Fraserview Court

Suppression

Fire 03 - Dry Sprinkler Compressor

Location

Valve room in parkade P1.

Description

Makita compressor with 2 HP motor and 2.6 gallons capacity to maintain the pressure of air in the dry fire sprinkler lines.

Information

Service Life:	15	Install Year:	2003
Chronological Age:	10	Next Event Year:	2018
Effective Age:	10		

Fire 04 - Portable Fire Extinguisher

Location

Hallways and service rooms.

Description

Wall mounted, manually operated, 5lbs and 10lbs ABC type, pressurized vessels for controlled discharge of chemicals to extinguish small fires.

Information

Service Life:	24	Install Year:	1995
Chronological Age:	18	Next Event Year:	2019
Effective Age:	18		

Fire 05 - Sprinkler & Standpipe - Wet

Location

Throughout heated common spaces.

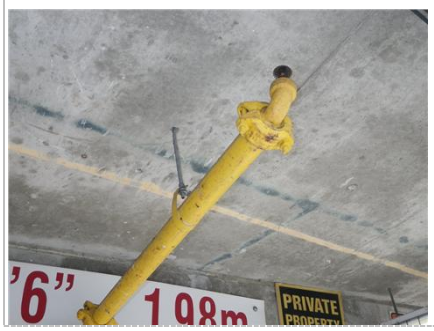
Description

Recessed pendant sprinkler heads, flow switches and indicating devices, gauges, steel distribution lines.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Fire 06 - Sprinkler System - Dry



Location

Parking garage and unheated service rooms.

Description

Exposed dry sprinklers, upright and sidewall sprinkler heads, steel piping.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Fraserview Court

Fire 07 - Sprinkler Valve Assembly - Dry

Location

Valve room in parkade P1.

Description

Gem dry sprinkler valve, trim and gauges, steel piping.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Egress

Fire 08 - Emergency Egress Equipment

Location

Throughout building.

Description

Ready-Lite unit battery packs, incandescent exit signs, and dual bulb surface mounted remote heads.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	18		

Interior Finishes

Floors

Finish 01 - Painted Concrete Flooring

Location

Stairwells and and non-residential corridors.

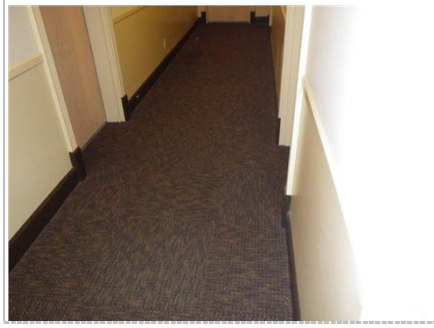
Description

Floor paint applied to concrete substrate.

Information

Service Life:	8	Install Year:	2008
Chronological Age:	5	Next Event Year:	2016
Effective Age:	5		

Finish 02 - Tile Carpet - Glued Down



Location

Residential hallways.

Description

Synthetic, low level loop, textile floor carpet tile units glued over floor substrate.

Information

Service Life:	15	Install Year:	2008
Chronological Age:	5	Next Event Year:	2028
Effective Age:	0		

Fraserview Court

Finish 03 - Porcelain Floor Tile

Location

Entrance lobby and washrooms.

Description

Porcelain floor tile on thin set mortar with grout.

Information

Service Life:	40	Install Year:	2006
Chronological Age:	7	Next Event Year:	2046
Effective Age:	7		

Walls

Finish 04 - Mirror

Location

Entrance lobby walls and column.

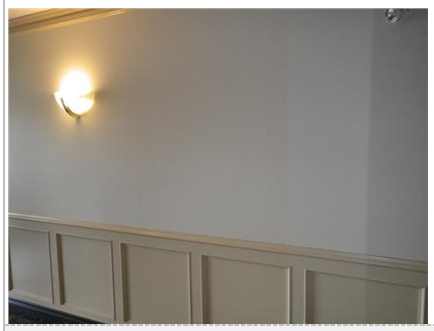
Description

Mirrored glass with structural fasteners to the substrate.

Information

Service Life:	25	Install Year:	1995
Chronological Age:	18	Next Event Year:	2023
Effective Age:	15		

Finish 05 - Paint



Location

Entrance lobby, hallways, and stairwells.

Description

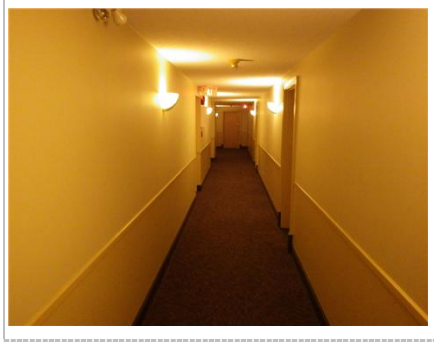
Primers and multiple pigmented coating finishes applied to interior gypsum wallboard.

Information

Service Life:	15	Install Year:	2008
Chronological Age:	5	Next Event Year:	2028
Effective Age:	0		

Housekeeping

Finish 06 - General Housekeeping



Location

Throughout building interior.

Description

Cleaning and care of miscellaneous brightwork, millwork, flooring glass and other interior finishes. Includes housekeeping equipment.

Information

Service Life:	10	Install Year:	1995
Chronological Age:	18	Next Event Year:	2015
Effective Age:	8		

Fraserview Court

Doors

Finish 07 - Interior Swing Door - General

Location

Throughout building, including hallways, exit stairs, and service rooms.

Description

A variety of interior swing doors, including solid or hollow core wood or hollow metal, glazed or unglazed, hung in framed opening including hardware.

Information

Service Life:	30	Install Year:	1995
Chronological Age:	18	Next Event Year:	2025
Effective Age:	18		

Amenities

Equipment

Amen 01 - Computer Equipments

Location

P1 electrical room.

Description

Computer, monitor, printer, keyboard and associated electronic devices required for general operations and management of the facility.

Information

Service Life:	6	Install Year:	2005
Chronological Age:	8	Next Event Year:	2015
Effective Age:	4		

Specialties

Amen 02 - Wood Storage Locker

Location

Parkade P1 storage room.

Description

Wood framed general purpose storage locker with swing door and hardware.

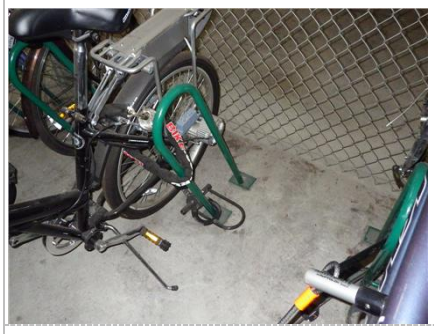
Information

Service Life:	30	Install Year:	1995
Chronological Age:	18	Next Event Year:	2025
Effective Age:	18		

Fraserview Court

Furnishings

Amen 03 - Bicycle Rack



Location

Bicycle storage rooms on P1 and P2.

Description

Floor or wall mounted, steel frame bicycle rack.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Amen 04 - Furniture & Accessories

Location

Entrance lobby.

Description

Lobby furnishings, including carpets and potted plants.

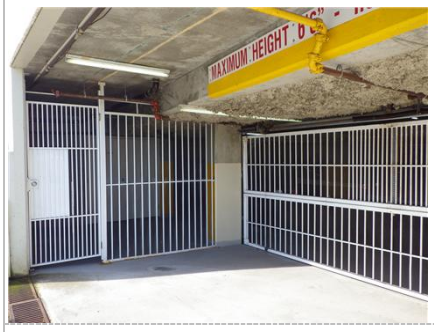
Information

Service Life:	15	Install Year:	2005
Chronological Age:	8	Next Event Year:	2020
Effective Age:	8		

Sitework

Hard Landscaping

Site 01 - Metal Screen Gate



Location

Adjacent to overhead garage doors.

Description

10-foot high painted metal screen fencing with gate and gate hardware.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Site 02 - Metal Fencing

Location

Bicycle storage areas on P1 and P2..

Description

12-foot high chainlink metal fence with prefinished posts; gates with hardware.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Fraserview Court

Site 03 - Wood Fencing

Location

Between suites on east elevation decks.

Description

6-foot high wood fence with posts and panel.

Information

Service Life:	20	Install Year:	1995
Chronological Age:	18	Next Event Year:	2018
Effective Age:	15		

Site 04 - Concrete Paving

Location

Entrances around building on south and west elevations, and parkade entrances on east elevation.

Description

Concrete pavement, cast with control and construction joints, onto compacted gravel base.

Information

Service Life:	40	Install Year:	1995
Chronological Age:	18	Next Event Year:	2035
Effective Age:	18		

Soft Landscaping

Site 05 - Groundskeeping & Pest Control

Location

Landscaping on east, south, and west sides of site.

Description

Care of miscellaneous site furnishing, hard paved surfaces and landscaped areas.

Information

Service Life:	5	Install Year:	2008
Chronological Age:	5	Next Event Year:	2015
Effective Age:	3		

Site 06 - Irrigation System

Location

Electrical room on P1.

Description

Controller with time clock, network of pipes, valves, and irrigation heads distributed around the soft landscaping.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	8	Next Event Year:	2020
Effective Age:	8		

Fraserview Court

Site 07 - Soft Landscaping

Location

East, south, and west sides of site.

Description

Lawn, ground cover, shrubs, perennials and small trees (up to 30').

Information

Service Life:	15	Install Year:	2005
Chronological Age:	8	Next Event Year:	2020
Effective Age:	8		

Site Services

Site 08 - Electrical Site Services

Location

(Concealed Asset). From individual pad mounted transformers to building electrical room.

Description

Underground secondary distribution conduits and services.

Information

Service Life:	50	Install Year:	1995
Chronological Age:	18	Next Event Year:	2045
Effective Age:	18		

Site 09 - Underground Natural Gas Service

Location

(Concealed Asset). Underground from the property line to the building.

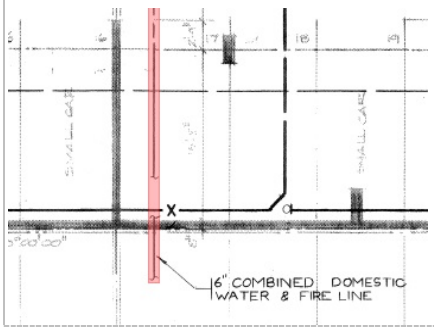
Description

Natural gas pipe installed.

Information

Service Life:	50	Install Year:	1995
Chronological Age:	18	Next Event Year:	2045
Effective Age:	18		

Site 10 - Underground Water Services with PVC/Copper and Ductile Piping



Location

(Concealed Asset). From the property line to the building.

Description

Fire/domestic water supplies.

Information

Service Life:	50	Install Year:	1995
Chronological Age:	18	Next Event Year:	2045
Effective Age:	18		

Fraserview Court

Site 11 - Underground Drainage Services - Storm

Location

(Concealed Asset). From building and catch basins to property line.

Description

Storm sewer system.

Information

Service Life:	80	Install Year:	1995
Chronological Age:	18	Next Event Year:	2075
Effective Age:	18		

Site 12 - Underground Sewer Services - Sewer

Location

(Concealed Asset). From the building to the property line, including all appurtenances.

Description

Sanitary sewer system.

Information

Service Life:	80	Install Year:	1995
Chronological Age:	18	Next Event Year:	2075
Effective Age:	18		

Appendix C

Asset Service Life Summary

Fraserview Court
Asset Service Life Summary

Asset Ref	Asset Name	Chronological Age	Estimated Remaining SL
Enclosure			
Encl 01	Exposed SBS Membrane Roof	5	20
Encl 02	Protected SBS Balcony Membrane	5	25
Encl 03	Stucco Clad Soffit	5	35
Encl 04	Aluminum Panel Soffit	5	35
Encl 05	Guardrail Glazed Aluminum	5	25
Encl 06	Stucco Clad Wall - Drained	5	35
Encl 07	Stucco-clad Concrete Walls	5	70
Encl 08	Profiled Sheet Metal Cladding Wall	5	35
Encl 09	Concrete Masonry Unit Wall	18	57
Encl 10	Coated Architectural Concrete Wall	18	57
Encl 11	Aluminum Storefront	5	35
Encl 12	Aluminum Framed Window	5	35
Encl 13	Window Wall	5	35
Encl 14	Unit Skylight	5	20
Encl 15	Metal Clad Swing Door	18	42
Encl 16	Aluminum Framed Sliding Glass Door	5	25
Encl 17	Metal Frame and Glass Canopy	5	35
Encl 18	At Grade Waterproofing - Existing	18	22
Encl 19	At Grade Waterproofing - New	5	35
Encl 20	Parking Slab with Traffic-bearing Membrane	18	57
Encl 21	Slab-on-Grade	18	57
Encl 22	Sectional Overhead Door - Metal	18	17
Encl 23	General & Inspections	0	3
Encl 24	Sealant	5	5
Electrical			
Elec 01	Electrical Service - Switchgear & Distribution	18	22
Elec 02	Distribution Transformer - Exterior [PLACEHOLDER]	18	27
Elec 03	Exterior Light Fixtures	18	2
Elec 04	Interior Light Fixtures	18	2
Elec 05	Enterphone System	5	20
Elec 06	Proximity Access Control	5	10
Elec 07	Security Surveillance	10	10
Mechanical			
Mech 01	Controls - HVAC Instrumentation	18	2

Fraserview Court
Asset Service Life Summary

Asset Ref	Asset Name	Chronological Age	Estimated Remaining SL
Mech 02	Controls - Boiler Electronic	8	7
Mech 03	Gas Detection - Parking Garage	18	0
Mech 04	Heat Tracing - Freeze Protection	18	1
Mech 05	Fixtures - Taps & Sinks	18	4
Mech 06	Fixtures - Toilets	18	4
Mech 07	Valves - Cross Connection & Backflow Prevention	18	2
Mech 08	Trapping Sump	18	32
Mech 09	Piping - Domestic Water Distribution	18	10
Mech 10	Drainage - Sanitary	18	32
Mech 11	Drainage - Perimeter and Foundation	18	22
Mech 12	Drainage - Storm - Internal	18	22
Mech 13	Pumps - Pull Pit Sump Lift and Control Panel	18	1
Mech 14	Tank - DHW - Storage	7	2
Mech 15	Pump - DHW - Circulation and Recirculation	7	3
Mech 16	Boiler - DHW - Heating - Gas Fired	7	7
Mech 17	Baseboard - Electric	18	22
Mech 18	Condensing Unit - Outdoor Section - Heat Pump	18	1
Mech 19	General Exhaust Fan	18	3
Mech 20	Outdoor Air Handler - Makeup Air - Gas	18	2
Mech 21	Overhead Gate Motor	18	2
Elevator			
Elev 01	Hydraulic Elevator, Double Bottom	18	7
Elev 02	Elevator Cabs & Hoistway	18	7
Fire Safety			
Fire 01	Fire Alarm Panel - Conventional	18	2
Fire 02	Fire Detection & Alarm	18	2
Fire 03	Dry Sprinkler Compressor	10	5
Fire 04	Portable Fire Extinguisher	18	6
Fire 05	Sprinkler & Standpipe - Wet	18	22
Fire 06	Sprinkler System - Dry	18	22
Fire 07	Sprinkler Valve Assembly - Dry	18	22
Fire 08	Emergency Egress Equipment	18	2
Interior Finishes			
Finish 01	Painted Concrete Flooring	5	3
Finish 02	Tile Carpet - Glued Down	5	15

Fraserview Court
Asset Service Life Summary

Asset Ref	Asset Name	Chronological Age	Estimated Remaining SL
Finish 03	Porcelain Floor Tile	7	33
Finish 04	Mirror	18	10
Finish 05	Paint	5	15
Finish 06	General Housekeeping	18	2
Finish 07	Interior Swing Door - General	18	12
Amenities			
Amen 01	Computer Equipments	8	2
Amen 02	Wood Storage Locker	18	12
Amen 03	Bicycle Rack	18	22
Amen 04	Furniture & Accessories	8	7
Sitework			
Site 01	Metal Screen Gate	18	22
Site 02	Metal Fencing	18	22
Site 03	Wood Fencing	18	5
Site 04	Concrete Paving	18	22
Site 05	Groundskeeping & Pest Control	5	2
Site 06	Irrigation System	8	7
Site 07	Soft Landscaping	8	7
Site 08	Electrical Site Services	18	32
Site 09	Underground Natural Gas Service	18	32
Site 10	Underground Water Services with PVC/Copper and Ductile Piping	18	32
Site 11	Underground Drainage Services - Storm	18	62
Site 12	Underground Sewer Services - Sewer	18	62

Appendix D

Funding Scenario Cash Flow Tables

Statutory Funding Model: Cash Flow Table (30 Years)

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$0	$0	$2,420	$2,300	$1,000	$120,120
2014	$120,120	$0	$0	$2,402	$43,800	$1,000	$77,722
2015	$77,722	$0	$6,123	$1,554	$84,400	$1,000	$0
2016	$0	$10,000	$11,500	$0	$20,500	$1,000	$0
2017	$0	$10,000	$0	$0	$2,400	$1,000	$6,600
2018	$6,600	$10,000	$20,368	$132	$36,100	$1,000	$0
2019	$0	$10,000	$3,600	$0	$12,600	$1,000	$0
2020	$0	$10,000	$142,200	$0	$151,200	$1,000	$0
2021	$0	$10,000	$0	$0	$2,000	$1,000	$7,000
2022	$7,000	$10,000	$0	$140	$6,500	$1,000	$9,640
2023	$9,640	$10,000	$518,827	$193	$537,660	$1,000	$0
2024	$0	$10,000	$0	$0	$8,600	$1,000	$400
2025	$400	$10,000	$35,362	$8	$44,770	$1,000	$0
2026	$0	$10,000	$0	$0	$0	$1,000	$9,000
2027	$9,000	$10,000	$0	$180	$10,370	$1,000	$7,810
2028	$7,810	$10,000	$77,734	$156	$94,700	$1,000	$0
2029	$0	$10,000	$13,870	$0	$22,870	$1,000	$0
2030	$0	$10,000	$31,900	$0	$40,900	$1,000	$0
2031	$0	$10,000	$14,570	$0	$23,570	$1,000	$0
2032	$0	$10,000	$1,200	$0	$10,200	$1,000	$0
2033	$0	$10,000	$512,200	$0	$521,200	$1,000	$0
2034	$0	$10,000	$14,200	$0	$23,200	$1,000	$0
2035	$0	$10,000	$383,600	$0	$392,600	$1,000	$0
2036	$0	$10,000	$0	$0	$0	$1,000	$9,000
2037	$9,000	$10,000	$0	$180	$14,900	$1,000	$3,280
2038	$3,280	$10,000	$183,654	$66	$196,000	$1,000	$0
2039	$0	$10,000	$10,400	$0	$19,400	$1,000	$0
2040	$0	$10,000	$36,900	$0	$45,900	$1,000	$0
2041	$0	$10,000	$0	$0	$3,300	$1,000	$5,700
2042	$5,700	$10,000	$0	$114	$0	$1,000	$14,814

Status Quo Funding Model: Cash Flow Table (30 Years)

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$10,000	$0	$2,420	$2,300	$1,000	$130,120
2014	$130,120	$10,000	$0	$2,602	$43,800	$1,000	$97,922
2015	$97,922	$10,000	$0	$1,958	$84,400	$1,000	$24,481
2016	$24,481	$10,000	$0	$490	$20,500	$1,000	$13,470
2017	$13,470	$10,000	$0	$269	$2,400	$1,000	$20,340
2018	$20,340	$10,000	$11,353	$407	$36,100	$1,000	$5,000
2019	$5,000	$10,000	$3,500	$100	$12,600	$1,000	$5,000
2020	$5,000	$10,000	$142,100	$100	$151,200	$1,000	$5,000
2021	$5,000	$10,000	$0	$100	$2,000	$1,000	$12,100
2022	$12,100	$10,000	$0	$242	$6,500	$1,000	$14,842
2023	$14,842	$10,000	$518,521	$297	$537,660	$1,000	$5,000
2024	$5,000	$10,000	$0	$100	$8,600	$1,000	$5,500
2025	$5,500	$10,000	$35,160	$110	$44,770	$1,000	$5,000
2026	$5,000	$10,000	$0	$100	$0	$1,000	$14,100
2027	$14,100	$10,000	$0	$282	$10,370	$1,000	$13,012
2028	$13,012	$10,000	$77,428	$260	$94,700	$1,000	$5,000
2029	$5,000	$10,000	$13,770	$100	$22,870	$1,000	$5,000
2030	$5,000	$10,000	$31,800	$100	$40,900	$1,000	$5,000
2031	$5,000	$10,000	$14,470	$100	$23,570	$1,000	$5,000
2032	$5,000	$10,000	$1,100	$100	$10,200	$1,000	$5,000
2033	$5,000	$10,000	$512,100	$100	$521,200	$1,000	$5,000
2034	$5,000	$10,000	$14,100	$100	$23,200	$1,000	$5,000
2035	$5,000	$10,000	$383,500	$100	$392,600	$1,000	$5,000
2036	$5,000	$10,000	$0	$100	$0	$1,000	$14,100
2037	$14,100	$10,000	$0	$282	$14,900	$1,000	$8,482
2038	$8,482	$10,000	$183,348	$170	$196,000	$1,000	$5,000
2039	$5,000	$10,000	$10,300	$100	$19,400	$1,000	$5,000
2040	$5,000	$10,000	$36,800	$100	$45,900	$1,000	$5,000
2041	$5,000	$10,000	$0	$100	$3,300	$1,000	$10,800
2042	$10,800	$10,000	$0	$216	$0	$1,000	$20,016

Alternative Funding Model: Cash Flow Table (30 Years)

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$10,000	$0	$2,420	$2,300	$1,000	$130,120
2014	$121,000	$31,500	$0	$2,420	$39,200	$1,000	$114,720
2015	$121,000	$42,000	$0	$2,420	$78,600	$1,000	$85,820
2016	$121,000	$53,000	$0	$2,420	$13,100	$1,000	$162,320
2017	$121,000	$62,600	$0	$2,420	$2,200	$1,000	$182,820
2018	$121,000	$77,000	$0	$2,420	$41,600	$1,000	$157,820
2019	$157,820	$77,000	$0	$3,156	$31,300	$1,000	$205,676
2020	$205,676	$77,000	$0	$4,114	$139,400	$1,000	$146,390
2021	$146,390	$77,000	$0	$2,928	$1,800	$1,000	$223,518
2022	$223,518	$77,000	$0	$4,470	$6,500	$1,000	$297,488
2023	$297,488	$77,000	$163,122	$5,950	$537,560	$1,000	$5,000
2024	$5,000	$77,000	$0	$100	$8,600	$1,000	$72,500
2025	$72,500	$77,000	$0	$1,450	$51,570	$1,000	$98,380
2026	$98,380	$77,000	$0	$1,968	$0	$1,000	$176,348
2027	$176,348	$77,000	$0	$3,527	$11,470	$1,000	$244,405
2028	$244,405	$77,000	$0	$4,888	$88,600	$1,000	$236,693
2029	$236,693	$77,000	$0	$4,734	$17,870	$1,000	$299,557
2030	$299,557	$77,000	$0	$5,991	$36,900	$1,000	$344,648
2031	$344,648	$77,000	$0	$6,893	$33,370	$1,000	$394,171
2032	$394,171	$77,000	$0	$7,883	$10,200	$1,000	$467,854
2033	$467,854	$77,000	$0	$9,357	$541,000	$1,000	$12,211
2034	$12,211	$77,000	$0	$244	$8,200	$1,000	$80,255
2035	$80,255	$77,000	$240,340	$1,605	$393,200	$1,000	$5,000
2036	$5,000	$77,000	$0	$100	$0	$1,000	$81,100
2037	$81,100	$77,000	$0	$1,622	$16,300	$1,000	$142,422
2038	$142,422	$77,000	$0	$2,848	$200,600	$1,000	$20,670
2039	$20,670	$77,000	$0	$413	$19,100	$1,000	$77,984
2040	$77,984	$77,000	$0	$1,560	$44,200	$1,000	$111,344
2041	$111,344	$77,000	$0	$2,227	$4,800	$1,000	$184,770
2042	$184,770	$77,000	$0	$3,695	$0	$1,000	$264,466

Progressive Funding Model: Cash Flow Table (30 Years)

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2013	$121,000	$77,000	$0	$2,420	$2,600	$1,000	$196,820
2014	$196,820	$77,000	$0	$3,936	$39,200	$1,000	$237,556
2015	$237,556	$77,000	$0	$4,751	$100,500	$1,000	$217,808
2016	$217,808	$77,000	$0	$4,356	$10,600	$1,000	$287,564
2017	$287,564	$77,000	$0	$5,751	$3,500	$1,000	$365,815
2018	$365,815	$77,000	$0	$7,316	$41,500	$1,000	$407,631
2019	$407,631	$77,000	$0	$8,153	$33,000	$1,000	$458,784
2020	$458,784	$77,000	$0	$9,176	$137,100	$1,000	$406,860
2021	$406,860	$77,000	$0	$8,137	$3,800	$1,000	$487,197
2022	$487,197	$77,000	$0	$9,744	$3,600	$1,000	$569,341
2023	$569,341	$77,000	$0	$11,387	$538,260	$1,000	$118,468
2024	$118,468	$77,000	$0	$2,369	$9,200	$1,000	$187,637
2025	$187,637	$77,000	$0	$3,753	$45,670	$1,000	$221,720
2026	$221,720	$77,000	$0	$4,434	$0	$1,000	$302,154
2027	$302,154	$77,000	$0	$6,043	$13,770	$1,000	$370,427
2028	$370,427	$77,000	$0	$7,409	$83,200	$1,000	$370,636
2029	$370,636	$77,000	$0	$7,413	$19,470	$1,000	$434,578
2030	$434,578	$77,000	$0	$8,692	$32,700	$1,000	$486,570
2031	$486,570	$77,000	$0	$9,731	$35,670	$1,000	$536,631
2032	$536,631	$77,000	$0	$10,733	$10,200	$1,000	$613,164
2033	$613,164	$77,000	$0	$12,263	$543,080	$1,000	$158,347
2034	$158,347	$77,000	$0	$3,167	$4,500	$1,000	$233,014
2035	$233,014	$77,000	$118,326	$4,660	$427,000	$1,000	$5,000
2036	$5,000	$77,000	$0	$100	$800	$1,000	$80,300
2037	$80,300	$77,000	$0	$1,606	$14,300	$1,000	$143,606
2038	$143,606	$77,000	$0	$2,872	$200,100	$1,000	$22,378
2039	$22,378	$77,000	$0	$448	$21,900	$1,000	$76,926
2040	$76,926	$77,000	$0	$1,539	$34,100	$1,000	$120,364
2041	$120,364	$77,000	$0	$2,407	$6,900	$1,000	$191,871
2042	$191,871	$77,000	$0	$3,837	$900	$1,000	$270,809

Appendix E

Disclosures and Disclaimers

RDH | Building Engineering Ltd.
224 WEST 8TH AVENUE VANCOUVER BC V5Y 1N5
TEL 604 873 1181 FAX 604 873 0933
VAN@RDHBE.COM WWW.RDHBE.COM

Disclosures and Disclaimers

Condition of the Assets

The method of determining the physical condition of the assets is based on a visual review of a representative sampling of the assets in readily accessible locations, discussions with facility representatives, and review of readily available reference documents. No destructive testing or exploratory openings are carried out on any of the assets and the equipment is not disassembled, operated or subject to re-commissioning tests. The physical review is not a full "condition assessment" since operating, testing or exploratory openings are excluded from the scope of services.

Cost Estimating for Assets

- All estimates of costs are provided in future year dollars.
- All estimates of costs are Class D estimates intended for planning purposes and not for accounting or tender use. See Glossary of Terms for definition of Class D estimates.
- Actual costs will vary depending on several factors. The estimates assume economies of scale will be achieved by bundling work tasks together into larger renewal, repair or rehabilitation projects. Small tasks performed individually may exceed the estimates presented.
- Soft costs, such as consulting services and contingency allowances are not included in the budget estimates. When developing cost estimates for projects in greater detail for budgeting, each project should include appropriate soft costs - such as owner contingency, permit fees, engineering fees, etc. Depending on the sizes, scope and timing of individual projects, the magnitude of the soft costs will vary.
- Construction costs are subject to the vagaries of the marketplace. At the time of tender, costs may vary depending on the time of the year, contractor availability, and other factors.
- The estimates must be updated over time, further developed for scope of work and confirmed by competitive tender before any contracts are awarded.
- Detailed repair specifications are required to be prepared in order to confirm scopes of work and costs.
- The estimates do not include allowances for site specific access requirements or environmental concerns, which should be addressed on a project-by-project basis.
- Consideration may sometimes need to be given to costs arising from the impact of projects on occupancy use and facility operations.
- Replacement costs are typically based on like-for-like with a similar asset unless code or other circumstances require the replacement cost to include an upgrade.

Maintenance of the Assets:

- The maintenance checklists are not exhaustive and are intended as a framework for the ongoing refinement of the maintenance program.
- Work must only be carried out by appropriately qualified personnel who have the necessary and sufficient knowledge about the maintenance tasks and maintenance intervals.
- The manufacturers' latest printed instructions should take precedence in the event of any conflict with the maintenance checklists.
- The owners' maintenance staff and/or service contractors are responsible to verify what is contained in the manufacturers' documentation regarded recommended maintenance procedures and intervals.
- The maintenance checklists and maintenance intervals should be reviewed annually and adjusted, as required, to reflect the service environment, feedback from contractors, etc.

Specialist and Non-Specialist Reviews

Our personnel collect the asset inventory data for all the different systems, including mechanical, plumbing, fire safety, elevator, electrical, interior finishes and sitework. Our scope of services is to identify the assets within each system, determine their age and report on their reasonable service life-cycles according to accepted industry standards. RDH personnel do not make observations with regard to specialty building system conditions unless specifically addressed in our proposal.

Forecasting the Useful Service Life of Assets

The service life of assets can be affected by a variety of circumstances, including the following:

- The quality of the maintenance conducted on an asset will affect the service life of the asset. Poor maintenance can lead to a reduced service life and may result in the premature failure of an asset.
- Insurable losses (force majeure), such as earthquakes, fires and floods can shorten the life of an asset. These events are not considered in a depreciation report.
- Asset service life in a Depreciation Report is determined according to accepted industry standards.

Funding Models

The funding models for Depreciation Reports are based on a 30-year horizon and use "future year dollars termed" methodology. This methodology projects the costs (in future year dollars) over the planning horizon and not beyond the terminus year of the planning horizon. The current year is the starting year of the planning horizon. The term, therefore, matches the initial horizon and does not respect a shifting horizon. This means that in year 1 the funding scenarios will look forward for 30 years.

For example, in 2012 the model looks forward to 2042. In year two, it will be accurate for 29 years, as it is only looking forward to year 2042. When an update study is performed in three years, the revised funding scenarios will look forward 30 years from 2015 to 2045. Renewal and major maintenance projects that occur beyond the 30-year planning horizon are not considered in the scenarios; that is, those projects that occur beyond 30 years are unfunded in the funding scenarios.

Appendix F

RDH Qualifications

RDH

RDH Qualifications 1/4

DEPRECIATION REPORT

New regulations in British Columbia make Depreciation Reports mandatory for most strata corporations. RDH Building Engineering Ltd. offers building science and building asset management services from three offices in BC; Vancouver, Victoria, and Courtenay. RDH staff have broad practical experience assisting building owners with all aspects of planning for the long term stewardship of their building(s). Our reserve fund analysts, engineers, architects, and technologists have a wide variety of formal training—including building science, structural engineering, and mechanical engineering. To supplement our in-house expertise, we hire subconsultants for items such as elevator and swimming pool reviews. We believe that by using a team approach, we can ensure an appropriate level of thoroughness and quality.

We have prepared hundreds of Depreciation Reports and are recognized as industry leaders. David Albrice is a certified Professional Reserve Analyst and was one of the key people consulted when the legislation was drafted. He has an unrivaled depth of understanding of the physical, financial planning, and strata governance issues that need to be considered in the development of an effective Depreciation Report.

ABOUT US

David Albrice, B.Sc. URP, ARP, PRA

- Professional Reserve Analyst, APRA
- B.Sc. Urban and Regional Planning
- Associate Reserve Planner, REIC
- Project Manager on 100s of Facility Condition Assessments and Reserve Studies (Depreciation Reports)

Mike Wilson, P.Eng.

- B.Eng. & M.Eng., Structural Engineering
- Registered professional engineer, APEGBC
- 20 years experience as a consultant focused in the field of building science

Mark Will, Dipl.T., BA

- Dipl.T., Building Science Technology
- B.A., Economics
- 15 years experience in project management
- CHOA Board Member

Peter Fitch, C.Tech.

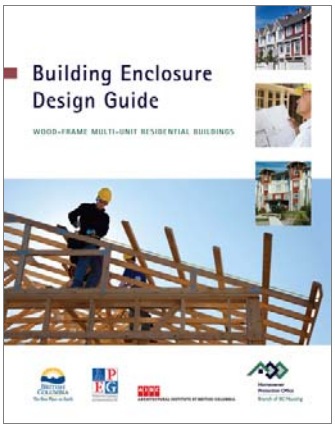
- UBC/UBCM Certified Professional program (audit only)
- Member of Applied Science Technologists & Technicians of British Columbia
- 30 years of experience in the mechanical design field

Phil Johnson, P.Eng.

- B.Sc. & M.Sc., Agricultural Engineering
- Registered professional engineer, APEGBC
- 20 years experience as a consultant focused in the field of building science

Matt Mulleray, P.Eng.

- B.A.Sc., Civil Engineering
- Dipl.T., Civil and Structural Engineering
- Registered professional engineer, APEGBC
- 10 years experience in bldg. science & engineering consulting



RDH

RDH Qualifications 2/4

Harvey Goodman, P.Eng.

- B.A.Sc., Civil Engineering
- Registered professional engineer, APEGBC
- 20 years experience in building science consulting

Serge Desmarais, Architect AIBC, CP

- B.Arch.
- Registered architect, AIBC
- Certified Professional, UBC
- 30 years experience in building design and construction capital renewal projects

Jason Dunn, B.Arch.Sc., CCCA

- B.Arch.Sc, Building Science Option
- Certified Construction Contract Administrator, CSC
- 10 years experience in building science consulting

Robin Breuer, A.Sc.T., RRO

- Dipl.T., Building Engineering Technology (Building Science Option)
- Registered Roof Observer, RCI Inc.
- 15 years experience in building science consulting

Laureen Stokes, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- 5 years experience in building science consulting

Rob Mathena, Dipl.T.

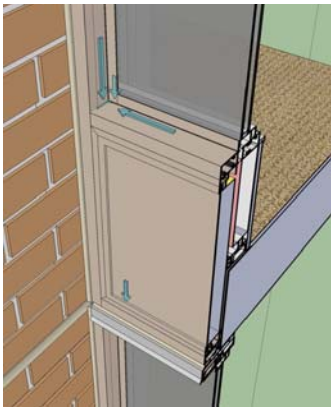
- Dipl.T., Technology in Building Engineering (Building Science Option)
- 15 years experience in building science consulting and construction

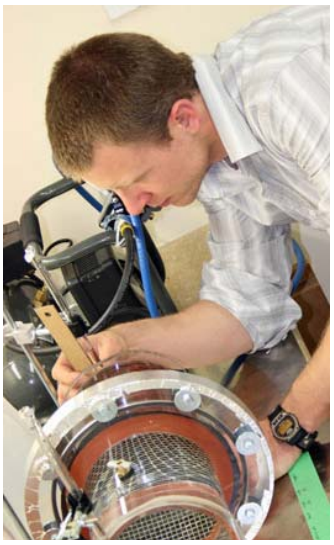
Tim Smith, A.Sc.T.

- Dipl.T., Civil Engineering Technologist
- Member of Applied Science Technologists & Technicians of British Columbia
- 5 years experience in building science consulting

Brandon Carreira, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)





climatesmart business2011

We are committed to reducing our environmental impact. RDH participated in Climate Smart to evaluate and reduce our carbon footprint.

Jesus De Mesa, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)

Alex Seto, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)

Roma Santos, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)

Nick Smit, Dipl.T.

- Dipl.T., Architectural & Building Engineering Technology (Building Science Option)

Kingston Chow, EIT, Dipl.T.

- B.Eng., Civil Engineering
- Dipl.T., Civil Engineering

Jeff Coulombe, Dipl.T.

- Dipl.T., Green Building & Renewable Energy

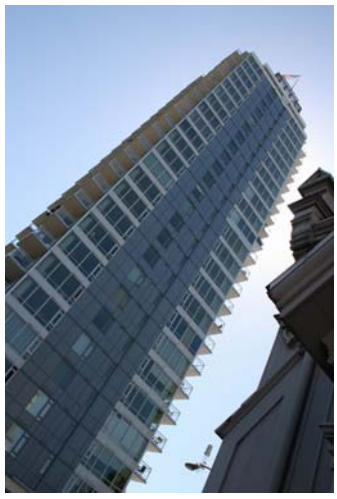
Administrators and Client Support

Vanessa Jumawan

- 4 years experience in administration with engineering/architecture firm

Anna Qiu

- Cert., Business Administration
- 8 years experience in administration with engineering/architecture firm



Software Support and Programmers

Matthew Branch, P.Eng.

- B.Sc., Civil Engineering
- Registered professional engineer, APEGBC
- 12 years experience in engineering data analysis

Gary Zhang, B.Sc.

- B.Sc., Computer Science and Engineering
- 16 years experience in software development

Kan Ma, B.Sc.

- B.Sc., Computing Science
- 6 years experience in software development

Quantity Take-Offs

Andrea Corona, Dipl.

- Dipl., Small Craft Naval Architecture
- 25 years experience in architectural drafting

Roya Kiani Amin, B.Sc.

- B.Sc., Civil Engineering
- 5 years experience in architectural drafting
- 2 years experience in construction

Brigitte MacKenzie

- 3-year Apprenticeship Program, Germany
- 25 years experience in architectural drafting

Appendix G

Insurance Certificate

Ref. No. 320006772241 AMENDED

CERTIFICATE OF INSURANCE

Aon Reed Stenhouse Inc.
401 West Georgia Street, Suite 1200
PO Box 3228 STN. TERMINAL
Vancouver BC V6B 3X8
tel 604-688-4442 *fax* 604-682-4026

Amending Certificate No. : 320006772239

Re: Evidence of Insurance:

To Whom It May Concern

Insurance as described herein has been arranged on behalf of the Insured named herein under the following policy(ies) and as more fully described by the terms, conditions, exclusions and provisions contained in the said policy(ies) and any endorsements attached thereto.

Insured

RDH Building Engineering Ltd.
224 West 8th Avenue
Vancouver, BC V5Y 1N5

Coverage

Commercial General Liability	**Insurer**	Royal and Sun Alliance Insurance Co. of Canada	
	Policy #	8141333	
	Effective	01-Jun-2013	**Expiry** 02-May-2014
	Limits of Liability	Bodily Injury & Property Damage, Each Occurrence $5,000,000 Products and Completed Operations, Aggregate $5,000,000 Personal Injury $5,000,000 Advertising Liability $5,000,000 Non-Owned Automobile Liability $5,000,000 Legal Liability for Damage to Hired Automobiles $50,000 Policy may be subject to a general aggregate and other aggregates where applicable	
Professional Liability	**Insurer**	Certain Underwriters At Lloyd's	
	Policy #	QC1302155	
	Effective	02-May-2013	**Expiry** 02-May-2014
	Limits of Liability	Subject to aggregate where applicable	

Terms and / or Additional Coverage

Professional Liability
Limit: $2,000,000 Per Claim Limit / $4,000,000 Aggregate Limit

THE POLICY CONTAINS A CLAUSE THAT MAY LIMIT THE AMOUNT PAYABLE
OR, IN THE CASE OF AUTOMOBILE INSURANCE,
THE POLICY CONTAINS A PARTIAL PAYMENT OF LOSS CLAUSE

Ref. No. 320006772241 AMENDED

CERTIFICATE OF INSURANCE

Commercial General Liability

Products and Completed Operations
Broad Form Property Damage
Cross Liability
Contractual Liability

THIS CERTIFICATE CONSTITUTES A STATEMENT OF THE FACTS AS OF THE DATE OF ISSUANCE AND ARE SO REPRESENTED AND WARRANTED ONLY TO THE INSURED. OTHER PERSONS RELYING ON THIS CERTIFICATE DO SO AT THEIR OWN RISK.

Aon Reed Stenhouse Inc.

L Hadden

Dated : 30-May-2013
Issued By : Hadden,Lindsay D.
Tel : 604-443-2524

THE POLICY CONTAINS A CLAUSE THAT MAY LIMIT THE AMOUNT PAYABLE
OR, IN THE CASE OF AUTOMOBILE INSURANCE,
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