

# 2011 Depreciation Report

West Royal, 328 Taylor Way, West Vancouver, BC



SUBMITTED TO The Owners, Strata Plan LMS445  
C/O Ms. Tracey Lutz, Property Manager  
The Wynford Group  
815 - 1200 W 73rd Avenue  
Vancouver BC V6P 6G5

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

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# 1. Introduction

RDH Building Engineering Ltd. (RDH) was retained by Strata Plan LMS445 (the Owners) to prepare a Depreciation Report (the Report) for the common property components (the Assets) at the residential high-rise and townhouse buildings located at 328 Taylor Way, West Vancouver, BC and known as West Royal.

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, boilers and hallway carpets).

The following documents were reviewed:

• 2009 RJC Building Enclosure Condition Assessment

A site visit was conducted on December 15<sup>th</sup>, 2011. In order to prepare the Report, RDH acknowledges that there is no relationship between the employees at RDH and the strata corporation.

The information provided in the Report satisfies the requirements stipulated in the Strata Property Act. 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 is 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.

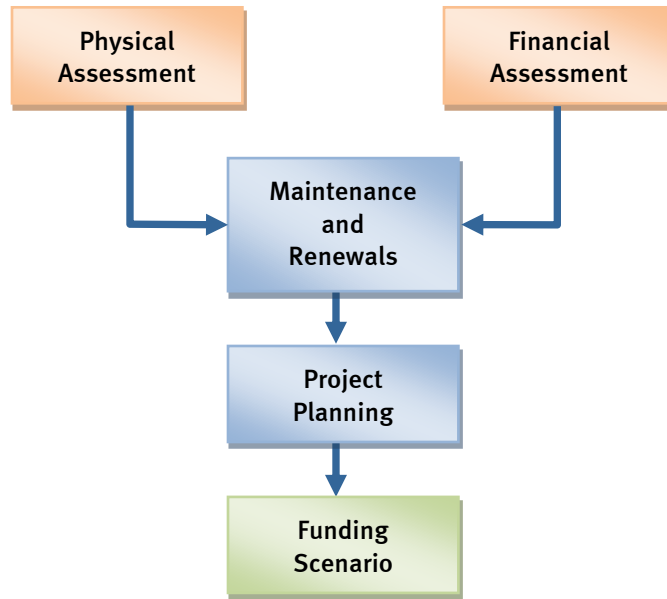
The data is owned by the strata corporation and can be printed and/or exported to spreadsheets as required.

As the physical and financial status of the commonly owned assets changes, the Report will require updating. The BC legislation requires that updates to the Report are 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: i) a “physical” assessment and ii) 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:



Depreciation Report Process

### 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 sampling 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 were the assets disassembled or subjected to confirmation of operational characteristics.

Over time, all buildings move through a series of lifecycle stages. In this regard, West Royal can be considered a “middle aged” building where some major maintenance and capital renewal projects have been undertaken by the owners, such as:

- Replacement of domestic water distribution system
- Replacement of miscellaneous pumps and valves
- Replacement of boilers



- ..... Replacement of domestic booster pumps
- ..... Replacement of sump pumps
- ..... Replacement of fire alarm control system and field devices
- ..... Replacement of hallway carpets
- ..... Repainting of interior common areas
- ..... Replacement of amenity furniture
- ..... Replacement of common plumbing fixtures
- ..... Replacement of 2-ply SBS roof
- ..... Replacement of sloped glazing
- ..... Replacement of exterior sealant
- ..... Replacement of aluminum swing doors
- ..... Replacement of townhouse roofs
- ..... Replacement of exterior face seal to rainscreen stucco cladding

The table below contains a summary of some of the key physical parameters of West Royal.

Physical Parameters	
Date of Original Construction	1992
Gross Floor Area (square feet)	282,000
Stories Above Grade	25
Number of suites	182
Asset Age (Average Years)	15
Remaining Service Life (Average Years)	10

## 2.2. Financial Assessment

Owners will spend money for operating, reviewing, renewing and maintaining assets over their service lives. Sometimes more comprehensive rehabilitation 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 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 building, 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 West Royal, which are used to develop funding scenarios and the tactical and strategic plans.

Financial Parameters	
Fiscal Year End	31 Aug
Building Reproduction Cost	\$88,509,800
Current Operating Budget	\$953,109
Current Annual Reserve Allocation	\$238,045
Current Accumulated Reserve Balance	\$489,650

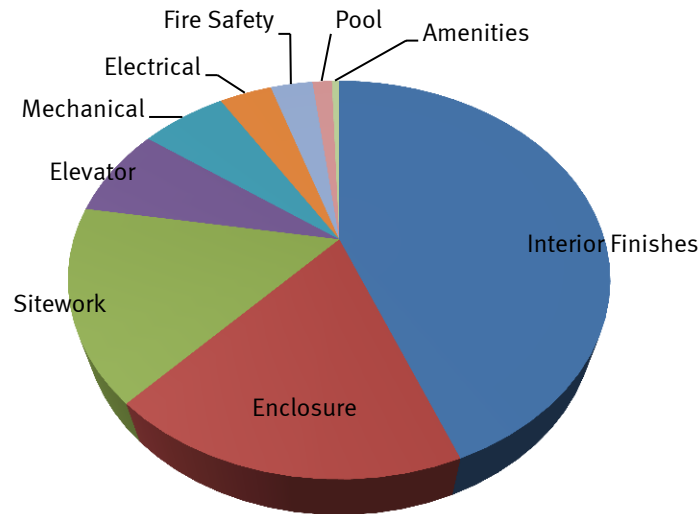
### 3. Major Maintenance and Renewals

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 ensures that the assets 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 \$249,737 per year, which represents approximately 26% of the total annual operating budget. The strata corporation has several line items in the budget that are devoted specifically to maintenance of the different systems, including multiple line items totalling \$38,425 for unspecified repairs and maintenance. The strata corporation has approximately 15 maintenance service contracts, which cover the key systems, such as elevators, HVAC, janitorial and landscaping.

The figure below contains a summary distribution of the current annual maintenance costs for West Royal.



Distribution of Annual Maintenance Costs

The pie chart reveals that the majority of the maintenance budget is allocated towards the building enclosure, interior finishes, enclosure and sitework, which is a typical distribution for this type of building. The current maintenance budget appears to be adequate to achieve the necessary levels of maintenance for the assets identified in the maintenance plan during this stage in the lifecycle of the building. However, it is recommendation that the corporation consider a few additional line items in the budget to enable refined tracking of expenditures.

On December 15<sup>th</sup>, 2011 RDH conducted a site review on a representative sample of the common elements at West Royal for the purpose of developing an inventory of common property assets and to estimate the useful remaining life of the assets. The property is in relatively good condition with some localized deferred maintenance, which is being addressed on an ongoing basis.

In order to avoid an accumulation of deferred maintenance the owners must ensure that the ongoing maintenance program provides for the necessary and sufficient maintenance of the assets over their useful lives. It is essential, however, that the owners continue to allow for adequate maintenance of all the assets so as to leverage the full service life from all

components of the building. The ongoing maintenance program provides guidelines for the necessary and sufficient maintenance of the assets over their useful lives. The software also has the capability to monitor minor maintenance events and can be used to bundle and coordinate the implementation of maintenance work. This functionality is not included in the Report.

### 3.2. Renewals Plan

It has been estimated that the strata corporation will need to spend approximately \$29M 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	Current Dollars	Future Dollars
Enclosure	\$17,620,600	\$22,849,600
Electrical	\$462,500	\$653,200
Mechanical	\$1,548,850	\$2,330,200
Elevator	\$1,220,000	\$1,498,000
Fire Safety	\$500,500	\$728,500
Interior Finishes	\$630,775	\$889,300
Amenities	\$108,500	\$147,400
Pool	\$55,300	\$79,800
Sitework	\$296,350	\$434,400

The figure below contains a summary distribution of the major maintenance and renewal costs for the next 10 years. For West Royal, the majority of these costs are in the enclosure system.

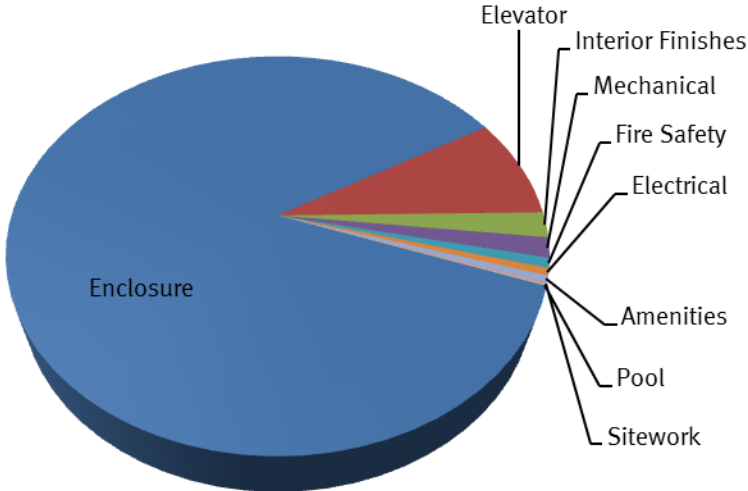


Fig. 3.2.1 Distribution of Major Maintenance and Renewal Costs Over Next 10 years

The cost implications of these events, together with scheduling considerations, are addressed in the following sections of the Report together with additional supporting material, such as photographs.

## 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 chunks 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 window 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 next section addresses some of the expenditures that are projected for West Royal within these three planning horizons.

### 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.

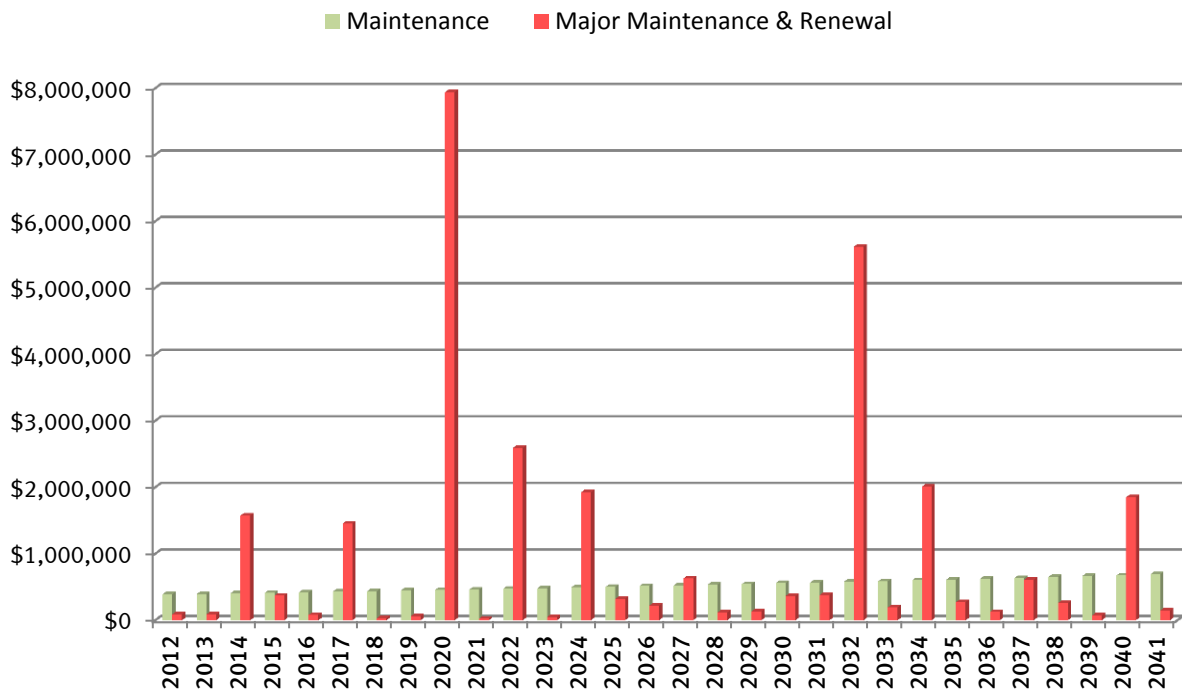


Fig. 4.1.1 Strategic Forecast (30 Years)

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 a project (or bundle of events) is most likely to occur as well as the total magnitude of major maintenance and renewal costs for that year.

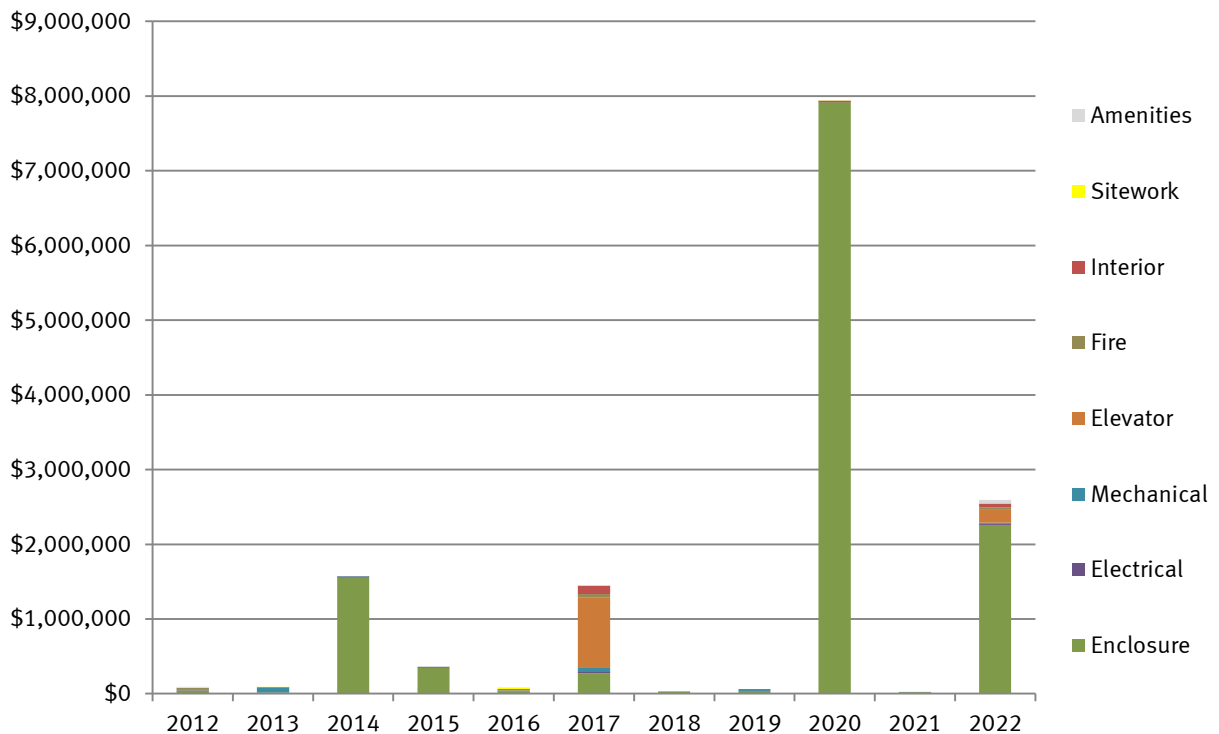


Fig. 4.2.1 10-Year Expenditure Forecast

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

- ..... Renewal of EIFS cladding.
- ..... Localized replacement of at-grade waterproofing membrane.
- ..... Repainting of exterior concrete and other cladding.
- ..... Cyclical replacement of failed insulated glazing units (IGUs).
- ..... Modernization of elevator controls.
- ..... Cyclical replacement of miscellaneous pumps, fans and motors.



....✦ Updating of the Depreciation Report every three years.

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 contingency reserve fund. 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

There are no significant capital renewal projects or major maintenance projects forecast for the next fiscal year.

### 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 sections of the building require renewal at one point time. For example: the carpets in amenity rooms 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 exterior wood trim is recoated 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 if these projects were completed as several, individual projects. For example: the exterior wood trim is repainted at the same time as the repainting of the cladding for the building or complex.

## 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 moving forward 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" Current	"B" Alternative	"C" Progressive Reserve
Percent of Progressive Reserve	28 %	31 %	100 %
Reserve Allocation	\$238,045	\$270,000 with a 2% annual increase	\$863,000
Per Suite Per Month	\$109	\$124	\$395
Per Square Foot	\$0.84	\$0.96	\$3.06
Assumed Inflation Rate	2%	2%	2%
Assumed Interest Rate	1%	1%	1%

- ..... ❖ **“A” The 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.
- ..... ❖ **“B” Alternative Reserve Allocation.** This represents an incremental increase from the status quo, which is just one of many possible scenarios for a new funding level in the next fiscal year.
- ..... ❖ **“C” 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 is sufficient to avoid any 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 alternative funding scenarios are provided as a guide for the Owners. The Owners can use the BAMS software to create additional funding scenarios that work for them.

Based on the findings of the Report, the Strata Corporation is currently considered to be approximately **28% funded**. This means that the cumulative reserve balance (\$489,650) is approximately 1/4 of what it ideally should be if the owners were to avoid any special levies over the next 30 years. The figure below illustrates the strata corporation’s financial position on a funding spectrum.

Current Funding  
**\$238,045**  
(per year)



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 incremental increases will need to be made over the upcoming years to move the current funding level from 28%. Although the strata corporation has not yet accumulated sufficient funds in its contingency reserve account to avoid all special levies, the age of the complex means that it is relatively easy to make adjustments and catch-up.

## 5.2. Funding Scenario “A” – 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 **\$238,045** and is summarized in the following cash flow table. 10 years of cash flow data is 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 Status Quo Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2012	\$489,000	\$238,000	\$0	\$4,890	\$91,100	\$2,000	\$638,790
2013	\$638,790	\$238,000	\$0	\$6,388	\$88,500	\$2,000	\$792,678
2014	\$792,678	\$238,000	\$537,695	\$7,927	\$1,574,300	\$2,000	\$0
2015	\$0	\$238,000	\$135,100	\$0	\$371,100	\$2,000	\$0
2016	\$0	\$238,000	\$0	\$0	\$80,500	\$2,000	\$155,500
2017	\$155,500	\$238,000	\$1,060,845	\$1,555	\$1,453,900	\$2,000	\$0
2018	\$0	\$238,000	\$0	\$0	\$31,000	\$2,000	\$205,000
2019	\$205,000	\$238,000	\$0	\$2,050	\$61,500	\$2,000	\$381,550
2020	\$381,550	\$238,000	\$7,318,435	\$3,816	\$7,939,800	\$2,000	\$0
2021	\$0	\$238,000	\$0	\$0	\$24,700	\$2,000	\$211,300

The owners are currently accustomed to monthly reserve allocations of approximately **\$109** per suite per month (averaged). If the owners were to continue to fund the reserve account at this level, the reserve balance and will require that the owners having to raise approximately \$22M for special levies over the next thirty years.

The figure below provides a graphical illustration of the status quo funding scenario. The annual contribution into the reserve account is shown by the blue bars, the closing balance in the CRF is shown by the purple line and the special levies (to offset the shortfall in the reserve account) are shown as red bars.

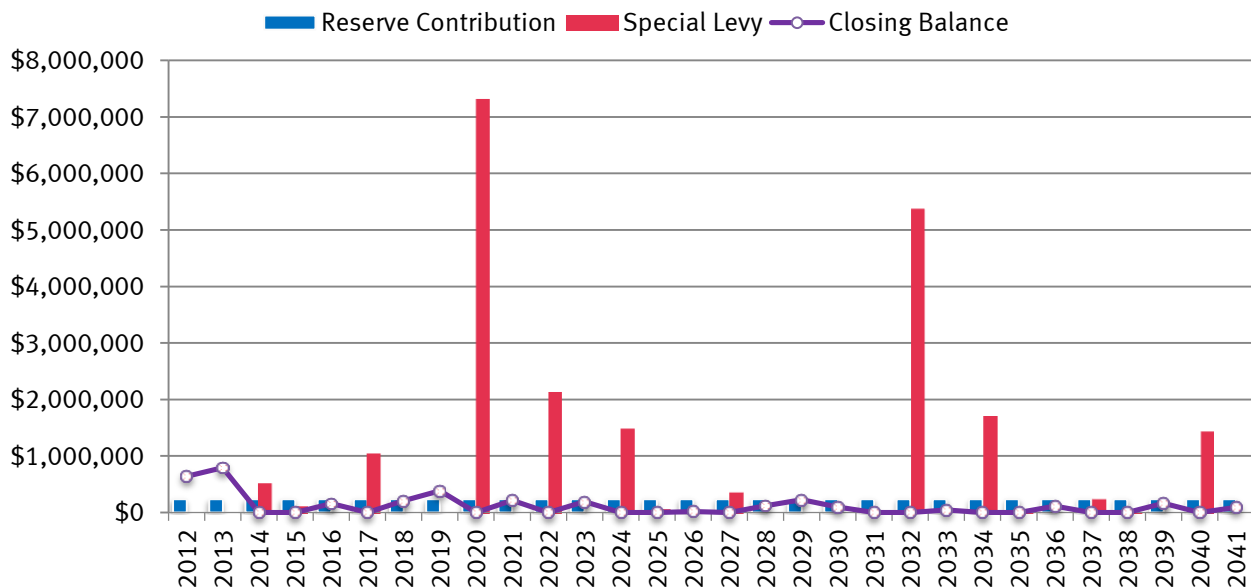


Fig. 5.2.2 Status Quo Funding Model: Graphical Analysis

### 5.3. Funding Scenario “B” – Alternative

The next scenario is based on a fixed annual reserve contribution of approximately **\$270,000 with a 2% annual increase** over the 30-year planning horizon. This represents a reserve contribution that is equivalent to approximately **\$124 per suite per month (averaged)** for the first year.

Table 5.3.1 Alternative Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2012	\$489,000	\$270,000	\$0	\$4,890	\$91,100	\$2,000	\$670,790
2013	\$670,790	\$275,400	\$0	\$6,708	\$88,500	\$2,000	\$862,398
2014	\$862,398	\$280,908	\$424,370	\$8,624	\$1,574,300	\$2,000	\$0
2015	\$0	\$286,526	\$86,574	\$0	\$371,100	\$2,000	\$0
2016	\$0	\$292,257	\$0	\$0	\$80,500	\$2,000	\$209,757
2017	\$209,757	\$298,102	\$945,944	\$2,098	\$1,453,900	\$2,000	\$0
2018	\$0	\$304,064	\$0	\$0	\$31,000	\$2,000	\$271,064
2019	\$271,064	\$310,145	\$0	\$2,711	\$61,500	\$2,000	\$520,420
2020	\$520,420	\$316,348	\$7,099,829	\$5,204	\$7,939,800	\$2,000	\$0
2021	\$0	\$322,675	\$0	\$0	\$24,700	\$2,000	\$295,975

While Scenario “C” does result in eliminating some 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.

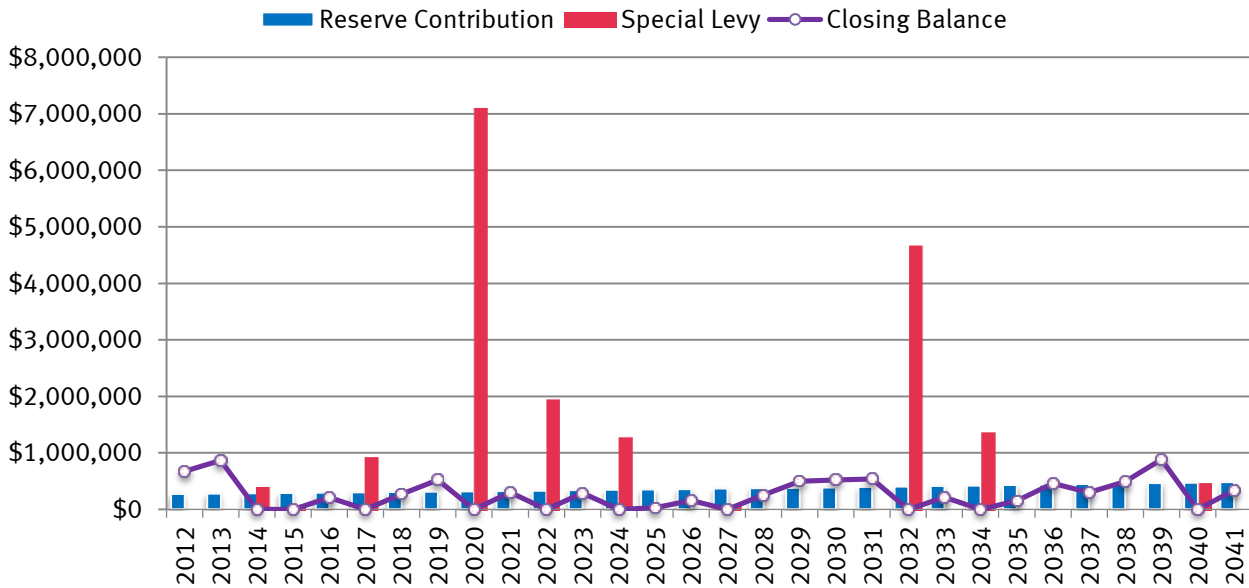


Fig. 5.3.2 Alternative Funding Model: Graphical Analysis

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” – Progressive

The next scenario is based on a fixed annual reserve contribution of approximately **\$863,000** over the 30-year planning horizon. This represents a reserve contribution that is equivalent to approximately **\$395** per suite per month (averaged).

Table 5.4.1 Progressive Funding Model: Cash Flow Table

Fiscal Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Closing Balance
2012	\$489,000	\$863,000	\$0	\$4,890	\$91,100	\$2,000	\$1,263,790
2013	\$1,263,790	\$863,000	\$0	\$12,638	\$88,500	\$2,000	\$2,048,928
2014	\$2,048,928	\$863,000	\$0	\$20,489	\$1,574,300	\$2,000	\$1,356,117
2015	\$1,356,117	\$863,000	\$0	\$13,561	\$371,100	\$2,000	\$1,859,579
2016	\$1,859,579	\$863,000	\$0	\$18,596	\$80,500	\$2,000	\$2,658,674
2017	\$2,658,674	\$863,000	\$0	\$26,587	\$1,453,900	\$2,000	\$2,092,361
2018	\$2,092,361	\$863,000	\$0	\$20,924	\$31,000	\$2,000	\$2,943,285
2019	\$2,943,285	\$863,000	\$0	\$29,433	\$61,500	\$2,000	\$3,772,217
2020	\$3,772,217	\$863,000	\$3,268,861	\$37,722	\$7,939,800	\$2,000	\$0
2021	\$0	\$863,000	\$0	\$0	\$24,700	\$2,000	\$836,300

While Scenario “D” does result in eliminating some 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.

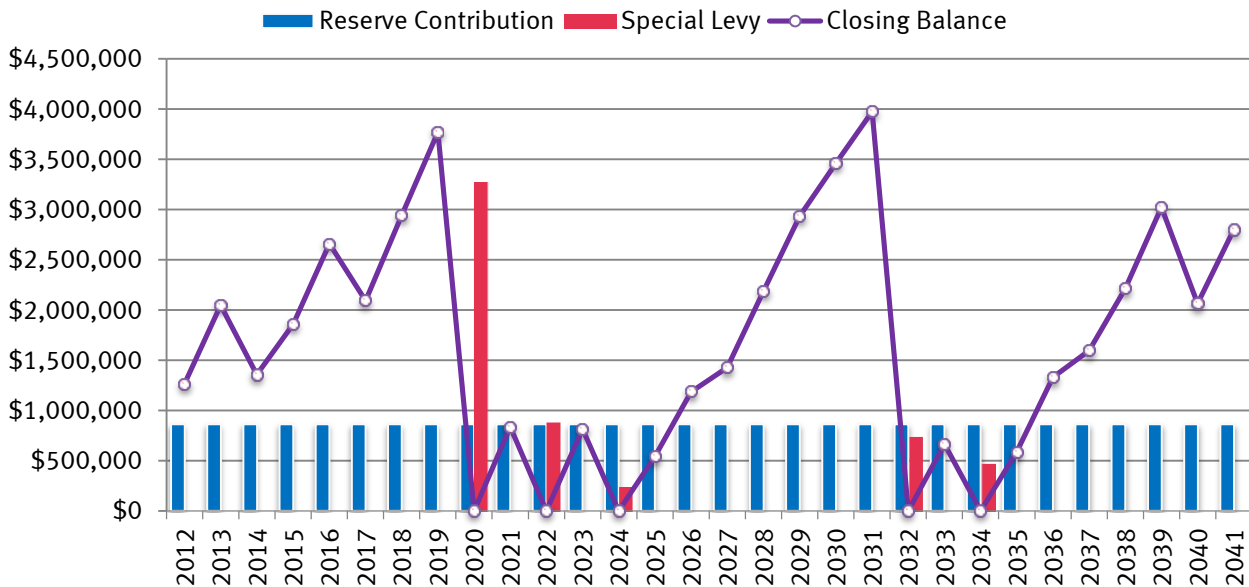


Fig. 5.4.2 Progressive Funding Model: Graphical Analysis

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.



## 5.5. 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 depreciation report.

Since the Depreciation Report has identified about \$29 million in capital reserve and major maintenance projects over the next 30 years, each of the 182 unit owners can estimate their personal share based on unit entitlements.

Each owner, on average, could set aside at least \$200 per unit per month for their personal share of the capital projects and major maintenance over the next 30 years. This will prepare the individual owners for special levies if the corporation does not fund the CRF to an adequate level.

## 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 contingency reserve funds for West Royal.

- **Operating Vs. Capital Costs.** Identify those small capital items that are generally funded from the operating budget, such as exterior lighting. Update the Depreciation Report accordingly.
- **Steward.** Appoint someone as the "Steward" of the Depreciation Report. This individual or committee will act as the timekeeper of the asset renewal schedules and gatekeeper of the renewal and maintenance activities.
- **Condition Assessment.** Conduct a Condition Assessment of the walls, roofs, and windows to validate the assumptions regarding the remaining service lives based on the visual review conducted for the Report. Update the Report with these findings and recommendations as may be required.
- **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 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 system. Please contact our office with any questions or if you should require further information.

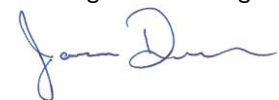
Sincerely,

RDH Building Engineering Ltd.



Brandon Carreira, Dipl.T

Building Asset Management Technologist



Jason Dunn, B.Arch.Sc.

Project Manager

# 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



Asset Inventory

Enclosure

Roofs & Decks



Encl 01

2-Ply SBS Conventional Roof

**Location:** Pool roof and projecting roofs above elevator lobby windows (upper levels).  
**Description:** Two plies of modified bitumen sheet membrane on sloped insulation. The membrane is exposed and the top ply is protected by embedded granules.  
**Chronological Age:** 1                      **Service Life:** 20  
**Effective Age:** 1                      **Remaining Service Life:** 19  
**Outstanding Conditions:** 0



Encl 02

Metal Roof

**Location:** Main roof level for both towers and townhouse turret roofs.  
**Description:** Standing seam roof panels over furring channels on structural steel framing. The roof panels are made from sheet steel with a painted coating. Townhouse roof turrets replaced 2009.  
**Chronological Age:** 20                      **Service Life:** 40  
**Effective Age:** 20                      **Remaining Service Life:** 20  
**Outstanding Conditions:** 0



Encl 03

Decks w/ Pavers

**Location:** Tower and townhouse decks.  
**Description:** 2-ply SBS membrane overlaid with drainage mat, rigid insulation, filter fabric and concrete pavers. The membrane is concealed, and fully bonded to the substrate. Replacement of the existing deck membrane has been carried out at various tower units over the past 4 years. Replacement of the townhouse main roof deck was completed in 2009  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 20                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0

Skylight



Encl 04

Sloped Glazing

**Location:** Pool roof and townhouse main roof.  
**Description:** Skylight assembly consists of a aluminum curtain wall with sealed insulating glass units, pre-finished aluminum frames and associated flashings.  
**Chronological Age:** 1                      **Service Life:** 40  
**Effective Age:** 1                      **Remaining Service Life:** 39  
**Outstanding Conditions:** 0

Fall Protection



**Encl 05**

**Fall Protection Equipment**

**Location:** Roofs.

**Description:** Through bolted safety anchors for boatswain chair access by window washing crews. The system is not designed for suspended stage access.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	25
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	5
		<b>Outstanding Conditions:</b>	0

**Walls**



**Encl 06**

**Rainscreen Stucco Cladding**

**Location:** Townhouse top floor roof deck exterior walls.

**Description:** Acrylic coated stucco with drainage cavity, insulation on exterior gypsum sheathing with a waterproof membrane. The wall assembly replaced the existing EIFS cladding which was removed during the 2009 roof renewal.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	40
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	37
		<b>Outstanding Conditions:</b>	0



**Encl 07**

**EIFS Cladding**

**Location:** Exterior walls.

**Description:** Textured acrylic finish applied over an exterior insulated wall assembly (EIFS) and directly applied to gypsum sheathing.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	25
<b>Effective Age:</b>	17	<b>Remaining Service Life:</b>	8
		<b>Outstanding Conditions:</b>	0



**Encl 08**

**Coated Concrete Frame**

**Location:** Balcony guardwalls, concrete columns, balcony & deck soffits and exposed concrete walls.

**Description:** Cast-in-place concrete walls and columns with a elastomeric based paint finish and acrylic stucco parging.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	10
<b>Effective Age:</b>	7	<b>Remaining Service Life:</b>	3
		<b>Outstanding Conditions:</b>	0

**Windows**



**Encl 09**

**Storefront Windows and Doors**

**Location:** West tower amenity room, fitness facility and pool.

**Description:** The aluminum windows consisting of a framing member, single pane glazing and seals. The amenity room and pool have swing doors as part of the assembly. The storefront glazing located at the lobby entrances to both towers is included within the lobby glazing and door asset.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	30
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	10
		<b>Outstanding Conditions:</b>	0





**Encl 10**

**Aluminum Windows**

**Location:** Townhouses and both towers (floors above main).  
**Description:** Aluminum framed, thermally broken, with double glazed insulated glazing units. Some windows have awning operable vents.  
**Chronological Age:** 20                      **Service Life:** 40  
**Effective Age:** 32                      **Remaining Service Life:** 8  
**Outstanding Conditions:** 0



**Encl 11**

**Glass Block Windows**

**Location:** Townhouses and pool.  
**Description:** Glass block windows with concealed structural framing.  
**Chronological Age:** 20                      **Service Life:** 35  
**Effective Age:** 20                      **Remaining Service Life:** 15  
**Outstanding Conditions:** 0



**Encl 12**

**Window Wall**

**Location:** East and west tower solariums.  
**Description:** Aluminum framed window wall with double glazed insulated units.  
**Chronological Age:** 20                      **Service Life:** 40  
**Effective Age:** 20                      **Remaining Service Life:** 20  
**Outstanding Conditions:** 0

**Doors**



**Encl 13**

**Aluminum Swing Doors**

**Location:** Both towers and townhouses.  
**Description:** Aluminum frames out-swing doors some with transoms and side lites.  
**Chronological Age:** 2                      **Service Life:** 20  
**Effective Age:** 2                      **Remaining Service Life:** 18  
**Outstanding Conditions:** 0



**Encl 14**

**Lobby Door Assemblies**

**Location:** Lobby entrances to both towers.  
**Description:** Commercial glazing system with closers, magnetic locks and electric strike.  
**Chronological Age:** 20                      **Service Life:** 20  
**Effective Age:** 15                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0



**Encl 15**

**Metal Swing Doors**

**Location:** Building exit doors & service rooms.  
**Description:** Steel frame exterior doors, some with glazing, used for exit doors and service rooms.  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 16                      **Remaining Service Life:** 9  
**Outstanding Conditions:** 0



**Encl 16**

**Sliding Glass Doors**

**Location:** Balconies, decks & patios.  
**Description:** Aluminum framed sliding exterior doors with insulated glazing units.  
**Chronological Age:** 20                      **Service Life:** 20  
**Effective Age:** 12                      **Remaining Service Life:** 8  
**Outstanding Conditions:** 0



**Encl 17**

**Townhouse Entry Doors**

**Location:** Townhouses.  
**Description:** Protected entrance doors and casings with coatings for protection against weather exposure.  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 20                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0

**Balconies**



**Encl 18**

**Tiled Balconies on Concrete Slab**

**Location:** Balconies.  
**Description:** Concrete slabs overlaid with ceramic tiles on thin set mortar bed.  
**Chronological Age:** 20                      **Service Life:** 30  
**Effective Age:** 20                      **Remaining Service Life:** 10  
**Outstanding Conditions:** 0



**Encl 19**

**Aluminum & Glass Guardrails**

**Location:** Decks & balconies  
**Description:** Glass and metal frame deck & balcony guardrails.  
**Chronological Age:** 20                      **Service Life:** 40  
**Effective Age:** 20                      **Remaining Service Life:** 20  
**Outstanding Conditions:** 0

**Canopies**





**Encl 20**

**Metal & Glass Canopies**

**Location:** Entrance to both towers and covered walkways

**Description:** Metal framed canopy with glass panels.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0

**At Grade**



**Encl 21**

**At-grade Waterproofing**

**Location:** Parkade podium.

**Description:** Waterproof membrane overburdened with hard landscaping or soil, plantings, water features and irrigation sprinkler piping.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	30
<b>Effective Age:</b>	28	<b>Remaining Service Life:</b>	2
		<b>Outstanding Conditions:</b>	0

**General & Inspections**



**Encl 22**

**Exterior Sealant**

**Location:** Sealant installed at interfaces between various exterior elements (i.e., window to wall interface).

**Description:** A flexible material used to seal a gap between two surfaces to prevent leakage of water and air.

<b>Chronological Age:</b>	5	<b>Service Life:</b>	15
<b>Effective Age:</b>	5	<b>Remaining Service Life:</b>	10
		<b>Outstanding Conditions:</b>	0



**Encl 23**

**Miscellaneous & Inspections**

**Location:** Exterior walls.

**Description:** Miscellaneous interior and exterior components, such as service penetrations and interface details, not related to any particular assembly.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0

**Electrical**

**Power Supply**



**Elec 01**

**Distribution Transformers**

**Location:** Main electrical rooms (east & west towers) & roof top mechanical rooms.

**Description:** Skyway 1750 KVA ventilated, 3 phase, dry-type, with NEMA enclosure, coil and vibration isolators that provide power to receptacles and low voltage loads. System also includes Federal Pioneer & Hammond 450, 75(2) & 30(2) KVA sub-transformers.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0





**Elec 02**

**Emergency Generator**

**Location:**

West tower generator room.

**Description:**

Simpson Power Systems, model SP0300D3P, 300 KW, 375 KVA, 3 phase, 600/24 volt (AC/DC), 6 cylinder diesel synchronous AC generator with one single wall steel fuel tank for standby AC power to certain critical fixtures and appliances, such as fire firefighters elevator, fire pump, certain interior light fixtures.

**Chronological Age:**

20

**Service Life:**

35

**Effective Age:**

20

**Remaining Service Life:**

15

**Outstanding Conditions:**

0

**Distribution**



**Elec 03**

**Electrical Distribution**

**Location:**

Various electrical rooms and metering closets.

**Description:**

Commander switchgear, lighting and distribution panelboards, breakers and wiring to several local sub-panels and mechanical loads.

**Chronological Age:**

20

**Service Life:**

40

**Effective Age:**

20

**Remaining Service Life:**

20

**Outstanding Conditions:**

0

**Light Fixtures**



**Elec 04**

**Exterior Light Fixtures**

**Location:**

Exterior walls, walkways & within the landscaped areas.

**Description:**

A mixture of wall-mounted, soffit recessed and metal bollard fixtures.

**Chronological Age:**

20

**Service Life:**

20

**Effective Age:**

20

**Remaining Service Life:**

0

**Outstanding Conditions:**

0



**Elec 05**

**Interior Lighting Components**

**Location:**

Hallways, stairwells, parkade, service rooms and other rooms throughout.

**Description:**

A variety of fixture types and wattage, including strip fluorescents, pot lights, surface, pendant and wall sconces.

**Chronological Age:**

20

**Service Life:**

25

**Effective Age:**

20

**Remaining Service Life:**

5

**Outstanding Conditions:**

0

**Security**



**Elec 06**

**Enterphone System**

**Location:**

East & west tower lobby entrances.

**Description:**

Enterphone 2000, surface mounted telephone entry panels with associated key pads and display panels.

**Chronological Age:**

20

**Service Life:**

25

**Effective Age:**

20

**Remaining Service Life:**

5

**Outstanding Conditions:**

0

**Mechanical**

**Controls**



**Mech 01**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Valves & Cross Connection**

Various pump and valve rooms.

Various types and sizes of valves, including pressure reducing valves, backflow preventers, 3-way mixing valves and check valves to regulate the flow of water through domestic and hydronic systems.

**Service Life:** 20

**Remaining Service Life:** 17

**Outstanding Conditions:** 0



**Mech 02**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Parkade Gas Detection**

Parkade.

Armstrong, model AMC-1022 electronic sensing devices for detection of dangerous gases, such as carbon monoxide (CO), propane and gasoline, produced by vehicles and to activate the exhaust fans accordingly.

**Service Life:** 10

**Remaining Service Life:** 0

**Outstanding Conditions:** 0



**Mech 03**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Door Actuators**

Lobby doors.

Ingorsol Rand door actuators used to operate the lobby doors.

**Service Life:** 20

**Remaining Service Life:** 13

**Outstanding Conditions:** 0

**Plumbing & Drainage**



**Mech 04**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Domestic Water Distribution**

Connected to fixtures throughout the building.

Mixture of copper for vertical system and PEX piping within the suites.

**Service Life:** 25

**Remaining Service Life:** 22

**Outstanding Conditions:** 0



**Mech 05**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Fixtures - Taps & Sinks**

Amenity room washroom m/f washrooms & kitchen, pool change rooms, staff room & corporate suite.

Hand basins, janitors mop sinks, water fountains and other commercial grade plumbing supply fixtures.

**Service Life:** 25

**Remaining Service Life:** 23

**Outstanding Conditions:** 0





**Mech 06**

**Location:** Amenity room m/f washrooms, pool change rooms & corporate suite.  
**Description:** Ceramic wall hung urinals and floor mounted toilets.  
**Chronological Age:** 20                      **Service Life:** 30  
**Effective Age:** 20                      **Remaining Service Life:** 10  
**Outstanding Conditions:** 0



**Mech 07**

**Location:** P1 boiler room, valve room, sprinkler room & rooftop mechanical rooms.  
**Description:** Grundfos, Armstrong & Taco 1/6, 1/4, & 1/2hp hot water re-circulation pumps.  
**Chronological Age:** 3                      **Service Life:** 8  
**Effective Age:** 3                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0



**Mech 08**

**Location:** P1 stall 337 (simplex), Storage 1 (simplex), P2 stall 3 (duplex), P2 stall 126 (duplex)  
**Description:** Zollar & Myres ,simplex and duplex systems, 1 hp, with PLAD cotrollers sump pump systems for storm and sanitary.  
**Chronological Age:** 20                      **Service Life:** 15  
**Effective Age:** 14                      **Remaining Service Life:** 1  
**Outstanding Conditions:** 0



**Mech 09**

**Location:** P1 Valve room.  
**Description:** Armstrong, model 4380 BF-STD booster pump system with three vertical 10 HP pumps, bronze and stainless steel construction, & Siemens controller unit to supply constant boosted pressure to fixtures and equipment on all levels.  
**Chronological Age:** 3                      **Service Life:** 14  
**Effective Age:** 3                      **Remaining Service Life:** 11  
**Outstanding Conditions:** 0



**Mech 10**

**Location:** East tower rooftop mechanical room.  
**Description:** Gas fired domestic water heaters to supply hot water to the upper floors of the east tower.  
**Chronological Age:** 5                      **Service Life:** 12  
**Effective Age:** 5                      **Remaining Service Life:** 7  
**Outstanding Conditions:** 0



**Mech 11**

**Location:** Sprinkler room, rooftop mechanical rooms,  
**Description:** A.O Smith (model TJV 120) 120 gallon tanks, hot water storage tanks connected to domestic boiler system.  
**Chronological Age:** 3                      **Service Life:** 8  
**Effective Age:** 3                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0



**Mech 12**

**Electric HW Reheat Tank**

**Location:** Sprinkler room, rooftop mechanical rooms, valve room and water feature pump room.

**Description:** A.O Smith (DEL 50-110) and GSW 4.5KW, electric domestic hot water reheat tanks.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	5
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	2
		<b>Outstanding Conditions:</b>	0



**Mech 13**

**DHW Boilers - Gas Fired**

**Location:** P1 boiler room.

**Description:** Allied Engineering, model AAE-2400-N-E, gas fired water heaters, which supply hot water during medium and high demand periods. Boilers are connected to electric storage tanks.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	20
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	17
		<b>Outstanding Conditions:</b>	0



**Mech 14**

**Expansion Tanks**

**Location:** P1 sprinkler room and boiler room.

**Description:** Amitrol Therm-x-Trol, model ST180VC (77 gal.) & Taco, CBX 300-125 (79 gal.) vertical expansion tanks used to handle increases in fluid volume due to temperature changes.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	20
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	17
		<b>Outstanding Conditions:</b>	0

**Heating & Cooling**



**Mech 15**

**Gas Fireplace**

**Location:** West tower amenity room.

**Description:** Natural gas fireplaces with fireplace enclosure, flue, gas piping, gas valve, glass panel and other components.

<b>Chronological Age:</b>	2	<b>Service Life:</b>	30
<b>Effective Age:</b>	2	<b>Remaining Service Life:</b>	28
		<b>Outstanding Conditions:</b>	0



**Mech 16**

**Electric Baseboards**

**Location:** Lobbies, service rooms and fitness facility.

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

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0





**Mech 17**

**Heat Exchangers**

**Location:** P1 Sprinkler room.

**Description:** Allied Engineering shell & tube heat exchangers, models C2.5, C25 & C10.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	20
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	17
		<b>Outstanding Conditions:</b>	0

**Ventilation**



**Mech 18**

**Make up Air Units**

**Location:** Rooftop mechanical rooms and located within the second floor bulkhead with exterior access panel.

**Description:** Reznor and Engineered Air, with 50000, 35000 & 30000 BTU input, belt-driven, to supply tempered fresh air and make-up air to the interior of the building.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	20
<b>Effective Age:</b>	19	<b>Remaining Service Life:</b>	1
		<b>Outstanding Conditions:</b>	0



**Mech 19**

**Parkade Ventilation Fans**

**Location:** Exhaust fans are located at stalls 339, 254, 60,100. Supply fans are located at stalls 196, 14.

**Description:** Belt driven, sidewall propeller fans for supply of fresh air and removal of stale and toxic air from the parking garage. Exhaust fans are controlled by the parkade gas detection system.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	20
<b>Effective Age:</b>	17	<b>Remaining Service Life:</b>	3
		<b>Outstanding Conditions:</b>	0



**Mech 20**

**General Exhaust Fans**

**Location:** Main electrical vault & various service and storage rooms.

**Description:** Direct drive and belt driven ceiling and wall mounted fans.

<b>Chronological Age:</b>	12	<b>Service Life:</b>	10
<b>Effective Age:</b>	7	<b>Remaining Service Life:</b>	3
		<b>Outstanding Conditions:</b>	0

**Other**



**Mech 21**

**Overhead Gate Motors**

**Location:** Parkade access ramps.

**Description:** Dual overhead gate system with Liftmaster Elite series (1/2 hp) and Lynx industries (1/2 hp) AC motor and commercial-grade overhead sectional door controlled by an electric operator and owner fob system.

<b>Chronological Age:</b>	5	<b>Service Life:</b>	8
<b>Effective Age:</b>	5	<b>Remaining Service Life:</b>	3
		<b>Outstanding Conditions:</b>	0

**Elevator**

**Traction**



**Elev 01**

**Location:** East and west towers.  
**Description:** Geared top mount traction elevators with Northern Elevators Limited controls, 25 & 30 hp (AC/DC) drives & Imperial geared machines.  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 20                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0

**Car Interiors**



**Elev 02**

**Location:** East and west towers.  
**Description:** Single speed side opening doors, plastic pushbuttons, LED dot matrix type position indicators, tiled flooring with mirrored walls.  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 15                      **Remaining Service Life:** 10  
**Outstanding Conditions:** 0

**Fire Safety**

**Controls**



**Fire 01**

**Location:** East and west tower lobbies.  
**Description:** Simplex Grinnell addressable, multi-zone, supervised unit with graphic annunciator, LCD display and response phone.  
**Chronological Age:** 1                      **Service Life:** 20  
**Effective Age:** 1                      **Remaining Service Life:** 19  
**Outstanding Conditions:** 0

**Detection**



**Fire 02**

**Location:** Mounted to walls and ceilings in various strategic locations throughout.  
**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.  
**Chronological Age:** 1                      **Service Life:** 20  
**Effective Age:** 1                      **Remaining Service Life:** 19  
**Outstanding Conditions:** 0

**Suppression**



**Fire 03**

**Location:** Sprinkler room.  
**Description:** Swan compressor, model SVU 101, with 1 HP motor and 225 l/min. capacity to increase the pressure of air in the fire sprinkler lines.  
**Chronological Age:** 20                      **Service Life:** 14  
**Effective Age:** 14                      **Remaining Service Life:** 0  
**Outstanding Conditions:** 0





**Fire 04**

**Fire & Jockey Pumps**

**Location:** Sprinkler room.  
**Description:** PLAD motor control centres connected to fire and jockey pump, which work in tandem to supply water flow and pressure to the sprinkler system and standpipe system.  
**Chronological Age:** 20                      **Service Life:** 30  
**Effective Age:** 20                      **Remaining Service Life:** 10  
**Outstanding Conditions:** 0



**Fire 05**

**Portable Fire Extinguishers**

**Location:** Mounted to walls in various strategic locations throughout.  
**Description:** Wall mounted, manually operated, 5lbs and 10lbs ABC type, pressurized vessels for controlled discharge of chemicals to extinguish small fires.  
**Chronological Age:** 20                      **Service Life:** 24  
**Effective Age:** 20                      **Remaining Service Life:** 4  
**Outstanding Conditions:** 0

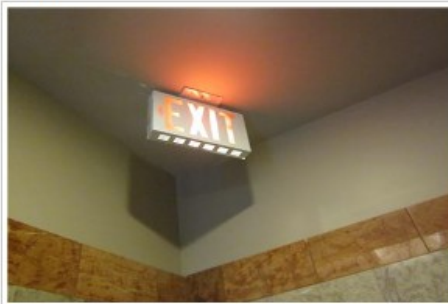


**Fire 06**

**Sprinklers & Standpipe**

**Location:** Sprinkler room.  
**Description:** 4" CSC sprinkler valves, siamese connections at lobby entrances, hose cabinets in the parkade, pendant sprinkler heads and distribution lines.  
**Chronological Age:** 20                      **Service Life:** 40  
**Effective Age:** 20                      **Remaining Service Life:** 20  
**Outstanding Conditions:** 0

**Egress**



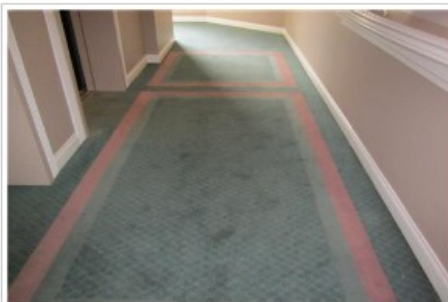
**Fire 07**

**Emergency Exit Signs**

**Location:** Mounted to walls and ceilings in various strategic locations throughout.  
**Description:** Exit signs in metal enclosures.  
**Chronological Age:** 20                      **Service Life:** 20  
**Effective Age:** 20                      **Remaining Service Life:** 0  
**Outstanding Conditions:** 0

**Interior Finishes**

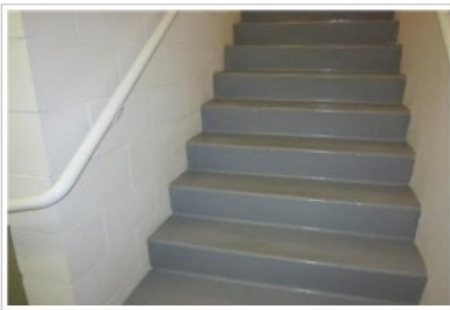
**Floors**



**Finish 01**

**Carpet Flooring**

**Location:** Upper floor corridors, fitness room, mail rooms and corporate suite.  
**Description:** Synthetic, low level loop, textile floor covering laid on cushion over floor substrate with seam binding and door thresholds.  
**Chronological Age:** 1                      **Service Life:** 12  
**Effective Age:** -2                      **Remaining Service Life:** 14  
**Outstanding Conditions:** 0



**Finish 02**

**Painted Concrete Flooring**

**Location:**

Stairwells & service rooms.

**Description:**

Exposed concrete floors, painted in some locations to provide a cleaner finish.

**Chronological Age:**

3

**Service Life:**

8

**Effective Age:**

3

**Remaining Service Life:**

5

**Outstanding Conditions:** 0



**Finish 03**

**Resilient Flooring**

**Location:**

West tower amenity room.

**Description:**

Vinyl tile faux wood flooring, door thresholds and interface thresholds with adjoining floor finishes.

**Chronological Age:**

1

**Service Life:**

20

**Effective Age:**

1

**Remaining Service Life:**

19

**Outstanding Conditions:** 0



**Finish 04**

**Stone Tile Flooring**

**Location:**

Lobbies.

**Description:**

Stone tile flooring on substrate with door thresholds and adjoining floor thresholds.

**Chronological Age:**

20

**Service Life:**

30

**Effective Age:**

20

**Remaining Service Life:**

10

**Outstanding Conditions:** 0



**Finish 05**

**Ceramic Tiled Flooring**

**Location:**

P1 & P2 elevator lobbies, pool change rooms, washrooms, and corporate suite.

**Description:**

Ceramic tiles and grout laid on substrate. Tiled floor associated with the pool deck and spa are included with the Pool Tanks & Deck Asset.

**Chronological Age:**

20

**Service Life:**

25

**Effective Age:**

20

**Remaining Service Life:**

5

**Outstanding Conditions:** 0

**Walls**



**Finish 06**

**Stone Tiled Walls**

**Location:**

Tower lobbies.

**Description:**

Stone tiles on mortar bed and substrate with grout for interface details.

**Chronological Age:**

20

**Service Life:**

35

**Effective Age:**

20

**Remaining Service Life:**

15

**Outstanding Conditions:** 0





**Finish 07**

**Location:** Pool surround, change room showers and corporate suite.  
**Description:** Ceramic tiles on mortar bed and substrate with grout and caulking for interface details.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	30
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	27
		<b>Outstanding Conditions:</b>	0



**Finish 08**

**Location:** Common areas.  
**Description:** Primers and multiple pigmented coating finishes applied to interior gypsum wallboard and mill work trim details.

<b>Chronological Age:</b>	3	<b>Service Life:</b>	10
<b>Effective Age:</b>	3	<b>Remaining Service Life:</b>	7
		<b>Outstanding Conditions:</b>	0



**Finish 09**

**Location:** Fitness facility and main floor elevator lobbies.  
**Description:** Mirrors fastened to interior walls.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	25
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	5
		<b>Outstanding Conditions:</b>	0

**Architectural Woodwork**



**Finish 10**

**Location:** Common corridors above main floor, amenity room, pool change rooms, washrooms and corporate suite.  
**Description:** Shop fabricated casework, countertops with laminate surface, melamine veneer cabinets, moldings, and door casings.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	30
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	10
		<b>Outstanding Conditions:</b>	0

**Furnishings**



**Finish 11**

**Location:** Stairwells, service rooms, utility rooms, amenity room, washrooms, change rooms and parkade vestibules.  
**Description:** Variety of glazed and solid metal swing doors hung in framed openings. Exterior doors are considered separately as part of the building enclosure system.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0



**Finish 12**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Washroom Partitions**

Pool change rooms.

Pressed steel panels and miscellaneous hardware fittings such as pilaster anchors, hinges, latches and brackets.

**Service Life:** 30

**Remaining Service Life:** 10

**Outstanding Conditions:** 0

**Housekeeping**



**Finish 13**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**General Housekeeping**

Throughout the common areas of the east and west.

Cleaning and care of miscellaneous brightwork, millwork, casework, and other interior finishes.

**Service Life:** 25

**Remaining Service Life:** 5

**Outstanding Conditions:** 0

**Amenities**

**Furnishings**



**Amen 01**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Bicycle Storage**

P1 Bike room and P2 storage cage.

Floor mounted, tubular steel framed bike racks located on P1 bike storage room and chain-link enclosure on P2.

**Service Life:** 30

**Remaining Service Life:** 10

**Outstanding Conditions:** 0



**Amen 02**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Central Mailboxes**

Lobbies.

Flush mounted, front loading, suite series, natural finish anodized, extruded aluminum trim, 5-pin cam locks, and Canada postal crown lock.

**Service Life:** 30

**Remaining Service Life:** 10

**Outstanding Conditions:** 0



**Amen 03**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Furniture & Accessories**

Amenity room, main and elevator lobbies.

Wood and fabric furniture, paintings, decorative mirrors, ornaments, and other miscellaneous accessories.

**Service Life:** 15

**Remaining Service Life:** 13

**Outstanding Conditions:** 0





**Amen 04**

**Public Signage**

**Location:** Various interior and exterior common areas.  
**Description:** Variety of permanently displayed information placards in the public areas of the building and site.  
**Chronological Age:** 20                      **Service Life:** 25  
**Effective Age:** 20                      **Remaining Service Life:** 5  
**Outstanding Conditions:** 0



**Amen 05**

**Staff Computer Equipment**

**Location:** Caretakers office.  
**Description:** Computer, monitors, printers, keyboards, and associated electronic devices required for general operations and management of the facility.  
**Chronological Age:** 7                      **Service Life:** 6  
**Effective Age:** 2                      **Remaining Service Life:** 4  
**Outstanding Conditions:** 0

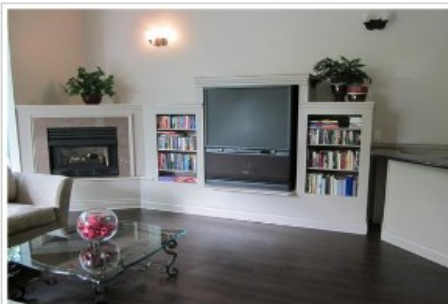
**Amenities**



**Amen 06**

**Corporate Suite**

**Location:** West tower unit 3B.  
**Description:** Millwork, appliances, floor coverings, paintwork, interior doors, small washroom fixtures and other miscellaneous items. Renewal cycles are included with common area assets.  
**Chronological Age:** 20                      **Service Life:** 12  
**Effective Age:** 9                      **Remaining Service Life:** 3  
**Outstanding Conditions:** 0



**Amen 07**

**Audio Visual Equipment**

**Location:** West tower amenity room.  
**Description:** Projector screen television and wall mounted surround sound speaker system.  
**Chronological Age:** 20                      **Service Life:** 10  
**Effective Age:** 10                      **Remaining Service Life:** 0  
**Outstanding Conditions:** 0



**Amen 08**

**Domestic Appliances**

**Location:** West tower amenity room, corporate suite and maintenance staff room.  
**Description:** Refrigerators, microwave ovens, dishwashers, ranges, a garburator, washing machines and a dryer from miscellaneous brands.  
**Chronological Age:** 1                      **Service Life:** 15  
**Effective Age:** 1                      **Remaining Service Life:** 14  
**Outstanding Conditions:** 0



**Amen 09**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Dry Sauna**

Pool facility.

Wood paneling, wood benches, wood door, electric element, controller.

3

3

**Service Life:** 18

**Remaining Service Life:** 15

**Outstanding Conditions:** 0



**Amen 10**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Fitness Equipment**

Ground floor east tower.

Various fitness machines, such as stationary bikes, cable weight station, treadmill and rowing machine

20

10

**Service Life:** 10

**Remaining Service Life:** 0

**Outstanding Conditions:** 0



**Amen 11**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Wood Storage Lockers**

Six individual storage rooms through out the parkade.

Wood framed general purpose storage lockers with swing door hardware.

20

20

**Service Life:** 30

**Remaining Service Life:** 10

**Outstanding Conditions:** 0

**Pool**

**Tank & Deck**



**Pool 01**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Pool Tanks and Deck**

Ground floor adjoining the east and west towers.

Chlorine pool and spa with concrete pilaster lined tank and ceramic tile and grout deck. Pool is approximately 28,000 US Gallons.

4

4

**Service Life:** 15

**Remaining Service Life:** 11

**Outstanding Conditions:** 0

**Support Infrastructure**



**Pool 02**

**Location:**

**Description:**

**Chronological Age:**

**Effective Age:**

**Pool and Spa Circulation and Sanitation**

Pool & spa.

Sand filters, circulation and jet pumps, PVC piping, chemical feeders and other components to distribute sanitized water to the pool and spa.

20

12

**Service Life:** 15

**Remaining Service Life:** 3

**Outstanding Conditions:** 0

**Sitework**

**Hard Landscaping**





**Site 01**

**Location:** Landscaped areas.

**Description:** Painted cast in place concrete elements including planters, concrete stairs, fencing and pillars.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0



**Site 02**

**Location:** Townhouse patios, exterior walkways adjacent to the water features, stairways and various locations throughout the landscaped areas.

**Description:** Aluminum powder coated posts, rails and pickets, with posts fastened to a concrete substrates.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0



**Site 03**

**Location:** Townhouse roof decks.

**Description:** 2x8 roof framing, 2x12 structural beams and 4x4 posts are assembled to form an overhead trellis for upper floor townhouse units.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	35
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	15
		<b>Outstanding Conditions:</b>	0



**Site 04**

**Location:** Parkade access ramps.

**Description:** Poured in place concrete paving (4-6" depth depending whether pedestrian or traffic surfaces); compacted base gravel and compacted sub-grade.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	35
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	15
		<b>Outstanding Conditions:</b>	0



**Site 05**

**Location:** Property driveway, walkways and townhouse patios.

**Description:** Concrete unit pavers, combination of chip seal joint filler and jointing sand, bedding sand, compacted gravel base, compacted sub-base.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	40
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	20
		<b>Outstanding Conditions:</b>	0



**Site 06**

**Location:** Exterior common areas.

**Description:** Metal and wooden benches, and other miscellaneous urban furnishings.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	30
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	10
		<b>Outstanding Conditions:</b>	0



**Site 07**

**Water Features**

**Location:** Main entrance turn around, north elevation adjacent to the townhouses and along the west elevation adjoining the two towers.

**Description:** Recirculating pumps, sand filtration equipment, waterproof liner?, with compacted sub-grade, distribution piping, valves, spiggots.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	20
<b>Effective Age:</b>	16	<b>Remaining Service Life:</b>	4
		<b>Outstanding Conditions:</b>	0

**Soft Landscaping**



**Site 08**

**Groundskeeping & Pest Control**

**Location:** Various locations around the site.

**Description:** Care of miscellaneous site furnishings and hard paved surfaces.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	25
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	5
		<b>Outstanding Conditions:</b>	0



**Site 09**

**Irrigation Sprinklers**

**Location:** Landscaped areas.

**Description:** James Hardie controller with time clock, network of PVC pipes, valves, and irrigation heads buried amongst the exterior 'soft' landscaping.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	15
<b>Effective Age:</b>	15	<b>Remaining Service Life:</b>	0
		<b>Outstanding Conditions:</b>	0



**Site 10**

**Soft Landscaping**

**Location:** Landscaped areas.

**Description:** Lawns, ground cover, shrubs, perennials and trees.

<b>Chronological Age:</b>	20	<b>Service Life:</b>	35
<b>Effective Age:</b>	20	<b>Remaining Service Life:</b>	15
		<b>Outstanding Conditions:</b>	0

# Appendix C

## Asset Service Life Summary





Service Life (Current)

		Est. Future Cost	Chronological Age (as reported in 2011)	Remaining Service Life (as reported in 2011)
<b>Enclosure</b>				
<b>Roofs &amp; Decks</b>				
Encl 01	2-Ply SBS Conventional Roof	\$87,000	1	19
Encl 02	Metal Roof	\$500,000	20	20
Encl 03	Decks w/ Pavers	\$180,000	20	5
<b>Skylight</b>				
Encl 04	Sloped Glazing	\$300,000	1	39
<b>Fall Protection</b>				
Encl 05	Fall Protection Equipment	50	20	5
<b>Walls</b>				
Encl 06	Rainscreen Stucco Cladding	\$190,000	3	37
Encl 07	EIFS Cladding	\$4,800,000	20	8
Encl 08	Coated Concrete Frame	\$170,000	20	3
<b>Windows</b>				
Encl 09	Storefront Windows and Doors	\$84,000	20	10
Encl 10	Aluminum Windows	\$2,200,000	20	8
Encl 11	Glass Block Windows	\$220,000	20	15
Encl 12	Window Wall	\$3,000,000	20	20
<b>Doors</b>				
Encl 13	Aluminum Swing Doors	\$89,000	2	18
Encl 14	Lobby Door Assemblies	\$27,000	20	5
Encl 15	Metal Swing Doors	\$18,000	20	9
Encl 16	Sliding Glass Doors	\$970,000	20	8
Encl 17	Townhouse Entry Doors	\$11,000	20	5
<b>Balconies</b>				
Encl 18	Tiled Balconies on Concrete Slab	\$2,000,000	20	10
Encl 19	Aluminum & Glass Guardrails	\$720,000	20	20
<b>Canopies</b>				
Encl 20	Metal & Glass Canopies	50	20	20
<b>At Grade</b>				
Encl 21	At-grade Waterproofing	\$1,500,000	20	2
<b>General &amp; Inspections</b>				
Encl 22	Exterior Sealant	\$120,000	5	10
Encl 23	Miscellaneous & Inspections	\$210,000	20	20
<b>Electrical</b>				



**Power Supply**

<b>Elec 01</b>	Distribution Transformers	\$260,000	20		20	
<b>Elec 02</b>	Emergency Generator	\$160,000	20		15	

**Distribution**

<b>Elec 03</b>	Electrical Distribution	\$61,000	20		20	
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**Light Fixtures**

<b>Elec 04</b>	Exterior Light Fixtures	\$11,000	20		0	
<b>Elec 05</b>	Interior Lighting Components	\$7,600	20		5	

**Security**

<b>Elec 06</b>	Enterphone System	\$23,000	20		5	
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**► Mechanical**

**Controls**

<b>Mech 01</b>	Valves & Cross Connection	\$29,000	3		17	
<b>Mech 02</b>	Parkade Gas Detection	\$3,700	20		0	
<b>Mech 03</b>	Door Actuators	\$5,300	7		13	

**Plumbing & Drainage**

<b>Mech 04</b>	Domestic Water Distribution	\$1,600,000	3		22	
<b>Mech 05</b>	Fixtures - Taps & Sinks	\$7,200	2		23	
<b>Mech 06</b>	Fixtures - Toilets & Urinals	\$5,000	20		10	
<b>Mech 07</b>	Domestic Recirculation Pumps	\$20,000	3		5	
<b>Mech 08</b>	Sump Pumps	\$8,700	20		1	
<b>Mech 09</b>	Domestic Booster Pumps	\$25,000	3		11	
<b>Mech 10</b>	Domestic Water Heater	\$9,000	5		7	
<b>Mech 11</b>	DHW Storage Tanks	\$16,000	3		5	
<b>Mech 12</b>	Electric HW Reheat Tank	\$5,300	3		2	
<b>Mech 13</b>	DHW Boilers - Gas Fired	\$57,000	3		17	
<b>Mech 14</b>	Expansion Tanks	\$2,900	3		17	

**Heating & Cooling**

<b>Mech 15</b>	Gas Fireplace	\$4,000	2		28	
<b>Mech 16</b>	Electric Baseboards	\$3,400	20		20	
<b>Mech 17</b>	Heat Exchangers	\$14,000	3		17	

**Ventilation**

<b>Mech 18</b>	Make up Air Units	\$62,000	20		1	
<b>Mech 19</b>	Parkade Ventilation Fans	\$9,700	20		3	
<b>Mech 20</b>	General Exhaust Fans	\$7,800	12		3	

**Other**

<b>Mech 21</b>	Overhead Gate Motors	\$2,700	5		3	
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**► Elevator**

**Traction**

<b>Elev 01</b>	Geared Traction, Overhead	\$680,000	20		5	
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**Car Interiors**

<b>Elev 02</b>	Elevator Cabs & Hoistway	\$170,000	20		10	
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**► Fire Safety**

Controls						
Fire 01	Fire Control Panels - Addressable	\$120,000	1	<div style="width: 100%;"></div>	19	<div style="width: 100%;"></div>
Detection						
Fire 02	Fire Detection & Alarm	\$120,000	1	<div style="width: 100%;"></div>	19	<div style="width: 100%;"></div>
Suppression						
Fire 03	Dry Sprinkler Compressor	\$2,600	20	<div style="width: 100%;"></div>	0	<div style="width: 100%;"></div>
Fire 04	Fire & Jockey Pumps	\$34,000	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Fire 05	Portable Fire Extinguishers	\$4,900	20	<div style="width: 100%;"></div>	4	<div style="width: 100%;"></div>
Fire 06	Sprinklers & Standpipe	\$200,000	20	<div style="width: 100%;"></div>	20	<div style="width: 100%;"></div>
Egress						
Fire 07	Emergency Exit Signs	\$15,000	20	<div style="width: 100%;"></div>	0	<div style="width: 100%;"></div>
► Interior Finishes						
Floors						
Finish 01	Carpet Flooring	\$140,000	1	<div style="width: 100%;"></div>	14	<div style="width: 100%;"></div>
Finish 02	Painted Concrete Flooring	\$11,000	3	<div style="width: 100%;"></div>	5	<div style="width: 100%;"></div>
Finish 03	Resilient Flooring	\$18,000	1	<div style="width: 100%;"></div>	19	<div style="width: 100%;"></div>
Finish 04	Stone Tile Flooring	\$16,000	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Finish 05	Ceramic Tiled Flooring	\$54,000	20	<div style="width: 100%;"></div>	5	<div style="width: 100%;"></div>
Walls						
Finish 06	Stone Tiled Walls	\$28,000	20	<div style="width: 100%;"></div>	15	<div style="width: 100%;"></div>
Finish 07	Ceramic Tiled Walls	\$12,000	3	<div style="width: 100%;"></div>	27	<div style="width: 100%;"></div>
Finish 08	Interior Painting	\$12,000	3	<div style="width: 100%;"></div>	7	<div style="width: 100%;"></div>
Finish 09	Mirrored Walls	\$7,300	20	<div style="width: 100%;"></div>	5	<div style="width: 100%;"></div>
Architectural Woodwork						
Finish 10	Carpentry & Millwork	\$20,000	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Furnishings						
Finish 11	Interior Swing Doors	\$18,000	20	<div style="width: 100%;"></div>	20	<div style="width: 100%;"></div>
Finish 12	Washroom Partitions	\$5,000	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Housekeeping						
Finish 13	General Housekeeping	\$0	20	<div style="width: 100%;"></div>	5	<div style="width: 100%;"></div>
► Amenities						
Furnishings						
Amen 01	Bicycle Storage	\$2,500	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Amen 02	Central Mailboxes	\$31,000	20	<div style="width: 100%;"></div>	10	<div style="width: 100%;"></div>
Amen 03	Furniture & Accessories	\$13,000	2	<div style="width: 100%;"></div>	13	<div style="width: 100%;"></div>
Amen 04	Public Signage	\$6,800	20	<div style="width: 100%;"></div>	5	<div style="width: 100%;"></div>
Amen 05	Staff Computer Equipment	\$1,700	7	<div style="width: 100%;"></div>	4	<div style="width: 100%;"></div>
Amenities						
Amen 06	Corporate Suite	\$3,200	20	<div style="width: 100%;"></div>	3	<div style="width: 100%;"></div>
Amen 07	Audio Visual Equipment	\$2,000	20	<div style="width: 100%;"></div>	0	<div style="width: 100%;"></div>
Amen 08	Domestic Appliances	\$2,700	1	<div style="width: 100%;"></div>	14	<div style="width: 100%;"></div>
Amen 09	Dry Sauna	\$14,000	3	<div style="width: 100%;"></div>	15	<div style="width: 100%;"></div>

<b>Amen 10</b>	Fitness Equipment	\$3,100	20		0	
<b>Amen 11</b>	Wood Storage Lockers	\$2,200	20		10	
<b>► Pool</b>						
<b>Tank &amp; Deck</b>						
<b>Pool 01</b>	Pool Tanks and Deck	\$13,000	4		11	
<b>Support Infrastructure</b>						
<b>Pool 02</b>	Pool and Spa Circulation and Sanitation	\$5,400	20		3	
<b>► Sitework</b>						
<b>Hard Landscaping</b>						
<b>Site 01</b>	Concrete Fencing & Planters	\$1,200	20		20	
<b>Site 02</b>	Metal Fencing, Railings and Gates	\$120,000	20		20	
<b>Site 03</b>	Wood Trellis Structures	\$14,000	20		15	
<b>Site 04</b>	Concrete Paving	\$7,400	20		15	
<b>Site 05</b>	Interlocking Unit Paving	\$110,000	20		20	
<b>Site 06</b>	Site Furniture	\$1,900	20		10	
<b>Site 07</b>	Water Features	\$8,800	20		4	
<b>Soft Landscaping</b>						
<b>Site 08</b>	Groundskeeping & Pest Control	\$1,700	20		5	
<b>Site 09</b>	Irrigation Sprinklers	\$5,100	20		0	
<b>Site 10</b>	Soft Landscaping	\$110,000	20		15	

**\*PREDICTING THE FUTURE:**

The life expectancy information in this report is intended as a guide only and is considered to be representative of the useful life of building elements. The actual life span of any asset may vary considerably depending on several factors, such as:

- 1.The appropriateness of the design of the asset.
- 2.The quality of the materials used in constructing the asset.
- 3.The level of maintenance and sustainment activities applied to achieve the full service life of the asset.
- 4.The extent of use, misuse and abuse of the asset.
- 5.The general operating conditions, such as exposure to mechanical damage.
- 6.The service environment conditions, such as exposure to extraordinary levels of dust, dirt and other environmental factors.
- 7.Extraordinary events, such as insurance losses (fire, flood, earthquake).

# Appendix D

## Funding Scenario Cash Flow Tables

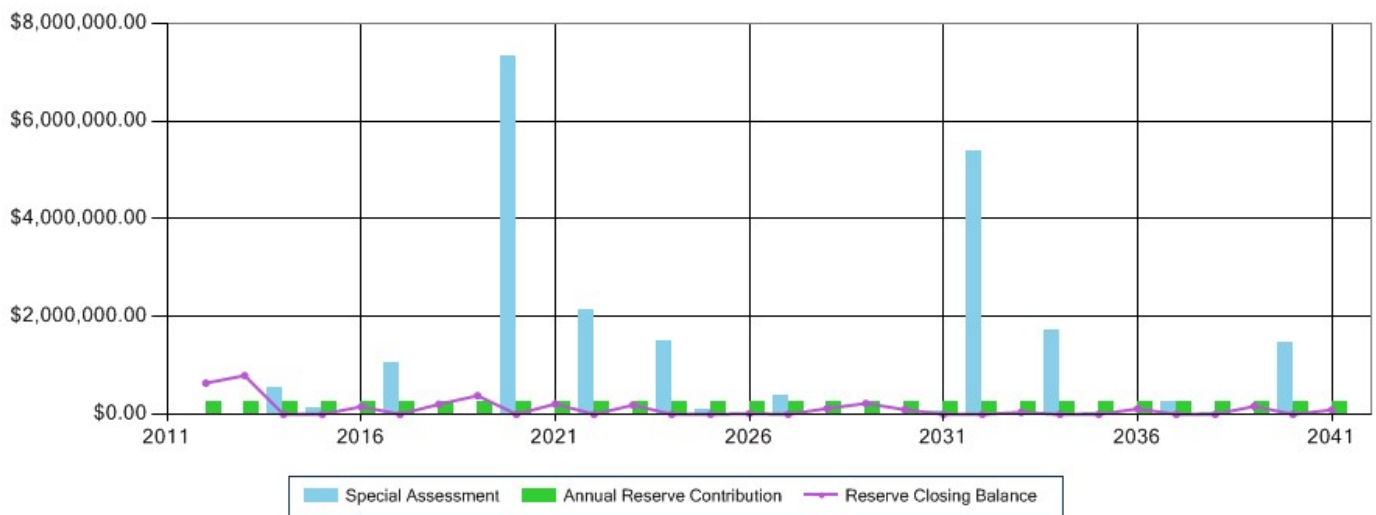




Funding Model (Basic) ⤴

Name	Fixed annual funding of \$238,000 (Status Quo)		
Type	Basic	Init Catchup Cost	\$0
Regarding	West Royal	Operating Budget	\$953,109
Start Year	2012	Starting Reserve Balance	\$489,000
Interest/Investment Rate	1.0%	Reserver Contribution Threshold	\$500,000
Estimated Contingency Allowance	\$2,000	Contribution Below Threshold	\$238,000
Tax Rate	0.0%	Contribution Above Threshold	\$238,000
Planning Horizon	30	Reserve Contribution Increase	0.0%
Number Of Units	182	Monthly Avg. Unit Contribution	\$109

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2012	\$489,000	\$238,000	\$0	\$4,890	\$91,100	\$2,000	\$0	\$638,790	5.74 %
2013	\$638,790	\$238,000	\$0	\$6,388	\$88,500	\$2,000	\$0	\$792,678	6.57 %
2014	\$792,678	\$238,000	\$537,695	\$7,927	\$1,574,300	\$2,000	\$0	\$0	0.00 %
2015	\$0	\$238,000	\$135,100	\$0	\$371,100	\$2,000	\$0	\$0	0.00 %
2016	\$0	\$238,000	\$0	\$0	\$80,500	\$2,000	\$0	\$155,500	1.18 %
2017	\$155,500	\$238,000	\$1,060,845	\$1,555	\$1,453,900	\$2,000	\$0	\$0	0.00 %
2018	\$0	\$238,000	\$0	\$0	\$31,000	\$2,000	\$0	\$205,000	1.48 %
2019	\$205,000	\$238,000	\$0	\$2,050	\$61,500	\$2,000	\$0	\$381,550	2.58 %
2020	\$381,550	\$238,000	\$7,318,435	\$3,816	\$7,939,800	\$2,000	\$0	\$0	0.00 %
2021	\$0	\$238,000	\$0	\$0	\$24,700	\$2,000	\$0	\$211,300	2.44 %
2022	\$211,300	\$238,000	\$2,144,287	\$2,113	\$2,593,700	\$2,000	\$0	\$0	0.00 %
2023	\$0	\$238,000	\$0	\$0	\$47,800	\$2,000	\$0	\$188,200	2.53 %
2024	\$188,200	\$238,000	\$1,500,118	\$1,882	\$1,926,200	\$2,000	\$0	\$0	0.00 %
2025	\$0	\$238,000	\$85,600	\$0	\$321,600	\$2,000	\$0	\$0	0.00 %
2026	\$0	\$238,000	\$0	\$0	\$220,800	\$2,000	\$0	\$15,200	0.22 %
2027	\$15,200	\$238,000	\$378,748	\$152	\$630,100	\$2,000	\$0	\$0	0.00 %
2028	\$0	\$238,000	\$0	\$0	\$117,500	\$2,000	\$0	\$118,500	1.61 %
2029	\$118,500	\$238,000	\$0	\$1,185	\$132,600	\$2,000	\$0	\$223,085	2.84 %
2030	\$223,085	\$238,000	\$0	\$2,231	\$365,200	\$2,000	\$0	\$96,116	1.18 %
2031	\$96,116	\$238,000	\$47,123	\$961	\$380,200	\$2,000	\$0	\$0	0.00 %
2032	\$0	\$238,000	\$5,380,900	\$0	\$5,616,900	\$2,000	\$0	\$0	0.00 %
2033	\$0	\$238,000	\$0	\$0	\$195,100	\$2,000	\$0	\$40,900	1.13 %
2034	\$40,900	\$238,000	\$1,732,691	\$409	\$2,010,000	\$2,000	\$0	\$0	0.00 %
2035	\$0	\$238,000	\$37,200	\$0	\$273,200	\$2,000	\$0	\$0	0.00 %
2036	\$0	\$238,000	\$0	\$0	\$124,900	\$2,000	\$0	\$111,100	5.33 %
2037	\$111,100	\$238,000	\$259,989	\$1,111	\$608,200	\$2,000	\$0	\$0	0.00 %
2038	\$0	\$238,000	\$23,500	\$0	\$259,500	\$2,000	\$0	\$0	0.00 %
2039	\$0	\$238,000	\$0	\$0	\$73,000	\$2,000	\$0	\$163,000	9.10 %
2040	\$163,000	\$238,000	\$1,450,170	\$1,630	\$1,850,800	\$2,000	\$0	\$0	0.00 %
2041	\$0	\$238,000	\$0	\$0	\$146,700	\$2,000	\$0	\$89,300	100.00 %
		\$7,140,000	\$22,092,401		\$29,610,400				



 [BAMS Disclaimer](#)

#### MAINTENANCE CHECKLIST

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9. Cost savings may be realized depending on the use of in-house labor or 3rd party-contractors.
10. The estimates do not include allowances for general conditions, such as site specific access requirements and environmental concerns, which should be addressed on a project-by-project basis.
11. Consideration may sometimes need to be given to costs arising from the impact of projects on occupancy use and facility operations.

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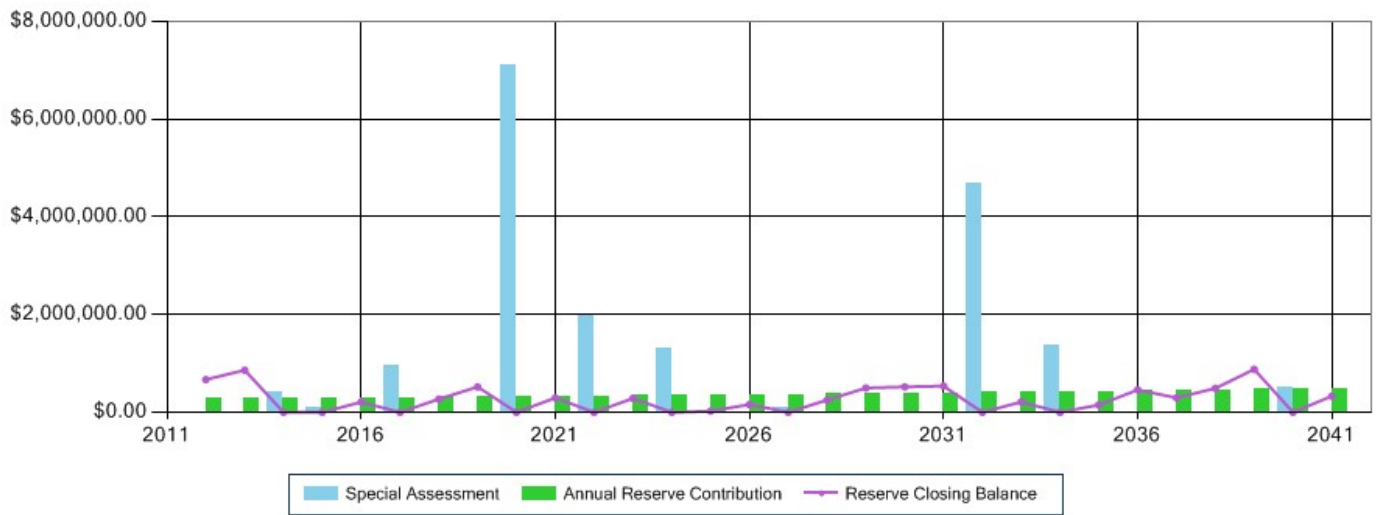




Funding Model (Basic) ⤴

Name	Fixed annual funding of \$270,000 (plus 2%)		
Type	Basic	Init Catchup Cost	\$0
Regarding	West Royal	Operating Budget	\$953,109
Start Year	2012	Starting Reserve Balance	\$489,000
Interest/Investment Rate	1.0%	Reserver Contribution Threshold	\$500,000
Estimated Contingency Allowance	\$2,000	Contribution Below Threshold	\$270,000
Tax Rate	0.0%	Contribution Above Threshold	\$270,000
Planning Horizon	30	Reserve Contribution Increase	2.0%
Number Of Units	182	Monthly Avg. Unit Contribution	\$124

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2012	\$489,000	\$270,000	\$0	\$4,890	\$91,100	\$2,000	\$0	\$670,790	6.03 %
2013	\$670,790	\$275,400	\$0	\$6,708	\$88,500	\$2,000	\$0	\$862,398	7.15 %
2014	\$862,398	\$280,908	\$424,370	\$8,624	\$1,574,300	\$2,000	\$0	\$0	0.00 %
2015	\$0	\$286,526	\$86,574	\$0	\$371,100	\$2,000	\$0	\$0	0.00 %
2016	\$0	\$292,257	\$0	\$0	\$80,500	\$2,000	\$0	\$209,757	1.59 %
2017	\$209,757	\$298,102	\$945,944	\$2,098	\$1,453,900	\$2,000	\$0	\$0	0.00 %
2018	\$0	\$304,064	\$0	\$0	\$31,000	\$2,000	\$0	\$271,064	1.96 %
2019	\$271,064	\$310,145	\$0	\$2,711	\$61,500	\$2,000	\$0	\$520,420	3.52 %
2020	\$520,420	\$316,348	\$7,099,829	\$5,204	\$7,939,800	\$2,000	\$0	\$0	0.00 %
2021	\$0	\$322,675	\$0	\$0	\$24,700	\$2,000	\$0	\$295,975	3.42 %
2022	\$295,975	\$329,128	\$1,967,637	\$2,960	\$2,593,700	\$2,000	\$0	\$0	0.00 %
2023	\$0	\$335,711	\$0	\$0	\$47,800	\$2,000	\$0	\$285,911	3.85 %
2024	\$285,911	\$342,425	\$1,297,005	\$2,859	\$1,926,200	\$2,000	\$0	\$0	0.00 %
2025	\$0	\$349,274	\$0	\$0	\$321,600	\$2,000	\$0	\$25,674	0.39 %
2026	\$25,674	\$356,259	\$0	\$257	\$220,800	\$2,000	\$0	\$159,390	2.32 %
2027	\$159,390	\$363,384	\$107,732	\$1,594	\$630,100	\$2,000	\$0	\$0	0.00 %
2028	\$0	\$370,652	\$0	\$0	\$117,500	\$2,000	\$0	\$251,152	3.42 %
2029	\$251,152	\$378,065	\$0	\$2,512	\$132,600	\$2,000	\$0	\$497,129	6.34 %
2030	\$497,129	\$385,626	\$0	\$4,971	\$365,200	\$2,000	\$0	\$520,526	6.41 %
2031	\$520,526	\$393,339	\$0	\$5,205	\$380,200	\$2,000	\$0	\$536,870	6.40 %
2032	\$536,870	\$401,206	\$4,675,455	\$5,369	\$5,616,900	\$2,000	\$0	\$0	0.00 %
2033	\$0	\$409,230	\$0	\$0	\$195,100	\$2,000	\$0	\$212,130	5.90 %
2034	\$212,130	\$417,414	\$1,380,335	\$2,121	\$2,010,000	\$2,000	\$0	\$0	0.00 %
2035	\$0	\$425,763	\$0	\$0	\$273,200	\$2,000	\$0	\$150,563	7.69 %
2036	\$150,563	\$434,278	\$0	\$1,506	\$124,900	\$2,000	\$0	\$459,446	22.06 %
2037	\$459,446	\$442,963	\$0	\$4,594	\$608,200	\$2,000	\$0	\$296,804	17.24 %
2038	\$296,804	\$451,823	\$0	\$2,968	\$259,500	\$2,000	\$0	\$490,095	29.29 %
2039	\$490,095	\$460,859	\$0	\$4,901	\$73,000	\$2,000	\$0	\$880,855	49.18 %
2040	\$880,855	\$470,076	\$493,060	\$8,809	\$1,850,800	\$2,000	\$0	\$0	0.00 %
2041	\$0	\$479,478	\$0	\$0	\$146,700	\$2,000	\$0	\$330,778	100.00 %
		\$10,953,378	\$18,477,940		\$29,610,400				



 **BAMS Disclaimer**

**MAINTENANCE CHECKLIST**

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5. The maintenance checklists and maintenance intervals must be reviewed annually and adjusted, as required, to reflect the service environment, feedback from contractors, etc

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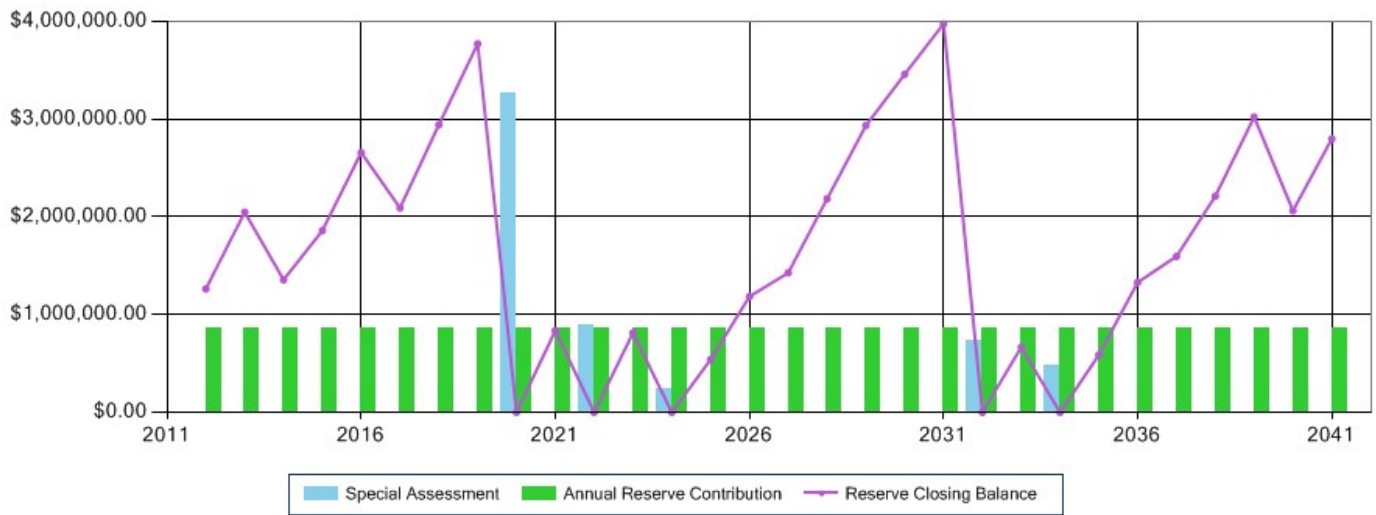




Funding Model (Basic) ⤴

Name	Fixed annual funding of \$863,000 (Progressive)		
Type	Basic	Init Catchup Cost	\$0
Regarding	West Royal	Operating Budget	\$953,109
Start Year	2012	Starting Reserve Balance	\$489,000
Interest/Investment Rate	1.0%	Reserver Contribution Threshold	\$500,000
Estimated Contingency Allowance	\$2,000	Contribution Below Threshold	\$863,000
Tax Rate	0.0%	Contribution Above Threshold	\$863,000
Planning Horizon	30	Reserve Contribution Increase	0.0%
Number Of Units	182	Monthly Avg. Unit Contribution	\$395

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2012	\$489,000	\$863,000	\$0	\$4,890	\$91,100	\$2,000	\$0	\$1,263,790	11.36 %
2013	\$1,263,790	\$863,000	\$0	\$12,638	\$88,500	\$2,000	\$0	\$2,048,928	16.99 %
2014	\$2,048,928	\$863,000	\$0	\$20,489	\$1,574,300	\$2,000	\$0	\$1,356,117	11.74 %
2015	\$1,356,117	\$863,000	\$0	\$13,561	\$371,100	\$2,000	\$0	\$1,859,579	15.25 %
2016	\$1,859,579	\$863,000	\$0	\$18,596	\$80,500	\$2,000	\$0	\$2,658,674	20.22 %
2017	\$2,658,674	\$863,000	\$0	\$26,587	\$1,453,900	\$2,000	\$0	\$2,092,361	16.39 %
2018	\$2,092,361	\$863,000	\$0	\$20,924	\$31,000	\$2,000	\$0	\$2,943,285	21.37 %
2019	\$2,943,285	\$863,000	\$0	\$29,433	\$61,500	\$2,000	\$0	\$3,772,217	25.52 %
2020	\$3,772,217	\$863,000	\$3,268,861	\$37,722	\$7,939,800	\$2,000	\$0	\$0	0.00 %
2021	\$0	\$863,000	\$0	\$0	\$24,700	\$2,000	\$0	\$836,300	9.66 %
2022	\$836,300	\$863,000	\$888,037	\$8,363	\$2,593,700	\$2,000	\$0	\$0	0.00 %
2023	\$0	\$863,000	\$0	\$0	\$47,800	\$2,000	\$0	\$813,200	10.95 %
2024	\$813,200	\$863,000	\$243,868	\$8,132	\$1,926,200	\$2,000	\$0	\$0	0.00 %
2025	\$0	\$863,000	\$0	\$0	\$321,600	\$2,000	\$0	\$539,400	8.36 %
2026	\$539,400	\$863,000	\$0	\$5,394	\$220,800	\$2,000	\$0	\$1,184,994	17.32 %
2027	\$1,184,994	\$863,000	\$0	\$11,850	\$630,100	\$2,000	\$0	\$1,427,744	20.88 %
2028	\$1,427,744	\$863,000	\$0	\$14,277	\$117,500	\$2,000	\$0	\$2,185,522	29.79 %
2029	\$2,185,522	\$863,000	\$0	\$21,855	\$132,600	\$2,000	\$0	\$2,935,777	37.47 %
2030	\$2,935,777	\$863,000	\$0	\$29,358	\$365,200	\$2,000	\$0	\$3,460,935	42.65 %
2031	\$3,460,935	\$863,000	\$0	\$34,609	\$380,200	\$2,000	\$0	\$3,976,344	47.43 %
2032	\$3,976,344	\$863,000	\$739,793	\$39,763	\$5,616,900	\$2,000	\$0	\$0	0.00 %
2033	\$0	\$863,000	\$0	\$0	\$195,100	\$2,000	\$0	\$665,900	18.52 %
2034	\$665,900	\$863,000	\$476,441	\$6,659	\$2,010,000	\$2,000	\$0	\$0	0.00 %
2035	\$0	\$863,000	\$0	\$0	\$273,200	\$2,000	\$0	\$587,800	30.03 %
2036	\$587,800	\$863,000	\$0	\$5,878	\$124,900	\$2,000	\$0	\$1,329,778	63.87 %
2037	\$1,329,778	\$863,000	\$0	\$13,298	\$608,200	\$2,000	\$0	\$1,595,876	92.72 %
2038	\$1,595,876	\$863,000	\$0	\$15,959	\$259,500	\$2,000	\$0	\$2,213,335	132.29 %
2039	\$2,213,335	\$863,000	\$0	\$22,133	\$73,000	\$2,000	\$0	\$3,023,468	168.81 %
2040	\$3,023,468	\$863,000	\$0	\$30,235	\$1,850,800	\$2,000	\$0	\$2,063,903	1,638.01 %
2041	\$2,063,903	\$863,000	\$0	\$20,639	\$146,700	\$2,000	\$0	\$2,798,842	100.00 %
		\$25,890,000	\$5,617,000		\$29,610,400				



 BAMS Disclaimer

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9. Cost savings may be realized depending on the use of in-house labor or 3rd party-contractors.
10. The estimates do not include allowances for general conditions, such as site specific access requirements and environmental concerns, which should be addressed on a project-by-project basis.
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# Appendix E

## Disclosures and Disclaimers

## 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 regarding 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





## 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



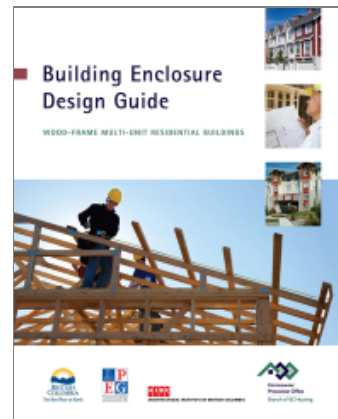
**Phil Johnson, P.Eng.**

- 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





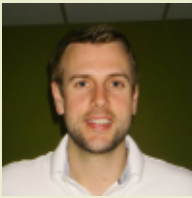
**Harvey Goodman, P.Eng.**

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



**Serge Desmarais, MAIBC, 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



**Rob Mathena, Dipl.T.**

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



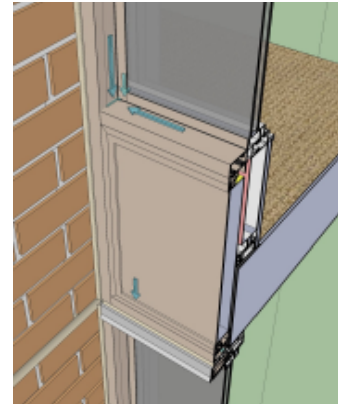
**Brandon Carreira, Dipl.T.**

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



**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



**climatesmart  
business2011**

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

# Appendix G

Insurance Certificate

**Ref. No. 320006531726**

**CERTIFICATE OF INSURANCE**

Aon Reed Stenhouse Inc.  
900 Howe Street  
P.O. Box 3228  
Vancouver BC V6B 3X8  
tel 604-688-4442 fax 604-682-4026

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**

<b>Professional Liability</b>	<b>Insurer</b>	Lloyd's Underwriters	
<b>Policy #</b>	QC1202155		
<b>Effective</b>	02-May-2012	<b>Expiry</b>	02-May-2013
<b>Limits of Liability</b>	Subject to aggregate where applicable		

**Terms and / or Additional Coverage**

Worldwide Coverage; Limit of Liability - CAD \$2,000,000 any one claim and CAD \$4,000,000 in the aggregate annually.

**Cancellation / Termination**

The Insurer will endeavour to provide THIRTY ( 30 ) days written notice of cancellation/termination to the addressee except that statutory or policy conditions (whichever prevails) will apply for non-payment of premium.

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.**



Dated : 26-April-2012  
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,**

**THE POLICY CONTAINS A PARTIAL PAYMENT OF LOSS CLAUSE**

