



JRS ENGINEERING
BUILDING ENVELOPE CONSULTANTS

DEPRECIATION REPORT

AZURA ONE

1438 RICHARDS STREET
VANCOUVER, BC



PREPARED FOR: The Owners, Strata Plan BCS679
c/o Rancho Management Services
8th Floor – 1125 Howe Street
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DATE: **APRIL 9, 2021**

JRS PROJECT: VR11020B

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PREFACE

The purpose of this Depreciation Report is to assist the owners in the asset management of their property with respect to the major building systems and components. JRS has reviewed pertinent building documents, communicated with building representatives, and performed a visual site review, all of which is summarized in this report.

The provisions of this Depreciation Report, including Reserve Planner qualifications, insurance requirements and site review and reporting methods, address all the requirements of the current Strata Property Act (Section 94) and its associated Regulation – BC Reg43/2000 (Part 6). These methods are also consistent with nationwide standards and guidelines provided by the Real Estate Institute of Canada (REIC).

In accordance with Strata Property Regulation requirements, JRS Engineering Ltd. confirms that it and its employees, directors and affiliates are unaware of any conflicting relationship with the strata corporation. This Depreciation Report is being provided independently, with no other purpose than to provide the strata corporation with an objective report in accordance with the Engineering Services Agreement executed on September 22, 2020.

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1.0 EXECUTIVE SUMMARY

JRS Engineering Ltd. (JRS) was retained by The Owners, Strata Plan BCS679 to complete a Depreciation Report on Azura One, located at 1438 Richards Street, Vancouver, BC. The purpose of this report is to assist in allocating the anticipated reserve fund expenditures associated with the major systems and components of the building. This executive summary should be read with the rest of the report in its entirety to recognize the full context.

Based on the Contingency Reserve Fund (CRF) balance, contributions and requirements, the strata corporation's CRF finances are in above average financial condition relative to other properties of similar size and type.

Since JRS has created hundreds of Depreciation Reports to date, we have compiled some useful information for the benefit of our clients to illustrate how your property compares to others of similar type, size and age. The table below compares other high-rise properties containing 200+ units built around the same time as your property.

#	Year Built	# of Units	Operating Budget	CRF Balance	Annual CRF Contribution	# SLs*	Inflation Adjusted Total SL Costs	Monthly Strata Fee	Contribution /ARFA
1	2006	306	\$452,900	\$100,023	\$70,325	1	\$2,130,389	\$123	56%
2	2005	251	\$742,620	\$240,785	\$103,000	8	\$6,185,894	\$247	18%
3	2006	378	\$1,428,800	\$780,719	\$150,000	5	\$14,979,754	\$315	18%
4	2006	378	\$1,284,828	\$1,514,478	\$150,000	6	\$19,244,756	\$283	17%
5	2006	419	\$1,508,805	\$559,103	\$106,151	5	\$11,074,223	\$300	17%
6	2007	245	\$1,061,342	\$390,350	\$50,000	7	\$10,599,106	\$361	11%
7	2007	211	\$852,022	\$332,625	\$40,000	8	\$8,881,361	\$337	10%
8	2006	268	\$753,658	\$69,639	\$3,459	8	\$6,795,156	\$234	1%
Your Property	2004	207	\$1,231,611	\$1,102,315	\$150,000	2	\$17,156,224	\$559	21%

* Number of estimated special levies/assessments based on their baseline 30-year cost projection/funding model

As shown above, the operating budget, CRF balance, annual CRF contribution, number of special levies and monthly strata fees are better than most properties of similar type, size and age, despite being the smallest in size. However, it should be noted that the cumulative costs of any special levies within a 30-year timeframe are quite high, which is a good reason to continue to save. Lastly, the "Contribution" divided by the "ARFA" (Annual Reserve Fund Assessment) percentage, which is one of the best metrics in indicating how a strata property's CRF finances are doing, scored quite high, relative to other properties.

As mentioned above, significant renewal costs will be expected to occur in the next 30 years. Therefore, it would be prudent for the strata corporation to still increase its CRF contributions. We recommend you increase your CRF contributions per the Graduated Hybrid model presented in Appendix D.

While JRS recommends prudent and practical increases in the strata corporation's annual CRF contributions, we understand that ideal contribution increases may not occur. At the very least, this report should be used as

supplemental information and an education tool for current owners and potential buyers to save for possible upcoming special levies.

Over the next three years (before or on the next Depreciation Report update), the strata council should consider the following:

- ♦ Perform underground water supply and drainage pipe cleaning and inspection (Item 77)
- ♦ Perform electrical vault infrared scanning and maintenance (Item 39)

The following is a summary of the most pertinent financial values within a 30-year outlook:

ITEM	COST
Current Replacement Costs	\$ 13,360,385
Future Replacement Costs	\$ 23,934,197
Current Reserve Fund Requirements	\$ 6,096,913
Future Reserve Fund Requirements	\$ 15,298,700
Current Annual Reserve Fund Contributions	\$ 150,000
Theoretical Fully Funded Annual Reserve Fund Contributions	\$ 706,575
Target Annual Reserve Fund Contributions (50%)	\$ 353,287

Our financial analysis includes three funding models: Baseline, Theoretical Fully Funded, and a Graduated Hybrid.

The Baseline model consists of current contribution levels or the statutory minimum, whichever is higher. In this case, it is the former. This would lead to 2 special levies within the 30-year outlook.

The Theoretical Fully Funded model creates a fully funded CRF that theoretically should not require any special levies (physical asset based) within a 30-year outlook. However, this theoretical model would require the owners to increase their current contributions significantly, which would be financially challenging for many and impractical to try to pass at a general meeting.

The Graduated Hybrid model is a funding strategy that JRS recommends, which will allow the strata corporation to gradually increase their contributions to 50% of a fully funded contribution level by 2025, then implementing inflationary increases –further reducing the amount required for the remaining special levies.

It is incumbent on the owners to decide what funding strategy works best for them and to tailor their own, customized financial plan. The Cash Flow Table for the recommended Graduated Hybrid Funding model is included in Appendix D for your review.

2.0 TERMS OF REFERENCE

As the information of all Depreciation Reports is comprehensive and subjective, a draft report was issued on March 8, 2021 in order to obtain feedback and commentary on any chronological mistakes and reporting errors. We have acknowledged all comments and made all appropriate revisions that we feel prudent and technically justifiable. It is important to understand that these reports are intended to be dynamic, “work-in-progress documents”, which should be continually updated to be practical documents.

2.1 GENERAL LIMITATIONS

JRS assumes that this is the third Depreciation Report for this property (requiring a site visit and a full compilation of asset inventory). We also assume that the building systems were built and completed with no known deficiencies in design and that construction procedures performed were in general conformance with the documents provided by the owners and property manager, unless otherwise noted.

The drawings, diagrams and photographs presented in this report are included for illustration purposes. No legal survey, soil analysis, detailed investigations, quantity survey compilations, nor exhaustive physical examinations, representative sampling or intrusive tests were performed, which would be required to discover any hidden conditions within the property.

JRS’ technical area of expertise is within the building envelope. Items such as mechanical, electrical, conveyance and site service systems have been reviewed in a general nature for the purposes of budgeting and can be reviewed in a more detailed fashion should the owners wish to do so. Accordingly, we have identified any items that require a more comprehensive review by appropriate professionals.

Replacement costs are subjective. They are based on a combination of company experience, building documents and historical construction data. It must be appreciated that reserve fund budgeting and projections are not an exact science. At best, they are prudent provisions for typical life cycle renewal costs, if and when they arise. Reserve fund requirements are subject to change and must be reviewed and revised periodically.

JRS Engineering maintains errors and omission insurance (Professional Liability Insurance) through our Certificate of Insurance, which is renewed on an annual basis.

2.2 REPORT ORGANIZATION

Section 1.0 presents an executive summary of the depreciation report.

Section 2.0 presents our terms of reference outlining general limitations of the report, how this report is organized, a general building description, all relevant building documents reviewed, and when the site visit(s) were performed.

Section 3.0 presents an introduction to the report. This includes a brief background to Depreciation Reports, methodology used to create one, a

general description of all reserve systems and components, as well as a short note on updating the report.

Section 4.0 presents a technical inventory of each building system consisting of a general description and history relating specifically to this property.

Section 5.0 presents a financial analysis of each building system consisting of historical data, life cycle renewal costs, and at least three funding models with 30-year cost projections (as required by the Strata Property Regulation). A summary and opinion of adequacy of the CRF, with considerations is also included.

Section 6.0 presents our recommendations to the owners.

Section 7.0 presents our report closure and limitations.

Included as part of this report are the following appendices:

Appendix A – Technical Inventory - Component Descriptions

Appendix B – Replacement Costs (Benchmark Analysis)

Appendix C – Funding Models and Cost Projections

Appendix D – Cash Flow Table

Appendix E – Reserve Planning Team

Appendix F – Glossary of Terms

2.3 BUILDING DESCRIPTION

Azura One is a residential strata complex that consists of one 2-storey townhouse building and one 38-storey highrise building; it was constructed circa 2004 and includes a total of 207 units. The shared amenities include: an exercise centre, sauna/steam room, indoor pool, hot tub, guest suite, squash court and a theatre.

A general description and site plan of the property are summarized below:

DESCRIPTION	
Construction Date	2004
Applicable Building Code	2002
Number of Buildings	2
Number of Storeys	2 & 38
Number of Units	207
Site Area	30,370 ft ²
Gross Floor Area	292,800 ft ²
Landscaping Area	7,300 ft ²

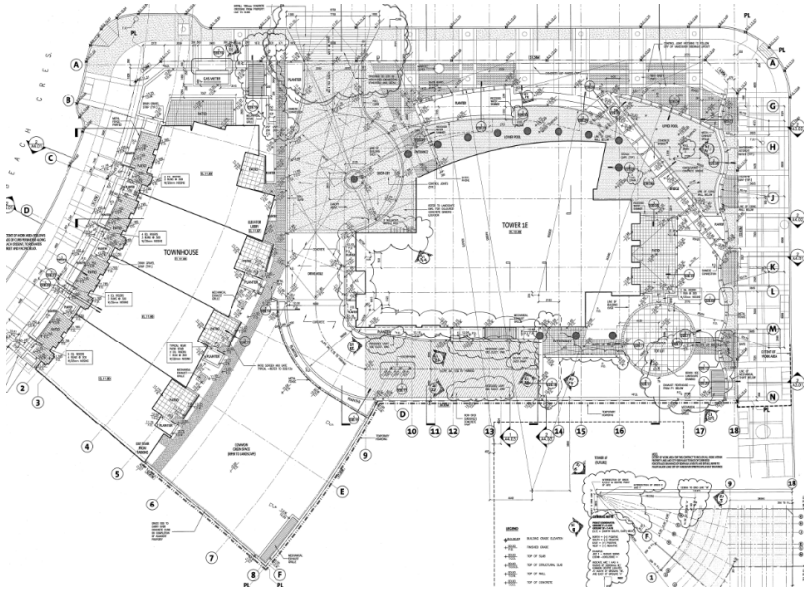


Figure 1 – Site Plan of Azura One

The following documents were provided for our review as resources for this Depreciation Report:

Plans/Drawings and Technical Documents

- ♦ Architectural (Record Set) – Roger Hughes + Partners Architects; June 2001
- ♦ Structural (Record Set) – Roger Hughes + Partners Architects; January 2002
- ♦ Mechanical – Roger Hughes + Partners Architects, August 2002
- ♦ Electrical – Arnold Nemetz and Associates; March 2004
- ♦ Strata Plan By-Laws
- ♦ Registered Strata Plan

Non-Technical and Financial Documents

- ♦ Financial Statements (Period Ending May 2020)

In addition, we interviewed Russel Jung (Building Manager) and communicated with Terry Li (Property Manager) as supplementation to the building history and supporting documents.

2.4 SITE VISITS

Jeffrey Leung, B.Sc., EIT of JRS visited Azura One on October 22, 2020. Access to the common areas, mechanical rooms, elevator mechanical rooms, electrical room, and Units 906, 1106, and 3503 were provided by Russel Jung. The temperature was approximately 6°C and the weather was sunny.

3.0 INTRODUCTION

3.1 BACKGROUND

The terms *Contingency Reserve Fund Study* and *Depreciation Report* have been used interchangeably. The former is typically used across Canada and the latter is the terminology used in the Strata Property Act of BC. Therefore, *Depreciation Report* will be used for reporting purposes. It should be noted that a Depreciation Report is not a technical report, but more of a financial report that contains technical descriptions and predictions intended to assist the owners with the prudent fiscal management of their CRF.

A Depreciation Report is a financial plan that consists of the identification, description, quantification and analysis of reserve components, and then provides cost estimate and life cycle analysis, projecting future repair or replacement costs and estimating the necessary reserve fund requirements. It also takes into consideration inflationary trends, interest assumptions, and appropriate funding models.

Depreciation Reports are a basis for prudent financial planning for capital expenditures, intended to assist owners and property managers with informed decision making on CRF matters such as investment, management, and budgeting. In essence, it provides a guide for the owners to save sufficient funds to cover the costs of future repairs and replacements of major building systems and components, as well as to help ensure that current and future owners are assessed for CRF contributions fairly and equitably.

Per the Strata Property Regulation, we are required to state our relationship with the Strata Corporation. JRS staff who created this Depreciation Report simply serve as independent parties and do not have conflicting relationships with the Strata Corporation or Property Management Company.

3.2 METHODOLOGY

There are generally four main components in the Depreciation Report production process:

1) Background Review

JRS reviews the pertinent technical, financial and legal records related to the building for the purposes of writing a Depreciation Report. We also communicate with building representatives in order to confirm CRF financial information, previous capital expenditures, system replacements, maintenance strategies, and upcoming renewals. This gives us a deeper understanding of the financial situation, building maintenance and the overall context of the asset management history.

2) Site Visit

JRS visits the property to visually review all the major building systems and components, which can include making notes and sketches, as well as taking site measurements and photographs. Intrusive/destructive investigation or inspection by specialized professionals does not typically take place, as

Depreciation Reports are meant to provide a general overview of component conditions.

3) Technical Inventory

JRS compiles an inventory of items that summarizes descriptions of all the major systems and components into a practical list of reserve items. To keep the list simple and easy to use, in some cases we have grouped together items that have minor renewal costs as well as similar maintenance and replacement dates. For example, roof components such as insulation, rock ballast, vents, and eave flashings are not reserved separately; instead, they are grouped together, as they will likely be replaced at the same time. Replacement dates are estimated based on typical service life and effective ages.

4) Financial Analysis

JRS' financial analysis is consistent with those outlined and recommended by the REIC. It uses the Cash Flow Funding method, which presents estimated current and future replacement costs for the CRF as a whole, as well as an accumulated CRF balance, using assumed inflation and interest rates. Units and dimensions are taken either directly from site, drawings, archived data on various governmental websites, or a combination of all of these sources. We provide at least three funding models to assist the owners with their CRF contribution strategy. Unit rates and allowances are based on similar completed projects, contractor quotes and other costing manuals/data.

3.3 UPDATING

Per the Strata Property Regulation - Part 6.2(7)(a), unless a 3/4 exemption vote is passed, strata corporations require a new or updated Depreciation Report every 3 years.

Furthermore, it is important that the strata council review the Depreciation Report annually to confirm accumulated CRF balance and contributions, document all expenditures and ensure that deterioration of certain building systems/components has not accelerated.

Continually updating your Depreciation Report will not only mitigate insufficient reserve funds for major repairs/renewals, but it will also enhance the value and durability of the property.

4.0 TECHNICAL INVENTORY

The technical inventory and reserve component descriptions below are property specific and based on building documents, visual review and communication with building representatives.

This technical inventory is categorized in the Unifomat sections listed below and summarized in component description boxes consisting of location, installation date, typical service life, effective age, remaining service life, planned renewal date, general description and condition as well as short term action. These reserve component description boxes are located in Appendix A. These

generally provide information on what is included in the cost estimation of the physical assets.

An overall general description and system history are presented for each of the major building systems below.

4.1 BUILDING ENVELOPE AND STRUCTURE

Major building envelope components on the highrise structures consist of low slope inverted roofs, roof decks, window-wall assemblies, punched windows, balcony door assemblies, metal panel wall cladding, balconies and below-grade parkade, as well as associated waterproofing, membranes, metal flashings, sealants and paint coatings.

Major building envelope components on the townhouse structure consist of high slope roofs, punched windows, balcony door assemblies, cladding, balconies, as well as associated waterproofing, membranes, metal flashings, sealants and paint coatings.

The highrise roof is protected by an inverted roof which typically consists of a 2-ply SBS modified bitumen membrane (MBM) with filter fabric and gravel ballast. The highrise roof decks typically consist of concrete pavers covering a waterproofing membrane. The townhouse sloped roof assembly consists of pre-finished rolled metal roof sheets. It acts as a main barrier to stop most of the infiltration from the exterior weather such as rain and snow. A waterproofing membrane is installed underneath the metal roof panels to protect against water ingress into the interior space below.

The highrise cladding is a combination of metal panel cladding, window-wall assemblies, and punched window assemblies. There are both fixed and operable windows installed. The window assemblies consist of aluminium framed double insulated glazing units (IGUs).

The highrise balcony door assemblies consist of a combination of aluminium framed double IGU sliding doors and solid wooden swing doors. The townhouses have swing balcony doors and sliding patio doors. The balcony and patio doors are generally protected by an overhang above.

The highrise balcony assemblies consist of reinforced concrete slabs protected by a liquid applied waterproofing membrane, which typically consist of a polyurethane coating. The balcony soffits are protected by a paint coating. Metal balcony guardrails with glass panel infills are mounted on the surface of the balcony slabs. Sealant is applied along the perimeter of the face plates.

No access to the townhouse balconies was available. The architectural drawings do not provide waterproofing details of the townhouse balconies. However, concrete balcony structures are typically protected by a liquid applied polyurethane waterproofing membrane.

The townhouse exterior is clad with a combination of masonry tile and metal panel cladding. The masonry tile and metal panels are installed as rainscreen systems with a cavity for drainage behind the cladding to allow for drainage.



The townhouse entry doors consist of solid core wood swing doors. The townhouse balcony doors consist of metal framed swing doors with glass panels. The townhouse patio doors consist of metal framed glass panel sliding doors.

The townhouse punched window assemblies consist of aluminium framed double IGU windows.

The below-grade membrane could not be observed without intrusive investigation. However, they typically consist of a waterproofing membrane adhered to the top of the parkade structure to prevent water ingress.

We have also included allowances for exposed structural elements, which may require targeted renewal prior to the end of the building lifespan.

A four-level below-grade parkade structure is located beneath the residential highrise building. The parkade structure consists of reinforced concrete slabs, beams, and columns. On levels P1-P3, the concrete floors are protected by an vehicular traffic waterproofing membrane. Patch repairs have been completed throughout the life of the complex.

Sealant and paint renewals are subjective and can vary from property to property. As a standard approach, we typically recommend significant sealant renewal and painting projects to occur concurrently within 7 to 10-year cycles. However, sections of sealant should be replaced upon failure (e.g. cracks, crazing, de-bonding, etc.), especially in critical locations. Some properties may have to perform annual maintenance or pursue a targeted sealant renewals program more frequently (every 2 to 5 years) than shown in our cost projections.

4.2 INTERIOR

The interior finishes include wall paint and carpet. These finishes are limited to the common areas of each building.

The lobby finishes consist of tile flooring, painted drywall walls and ceilings. The common hallway finishes consist of carpeted floors, painted drywall walls and ceilings.

4.3 CONVEYANCE

The conveyance systems on this property include three Fujitec gear traction elevators in the residential highrise.

The elevators were installed during original construction. We understand that routine inspections and maintenance have been performed on the elevators by Fujitec.

For a more detailed review and estimate of the conveyance systems, especially nearing the end of the service life, an elevator consultant should be engaged.

4.4 MECHANICAL

The mechanical systems for this building generally consist of heating (e.g. Engineered Air make-up air units, parkade exhaust fans, baseboard heaters and carbon monoxide detectors, Mitsubishi heat exchangers), plumbing (i.e. water pipe distribution, boilers, Rheem Manufacturing Co. hot water tanks, sump pumps), fire protection components, and an industrial-sized garbage compactor. The smaller exhaust fans found in utility and storage rooms are not included in this report (e.g. pond mechanical room, elevator mechanical room).

According to the information provided, Pacific West Mechanical Ltd. Performs the majority of the maintenance on the mechanical components at this complex.

Costs to renew domestic water piping should be viewed with caution. Numerous factors such as BC Building Code changes, material costs/upgrades as well as complicated plumbing designs and high-end interior furnishings can significantly affect the estimated cost of this asset. It should also be noted that while pipe replacement is common, there are other types of options available to the owners (e.g. internal coatings, altering water chemistry). JRS does not officially endorse any particular approach, as every property consists of varying factors that need to be considered (e.g. age of pipes, location of building, type of material, thickness of pipe, frequency of failures, type of failures). Regardless, we would be happy to discuss either of these options and provide general direction as needed.

Property wide renewals on sprinkler heads, standpipes and cabinet hoses are not typically included in these reports (as recommended by the REIC) due to the unpredictability of hidden conditions, soft costs and BC Fire Code changes/updates. Any safety deficiencies would also be caught during periodic inspections and corrected accordingly. Furthermore, complete and comprehensive fire detection system replacement has not been included in this report as this varies widely with different brands, models and parts and some manufacturers discontinue production of certain parts that support the current system. As the fire panels/detection systems become obsolete, a certified fire protection professional should be engaged to assess the system and make more detailed recommendations.

The mechanical components of Club Viva are included in the respective 2020 Depreciation Report.

4.5 ELECTRICAL

The electrical reserve components include electrical distribution devices (i.e. incoming services, transformers, various distribution panels, wiring etc.), access control, security, fire panels and emergency lighting.

The electrical section of any Depreciation Report should be viewed with caution. Many electrical systems and components generally serve the life of the building without having to be replaced (e.g. electrical panels, transformers, incoming underground service lines, etc.). Renewal dates are difficult to predict, depending on use, maintenance and review. Major electrical system renewals are rare but can be expensive. Furthermore, it is not always clear whose responsibility certain electrical items belong to (e.g. distribution transformer, electrical wiring).

Electrical room/vault maintenance and review should be performed on a periodic basis. As a point of reference, infrared review and dust/debris removal should be performed every 3 years on high rise building in Vancouver - this is specifically required for “dual radial” vaults.

The electrical components of Club Viva are included in the respective 2020 Depreciation Report.

4.6 SPECIALTY

The amenities in the Azura One building include a meeting room with a washroom, and an aerobics room.

Club Viva amenities include a pool, hot tub, fitness room, change rooms, washrooms, squash courts, steam rooms, lounge, terrace, billiards lounge, guest suite, arts and crafts workshop, television room, theatre room and a multi-purpose room with a kitchen. According to the information provided, Azura One is responsible for 24% of the total renewal costs of Club Viva.

The pool and hot tub mechanical components are maintained periodically by Imperial Paddock Pools which include the sand filters, pumps, and dehumidifier. The Engineered Air dehumidifier was installed on August 13, 2020.

The television and theatre room components include various audio and visual equipment along with sofas and theatre seats respectively.

The multi-purpose room and kitchen are adjacent to the terrace. The terrace is covered by concrete pavers and is surrounded by metal railings with glass panel infills.

At the time of the inspection, the billiards lounge was under construction. No access was available for the guest suite.

A male and female change room each contain a steam room. The showers in the change rooms are serviced by boilers in the janitor’s closet maintained by Keith Plumbing and Heating.

4.7 SITE SERVICES

The site services include walkways, patios, equipment (bike racks, benches), canopy, site services (utilities lines), exterior lighting, water feature, irrigation and landscaping.

Landscaping at Azura One includes the grassy area adjacent to the townhouse building with trees. Shrubs and other small plants are included around the complex in the landscaped planters and at the townhouse front entrances.

A water feature is installed adjacent the main entrance of the highrise building and consists of a pond and a fountain. A metal framed canopy with glass panel infills is installed above the main entrance to the highrise building. A metal bike rack is located adjacent to the main entrance of the highrise building.

5.0 FINANCIAL ANALYSIS

5.1 RESERVE FUND: HISTORICAL DATA

Based on the documents reviewed (past year) and our communications with building representatives, we have summarized pertinent CRF transactions and balances in the table below:

DESCRIPTION	2020
Annual Operating Budget (Azura One)	\$1,231,611
CRF Balance (Azura One)	\$988,421
*CRF Balance (Club Viva – Azura One Portion)	\$113,894
Approved CRF contributions (Azura One)	\$150,000
Approved CRF contributions (Club Viva – Azura One Portion)	\$5,760
Past interest accrued on CRF (Azura One)	\$24,194

Previous year's financial information was not made available for this study.

*This balance includes the funds in the special levy balance for 2020.

5.2 RESERVE FUND: LIFE CYCLE RENEWAL COSTS

The Life Cycle Renewal Cost table (Benchmark Analysis), included in Appendix B, is a tabulated summary of expected renewal years, costs and reserve fund parameters. Per the visual condition assessment of all the major building systems and components, future replacement dates are predicted (assuming reasonable and ongoing maintenance). This assumes that ongoing and reasonable maintenance is being performed unless otherwise noted or reported by property representatives. Based on these dates, as well as the assumed interest and inflation rates, the current and future CRF requirements are determined and allocated.

The order-of-magnitude renewal costs are developed based on general designs, makes and models, as well as estimated areas, assumed quantities and unit rates. While these costs may not be required on the specified dates, some or all of these allowances can be spent before or after these dates as needed. This is especially true for aggregate subjective assets like electrical, landscaping and miscellaneous mechanical equipment.

These costs may not consist of all contractor mobilization and front end costs, overhead and profit, as well as a detailed schedule of values, which would require the review of drawings, details, specifications and material schedules. Contingencies, consulting, project management and general contractor fees have also not been included. JRS does not guarantee the accuracy of these costs, and shall incur no liability where actual construction costs are exceeded.

The following pie chart illustrates the percentage that each of the major building systems represent relative to each other. The entire pie represents the reproduction value of the building reserve components and the wedges refer to the respective building systems, based on the "Reserve Fund Assessment Allocation" column in the benchmark analysis of Appendix B.

Distribution of Reproduction Value

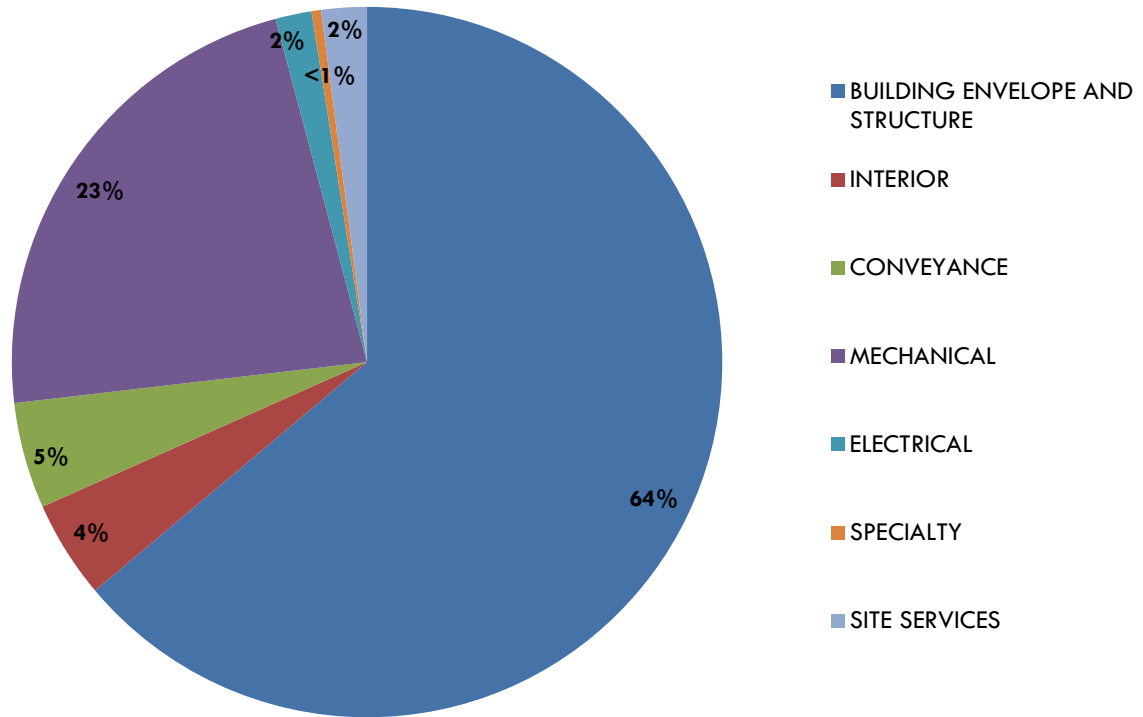


Figure 2 – Pie Distribution of Assets

It should also be noted that a *Power Smart Product Incentive Program* exists with BC Hydro. The program is intended to provide incentives for simple retrofits with energy efficient products to certain BC Hydro business customers. Refer to the *BC Hydro Product Acceptance Criteria* catalogue to determine acceptable technical and product requirements (i.e. lighting, HVAC and refrigeration) for the shared common assets of your property in order to potentially offset required renewal costs.

5.3 RESERVE FUND: 30-YEAR COST PROJECTION

The Cost Projection Sheets located in Appendix C consist of the estimated replacement costs of all the reserve fund components at anticipated renewal dates for the next 30 years (per the Strata Property Regulation). It should be noted that JRS does not purport that the actions/expenditures at the listed renewal dates must or will occur, but that we recommend the strata corporation strive to have sufficient funds for these actions/renewals that should or are highly likely to take place at or around these dates.

Interest Rate

Although the Regulation requires a reserve fund plan to be projected over 30 years, the interest rate is weighted more towards recent and short-term economic conditions because of their volatility over time. This is the rate of return applied to your CRF investment. We have assumed an annual interest rate of **1.9%**, taken from historical data of interest earned on your CRF in 2020. This should be revised at the next Depreciation Report update. Refer to Part 6.11 in the Strata Property Regulation to confirm what types of investment vehicles are permitted.

Inflation Rate

This is the growth rate applied to all future renewal costs. A common fallacy is that this rate should be tied to the CPI (Consumer Price Index). The CPI is based on a fixed basket of commodities - consumer goods and services such as milk and eggs, which are largely unrelated to construction costs. Since this fixed basket contains goods and services of unchanging or equivalent quantity and quality, the CPI reflects only price fluctuations and excludes labour costs, which is a significant portion of remediation/renewal projects. The CPI includes approximately 600 commodities categorized in 168 basic commodity classes, which is simply too broad to use for future construction/renewal cost estimating. Furthermore, volatile items such as oil and gas are also excluded from CPI, which can greatly affect construction costs.

We have derived an inflation rate from changes in actual construction price indices obtained from Statistics Canada relating to all trades in the Vancouver-area construction market. The estimated inflation rate takes into consideration construction indices going back to 1981 (as far back as Statistics Canada has records).

The inflation rate used in this Depreciation Report is **3.0%**. Although this is somewhat similar to the current CPI, a distinction in the process of reaching this value must be understood.

Interest and inflation rates are significant factors when projecting future replacement costs and CRF requirements. Slight variations in either parameter can have dramatic effects on future values, including the annual CRF contributions or any special levies, which are usually the most relevant concerns for the majority of owners.

5.4 FUNDING MODELS

To assist the owners with funding strategies, the Strata Property Regulation (Part 6.2.4) requires that at least 3 funding models be provided. Essentially, these are possible funding strategies for the owners to contribute to their CRF. Our funding models are “cash flow” and “cash funded” to allow pragmatic and user friendly recommendations.

It should be noted, Azura One’s contributions to the Club Viva CRF are assumed to only increase by inflation throughout the 30-year planning period of this study.

It is important to note that there are many possibly funding strategies that a Reserve Planner can recommend. JRS has included the following three different cash flow funding models, which essentially consists of a low end, high end and a combination of the two:

Baseline

This model maintains the status quo (how the CRF is currently being funded) or the statutory minimum (10% of operating budget or a closing CRF balance that is greater than or equal to 25% of operating balance), whichever is higher. Annual increases are only governed by inflation and therefore future loans or special levies are likely to occur. This is the most “hands off” funding strategy, consisting of a more reactive approach.

Theoretical Fully Funded

This model immediately implements a contribution level that will eventually achieve a 100% fully funded accumulated reserve fund balance. This contribution strategy should theoretically never require loans or special levies and can be perceived as a hypothetical model, which is typically not practical for the strata corporation to execute.

Graduated Hybrid

This model is a combination of the Baseline and Fully Funded models, starting at current contribution levels and ramping up to a 50% fully funded contribution level. Special levies may still occur but at smaller and less frequent amounts. This funding strategy allows a more targeted funding plan, allowing for a more balanced and pro-active approach.

It is widely accepted that strata fees in BC are generally low and that most CRFs are under-funded. This is likely the driving force for Depreciation Report legislation, which has been mandated in many other provinces some time ago. Therefore, your Baseline model, as well as the statutory minimum, is not sufficient in most cases. The Fully Funded model is ideal, but impractical for most strata corporations—at least when trying to attain a fully funded level within a short period of time. Achieving at least a 50% fully funded CRF contribution level as soon as practical, should be the goal of every strata corporation. History in other provinces and with strata corporations who have already updated their Depreciation Reports, have shown that this is feasible.

JRS has provided a Graduated Hybrid funding model that we believe is achievable and pragmatic. These models allow the owners to ramp up towards a 50% fully funded CRF contribution level within 5 years.

The Baseline, Theoretical Fully Funded and Graduated Hybrid funding models are presented in Appendix C. A graph is included with each funding model cost projection sheet to summarize and visually aid the reader in comprehending the CRF contributions, balance, and requirements. The varying input parameter in each funding model is the annual contribution amount to the CRF.

5.5 SUMMARY OF RESULTS AND ADEQUACY OF RESERVE FUND

The Baseline and Fully Funded models indicate a large amount of funding required through special levies and an immediately onerous level of annual CRF contributions, respectively.

The Graduated Hybrid funding model will slowly increase contribution levels over 5 years to reach 50% of the fully funded CRF contribution level. This funding model reduces the amount required for the 2 special levies within the 30-year planning period of this study. By proactively funding the CRF, the Owners have greater flexibility to schedule renewal projects.

Based on the 2020 financial statements and meeting minutes, there is a budgeted contribution of \$150,000 made to the Azura One CRF. In the Graduated Hybrid Model, the annual contributions allow the owners to achieve 50% of the fully funded contribution levels by gradually increasing their annual CRF from \$150,000 to \$353,287 until 2025. This is an average increase of approximately 17% annually. The annual increases can be revised during the 3-year updates based on a number of factors: actual CRF contributions, recent upgrades, anticipated short term expenditures, as well as current interest and inflation factors.

The owners do not have to decide on either of the models – they should choose what financial plan or contribution level works for them.

It is essential to remember that our financial models and recommended funding strategies are for the strata corporation's contributions to their CRF, not strata fees. CRF contributions are only a fraction of the overall budget, which is funded almost entirely by the strata fees. For example, if an owner is paying \$300/month in strata fees and 10% of their strata fees go to the CRF, a recommended CRF contribution increase of 50% a year, results in an extra \$15 a month. Moreover, increasing CRF contributions does not need to be entirely borne out of raising strata fees. Other methods of offsetting increased strata fees include cutting costs and increasing revenue generating activities (e.g. laundry services, vending machines, etc.).

It is important to note that this Depreciation Report, nor should any Depreciation Report, purport to be used verbatim or used to pressure the strata corporation into mandating higher CRF contributions or strata fees. Our financial analysis and funding strategies are meant to simply provide information and encourage a balanced approach in saving for eventual renewals that may occur at or around the time stated in the funding models, which should be continually reviewed and updated. Therefore, this report should not be perceived as having to spend exactly the amounts at the specified times. It should be used as guidance for the strata council to manage its CRF and create its own detailed, customized financial plan.

Each model safeguards against negative CRF balances. However, it is incumbent on the owners to ensure that at least the statutory minimum outlined in Part 6.1 of the Strata Property Regulation are maintained, which is widely known to be a bare minimum that almost never achieves a reasonably long term funded CRF.

5.6 CONSIDERATIONS

It is often practical and economical to undertake the repair or replacement of property assets at the same time or immediately consecutive to one another. Although resulting in higher immediate capital costs, there will be potentially less disturbance to unit occupants than performing work at separate times, which may be a significant consideration. The owners should evaluate the relative weight they ascribe to some of the issues noted above prior to undertaking any major capital expenditures or updating the Depreciation Report, so that this information can be incorporated accordingly.

The intent of this Depreciation Report is to mitigate unfair levels of contribution and encourage the strata corporation as a whole or as individuals to save for eventual renewals/replacements to the property, starting at the soonest applicable fiscal year.

Costs and input data should also be reviewed and updated regularly to ensure a higher level of accuracy. Review of the financial parameters should be performed by the strata council annually and through Depreciation Report updates, which include site visits by a Reserve Planner every 3 years, per the Strata Property Regulation.

6.0 RECOMMENDATIONS

JRS recommends the strata council implement the Graduated Hybrid model or something similar to eventually reach a 50% fully funded contribution level to the CRF by 2025 or sooner. The strata council should compare it with the other funding strategies, tailor it to the ownership demographics and decide which would be the most appropriate and acceptable for the general ownership to include in the annual budget.

Over the next three years (before or on the next Depreciation Report update), the strata council should consider the following:

- ◆ Perform underground water supply and drainage pipe cleaning and inspection (Item 77)
- ◆ Perform electrical vault infrared scanning and maintenance (Item 39)

JRS further submits the following general recommendations:

- .1 Perform more detailed, intrusive investigations targeting the higher expense systems (e.g. building envelope, piping, etc.) in order to fine tune the service life predictions and replacement costs.
- .2 Prior to any major renewals, the strata council should hire a consultant to prepare drawings and specifications and tender out the work to multiple contractors before raising funds or requesting any special levies.
- .3 Major repairs and replacements should be recorded in, and funded from, a separate contingency reserve fund account. Keep in mind that multiple “sub-CRF-accounts” for specific assets (e.g. roofing, windows, piping, etc.) are not required and should be used with caution.

- .4 The strata council should create a committee or appoint a strata council member to oversee the overall management and documentation of the CRF.
- .5 The CRF should be invested with a strategy that will allow for multiple transactions and achieve a higher rate of return than the current interest rate.

7.0 CLOSURE

This report was prepared by JRS for The Owners, Strata Plan BCS679. Any use that a third party makes of this report, or any reliance or decisions made based on it, are the sole responsibility of such third parties.

The findings herein are based on a visual review of surface conditions. Deficiencies that may exist, but were not recorded in this report, were not apparent given the level of study undertaken.

This assessment is in part based on information provided by others. Unless specifically noted, we have assumed this information to be correct and have relied upon it in reaching our conclusions and recommendations.

Component conditions and renewal costs identified are for the purpose of general financial planning. This report is not intended to substitute the need for in-depth condition assessment of components by professionals using testing and other means.

The replacement costs in this report apply only within the confines and objectives of this review. The costs herein must not be used in conjunction with any other appraisal or Depreciation Report and may be invalid if so used.

The strata corporation may use this report in deliberations affecting the subject property only, and in so doing, the report must not be abstracted; it must be used in its entirety.

The material in this report reflects the best judgement of JRS in light of the information available at the time of preparation.

Please contact the undersigned if you should require any additional information.

Prepared by:

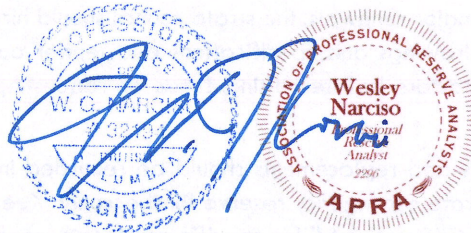
JRS ENGINEERING LTD.

Per:



Jeffrey Leung, B.Sc., EIT
Engineer

Reviewed by:



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Senior Project Engineer | Division Manager



BUILDING ENVELOPE AND STRUCTURE

1

Parkade/Concrete Structure

Location:	Below Building
Year Installed:	2004
Typical Service Life (yrs):	50
Effective Age (yrs):	16
Remaining Service Life (yrs):	34
Planned Renewal Date:	2054



Description: This component includes the 4-storey below-grade concrete parking structure and exposed concrete elements on the highrise structure.

Condition: The concrete parking structure is in serviceable condition.

Comments: The structural capacity of the slab and walls is expected to last the lifetime of the building. The costs associated with this reserve component are a rough estimate as to when the Owners can expect the need for concrete repairs to address delamination, spalling, water intrusion, and wear. Reserve costs account for renewals to a small percentage of the exposed concrete surfaces. We have also included an allowance 3 years prior to the planned major renewal year for an engineering review and targeted repairs.

Building Envelope and Structure

2

Balcony Guard Rail Assemblies

Location:	Balconies
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the metal balcony railings with glass panels. The guardrails are mounted on the surface of the balcony slabs and have sealant installed around the base plate.

Condition: The balcony guardrail assemblies are in serviceable condition.

Comments: Reserve costs include replacement of the balcony guard rails. JRS recommends periodic cleaning as a maintenance item.

Building Envelope and Structure

3

Balcony Membrane Assemblies

Building Envelope and Structure

Location:	Highrise and Townhouse Balconies
Year Installed:	2010
Typical Service Life (yrs):	15
Effective Age (yrs):	6
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the liquid applied waterproofing membrane on the concrete balcony slabs. The waterproofing was observed to be applied up the walls as per best construction practices.

Condition: The balcony waterproofing membranes are in serviceable condition.

Comments: Reserve costs include an allowance for targeted renewals in 2024 and an allowance for a condition assessment of the balcony membranes prior to the scheduled renewal.

4

Roof Deck Assemblies

Building Envelope and Structure

Location:	Penthouses
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the roof deck assemblies which typically consist of a waterproofing membrane covered by concrete pavers.

Condition: The waterproofing membrane condition could not be verified without intrusive investigation however, water ingress was reported.

Comments: Reserve costs include allowances for renewal after 30 years of service.

5

Exterior Walls – Metal Panel Cladding

Building Envelope and Structure

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal panel cladding around the exterior of the high rise and townhouse buildings.

Condition: The metal panel cladding is in serviceable condition.

Comments: Reserve costs include an allowance for a Building Envelope Condition Assessment 3-years prior to the large-scale renewals typically required after 30-years of service. The condition assessment should include the roof deck assemblies, exterior cladding, exposed concrete elements, balcony door assemblies and roof assemblies. An allowance for targeted renewals of the metal panel cladding has been included prior to the scheduled large-scale renewal.

6

Exterior Walls – Masonry Tile

Building Envelope and Structure

Location:	Townhouses
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the masonry tile on the townhouse building.

Condition: The masonry cladding is in serviceable condition.

Comments: Reserve costs include an allowance for targeted repairs of the masonry tile cladding prior to the scheduled large-scale renewal.

7

Window-wall Assemblies

Building Envelope and Structure

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the window-wall assemblies which consist of aluminium framed double IGU windows.

Condition: The window-walls are in serviceable condition with no major deficiencies reported.

Comments: Reserve costs include fish tanking repairs for the window-wall assemblies after 40 years of service.

8

Punched Windows

Building Envelope and Structure

Location:	Highrise and Townhouses
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the aluminium framed double IGU punched windows on the highrise and townhouses.

Condition: The punched windows are in serviceable condition with no major deficiencies reported.

Comments: Reserve costs include a condition assessment 3-years prior to the scheduled renewal of the punched windows.

9

Sliding Doors

Building Envelope and Structure

Location:	Highrise and Townhouses
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the aluminium framed sliding doors on the highrise balconies and townhouse patios. The sliding doors are generally protected by an overhang.

Condition: The sliding doors are in serviceable condition and appear to be functioning as intended.

Comments: The balcony doors are generally located under a balcony overhang reducing their exposure to precipitation. The overhangs in combination with head-flashing can help to extend the door's service life. JRS recommends routine cleaning and review of the sliding door assemblies as part of a maintenance plan. Reserve costs include an allowance for targeted repairs of the sliding doors prior to the large-scale renewal of the sliding doors.

10

Swing Doors

Building Envelope and Structure

Location:	Townhouse Balconies
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the swing doors at the townhouse balconies.

Condition: No access was provided to the townhouse balconies to inspect the swing doors. However, based on the age of the complex, the swing doors are in serviceable condition.

Comments: Reserve costs include an allowance for targeted repairs of the swing doors prior to the large-scale replacement of the replacement of the swing doors.

11

Highrise Main Entry Door

Building Envelope and Structure

Location:	Main Entrance
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal framed glass panel main entrance doors for the highrise building.

Condition: The main entry doors are in serviceable condition.

Comments: Reserve costs include replacement of the main entry doors.

12

Townhouse Entry Doors

Building Envelope and Structure

Location:	Townhouses
Year Installed:	2004
Typical Service Life (yrs):	25
Effective Age (yrs):	16
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the solid wood core townhouse entrance swing doors.

Condition: The townhouse entrance doors are in serviceable condition.

Comments: Reserve costs include replacement of the townhouse entrance doors.

13

Service Doors

Building Envelope and Structure

Location:	Throughout Highrise
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the exterior service doors for the highrise building.

Condition: The exterior service doors are in serviceable condition.

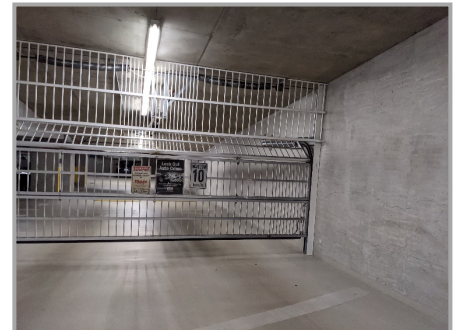
Comments: Reserve costs include an allowance for targeted renewals of the service doors.

14

Garage Doors

Building Envelope and Structure

Location:	Parkade
Year Installed:	2004
Typical Service Life (yrs):	25
Effective Age (yrs):	16
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the metal picket overhead garage doors and their motor units.

Condition: The garage doors are in serviceable condition and appear to be functioning as intended.

Comments: Garage doors are typically only replaced due to aesthetic reasons or due to vehicular accidents. Reserve costs include allowances for the replacement of the garage door and periodic replacement of the motor unit.

15

Sealant

Building Envelope and Structure

Location:	Throughout Complex
Year Installed:	2015
Typical Service Life (yrs):	10
Effective Age (yrs):	6
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Description: This component includes the sealant installed around the vent penetrations, balcony baseplates, flashings, and cladding joints.

Condition: The sealant is in serviceable condition and at all locations observed.

Comments: Reserve costs include allowances for periodic replacement of the sealant. Sealant renewal should be scheduled in conjunction with the paint coating renewal to reduce mobilization costs.

16

Paint Coating

Building Envelope and Structure

Location:	Balconies
Year Installed:	2015
Typical Service Life (yrs):	10
Effective Age (yrs):	6
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Description: This component includes the elastomeric paint coating on the balcony soffits and the paint coating on the entrance canopy frame.

Condition: The paint coating is in serviceable condition and appears to be functioning as intended.

Comments: Reserve costs include allowances for periodic renewal of the paint coating. This work should be done in conjunction with the sealant to reduce mobilization costs.

17

Fireplace Vents

Building Envelope and Structure

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the fireplace vents at the townhouse building and at select highrise units.

Condition: The fireplace vents are in serviceable condition and appear to be functioning as intended.

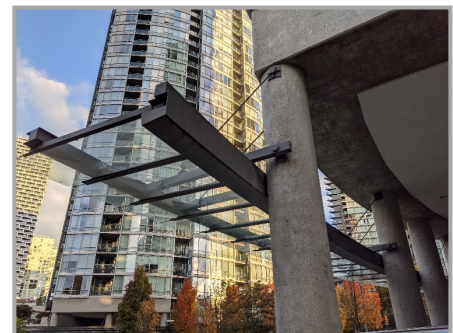
Comments: Reserve costs include allowances for the replacement of fireplace vents.

18

Entrance Canopy

Building Envelope and Structure

Location:	Highrise Entrance
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal framed glass panel canopy above the highrise main entrance.

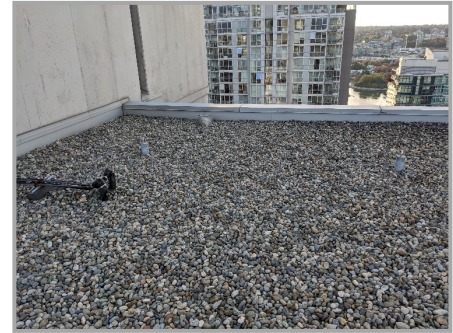
Condition: The entrance canopy is in serviceable condition and appears to be functioning as intended.

Comments: Reserve costs include an allowance for targeted renewals of the entrance canopy.

19

Low Slope Roof – Inverted

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	35
Effective Age (yrs):	16
Remaining Service Life (yrs):	19
Planned Renewal Date:	2039



Description: This component includes the inverted roof on the highrise structure. Inverted roofs typically consist of a waterproofing membrane covered by rigid insulation, filter fabric, and gravel ballast.

Condition: The roof appears to be functioning as intended with no signs of water ingress or reports of leaks.

Comments: According to the information provided, the Strata Council currently completes periodic maintenance on the roof. Reserve costs include allowances for the periodic maintenance of the inverted roof and an allowance for a condition assessment and targeted repairs of the roof 3-years prior to the scheduled renewal.

Interior

20

Steep Slope Roof – Metal

Location:	Townhouses
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal roofs on the townhouse buildings. Steep slope roof assemblies typically consist of sheathing, underlayment and eaves protection with asphalt shingles or metal panels protecting the assembly.

Condition: The roof appears to be functioning as intended with no reports of leaks or visible water ingress.

Comments: Reserve costs include an allowance for a condition assessment prior to the large-scale renewal scheduled after 30 years of service.

Interior

21

Parkade Vehicular Traffic Membrane

Interior

Location:	Parkade
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	16
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Description: This component includes the elastomeric liquid applied waterproofing membrane installed on the suspended parkade slabs.

Condition: The parkade vehicular traffic membrane is in serviceable condition with sections of targeted repairs observed to have been performed.

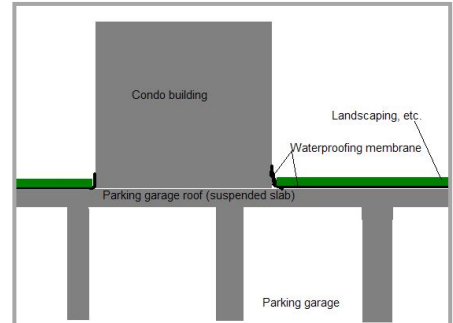
Comments: Reserve costs include an allowance for targeted repairs after 20 years of service.

22

Below-grade Membrane

Interior

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the below-grade waterproofing membrane installed on the top slab of the parkade structure.

Condition: This component could not be visually reviewed. However, there did not appear to be any active leaks into the parkade at the time of our inspection. Representatives of the Strata Corporation did not report any active leaks in the parkade structure that may indicate the podium level waterproofing has been compromised.

Comments: Reserve costs include an allowance for a condition assessment of the waterproofing membrane prior to the scheduled targeted repairs after 30-years of service. A large-scale replacement has been scheduled after 40-years of service. The cost of this item is based on the total square footage of podium roof.

INTERIOR

23

Lobby

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	15
Remaining Service Life (yrs):	5
Planned Renewal Date:	2025



Description: This component includes the lobby finishes (tile floor, painted drywall walls and ceilings) and furniture (reception desk, benches, light fixtures).

Condition: The lobby is in serviceable condition with no major deficiencies observed.

Comments: Due to the aesthetic nature of the interiors, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

24

Interior Doors

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal interior service doors at the common areas, parkade elevator lobbies, and the wood unit entry doors.

Condition: The interior doors are functioning as intended.

Comments: This asset is highly subjective and can vary from the planned renewal date based on the strata council's discretion. These doors are fully protected from the exterior climate and can generally last the lifetime of the building. Reserve costs for this component consist of allowances after 40-years of service for renewals to a percentage of the interior doors.

25

Hallways, Stairwells and Common Areas

Location:	Highrise
Year Installed:	2015
Typical Service Life (yrs):	12
Effective Age (yrs):	5
Remaining Service Life (yrs):	7
Planned Renewal Date:	2027



Interior

Description: This component includes the finishes in the hallways (carpet floor, painted drywall walls and ceilings), stairwells (painted concrete floors, walls and ceilings), and common areas (carpet floor, painted drywall walls and ceilings).

Condition: The interior hallways, stairwells, and common areas are in serviceable condition. According to the information provided, targeted renewals have been completed in 2015.

Comments: Due to the aesthetic nature of the interiors, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

CONVEYANCE

26

Elevator Modernization - Traction

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the Fujitec gear traction elevators in the highrise building. The elevators are periodically maintained by Fujitec.

Condition: The elevators appear to be regularly serviced and are functioning as intended.

Comments: The system should be inspected periodically for failure of: gears, valves, door operators, relays, contactors, motor windings and computer processors. JRS recommends the elevator systems be inspected and assessed by a qualified professional engineer to better gauge renewal year and costs associated with modernization. An allowance has been included for assessment and targeted repairs 3-years prior to modernization to better understand the condition of the elevators.

27

Elevator Cab Finishes

Location:	Elevator Interior
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the elevator cab interior finishes.

Condition: The elevator cab finishes are in satisfactory condition with no major deficiencies observed.

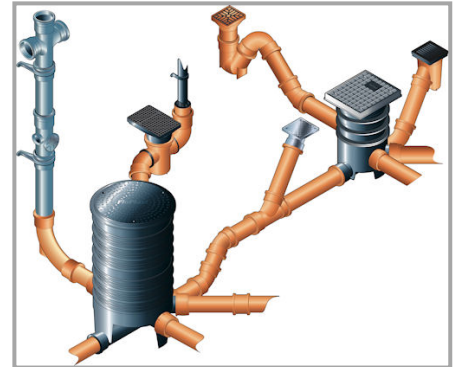
Comments: Due to the aesthetic nature of the elevator cab interiors, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

MECHANICAL

28

Domestic Water Pipes

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes domestic water distribution for residential units and building amenities.

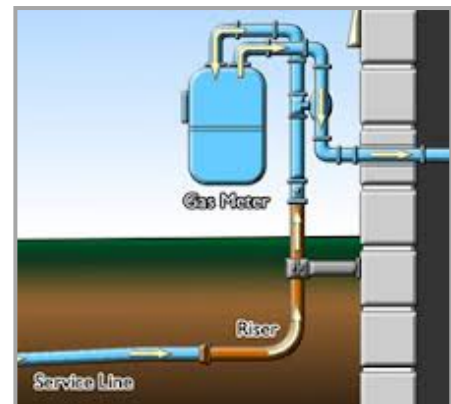
Condition: This asset's condition is not verifiable with a non-exploratory visual review; however, no leaks have been reported.

Comments: Predicting when failure will occur is difficult as many variables must be considered including localized water pressure, water quality, temperature, copper material quality/condition, manufacturing/installation conditions, etc. Renewal costs do not include all interior work (e.g. drywall, paint, texturing and finishes), which may vary substantially based on code updates, material compatibilities and potential hazardous material in the drywall and insulation, etc.

29

Gas Pipes

Location:	Townhouse and Highrise
Year Installed:	2004
Typical Service Life (yrs):	50
Effective Age (yrs):	16
Remaining Service Life (yrs):	34
Planned Renewal Date:	2054



Description: Gas is piped throughout the building for the fireplaces in the townhouse units and select highrise units.

Condition: The gas piping could not be visually reviewed; however, no issues were reported by the building representative.

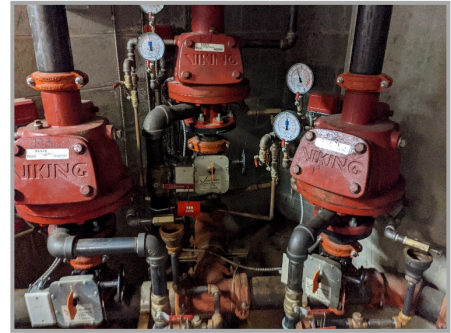
Comments: Documentation, targeted repairs and maintenance should be conducted as needed. It is important to note that gas pipes can last well beyond its typical life expectancy due to natural gas' inert nature. The cost allocated is an allowance for targeted repairs.

30

Sprinkler Pipes and Fire Pump Components

Mechanical

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	50
Effective Age (yrs):	16
Remaining Service Life (yrs):	34
Planned Renewal Date:	2054



Description: This component includes the automated sprinkler system servicing the parkade, residential units, and common areas, and consists of sprinkler pipes, pumping/compressor equipment. These components are maintained by Pacific West Mechanical Ltd.

Condition: The sprinkler pipes and fire pump components appear to be functioning as intended.

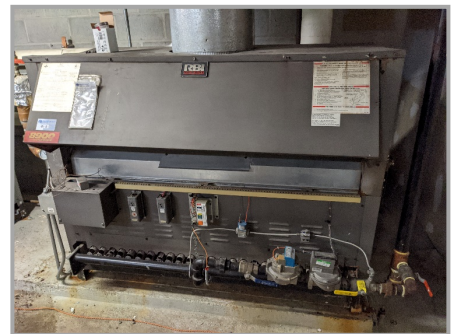
Comments: The fire suppression lines will likely last for a significant period of time. Costs associated with this asset will likely consist of upgrading or repairing mechanical components such as: sprinkler heads, pumps, air compressors, etc. An allowance has been included for renewal of a percentage of this asset after 30 years of service.

31

Boilers

Mechanical

Location:	Mechanical Room
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	16
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Description: This component includes the two RBI Water Heaters branded boilers maintained by Pacific West Mechanical Ltd.

Condition: The boilers appear to be functioning as intended with no reported deficiencies.

Comments: Regular inspection, testing, and maintenance with a mechanical contractor are recommended. Over time, the frequency of required maintenance and repairs will increase, and eventual full-scale replacement will be more cost effective. It is also important to note that the installation of new equipment may provide further energy cost savings, which may be more cost effective in the long term. The reserve costs included in the report accounts for full scale renewal of the equipment. For the purposes of costing, a lump sum amount has been included; however, the mechanical equipment will break down at various intervals and the Owners should expect repairs in staggered amounts.

32

Hot Water Storage Tanks

Location:	Mechanical Room
Year Installed:	2017
Typical Service Life (yrs):	12
Effective Age (yrs):	3
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the Rheem Manufacturing Co. hot water storage tanks maintained by Pacific West Mechanical Ltd.

Condition: The hot water storage tanks appear to be function as intended.

Comments: Regular maintenance and inspection should be undertaken to ensure that the hot water tanks are operating at full efficiency. The storage tanks have a typical service life of around 10-15 years, varying based on frequency of use and maintenance.

33

Heat Exchangers

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	25
Effective Age (yrs):	16
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the Mitsubishi condensing units on the highrise roof and York air conditioning units in the parkade.

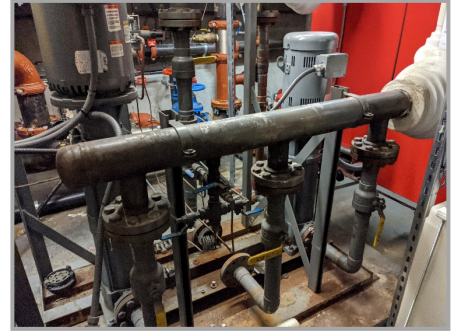
Condition: The heat exchangers are in serviceable condition and appear to be functioning as intended.

Comments: Reserve costs include targeted renewals for the heat exchangers after 25 years of service.

34

Miscellaneous Mechanical Room Components

Location:	Mechanical Room
Year Installed:	2015
Typical Service Life (yrs):	10
Effective Age (yrs):	5
Remaining Service Life (yrs):	5
Planned Renewal Date:	2025



Description: The miscellaneous mechanical components include pressure release valves, air compressors and other valves in the mechanical rooms and are maintained by Pacific West Mechanical Ltd.

Condition: The miscellaneous mechanical room components appear to be functioning as intended.

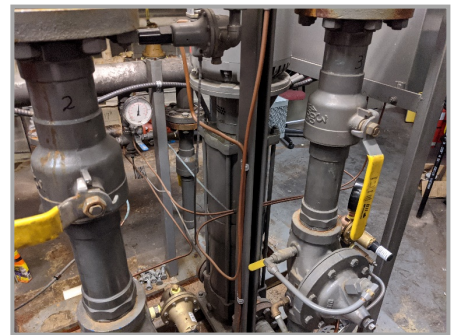
Comments: Regular inspection, testing, and maintenance with a mechanical contractor are recommended. It is also important to note that the installation of new equipment may provide further energy cost savings, which may be more cost effective in the long term. The reserve costs included in the report accounts for full scale renewal of the equipment. For the purposes of costing, a lump sum amount has been included; however, the mechanical equipment will break down at various intervals and the Owners should expect repairs in staggered amounts.

Mechanical

35

Water Pumps

Location:	Mechanical Room
Year Installed:	2010
Typical Service Life (yrs):	20
Effective Age (yrs):	10
Remaining Service Life (yrs):	10
Planned Renewal Date:	2030



Description: This component includes the booster pumps, and circulation pumps for the highrise building and are maintained by Pacific West Mechanical Ltd.

Condition: The water pumps appear to be functioning as intended.

Comments: Reserve costs include an allowance for targeted renewals.

Mechanical

36

Duplex Sump Pump

Mechanical

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the Myers duplex sump pump maintained by Pacific West Mechanical Ltd.

Condition: The sump pump appears to be functioning as intended with no major deficiencies reported.

Comments: Reserve costs include renewal of the sump pump after 30-years of service.

37

HVAC - Building

Mechanical

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	16
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Description: This component includes the Engineered Air make-up air unit in the highrise building maintained by Pacific West Mechanical Ltd.

Condition: The building HVAC components appear to be functioning as intended.

Comments: JRS recommends engaging in a mechanical professional to review the condition of the building HVAC and to better gauge renewal year and costs associated with replacements. Mechanical HVAC equipment requires regular maintenance in order to perform as expected. In addition, regular maintenance can extend the service lives of many components of the buildings' HVAC. The reserve cost includes an allowance for professional review and full replacement of the HVAC components when they fail.

38

HVAC - Parkade

Location:	Parkade
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	16
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Mechanical

Description: This component includes the CO sensors, and exhaust fans used to ventilate the parkade structure.

Condition: The parkade HVAC appears to be in functioning as intended with no major deficiencies reported.

Comments: As with the building HVAC system, the parkade HVAC equipment requires maintenance and regular inspection in order to operate at peak efficiency. The reserve costs include full replacement of the parkade ventilation components when they fail.

ELECTRICAL

39

Service Distribution

Location:	Electrical Room
Year Installed:	2004
Typical Service Life (yrs):	50
Effective Age (yrs):	16
Remaining Service Life (yrs):	34
Planned Renewal Date:	2054



Electrical

Description: This component includes incoming underground service, voltage transformers, and electrical equipment (i.e. circuit breaker panels, electrical panels and disconnect switches) inside electrical rooms.

Condition: The service distribution components appear to be functioning as intended.

Comments: Service distribution equipment often lasts beyond their expected service life with minimal maintenance, making it difficult to predict when the system might require renewal or what the risk of failure is. Often the equipment is upgraded due to increased residential demand, or replacement components become unavailable due to obsolescence. Common issues that arise from service distribution components are due to loosen connections, corrosion due to humid environment, and/or excessive dust. JRS recommends conducting periodic infrared checks for localized overheating of components as to proactively identify deteriorating areas and maintain equipment performance and lifespan. The cost of this reserve item is based on replacement of each individual electrical unit. An allowance has been included for maintenance and cleaning of the service distribution system every 3 years.

40

Power Distribution

Location:	Throughout Complex
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Electrical

Description: This component includes a small percentage of wiring in walls and lighting (interiors, exit signs, parkade).

Condition: The wiring could not be visually inspected; however, it is generally in functioning condition with no reported issues.

Comments: The interior wiring is designed to last the lifetime of the building. As such, reserve costs for the interior wiring are for renewals to a percentage of the interior wiring. It is expected to allocate an allowance for eventual light fixture renewal and electrical base board renewals.

41

Enterphone System

Electrical

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	25
Effective Age (yrs):	16
Remaining Service Life (yrs):	9
Planned Renewal Date:	2029



Description: This component includes the enterphone panel and system installed at the front entrance.

Condition: The enterphone system appears to be functioning as intended with no major deficiencies reported.

Comments: An allowance has been included for the renewal of the enterphone system in the scheduled renewal year. Over time, the frequency of required maintenance and repairs will increase, and eventual full-scale replacement will be more cost effective.

42

Security System and Cameras

Electrical

Location:	Throughout Building
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	10
Remaining Service Life (yrs):	10
Planned Renewal Date:	2030



Description: This component includes cameras, recording and monitoring devices and computer.

Condition: The security access system and cameras appear to be functioning as intended.

Comments: Electronic equipment is sensitive to dust and debris. As such, they should be inspected and cleaned regularly. Any upgrades or expansions of the system will affect the cost. As issues arise, they should be repaired immediately to maintain building security. Reserve costs include targeted renewals of the security system and cameras.

43

Fire Alarm Panel and Emergency Lighting

Location:	Throughout Highrise
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	16
Remaining Service Life (yrs):	4
Planned Renewal Date:	2024



Electrical

Description: This component includes the fire alarm panels and annunciator at the building entrance, as well as emergency lighting throughout the building. The panel is used by fire fighters in case of an emergency to locate the fire.

Condition: The fire alarm system appeared to be functioning as intended.

Comments: The fire alarm and emergency lighting systems need to be inspected regularly, ensuring that they function as intended. JRS also recommends having a fire drill plan set up to prepare for the unlikely event of a fire. Reserve costs include the fire alarm panels and a percentage of the emergency lighting.

SPECIALTY

44**Mailboxes**

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the mailboxes in the highrise lobby.

Condition: The mailboxes are in serviceable condition.

Comments: Reserve costs include renewal of the mailboxes.

45**Meeting Room**

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	15
Effective Age (yrs):	8
Remaining Service Life (yrs):	7
Planned Renewal Date:	2027



Description: This component includes the finishes (carpet floor, painted drywall walls and ceiling) furniture, and appliances in the meeting room.

Condition: The meeting room finishes, furniture, and appliances are in serviceable condition.

Comments: Due to the aesthetic nature of the meeting room finishes and furniture, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

46

Aerobics Room

Specialty

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	15
Effective Age (yrs):	8
Remaining Service Life (yrs):	7
Planned Renewal Date:	2027



Description: This component includes the finishes (carpet floor, painted drywall walls and ceiling) and equipment in the aerobics room.

Condition: The finishes and equipment appear to be in serviceable condition.

Comments: Due to the aesthetic nature of the aerobic room interiors and equipment, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

47

Washroom

Specialty

Location:	Highrise Meeting Room
Year Installed:	2004
Typical Service Life (yrs):	15
Effective Age (yrs):	8
Remaining Service Life (yrs):	7
Planned Renewal Date:	2027



Description: This component includes the finishes and fixtures in the washroom.

Condition: The washroom finishes and fixtures appear to be functioning as intended.

Comments: Due to the aesthetic nature of the washrooms, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for targeted renewals.

48

Play Structure

Specialty

Location:	Highrise
Year Installed:	2004
Typical Service Life (yrs):	20
Effective Age (yrs):	17
Remaining Service Life (yrs):	3
Planned Renewal Date:	2023



Description: This component includes the play structure at the northeast end of the property.

Condition: The play structure appears to be functioning as intended.

Comments: Due to the aesthetic nature of the play structure, the renewal year is subjective and at the discretion of the Owners. An allowance has been included for renewal of the play structure.

49 - 73

Club Viva Assets

Specialty

Location:	Club Viva
Year Installed:	2003
Typical Service Life (yrs):	Varies
Effective Age (yrs):	Varies
Remaining Service Life (yrs):	Varies
Planned Renewal Date:	Varies



Description: These assets include the building envelope components, amenities, mechanical and electrical systems for Club Viva.

Condition: Refer to 2020 Club Viva Depreciation Report completed by Morrison Hershfield for further detail.

Comments: According to the information provided, the Strata Council is responsible for 24% of the renewal costs.

SITE SERVICES

74

Softscaping

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	2044
Planned Renewal Date:	



Site Services

Description: This component includes the landscaped area between the highrise and townhouse building, as well as the surrounding plants in the planters.

Condition: The softscaping is in satisfactory condition with no major deficiencies observed.

Comments: The cost of this reserve item is based on the overall complexity of vegetation, frequency of large trees and total area and provides funds for a percentage of complete replacement. It is recommended for trees that are becoming too large, be pruned to prevent damage to the surrounding hardscaping. Reserve costs include allowances for softscaping work in conjunction with below-grade waterproofing membrane renewal projects.

75

Water Feature

Location:	Highrise Entrance
Year Installed:	2004
Typical Service Life (yrs):	15
Effective Age (yrs):	10
Remaining Service Life (yrs):	5
Planned Renewal Date:	2025



Site Services

Description: This component includes the waterproofing membrane, sand filters, and water pumps for the water feature.

Condition: The water feature appears to be functioning as intended with no major deficiencies reported.

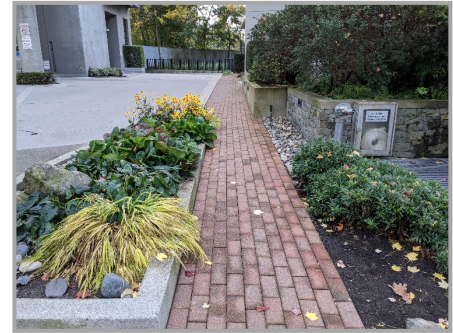
Comments: Reserve costs include allowances for targeted renewals.

76

Hardscaping

Site Services

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	50
Effective Age (yrs):	16
Remaining Service Life (yrs):	34
Planned Renewal Date:	2054



Description: This component includes the concrete walkway pavers, townhouse patio pavers, driveways, ramp, stairs, planters.

Condition: The hardscaping is in serviceable condition.

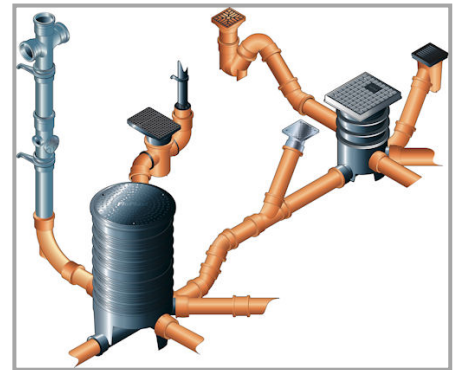
Comments: The hardscaping should be monitored for developing issues and potential tripping hazards. The cost of this component is based on overall complexity and size and provides funds for a percentage of complete replacement. Hardscaping is generally considered to last the life of the property and may only see partial renewals. The major renewal year is timed to coincide with renewal of the below-grade membrane, as any membrane work will require removal of large portions of the hardscaping areas.

77

Underground Water Supply and Drainage

Site Services

Location:	Throughout Complex
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component consists of the incoming water supply from the water mains, sewer, and storm water drainage.

Condition: These components could not be visually reviewed; however, they are generally in satisfactory condition with no reported issues.

Comments: Reserve costs consist of an allowance to replace a percentage of the underground piping systems. Additional allowance has been included to flush the drainage system every 3 years.

78

Outdoor Lighting and Electrical

Site Services

Location:	Throughout Complex
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the exterior lighting on the balconies, townhouse unit entrances, and walkways.

Condition: The exterior light fixtures are in satisfactory condition with no major deficiencies observed or reported.

Comments: Reserve costs include an allowance for targeted replacements.

79

Retaining Walls

Site Services

Location:	Throughout Complex
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the cast-in-place concrete retaining wall above the parkade entrance and the concrete planters around the complex. The concrete interlocking unit planters around the townhouse building are also included.

Condition: The concrete retaining walls are in serviceable condition.

Comments: Reserve costs include an allowance for targeted concrete repairs.

80

Site Guard Rails

Site Services

Location:	Exterior
Year Installed:	2004
Typical Service Life (yrs):	30
Effective Age (yrs):	16
Remaining Service Life (yrs):	14
Planned Renewal Date:	2034



Description: This component includes the metal guard rails adjacent the water feature.

Condition: The site guard rails are in satisfactory condition with no major deficiencies observed.

Comments: Reserve costs include the replacement of the site guard rails.

81

Bike Rack

Site Services

Location:	Highrise Main Entrance
Year Installed:	2004
Typical Service Life (yrs):	40
Effective Age (yrs):	16
Remaining Service Life (yrs):	24
Planned Renewal Date:	2044



Description: This component includes the metal bike rack adjacent to the highrise main entrance.

Condition: The bike rack is in serviceable condition.

Comments: Reserve costs include an allowance for targeted repairs.





CONSIDERATIONS & LIMITATIONS

The service life and estimated age of a specific reserve component is highly subjective. It should not be used for the exact timing of replacements, but as a relative timing to be used to assist in developing a financial plan. The exact timing of replacements will be influenced by several factors that are difficult to quantify. These factors include but are not limited to the following:

- ◆ Design appropriateness of reserve component
- ◆ Installation of reserve component
- ◆ Frequency and intensity of maintenance
- ◆ Frequency of use and misuse
- ◆ Exposure to traffic and weather
- ◆ Brand, quality, and model of reserve components
- ◆ Unplanned events such as earthquakes, floods and fires

It should be noted that economies of scale may be achieved if multiple projects are bundled together into larger projects, thus sharing front-end and mobilization costs.

The estimated costs should be considered as “order-of-magnitude” and used to allocate funds to undertake the work, not for accounting purposes. Actual costs will vary based on a variety of factors, which include but are not limited to the following:

- ◆ labour and materials market conditions
- ◆ time of the year
- ◆ contractor availability
- ◆ site-specific conditions
- ◆ environment concerns
- ◆ design specifications
- ◆ functional obsolescence
- ◆ project delivery method
- ◆ tendering process
- ◆ code upgrades
- ◆ required emergency repairs discovered during construction
- ◆ occupancy use and facility operations

More accurate estimates can only be determined once the project objectives are specified and the work tendered. Project-related costs, such as consulting services, contingency allowances, front-end costs, all overhead and profit, have not been included.

AZURA ONE		Inflation Factor	3.0%											
LIFE CYCLE RENEWAL COSTS		Interest Rate	1.90%											
RESERVE COMPONENTS	YEAR INSTALLED	TYPICAL LIFE (Yrs)	EFFECTIVE AGE (Yrs)	REMAINING LIFE (Yrs)	RENEWAL YEAR	CURRENT REPLACEMENT COST	FUTURE REPLACEMENT COST	CURRENT RESERVE FUND REQUIREMENT	FUTURE RESERVE FUND ACCUMULATION	FUTURE RESERVE FUND REQUIREMENT	ANNUAL RESERVE FUND ASSESSMENT	RESERVE FUND ASSESSMENT	RESERVE FUND ALLOCATION	
BUILDING ENVELOPE AND STRUCTURE														
1	Parkade/Concrete Structure	2004	50	16	34	2054	89,947	245,727	28,783	54,583	191,143	4,052	0.57%	
2	Balcony Guard Rail Assemblies	2004	30	16	14	2034	507,500	767,639	270,667	352,268	415,371	26,177	3.70%	
3	Balcony Membrane Assemblies	2010	15	6	9	2029	410,000	534,957	164,000	194,273	340,684	35,067	4.96%	
4	Roof Deck Assemblies	2004	30	16	14	2034	181,900	275,140	97,013	126,261	148,879	9,383	1.33%	
5	Exterior Walls - Metal Panel Cladding	2004	40	16	24	2044	489,250	994,545	195,700	307,448	687,097	22,863	3.24%	
6	Exterior Walls - Concrete Façade	2004	40	16	24	2044	89,000	180,919	35,600	55,928	124,991	4,159	0.59%	
7	Windowwall Assemblies	2004	40	16	24	2044	4,918,000	9,997,281	1,967,200	3,090,501	6,906,780	229,817	32.53%	
8	Punched Windows	2004	40	16	24	2044	478,000	971,676	191,200	300,378	671,297	22,337	3.16%	
9	Sliding Doors	2004	40	16	24	2044	489,000	994,036	195,600	307,291	686,746	22,851	3.23%	
10	Swing Doors	2004	40	16	24	2044	232,500	472,625	93,000	146,104	326,520	10,865	1.54%	
11	Highrise Main Entry Door	2004	40	16	24	2044	15,000	30,492	6,000	9,426	21,066	701	0.10%	
12	Townhouse Entry Doors	2004	25	16	9	2029	8,000	10,438	5,120	6,065	4,373	450	0.06%	
13	Service Doors	2004	30	16	14	2034	5,000	7,563	2,667	3,471	4,092	258	0.04%	
14	Garage Doors	2004	25	16	9	2029	25,500	33,272	16,320	19,332	13,939	1,435	0.20%	
15	Sealant	2015	10	6	4	2024	175,950	198,033	105,570	113,825	84,208	20,462	2.90%	
16	Paint Coating	2015	10	6	4	2024	92,250	103,828	55,350	59,678	44,150	10,728	1.52%	
17	Fireplace Vents	2004	30	16	14	2034	6,000	9,076	3,200	4,165	4,911	309	0.04%	
18	Entrance Canopy	2004	40	16	24	2044	6,000	12,197	2,400	3,770	8,426	280	0.04%	
19	Low Slope Roof - Inverted	2004	35	16	19	2039	286,300	502,029	130,880	187,147	314,882	13,916	1.97%	
20	Steep Slope Roof - Metal	2004	40	16	24	2044	108,500	220,558	43,400	68,182	152,376	5,070	0.72%	
21	Parkade Vehicular Traffic Membrane	2004	20	16	4	2024	81,375	91,588	65,100	70,190	21,398	5,199	0.74%	
22	Below-grade Membrane	2004	40	16	24	2044	165,000	335,411	66,000	103,687	231,724	7,710	1.09%	
INTERIOR														
23	Lobby	2004	20	15	5	2025	28,000	32,460	21,000	23,072	9,387	1,807	0.26%	
24	Interior Doors	2004	40	16	24	2044	10,000	20,328	4,000	6,284	14,044	467	0.07%	
25	Hallways, Stairwells and Common Areas	2015	12	5	7	2027	273,832	336,779	114,097	130,164	206,614	27,876	3.95%	
CONVEYANCE														
26	Elevator Modernization - Traction	2004	30	16	14	2034	600,000	907,554	320,000	416,475	491,079	30,949	4.38%	
27	Elevator Cab Finishes	2004	30	16	14	2034	45,000	68,067	24,000	31,236	36,831	2,321	0.33%	
MECHANICAL														
28	Domestic Water Pipes	2004	30	16	14	2034	2,691,000	4,070,379	1,435,200	1,867,889	2,202,490	138,805	19.64%	
29	Gas Pipes	2004	50	16	34	2054	12,500	34,149	4,000	7,585	26,563	563	0.08%	
30	Sprinkler Pipes and Fire Pump Components	2004	50	16	34	2054	38,750	105,861	12,400	23,515	82,346	1,745	0.25%	
31	Boilers	2004	20	16	4	2024	80,000	90,041	64,000	69,004	21,036	5,112	0.72%	
32	Hot Water Storage Tanks	2017	12	3	9	2029	36,000	46,972	9,000	10,661	36,311	3,737	0.53%	
33	Heat Exchangers	2004	25	16	9	2029	40,000	52,191	25,600	30,323	21,865	2,251	0.32%	
34	Miscellaneous Mechanical Room Components	2015	10	5	5	2025	15,000	17,389	7,500	8,240	9,149	1,762	0.25%	
35	Water Pumps	2010	20	10	10	2030	20,000	26,878	10,000	12,071	14,807	1,358	0.19%	
36	Duplex Sump Pump	2004	30	16	14	2034	14,000	21,176	7,467	9,718	11,459	722	0.10%	
37	HVAC - Building	2004	20	16	4	2024	21,000	23,636	16,800	18,114	5,522	1,342	0.19%	
38	HVAC - Parkade	2004	20	16	4	2024	23,700	26,675	18,960	20,443	6,232	1,514	0.21%	
ELECTRICAL														
39	Service Distribution	2004	50	16	34	2054	66,903	182,773	21,409	40,599	142,173	3,014	0.43%	
40	Power Distribution	2004	40	16	24	2044	19,128	38,882	7,651	12,020	26,862	894	0.13%	
41	Enterphone System	2004	25	16	9	2029	13,000	16,962	8,320	9,856	7,106	731	0.10%	
42	Security System and Cameras	2004	20	10	10	2030	18,000	24,190	9,000	10,864	13,327	1,223	0.17%	
43	Fire Alarm Panel and Emergency Lighting	2004	20	16	4	2024	50,000	56,275	40,000	43,128	13,148	3,195	0.45%	
SPECIALTY														
44	Mailboxes	2004	40	16	24	2044	16,000	32,525	6,400	10,054	22,470	748	0.11%	
45	Meeting Room	2004	15	8	7	2027	25,000	30,747	13,333	15,211	15,536	2,096	0.30%	
46	Aerobics Room	2004	15	8	7	2027	15,000	18,448	8,000	9,127	9,322	1,258	0.18%	
47	Washroom	2004	15	8	7	2027	13,000	15,988	6,933	7,910	8,079	1,090	0.15%	
48	Play Structure	2004	20	17	3	2023	10,000	10,927	8,500	8,994	1,934	632	0.09%	
49	Club Viva - Exterior Walls													
50	Club Viva - Glazing System													
51	Club Viva - Roof Systems													
52	Club Viva - Fitness Room													
53	Club Viva - Lounge													
54	Club Viva - Billiards Lounge													
55	Club Viva - Squash Courts													
56	Club Viva - Guest Suite													
57	Club Viva - Theatre Room													
58	Club Viva - Television Room													
59	Club Viva - Pool													
60	Club Viva - Hot Tub													
61	Club Viva - Steam Rooms													
62	Club Viva - Arts and Crafts Room													
63	Club Viva - Multi-purpose Room													
64	Club Viva - Change Rooms													
65	Club Viva - Kitchen													
66	Club Viva - Lobby													
67	Club Viva - Parkade													
68	Club Viva - Plumbing Systems													
69	Club Viva - HVAC Systems													
70	Club Viva - Fire Suppression Systems													
71	Club Viva - Electrical Systems													
72	Club Viva - Site Development													
73	Club Viva - Professional Services													
SITE SERVICES														
74	Softscaping	2004	40	16	24	2044	38,500	78,263	15,400	24,194	54,069	1,799	0.25%	
75	Water Feature	2004	15	10	5	2025	38,500	44,632	25,667	28,199	16,433	3,164	0.45%	
76	Hardscaping	2004	50	16	34	2054	97,000	264,995	31,040	58,863	206,132	4,369	0.62%	
77	Underground Water Supply and Drainage	2004	40	16	24	2044	65,000	132,132	26,000	40,846	91,285	3,037	0.43%	
78	Outdoor Lighting and Electrical	2004	30	16	14	2034	5,000	7,563	2,667	3,471	4,092	258	0.04%	
79	Retaining Walls	2004	40	16	24	2044	35,000	71,148	14,000	21,994	49,154	1,636	0.23%	
80	Site Guard Rails	2004	30	16	14	2034	15,000	22,689	8,000	10,412	12,277	774	0.11%	
81	Bike Rack	2004	40	16	24	2044	3,000	6,098	1,200	1,885	4,213	140	0.02%	
RESERVE FUND PLANNING														
Certified Reserve Fund Consultant		2020	3	3	3	2023	8,600	9,397	8,600	9,100	298	97	0.01%	
TOTAL RESERVES							13,360,385	23,934,197	6,096,913	8,635,497	15,298,700	706,575	100%	

Refer to 2020 Depreciation Report completed by Morrison Hershfield

DEFINITIONS

RESERVE COMPONENTS: Individual components within the major building systems. Note that some of these components were separated due to differences in installation dates. There may also be multiple renewals and smaller repairs included in the 30-year outlook. Minor components with insignificant renewal costs have either been combined with an allowance or not included in order to simplify financial analysis.

YEAR INSTALLED: Year the component was installed, which includes original construction or replacement. JRS assumes that all previously replaced components were new when installed, unless stated otherwise.

EXPECTED LIFE: Expected service life based on historical data and industry standards.

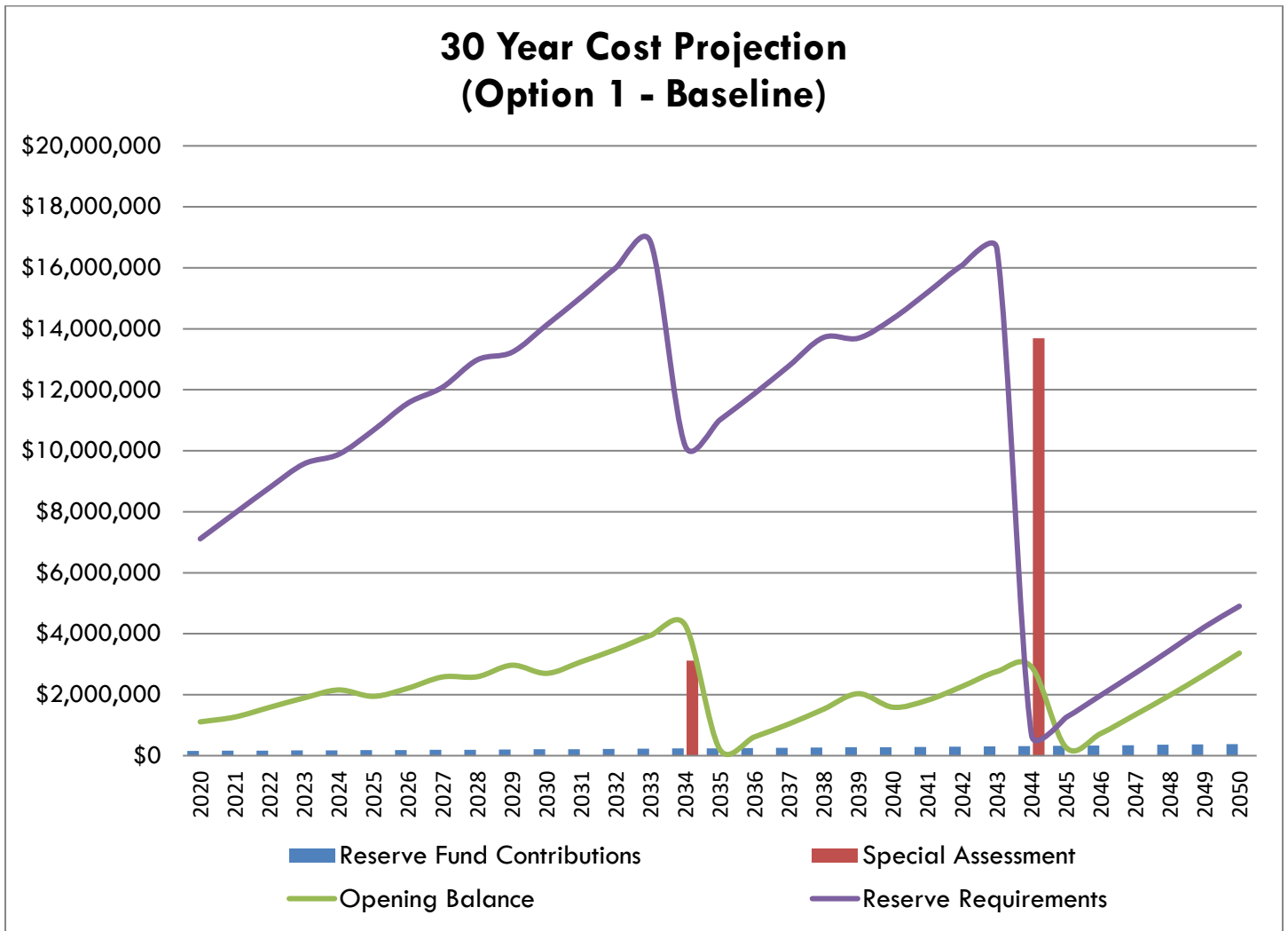
EFFECTIVE AGE: Assessed age of component. The default is the chronological age, but may be adjusted based on condition, location (exposure to weather and traffic), installation, maintenance, brand, model,





OPTION 1 (BASELINE)

This model shows annual contributions (increasing with inflation) consistent with status quo (current contributions) or the statutory requirement of 10% of operating budget, whichever is higher. In this case no changes to the contribution levels have been made. As seen below, multiple special levies will be required. From 2020 to 2050 (the end of the 30-year outlook), special levies will theoretically be required in 2 out of 30 years.

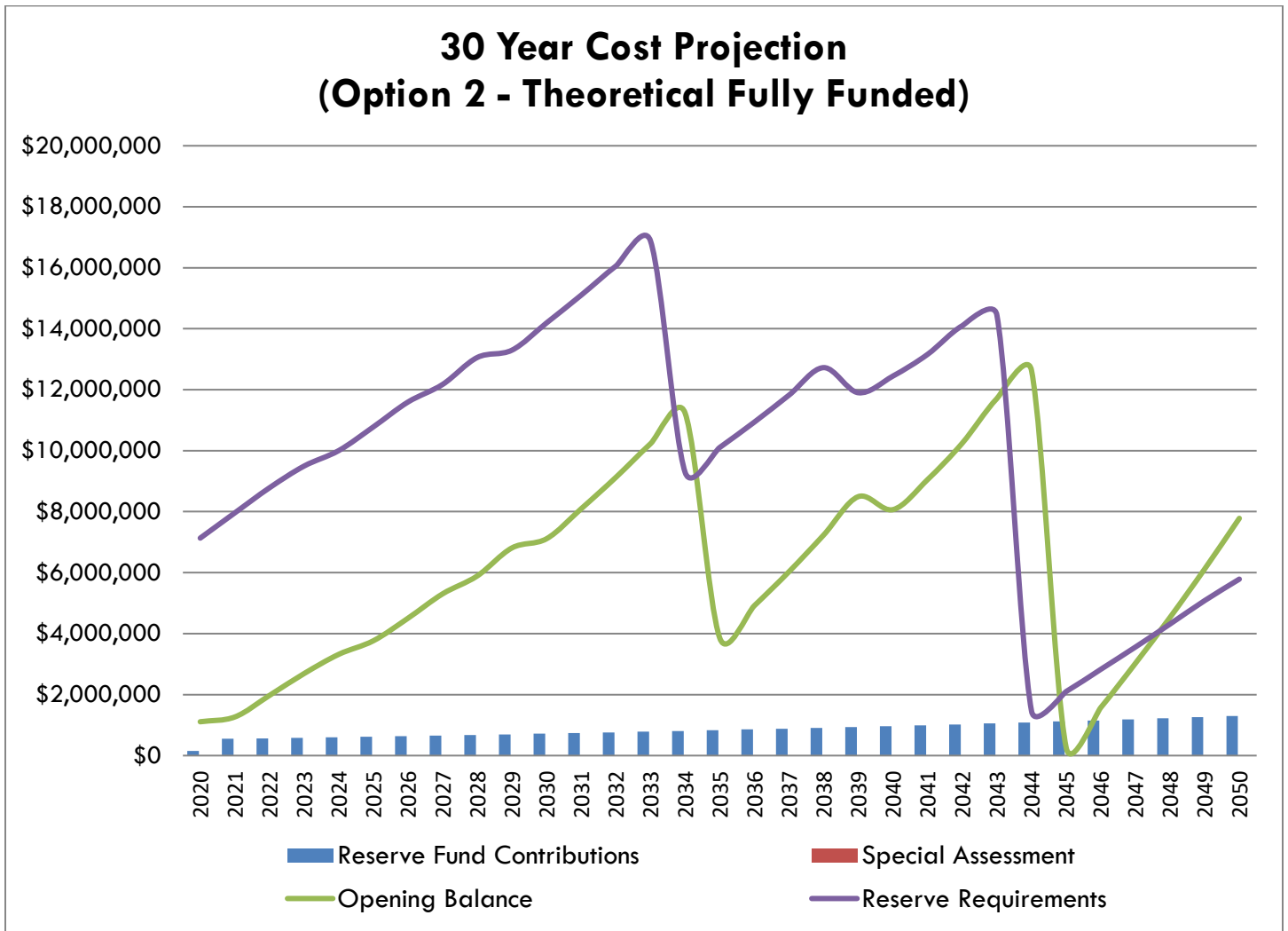




OPTION 2 (THEORETICAL FULLY FUNDED)

This model shows annual contributions (increasing with inflation) that would allow for a sufficient and fully funded CRF that should theoretically not require special levies during the 30-year outlook. This contribution level is immediate and based on the objective of achieving a positive value in the accumulated CRF balance after 30 years.

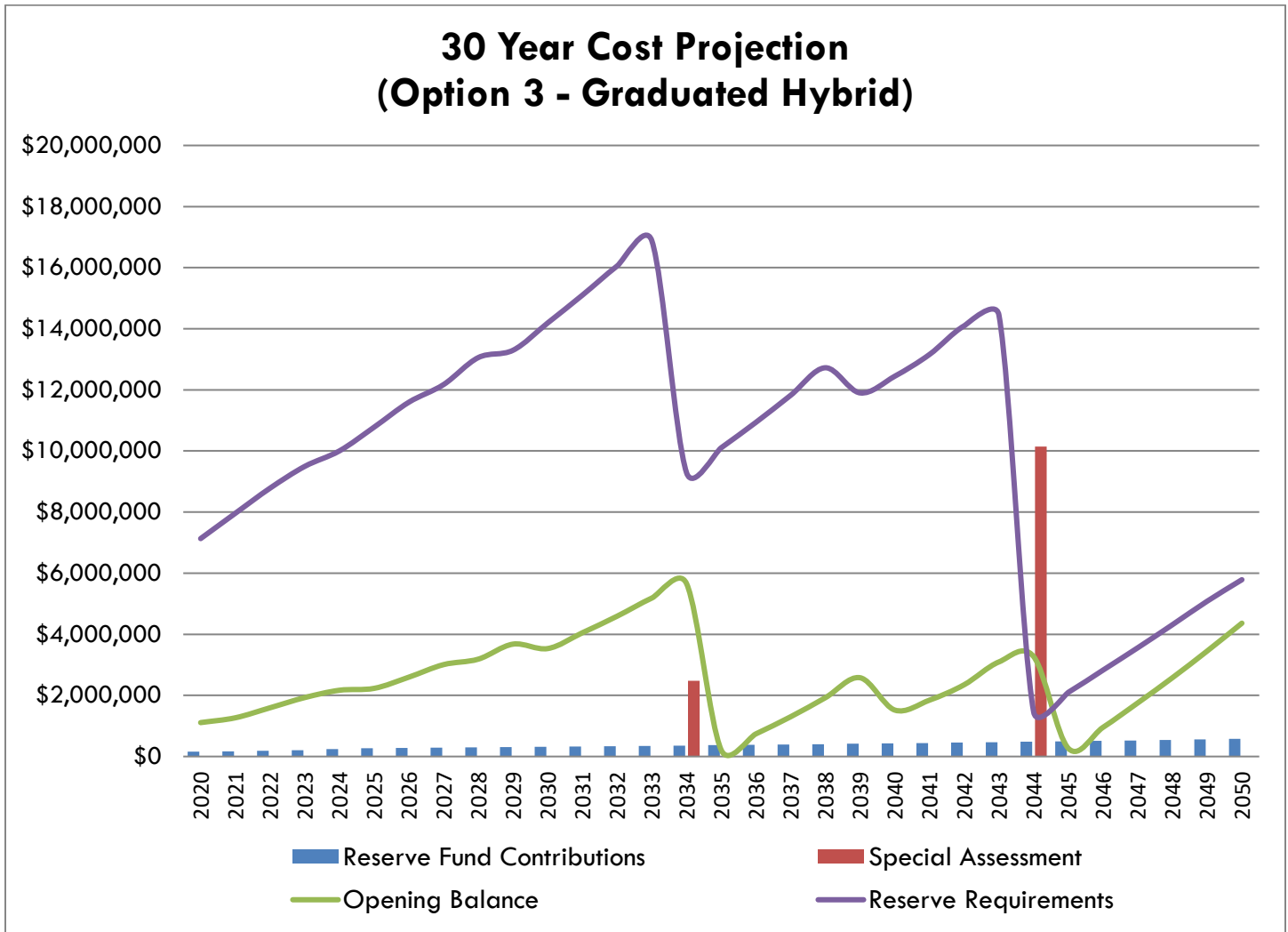
Fully funded contributions are usually much higher than the amount the Owners are actually contributing to the CRF. Therefore, it is usually impractical and difficult to achieve this immediately.





OPTION 3 (GRADUATED HYBRID)

This model shows annual contributions that are gradually increased until 50% of the fully funded CRF contribution levels is reached. These increases can be revised during the 3-year updates based on a number of factors: actual CRF contributions, recent upgrades, anticipated short term expenditures, as well as current interest and inflation factors. This model generally indicates that eventually (5 years) the CRF contribution level achieves 50% of the fully funded contribution level (\$353,288) and is likely the most prudent option that the general Ownership would be willing to accept. The owners can ultimately revise the percent of annual increases and time it takes to get to this value. This model reduces the amount required for the remaining special levies.





**RESERVE FUND – CASH FLOW TABLE**

The Cash Flow Table presented below is for JRS' recommended Graduated Hybrid Funding Model. It demonstrates estimated cash flow over a 30-year period as the funding model is applied, including opening balance, of reserve fund contributions and expenditures as major components are expected to be replaced.

YEAR	OPENING BALANCE	RECOMMENDED ANNUAL CONTRIBUTION	SPECIAL ASSESSMENT	ESTIMATED INFLATION-ADJUSTED EXPENDITURES	ESTIMATED INTEREST EARNED 1.90%	% INCREASE IN RECOMMENDED ANNUAL CONTRIBUTIONS	CLOSING BALANCE
2020	1,102,315	155,760	-	146,160	20,944	--	1,132,859
2021	1,252,513	182,239	-	480	23,798	17.00%	1,458,070
2022	1,583,484	213,220	-	23,360	30,086	17.00%	1,803,430
2023	1,934,604	249,467	-	88,887	36,757	17.00%	2,131,941
2024	2,268,875	291,877	-	704,630	43,109	17.00%	1,899,231
2025	2,041,925	353,288	-	105,778	38,797	21.04%	2,328,231
2026	2,476,685	363,886	-	20,602	47,057	3.00%	2,867,026
2027	3,021,240	374,803	-	401,962	57,404	3.00%	3,051,484
2028	3,211,458	386,047	-	42,021	61,018	3.00%	3,616,502
2029	3,782,236	397,628	-	695,927	71,862	3.00%	3,555,800
2030	3,727,294	409,557	-	64,962	70,819	3.00%	4,142,707
2031	4,319,961	421,844	-	58,399	82,079	3.00%	4,765,485
2032	4,948,499	434,499	-	27,301	94,021	3.00%	5,449,719
2033	5,638,493	447,534	-	164,220	107,131	3.00%	6,028,939
2034	6,223,473	460,960	912,875	7,715,554	118,246	3.00%	0
2035	200,294	474,789	-	51,890	3,806	3.00%	626,999
2036	833,053	489,033	-	54,180	15,828	3.00%	1,283,733
2037	1,495,547	503,703	-	17,280	28,415	3.00%	2,010,386
2038	2,227,960	518,815	-	17,960	42,331	3.00%	2,771,146
2039	2,994,480	534,379	-	992,716	56,895	3.00%	2,593,038
2040	2,822,132	550,410	-	322,655	53,621	3.00%	3,103,508
2041	3,338,362	566,923	-	120,015	63,429	3.00%	3,848,699
2042	4,089,313	583,930	-	108,033	77,697	3.00%	4,642,907
2043	4,889,281	601,448	-	467,049	92,896	3.00%	5,116,577
2044	5,368,711	619,492	10,881,692	16,971,900	102,005	3.00%	0
2045	257,894	638,077	-	140,528	4,900	3.00%	760,343
2046	1,023,997	657,219	-	6,480	19,456	3.00%	1,694,191
2047	1,963,605	676,935	-	16,740	37,309	3.00%	2,661,109
2048	2,936,283	697,243	-	6,480	55,789	3.00%	3,682,836
2049	3,963,770	718,161	-	7,108	75,312	3.00%	4,750,134
2050	5,036,828	739,706	-	110,676	95,700	3.00%	5,761,558



JRS ENGINEERING
BUILDING ENVELOPE CONSULTANTS

Appendix E

Reserve Fund Study Team



OUR RESERVE PLANNING TEAM



Wesley Narciso, M.Eng., P.Eng., CRP, PRA

Senior Project Engineer | Division Manager

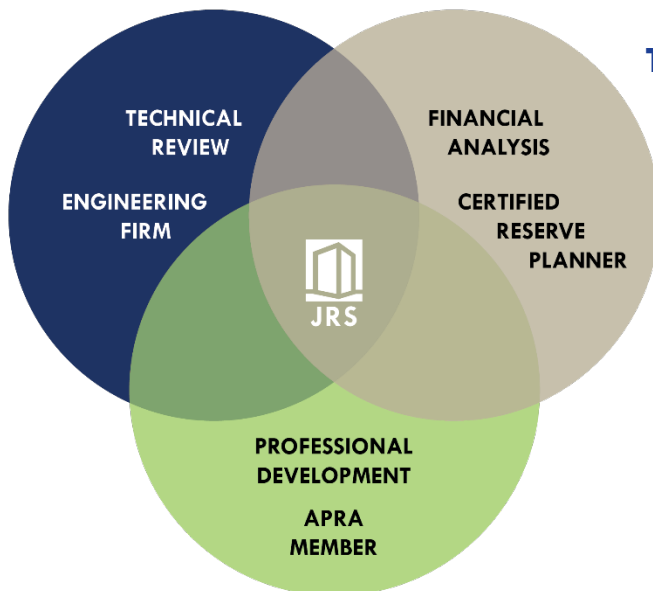
Wesley is a Senior Building Science Specialist, division manager, and part owner at JRS Engineering who has provided engineering consulting services in Canada and the US for more than 20-years. With over a hundred testing and failure analysis reports his unique expertise in materials testing, metallurgical engineering and corrosion has been beneficial in assisting with structural assessments, fastener failure investigations and domestic water pipe replacements.

Wesley has applied his building science experience to a broad spectrum of building types — wood-frame low-rise and concrete high-rise residential buildings to steel-and-glass commercial, office and institutional buildings. He has performed and reviewed over 400 hundred targeted and full-scale building/property assessments/investigations, provided recommendations to a variety of clients with respect to their financial and asset management and helped resolved multiple warranty claim disputes. Wesley has experience in research, design and project management on a variety of west coast projects. He has provided legal support in Canada and the US, as well as expert witness testimony in the Supreme Court of BC.

An active participant in the building science industry, Wesley takes part in professional committees and presents to industry groups and associations. As part of SeaBEC, he helped plan their first Building Enclosure Symposium in 2011. He was the first Professional Engineer in BC to become a Certified Reserve Planner and the only Professional Engineer in North America to also be a Professional Reserve Analyst.

Wesley is an official Mentor with Engineers and Geoscientists BC and was awarded Mentor of The Year in 2012, the inaugural year of the award. He is also the recipient of Engineers and Geoscientists BC 2014 Young Professional Award (President’s Award). A coveted President’s Award is the top honour for engineering in BC.

All reserve planners are engineers registered with the Engineers and Geoscientists of British Columbia



**THE ONLY CONSULTING FIRM
THAT CURRENTLY OFFERS
ALL THREE FACETS OF
RESERVE PLANNING**



OUR RESERVE PLANNING TEAM



Justin Unger, B.ASc, EIT

Mechanical Engineer

Justin has experience in all aspects of building envelope consulting with a focus on energy modelling. He has experience in new construction, existing building and window testing with significant amount of experience in depreciation reports and reserve planning. Justin is meticulous in his approach to all projects; including technical accuracy, foresight and correction of potential problems before they impact projects.

Boris Lin, M.Eng., EIT

Civil / Structural Engineer

Boris specializes in new construction, warranty reviews, depreciation reports, maintenance manuals, and field testing. His expertise includes a broad range of skills including proficiency in design, testing, coordinating projects and ensuring a high level of construction quality control as an on-site field engineer.



Kelvin Chen, B.ASc, EIT

Civil / Structural Engineer

Kelvin has experience in new construction and existing buildings with also significant experience in reserve planning, warranty reviews, and leak investigations. His broad range of knowledge and hands-on experience includes roofing, overseeing construction projects and conducting material testing.

Peggy Shen, B.ASc, EIT

Civil / Structural Engineer

Peggy specializes in depreciation reports, whole building and targeted condition assessments, and leak investigations. Her broad range of expertise includes working with a variety of existing buildings containing varying architectural styles and conditions, meeting with clients to provide customer service, and financial analysis.



Jeffrey Leung, B.Sc. EIT

Engineer

Jeffrey specializes in Depreciation Reports, while also applying his knowledge and experience on a variety of other project types at JRS. Jeffrey's experience in building condition assessments and rehabilitation projects on existing buildings makes him a valuable member of the JRS Reserve Planning Team.





GLOSSARY OF TERMS

- ANNUNCIATOR PANEL:** A central fire alarm display panel usually located in close proximity to the building entrance. It is used to allow for easy identification of fire hazard areas by fire rescue personnel during an emergency and is linked with fire sensor devices throughout the building. It is a requirement in many Canadian bylaws and requires periodic testing, which can be performed in conjunction with other fire protection equipment.
- ASBESTOS:** A natural fibrous mineral that has carcinogenic and other negative health properties. It was heavily used in building construction in the early to mid twentieth century due to its strength, corrosion and fire resistant properties. In the late 20th century, the carcinogenic effects of asbestos were better understood and it was then banned from use in developed countries in the 1980s and 1990s. Typically, buildings built earlier than 1990 should have asbestos testing performed, if interior finishes are disturbed.
- BACKFLOW PREVENTER VALVE:** A mechanical piping component that is used to prevent backflow of fluid (fluid flowing opposite to intended direction). Its use may be required by municipal regulations and can prevent contaminants from entering potable water. The City of Vancouver requires this device for use in "larger complexes" to prevent backflow into potable water from fire sprinkler systems, underground irrigation systems, and commercial/residential boiler systems with and without antifreeze. NFPA 25 (Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems) includes a specification for testing of fire sprinkler system backflow. These devices require annual testing according to the Vancouver Water Works Bylaw 4848.
- BASELINE FUNDING:** A CRF funding regime that typically represents how much the Strata Corporation is currently contributing or whatever the statutory minimum is, whichever is higher. This usually describes a CRF growth strategy that tries to keep contributions low or similar to current or minimum statutory requirements, usually with minor annual adjustments due to inflation. This funding strategy will allow for minimal disturbance to owners' annual Contingency Reserve Fund (CRF) contributions, but will likely lead to frequent special assessments to fund larger future projects (dependant on the health of the current CRF balance).
- BELOW-GRADE MEMBRANE:** A waterproofing material that is applied to surfaces that are below grade, often buried under a nominal amount of landscaping ("at-grade" waterproofing is often at a trafficable surface or at close proximity to a trafficable surface). The material is designed to prevent water ingress into the substrate (e.g. concrete wall) where hydrostatic pressure is expected. A common example of a below grade membrane is 2-ply SBS (Styrene Butadiene Styrene) over an underground parkade roof.
- BENCHMARK ANALYSIS:** Backbone of the Depreciation Report's financial analysis. It consists of an asset inventory along with information regarding installation dates, typical life expectancies, effective ages, remaining life, projected future renewal dates, estimated current and future costs for renewal as well as other CRF related financial information, including the annual reserve fund assessment values.
- BOILER:** A mechanical vessel designed for heating fluid (air or water) for the purpose of air or domestic water distribution. A boiler is often used for heating the building, where, for example, the heated medium is pumped to radiant heaters and its energy is dissipated to its surroundings.
- BOOSTER PUMP:** A mechanical device used to increase/maintain the pressure or flow rate of a fluid. Booster pumps are not typically intended to be used independently but as an auxiliary unit to a usually larger and more complex pumping device. Booster pumps are commonly used in mechanical sprinkler systems in buildings and for domestic water use in highrise buildings.
- BUILDING CONDITION ASSESSMENT:** A technical review of all the physical assets of a property and often includes associated costs of short term renewals. It is similar to a Depreciation Report, except technically more detailed and without the cost projections and cash flow tables associated with long term capital asset planning.
- BUILDING ENVELOPE:** The shell of the building that separates the interior environment from the exterior environment. Its purpose is to protect the interior space from environmental and manmade elements. Parts of the building envelope include windows, walls, roofs, and floors. Other noteworthy components can include attics, parkades, garages, carports and balconies.
- BUILDING ENVELOPE CONDITION ASSESSMENT:** Unlike Depreciation Reports/Reserve Fund Studies or Building Condition Assessments, this type of assessment focuses only on building envelope systems/components and at a greater detail, often including interior and/or exterior exploratory openings, moisture probes and other analytical methods/tools to diagnose the building envelope's condition in greater detail.
- BYLAWS:** Sets of rules, regulations or subsidiary laws imposed onto a community, group, or organization by consensus or legislation and registered in the Land Title Office. All strata corporations should have a set of bylaws to address specific concerns where the standard Strata Property Act and Regulation are not sufficient. It should be noted that not all rules voted into the bylaws may be legal and should be reviewed by legal professionals.
- CANOPY:** A physical overhanging component commonly installed over fenestrations such as windows and doors. It is used to deflect precipitation and/or provide shading for users.



- CAPITAL RESERVE PLAN:** A formalized plan/strategy that compiles all major assets of a property and projects what major remedial actions may be required along with their costs. The term is used interchangeably with Depreciation Report (used mainly in BC), Reserve Study and Reserve Fund Study and is used more often with Housing Co-ops and commercial property.
- CASH FLOW METHOD:** A CRF contribution strategy or option where contributions are designed to offset the variable annual expenditures from the CRF. The CRF is considered one large pool of money, where annual contributions (or special levies) offset the scheduled CRF expenditures from the fund, regardless of what the money is intended for on that particular year.
- CASH FLOW TABLE:** A summary table in a depreciation report or reserve fund study that summarizes the pertinent and more practical financial values within a projected outlook (e.g. balances, recommended annual contributions, possible special assessments, estimated expenditures, estimated interest earned).
- CEDAR SHAKES:** A thin tapered piece of cedar that is often used in an offset layered pattern such as roofing or cladding. Shakes are similar in appearance to shingles, but have differences in application, surface, and dimension. Compared to shingles, shakes are slightly thicker (1/2" to 3/4" at butt end) and have a more irregular surface finish causing them to not lay as flat after installation. Because of this, roofing shakes typically utilize felt paper between courses.
- CEDAR SHINGLES:** A thin tapered piece of cedar that is often used in an offset layered pattern such as roofing or cladding. Shingles are similar in appearance to shakes, but have differences in application, surface, and dimension. Compared to shakes, shingles are slightly thinner (3/8" to 1/2" at butt end) and have a more precise surface finish. Shingles do not typically have felt interweaving.
- CHILLER SYSTEM:** A mechanical system that is used to removed heat. It uses either vapour-compression or absorption refrigeration cycle processes to cool a fluid, which is then run through further equipment (e.g. heat exchanger) to remove heat from a space or equipment.
- CHLORINATOR:** A mechanism used to treat a substrate, most commonly water, with chlorine or a chloride compound for the purpose of disinfection.
- CIRCUIT BREAKER:** An electrical device that is composed of mechanical switches, which are designed to automatically switch off in case of high current flow. The equipment is used for safety purposes and is usually required by law.
- CLADDING:** The exterior material or component of a building (typically at walls) designed to provide a deflection mechanism for weather precipitation and the first line of defence against the environment.
- CONDOMINIUM BOARD:** The condominium board is usually elected by, and made up of, individual condominium or property owners. The board meets regularly to handle policy, finances, and make decisions about the upkeep and repair of the common property. In BC, these are referred to as strata councils.
- CONTINGENCY RESERVE FUND:** A fund or financial account used to pay for asset repairs, rehabilitation work, renovations and renewals that occur less often than once per year. The fund may be built up over time through annual strata fees so that future common expenses can be paid for partially or fully from the fund.
- CONVEYANCE:** Part of the building that transports (vertically or horizontally) supplies and/or building occupants from one point to another (e.g. elevators, escalators, wheelchair lifts).
- COOLING TOWER:** A type of mechanical equipment that rejects waste heat to the atmosphere by way of cooling water. This type of heat rejection is "evaporative", where it allows a small portion of the water to evaporate into a moving air stream and provide significant cooling to the rest of that water stream. Common applications are found in air conditioning, manufacturing and electric power generation.
- COST PROJECTION:** For Depreciation Reports and Reserve Studies, the cost projections relate to the future costs of asset renewals within a given timeframe.
- CPI (CONSUMER PRICE INDEX):** An indicator of changes in consumer prices experienced by Canadians. It is obtained by comparing, over time, the cost of a fixed basket of goods and services purchased by consumers. This value should not be mistaken for the construction inflation rate and should not used for projecting future asset renewal costs in a Depreciation Report or Reserve Study.
- DECK:** A deck is a low slope surface capable of supporting weight, similar to a floor, but typically constructed outdoors, often elevated from the ground, and usually connected to a building. More specifically, the term deck refers to a roof over living space and may be designed to be used in a fashion similar to a balcony.
- DEPRECIATION REPORT UPDATES:** An update to a previous Depreciation Report, typically performed by the same company. This includes an update in interest and inflation values, history of CRF transactions and asset renewals, another interview with building representatives and in most jurisdictions, a site visit. Currently, strata corporations in BC are required to obtain depreciation report updates every three years unless voted down by a 3/4 vote and require a site visit. The updates, if performed by the same company, are usually much cheaper than the previous Depreciation Report.
- DISCONNECT SWITCHES:** A disconnect switch is a piece of mechanical equipment that has the capability to interrupt power to an electrical circuit or to a group of electrical circuits. Disconnect switches are used in a wide



variety of settings, and are primarily employed as safety devices, which de-energize circuits so that people can work on them safely.

DISTRIBUTION PANELS: A distribution panel is also known as a breaker panel. It consists of circuit breakers, fuses and switches. The panel is connected to the main feeder lines and branch lines and are used to distribute electricity within a building.

DOMESTIC WATER PIPE ASSESSMENT: This is a comprehensive assessment conducted on the potable water and pipes to review the current condition of the domestic water distribution system. Information including, but are not limited to, water quality, corrosion, leakage due to pitting, pipe breakage and serviceability, will be documented such that informed decisions regarding repair, rehabilitation or replacement of the pipelines can be made.

DUE DILIGENCE REPORT: These reports typically refer to technical reviews or condition assessments on buildings that are being re-financed or changing possession. The interested party commissions the due diligence report from building/construction professionals/consultants in order to ascertain any potential financial liabilities.

EAVE: The bottom horizontal edge of a roof that overhangs the face of a wall. The primary function of eaves is to keep rain water off the windows and walls and to prevent the ingress of water at the junction where the roof meets the wall. The eaves may also protect walkways around a building, prevent erosion of the footings, and reduce splatter on the walls.

EFFECTIVE AGE: The age of a component or asset based on its condition. This is usually chronological by default (time since installation), but may be younger or older, depending on the asset's condition.

ELEVATOR MODERNIZATION: This typically refers to overhauling the elevator for most, if not all, of the mechanical and electrical components, as well as the interior finishes, with the exception of the structural cab.

EMERGENCY GENERATOR: Equipment that uses fuel to produce emergency electricity when the electricity source from the centralized electrical grid is cut off, interrupted, or reduced. Emergency generators are often installed in buildings and are dormant when the building is obtaining electricity from the central grid.

EMERGENCY LIGHTING: A battery-packed or generator-sourced lighting device that switches on automatically when a building experiences a power outage. Emergency lights are standard in new commercial and high occupancy residential buildings.

ENTERPHONE: A standalone voice communication system for use within a building or small collection of buildings, functioning independently of the public telephone network. Enterphones are generally mounted permanently in buildings and can incorporate connections to public address loudspeaker systems, walkie-talkies, telephones, and other intercom systems. Some intercom systems incorporate control of devices such as signal lights and door latches.

EXPANSION TANK: A mechanical vessel that is typically filled with air and is used to regulate water pressure by allowing the flow of expanding water into the tank and release pressure within the system. Expansion tanks are typically installed as part of the water supply line to the water heater. When the water temperature within the water heater rises, the water will expand due to its incompressibility.

FASCIA: Usually consists of long, straight boards (e.g. wood or fibre cement) that run along the lower edge of a roof or balcony. Roof fascias are usually fixed directly to the trusses and act as backing for gutters.

FIRE PANELS: A control unit for a building's fire alarm system. The purpose of this panel is to monitor fires, alert people to the location of a fire and supply power to fire detectors. There are two categories of fire alarm panels: conventional and addressable. In conventional fire alarm panels, a series of circuits link all the fire sensors to the central panel. The building is divided into zones, which devices are wired accordingly. Addressable fire alarm panels have the system wired in one or more loops so that a fire can be pinpointed to its exact location.

FLASHING: Usually refers to thin material (most often metal or polymeric) installed to deflect water away from a structure, joint, fenestration, etc. It often plays a key role in the weather resistant barrier (WRB) system.

FOB ACCESS: A small security hardware device with built-in authentication, used to control, monitor and secure access to certain areas. In buildings, key fobs can be used to access lobby doors, storage areas, fitness rooms, pool rooms, etc. The FOB communicates via a reader pad with a central server for the building to grant access to a particular area within customizable durations.

FULLY FUNDED OR FULL FUNDING: A funding option proposed in most depreciation reports that allow for all projected expenses to be paid completely by the CRF with no projected special levies for the entire 30 year scope of the report. This funding strategy is usually impractical and requires substantial increases to CRF contributions and subsequently the strata fees. In other provinces where reserve planning has been legislated for much longer (e.g. Alberta), fully funded models are reasonable and attainable goals.

FUNDING MODELS: Funding models utilize mathematical framework to establish appropriate funding strategies towards the proper maintenance and asset renewal of a property. These models incorporate various parameters such as inflation rates, interest rates, predicted special levies, as well as allowances for targeted work and consulting. The purpose of proposing funding models is to quantify the level of unfunded liabilities and empower the building owners with information to make informed financial decisions. The Strata Property Regulation in BC requires that Depreciation Reports include at least 3 funding models.



- FUSE:** A type of low resistance resistor that acts as a sacrificial device to provide over current protection of either the load or source circuit. The primary component is a metal wire or strip that melts when too much current flows through it, interrupting the circuit that it connects. Short circuits, overloading, mismatched loads, or device failure are the prime reasons for excessive current.
- GEAR TRACTION ELEVATOR:** An elevator that is driven by an AC or DC electric motor using a worm-and-gear-type reduction unit, which turns the hoisting sheave. While the lift rates are slower than in a typical gearless elevator, the gear reduction offers the advantage of requiring a less powerful motor to turn the sheave.
- GRADUATED HYBRID:** A type of funding model that combines the Baseline and Fully Funded models to achieve a balanced approach and gradual increase in CRF contributions. It starts with the current contribution levels and eventually reaches a 50% to 75% fully funded contribution level (this target percentage can be adjusted based on the financial condition of the property). Special levies may still occur but at smaller quantities and less frequently than the baseline model. This funding strategy allows for a more customized and pragmatic funding plan.
- HEAT PUMP:** A mechanical device that uses electrical energy to extract heat from an area of lower heat content and transfer it to an area of higher heat content. A refrigerator is a common example of a heat pump device.
- HEATING VENTILATION AIR CONDITIONING (HVAC):** Refers to either a professional field, area of study, or type of mechanical system/equipment. The HVAC of a building focuses on using mechanical systems and design to maintain reasonable air quality and interior environmental comfort through heating, ventilation, and air conditioning.
- HOSE BIB:** An outdoor water threaded faucet, protruding from a building, also known as a wall hydrant. In colder climates, exterior house bibs should be installed in line with an interior wall (thermal barrier) such that it can be recessed within the wall to provide freezing protection or protected with exterior grade foam insulation.
- HOT WATER STORAGE TANKS:** A mechanical vessel, such as an insulated tank, that is used for storing hot water for domestic use. Hot water tanks may have a built-in gas or oil burner system, electric immersion heaters, or may use an external heat exchanger to heat water from another energy source.
- HOUSING CO-OP:** A legal entity, usually a corporation, which owns real estate, consisting of one or more residential buildings, where individual parties own a share instead of equity in the property. There are two types of housing co-operatives: non-profit and for-profit. In BC, there are also government subsidized and non-subsidized housing co-ops.
- HYDRAULIC ELEVATOR:** An elevator that is powered by a piston that travels inside a cylinder. An electric motor pumps oil into the cylinder to move the piston, which then lifts the elevator cab. Electrical valves control the release of the oil for a gentle decent. They do not use large overhead hoisting machinery the way gear traction systems do.
- INFLATION RATE:** A sustained increase in the general price level of materials and/or services in an economy over a period of time. Also defined as the percentage rate of change of a price index over time. For renewal costs, a construction inflation rate is used, rather than the CPI.
- INFRARED (IR):** A type of electromagnetic radiation that has a wavelength greater than the red end of the visible light spectrum. It is invisible to the human eye. All objects on earth emit infrared radiation as heat, which is detectable by electronic sensors. IR cameras are used to assist with air leakage and discontinuities in thermal insulation.
- INSPECTION:** Refers to a highly detailed and systematic review of a property with a well defined scope of work and objective (e.g. roof, home). Most professional engineers do not provide "inspections," instead, provide assessments, observations or technical reviews of buildings and/or targeted systems or equipment.
- INTEREST RATE:** Also known as the annual percentage rate of the principal, is an amount that is charged to borrowers for the use of money from the lenders. It may be understood as the cost of borrowing money. Rates can change by lenders, government policies as well as inflation.
- IRRIGATION:** The application of water to vegetation by means of pipes, sprinklers, ditches, or streams. It may refer to as a mechanical system (often automated) installed on a property for the purpose of watering trees, grass or plants.
- LIFE CYCLE ANALYSIS (LCA):** LCA is often applied to construction products, building assemblies, whole structures, building portfolios and highways. It is often referred to as cradle-to-grave or cradle-to-cradle analysis and is essential for making green decisions, whether in product manufacturing or in building design. It is life cycle thinking applied to a product: what is involved to make a product and transport it to an installation site; what inputs (e.g. raw materials) and outputs (e.g. products, waste) will occur related to making and using the product over its expected life as well as what will happen to the product when it is no longer needed.
- MAINTENANCE MANUAL:** A report that acts as an information source, which includes building envelope assemblies, warranties, and guides end users in the understanding a building. The manual should define the building construction and its systems, along with the processes and procedures required for it to be maintained efficiently and safely. The manual should also provide recommendations, requirements and checklists for the proper maintenance and long term performance of the respective system or equipment.



- MAINTENANCE REVIEW:** A report that consists of a site visit to a property and typically a review of the building envelope systems and components, which comments on the effectiveness of current maintenance processes and procedures, and offers recommendations for further maintenance actions.
- MAJOR MAINTENANCE:** Maintenance is casually defined in the Strata Property Act as actions performed more often than once a year. Major maintenance consist of action items such as painting and sealant renewals, that are likely to occur less frequently than once a year and if not performed, have potentially significant financial and physical impact to the buildings.
- MAKE UP AIR UNIT:** A piece of equipment used to accept, filter and regulate airflow and distribute it throughout the building as part of the HVAC system. Usually contains a blower, heating or cooling elements, and filter racks.
- MEMBRANE:** A layer or multiple layers of material or a combination of materials that serve as a moisture barrier or as an air and vapour barrier as well. An example would be a balcony or deck membrane (e.g. PVC or polyurethane), which protects the substrate below from water ingress. Other common membranes consist of asphalt, rubber, TPO and polyolefin.
- MIXING VALVE:** A mechanical device that blends hot and cold water together to ensure constant safe outlet temperatures. The storage of water at a high temperature limits the possible breeding ground for bacteria, and the use of a mixing valve allows for water to be stored at high enough temperatures and still be used safely.
- MOULD:** A form of organic growth, such as fungi, that may grow on construction materials. Mould needs three things to be created and sustain growth: food source, water and suitable temperature. It can be any colour and can contribute to poor indoor air quality, adverse health effects, and material deterioration. It reproduces by releasing small "spores" into the air that can lay dormant for long periods of time.
- OBSOLESCENCE (TYPES: FUNCTIONAL, AESTHETIC, ECONOMIC):** The state at which a piece of equipment, service, or practice is no longer needed even though it may still be in good working order. Obsolescence frequently occurs because a replacement has become available that has, in sum, more advantages than the inconvenience related to repurchasing the replacement.
- PARKADE VESTIBULE:** A parkade vestibule is a lobby, entrance hall, or passage that serves to connect the parkade space to the rest of the building interior.
- PATIO:** A ground level area intended for recreational use, commonly adjoining to a residence. Patios can be paved (e.g. stone, concrete, brick, etc.) or built up from the ground (e.g. wood) and not typically suspended or cantilevered from a building. Balconies are often suspended or cantilevered and roof decks are over living space.
- PAVER:** A cementitious/masonry unit commonly used at patios, roof decks, or walkways to provide a walking/traffic surface, a drainage pathway, and/or protection for underlying membranes/surfaces. Pavers are often made from concrete, stone, or brick.
- 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.
- PRESSURE REDUCING VALVE (PRV):** A mechanical device used in plumbing to provide a lower pressure fluid output from a higher pressure fluid input, with the purpose of preventing damage that high pressure could cause to lines and plumbing devices on the output side. In many municipalities, supply water pressure is higher than what is recommended for domestic water lines (in some cases supply mains can exceed 200 psi). Many plumbing codes require PRVs where supply pressures exceed 80 psi.
- RAKE:** The sloped edge of a roof at the ends or sides of a building. Rakes typically do not consist of an overhang, but should as it greatly assists in water deflection, especially if window penetrations exist below.
- REAL ESTATE INSTITUTE OF CANADA (REIC):** An organization that provides education and designation programs for real estate industry professionals in Canada.
- RECIRCULATION PIPE:** Recirculation pipes are used to circulate hot water continuously so that plumbing fixtures (e.g. faucet) will better provide hot water on demand.
- RESERVE FUND STUDY:** Also known as a depreciation report, a report that reviews the current financial well-being of a property as well as provides a visual assessment of the quantities and conditions of common assets of the property, and estimates whether there are sufficient funds available for anticipated major repairs or replacement of these common assets in the future. This report assists in long term financial planning; it strives to examine all the systems and other physical aspects and gives a reasonable expectation as to when they will need to be replaced or have non-routine repairs, and how much this will cost at that projected time in the future. BC is one of the only jurisdictions in North America that uses the term "Depreciation Report."
- ROCK BALLAST:** Part of an assembly that consists of coarse aggregate (rocks or gravel) that is typically used to protect or hold something in place and/or provide a drainage plane. Rock ballasts are used frequently on built-up or inverted, low-slope roofing systems.
- ROOFING CONTRACTORS ASSOCIATION OF BC (RCABC):** An organization that includes professional roofing contractors, manufacturers, and suppliers, and offers training, support, and leadership to its members.



- SAND FILTER:** A device that uses sand as a natural filtration substance to purify water by removing suspended solids. This type of filter is environmentally friendly and commonly used in swimming pools. Regular maintenance (via backwashing or reversing the water flow through the filter) should be performed to maintain good water filtration.
- SBS MEMBRANE:** A type of low-slope roofing membrane (styrene-butadiene-styrene) otherwise known as modified bitumen, made from asphalt and a variety of rubber modifiers and solvents. Techniques or methods to install SBS roofing membrane consist of heat applied, hot-mopped, mechanically fastened and cold-applied adhesives.
- SKYLIGHT:** A type of fenestration installed in a roof or ceiling (typically at 45 degrees or smaller), fitted with safety glass (i.e. tempered, laminated or wire reinforced) to allow for the transmission of daylight.
- SOFFIT:** A flat material installed under roof overhangs, or balcony joist spaces. It may be used for aesthetic purposes but may also be useful in preventing unwanted animal habitation. Soffits are often perforated or have vents installed to allow for venting of the enclosed space. Soffits can be made from a variety of materials such as aluminum, vinyl, fiber cement, wood, steel, etc.
- SPECIAL LEVY OR ASSESSMENT:** An amount of money that owners are required to provide to their Strata Corporation, in addition to their normal strata fees, to pay for essential items such as major maintenance, emergency repairs, legal fees/costs, renewal and rehabilitation of common assets, when there is a shortfall in available funds normally used for these types of expenses.
- STANDPIPE:** A standpipe is part of a series of pipes that transport water to hose valves located within the building. It is designed to provide constant water flow for fire protection purposes and sometimes serves as a backup system for buildings with sprinklers.
- STATUTORY FUNDING:** The minimum CRF funding level that is required to meet the statutory requirements for strata corporations. In BC, the minimum statutory CRF contribution is 10% of the strata corporation's operating budget, unless the CRF balance is at 25% of the operating budget. This is misleading as it indicates that 10% is sufficient when it typically is not.
- STRATA CORPORATION:** A legal entity created by the deposit of a strata plan in the Land Title Office. Its purpose is to divide a building (or buildings) and/or a parcel of land into separate components individually owned where common components are owned by all of the owners. The owners of the strata lots are the members of the strata corporation. An elected strata council governs and maintains the strata corporation.
- STRATA PLAN:** A strata plan outlines the areas, boundaries and dimensions of the strata lots on a horizontal plane by reference to survey makers and not by reference to the floors, walls or ceilings of a building. This document is registered in the Land Title Office.
- STRATA PROPERTY ACT:** The Strata Property Act came into effect on July 1, 2000, (replacing the Condominium Act) and provides a legal framework for all creations and operations of strata corporations in British Columbia. It contains pertinent information affecting strata corporations. Owners and residents in all strata properties must comply with the Strata Property Act, which requires every strata corporation to maintain property insurance on the buildings on a strata plan and to maintain liability insurance. Under the Strata Property Act, a strata corporation has a Schedule of Standard Bylaws, which governs the use, safety and condition of common property and common assets.
- STRATA PROPERTY REGULATION:** Regulations are part of the Strata Property Act and are made by the Lieutenant Governor in Council. Along with the Strata Property Act, the Regulations are the applicable and practical component that allows for specific governance of a strata corporation's operation.
- SUMP PUMP:** A pump used to remove water that has accumulated in a water collection sump basin commonly found in the lower sections of buildings. Sump pumps are especially used where the water table is above the foundation of the home. They will divert the water away from a house to a location that can withstand and deal with water flow such as a storm drain.
- THEORETICAL FULLY FUNDED:** This refers to the annual allocation of funds that is required so that the owners will theoretically never require a special levy. In BC, where CRF balances and contributions (as well as strata fees) are relatively lower than the rest of Canada, it is often an unrealistic target for the short term, but is useful to reference when setting targets and financial goals.
- THRESHOLD FUNDING:** Threshold funding represents a reference funding level where the contingency reserve contribution is set at a predetermined amount.
- TRANSFORMER:** An electrical device that converts electricity of one voltage into another. It does so by increasing or reducing the voltage of an alternating current.
- TRIM:** Generally a strip of material used to help transition between different underlying substrates or cladding components. Trims offer increased protection at vulnerable locations, facilitate construction, and/or provide an aesthetic element to a building. Common areas for trim usage include around windows and doors, at cladding inside/outside corners, floor lines, between different types of cladding, and at the base of walls. Common trim materials include comb-faced spruce, fiber cement board, metal and polyvinyl sheets.



UNIFORMAT: UniFormat is a North American based technical standard used for building asset life cycle and cost analysis as well as building specifications. It has been adopted by ASTM (American Society for Testing and Materials).

WARRANTY REVIEW: A warranty review is a technical report written for a building generally 12, 15, 24, 60 and 120 months following construction. This report often includes a questionnaire for owners, a site visit by engineers for the purpose of reviewing the condition of various warrantable assets, and a professional opinion on construction deficiencies that may be warrantable by the insurance company. This report is most often commissioned by the owner(s) of the building. Types of warranty reviews will differ depending on what is covered, given a certain timeframe, but it is important to understand that only the insurer (not the engineer or contractor) can determine what a warrantable defect is. If there is disagreement, litigation can ensue, which would be costly to the property owners and insurance company.

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