Engineers

Harbour Cove
Depreciation Report

1450, 1470 & 1490 Pennyfarthing Drive, Vancouver, BC

Prepared for:

Strata Corporation VR 1291
c/o The Wynford Group
#815 - 1200 West 73rd Avenue
Vancouver, BC V6P 6G5

Prepared by:

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1 Introduction

1.1 Terms of Reference

Read Jones Christoffersen Ltd. (RJC) was commissioned to prepare a depreciation report for Harbour Cove by The Wynford Group, representing the owners of strata corporation VR 1291.

As outlined in our proposal, the intent of the report is to:

- Estimate the repair, maintenance, renewal or replacement requirements for the common property components based upon their age, condition and estimated remaining life.
- Provide an Opinion of Probable Cost for repairs, maintenance, renewals or replacements which occur less often than once a year or that do not usually occur.
- Develop three contingency reserve fund (CRF) cash flow scenarios based on the projected expenditures.

A visual review of common and limited common property was performed on Thursday, February 4 and Friday, February 5, 2016 to create an inventory (and assess the condition) of the complex's building components. We were provided access to most of the common areas of the complex, roofs, service rooms and parkade areas. We were also provided access to 11 units to assess limited common property components which could not be easily reviewed from the exterior grounds. The six elevators were reviewed on March 1, 2016. In addition to these field reviews, this report also incorporates our extensive knowledge of the complex gained through several years of field reviews, assessments, reports, meetings and discussions.

.1 External Assistance Provided

A review of the elevators was undertaken by Gunn Consultants.

.2 Disclaimers

This report reflects our judgement in light of the information available at the time of preparation and has been prepared in accordance with generally accepted engineering, depreciation report, and building condition assessment practices. No warranties, either expressed or implied, are made as to the professional services provided under the terms of our scope of work and included in this report. No calculations or testing of the building, systems or equipment has been undertaken.

RJC's areas of specialization are limited to the building enclosure, parkade and structure. Nonetheless, because the interior finishes, hard landscaping elements, mechanical systems and electrical systems are relatively simple in nature, RJC undertook the review of, and provided comment on these elements. Should the owners want a more detailed or comprehensive review of the building components outside of RJC's areas of specialization, we suggest that specialists be engaged separately to provide a report.

1.2 Statement of Qualifications and Insurance

This depreciation report prepared by RJC meets the requirements for Depreciation Reports as described by Section 94 of the British Columbia Strata Property Act and Part 6.2 of the British Columbia Strata Property Regulation.

.1 Qualifications of Report Author and Organization

The primary author of this report is Roberto Pecora, P.Eng., LEED AP of RJC's Building Science and Restoration Group. He has a degree in mechanical engineering, over ten years of experience in construction project management and over four years of experience in the preparation of depreciation reports and building condition assessments. Roberto authored all of the appendices (not including the elevator appendix) with input from a variety of building science and structural restoration specialists from RJC. RJC representatives which were involved in the 2014 parkade restoration project, as well as past and current building enclosure-related assessments or projects provided significant input for the parkade (PKD) and building enclosure (BE) appendices.

RJC is a well-established consulting firm with extensive experience in depreciation reports, building condition assessments, building enclosure engineering, building restoration and structural engineering. We have well over a decade of experience compiling depreciation reports and have completed numerous building enclosure and structural restoration projects for strata corporations, leasehold properties and housing co-operatives. RJC's considerable experience in the design, evaluation, restoration, repair and construction of a wide variety of buildings is reflected in every report we produce.

The elevator appendix was prepared by Gunn Consultants. Gunn Consultants, established in 1983, is a well-established firm specializing in elevators, lifts, escalators, moving walks and other methods of vertical transportation.

.2 Statement of Insurance

RJC maintains professional liability insurance, through Metrix Professional Insurance Brokers Inc.

1.3 Declaration of No Conflict of Interest

To the author's knowledge, the individuals that have completed this report do not have a vested interest in the subject property beyond the fee for service to prepare this report.

1.4 Documents Reviewed

The documents provided by the strata property manager prior to the field review and/or while preparing the report were the:

- strata council meeting, SGM and AGM minutes from 2011 to 2015
- 1984 agreement between Harbour Cove Housing Co-Operative and Pennyfarthing Development Corp. and Strata Corporation VR 1291
- 1985 agreement between Pennyfarthing Development Corp. and The Owners, Strata Plan VR 1291
- 2006 brick veneer condition assessment report

- 2013 depreciation report
- 2015/2016 operating budget
- strata bylaws (updated November 25, 2015)
- strata plan

Many RJC documents were also reviewed while preparing this report. These documents include:

- 2013 RJC Parking Structure Evaluation Report
- 2014 RJC Building Envelope Condition Assessment Report
- 2014 RJC Recreation Centre Plaza Waterproofing Design Development Report
- 2014 RJC Targeted Water Testing at Unit 1002 Report
- 2014 RJC Solarium Window/Skylight Design Development Report
- 2014 RJC Bid Summary Sheet for Solaria Rehabilitation
- 2014, 2015 and 2016 documents related to the parkade restoration, solaria rehabilitation and roof deck and balcony waterproofing membrane replacement projects
- architectural drawings

2 Methodology

2.1 Depreciation Reports and Contingency Reserve Funds

The provincial legislation governing strata properties in British Columbia is the Strata Property Act (the Act) and its referenced Strata Property Regulation (the Regulation). On-line copies of the Act and the Regulation can be viewed at:

- http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/98043_01
- http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/12_43_2000

The Act includes a requirement for strata corporations to maintain a contingency reserve fund for "common expenses that usually occur less often than once a year or that do not usually occur". The Act and Regulation also include direction for funding this contingency reserve fund.

A new Regulation of the Act came into effect on December 14, 2011 which made it mandatory for strata corporations to obtain a depreciation report (known as reserve fund studies outside of British Columbia) in order to help plan for the repair, maintenance and replacement of common property and limited common property. The report must contain at least three cash flow funding models for the strata corporation's contingency reserve fund (CRF). This requirement can be waived by a 3/4 vote at an annual or special general meeting, but the waiver has an 18-month limit.

In April, 2014, amendments were made to the Act which now allow strata corporations to pay for projects recommended in the depreciation report with only a majority vote. Previously, this type of resolution required a three quarter vote. Expenditures from the contingency reserve fund that are unrelated to the repair and maintenance of common assets still require a three quarter vote. The same amendment also clarifies that paying for, and accruing funds to pay for, a depreciation report is a legitimate operating fund expense, and can be approved by a majority vote. These amendments to the Act have made it easier for strata councils to carry out their responsibilities to repair and maintain their property.

The Condominium Home Owners' Association of British Columbia (CHOA) and Vancouver Island Strata Owners Association (VISOA) websites are good resources for additional information on the Act, the Regulation, and other important topics.

A depreciation report is intended to be a dynamic document which should be reviewed annually by the strata council and updated in three-year cycles as required by the Act. Updates allow the strata council to revise financial projections based on the changed condition of the common property, altered requirements of the strata corporation and inflation. The report provided is a planning tool, not a directive for action and it should be used in combination with professional and trade advice.

2.2 Common Property and Limited Common Property

The Act defines common property as follows:

a. that part of the land and buildings shown on a strata plan that is not part of a strata lot, and
b. pipes, wires, cables, chutes, ducts and other facilities for the passage or provision of water, sewage, drainage, gas, oil, electricity, telephone, radio, television, garbage, heating and cooling systems, or other similar services, if they are located
    i. within a floor, wall or ceiling that forms a boundary
        A. between a strata lot and another strata lot,
        B. between a strata lot and the common property, or
        C. between a strata lot or common property and another parcel of land, or
    ii. wholly or partially within a strata lot, if they are capable of being and intended to be used in connection with the enjoyment of another strata lot or the common property;

The Act defines limited common property as "common property designated for the exclusive use of the owners of one or more strata lots."

The strata corporation may, by bylaw, take responsibility for the repair and maintenance of specified portions of a strata lot. It may also make an owner responsible for the repair and maintenance of limited common property that the owner has a right to use, or common property (other than limited common property) only if identified in the Regulation and subject to prescribed restrictions.

The building components included in this report are based on the strata corporation responsibilities outlined in Section 11 (Repair and maintenance of property by strata corporation) of the current strata bylaws. For building elements not specified in this section of the bylaws, or where certain conflicts may exist between Section 11 and Section 3 (Repair and maintenance of property by owner), the Act's Schedule of Standard Bylaws (Division 2, Section 8) is used as a reference.

Any building components or enclosures added by owners after original construction, such as a solarium on a roof deck or retractable canopy, are not included in this report. Given that the balcony and roof deck lighting is not visible from most areas of the exterior grounds and some of the lights have been replaced by owners in the past, we have excluded balcony and roof deck lighting from the report. We expect that future owners can replace these lights based on their own preferences when they see fit. Similarly, the patio walking surfaces at the enclosed patios are not included in this report. Because these walking surfaces are not readily visible from the exterior grounds, we do not believe that they need to be consistent in appearance. Based on the variety of walking surfaces observed

during the field review, we believe that some walking surfaces have been replaced by individual owners in the past or may have been added after original construction.

This report excludes all building components which are for the exclusive use of the Harbour Cove Housing Co-Operative. Section 1 of the 1984 agreement between Harbour Cove Housing Co-Operative, Pennyfarthing Development Corporation and strata corporation VR 1291 designates specific areas for the exclusive use of the co-op. These areas include the recreation room (including adjacent patio, small kitchen and washroom), lobby, elevator (including machine room), bicycle and wheelchair storage room, laundry room, 16 individual storage lockers, bulk storage room, enterphone, and stairways and hallways adjacent to the co-op units. Components which are shared between the co-op and the strata corporation are included in the report. These elements include the building structure, building enclosure, exterior grounds, and many mechanical and electrical systems.

The lounge overlooking the racquet ball court was under renovation at the time of the field review. Consequently, it has been excluded from the report. It was the first time that the lounge has been renovated since original construction and we do not expect that future owners will choose to renovate this area in the next 30 years.

2.3 Maintenance and Renewals

Maintenance, which includes the regular inspections, minor repairs and replacement of assembly components, is required to help many building elements reach their expected service life. The decision to maintain or renew (replace worn out assemblies or materials) is one that the strata corporation needs to consider as various components age. In some instances, as a component ages, its maintenance costs increase to a point where it is more cost-effective to renew the component rather than continue maintaining it. Renewal at approximately this point in time will allow the strata corporation to achieve a low life cycle cost.

It is important to note that maintaining the component beyond its expected service life could increase the risks associated with failure of the component. Consequential damage due to failure of the component can often be more than the cost of replacing the component. In other instances, where failure does not result in significant consequential damage, a run-to-failure approach can be undertaken, where a low-risk component is replaced once it fails.

Other important factors which will have an impact on the timing of renewals include availability of parts or materials, the timing of other related projects, and as mentioned above, the consequences of component failure.

Professional opinions by qualified individuals having significant experience with the component in question would greatly assist the strata corporation in the decision-making process. This type of decision-making process is not part of this depreciation report but is recommended by RJC.

2.4 Expected Service Life and Present Equivalent Age

In the appendices, we provide an opinion on the condition of the building component, its expected service life, present equivalent age and estimated remaining life. The condition assessment is based on a visual review which includes, where applicable and where visually ascertainable, observations related to the maintenance of the building component.

The condition is generally categorized as Very Good, Good, Fair, Poor or Failed. Very Good generally applies to new building components or components that are very well-maintained, require only basic maintenance if any, are fully functional and serving their intended purpose without known issues. Good generally applies to building components that are in the first half of their expected service life, are well-maintained, require only basic maintenance if any, are fully functional and serving their intended purpose without known issues. Fair generally applies to building components that are more than half way through their expected service life, require some regular maintenance, are fully functional and serving their intended purpose, however may have known issues. Poor generally applies to building components that require increasing effort to maintain in a functional state or are not serving their intended purpose reliably. Failed applies to building components that require replacement or that cannot serve their functional purpose any longer without significant repairs. When a component cannot be visually reviewed, such as underground stormwater piping or building components hidden inside walls or behind other building components, Unknown is used. When the component condition varies significantly, such as for buildings where a portion of the windows have been recently replaced, Varies is used.

A component which has not been properly maintained is often in worse condition than one that is well-maintained and this is accounted for in the condition assessment and the present equivalent age. Consequently, the present equivalent age is not always the actual age of the component. For example, if carpeting in a corridor is 15 years old, but is very well maintained and lightly used, we may assess the carpet to have a present equivalent age of 8 years to reflect this. On the other hand, if a door closer was installed 10 years ago, but we notice that it is leaking or showing signs of premature failure, we may assess it to have a present equivalent age of 15 years to reflect our observations. A difference between the actual age and present equivalent age indicates that the component is in better or worse condition than would be expected. If the age of the component is unknown, the present equivalent age is our estimate of its current age based on our observations.

The expected service life values provided in the report are based on published data of expected service lives, discussions with contractors and our experience with the building component in question. The expected service life values noted in the report assume that regular maintenance is undertaken as recommended by manufacturers. The estimated remaining life is simply the difference of the expected service life and its present equivalent age.

There are numerous factors that can affect the longevity and performance of a component, therefore it is difficult to accurately predict the anticipated expenditures over a 30-year period. Furthermore, certain evidence which might impact our opinions of expected service life or present equivalent age may be hidden within walls, underground or in crawl spaces, for example. As a result, there remains a significant margin for error for certain building components. Actual conditions may differ significantly from the assumed conditions. In some cases, components could require replacement earlier or later than what is noted in this report. Although the report may be used to assist in planning work for the first ten years, it should be updated every three years, as required by the Act.

2.5 Opinions of Probable Cost

For each component, opinions of probable cost, or budget values, are provided based on work which we expect will be required in the next 30 years. They are intended to provide an expectation for the magnitude of costs required to renew the various building components with new assemblies of similar quality and performance (unless improvements are mandated by building codes or other

regulatory authorities). These budget values are not quotes, since quotes require a site review by a specialized contractor or service provider and in certain cases, the preparation of plans, details, specifications and schedules to achieve a quantified summary of costs. The budget values in this report are not to be confused with improvement budgets, which imply upgrading an assembly or component.

Similar to the service life estimates, the opinions of probable cost are based on published book values, conceptual replacement or repair methods, recently obtained broad unit rates, discussions with contractors and our extensive experience with a wide variety of new construction and restoration projects. All opinions of probable cost are based on projects undertaken during regular working hours.

Although taxes are included in the opinions of probable cost, consulting fees and construction project contingencies are only included for some of the larger projects. Contingencies are typically 10% of the estimated construction costs and consulting fees range between 10% and 20% of the estimated construction costs (the smaller the scope, the higher the percentage). Consulting services would include preparation of contract documents (drawing and specifications), administering a tender process, contract administration and field review.

The report rounds present dollar budget values based on the following rounding protocol:

- Rounded to the nearest $1,000 for budget values up to $20,000
- Rounded to the nearest $5,000 for budget values between $20,000 and $100,000
- Rounded to the nearest $25,000 for budget values between $100,000 and $500,000
- Rounded to the nearest $50,000 for budget values between $500,000 and $1,000,000
- Rounded to the nearest $100,000 for budget values in excess of $1,000,000

If a project is divided to occur over several years (phased), the total present dollar budget value is rounded according to the protocol above, but the yearly present dollar budget value is rounded to the nearest $1,000. The inflation-adjusted budget values are also rounded to the nearest $1,000.

Based on the total value of the maintenance and repair line items in the 2015/16 operating budget, a minimum threshold of $2,000 has been set for budget values. Expenditures which are likely to be less than $2,000 are not included in this report because they are assumed to be small enough to be drawn from the operating budget as required without significant impact. Typical examples include replacement of corroded guardrail fasteners, small painting or staining projects and door hardware replacement. According to the Regulation, common expenses which occur annually or more often are also excluded from this report.

2.6 Items and Expenditures Schedules

The Regulation requires that at least three CRF cash flow models be presented in the report. To create these cash flow models, an Items Schedule and Expenditures Schedule are first generated. The Items Schedule lists all of the building components included in the report and itemizes the work that we expect will be required for each component, along with associated budgets in present dollar

values. The Expenditure Schedule lists the work we expect will be required for each component by year, along with associated budgets in inflation-adjusted future dollar values. For this depreciation report, the inflation rate is set at 3%. This inflation rate relates to construction labour and material, and is affected by the overall national inflation rate, as well as more sector-specific factors such as commodity prices, labour shortages, market demand and new construction codes. The future dollar values are used in the three cash flow scenarios.

The projected timing of expenditures is estimated and should not be the only source of information to determine the actual timing. This is especially true of projects shown to occur more than ten years into the future. The timing for some of the projects can be adjusted by the owners. Schedule adjustments can be made for reasons that include:

- A focused review of the building component indicates that it is in a different condition than anticipated.
- The CRF is insufficiently funded for the project.
- Priority has been given to another project.
- The recommended timing for renewal or replacement has been adjusted such that it coincides with other renewal items where there would be a benefit in having the work occur simultaneously (i.e. new windows with exterior cladding, re-landscaping with parkade suspended slab waterproofing, etc.).
- The strata council may want to address items sooner than what would necessarily be required from a service life perspective. This is often the case for replacements which can be partially funded by government incentive programs in effect for a limited period of time.

2.7 Categories

Each building component is assigned a category based on Canada Mortgage and Housing Corporation's (CMHC) Capital Replacement Planning manual:

1. Health and safety
2. Structural integrity
3. Legislative requirements
4. Building functionality, cost effectiveness and/or marketability

The intent of the categorization is to provide some guidance on the level of risk associated with deferring the work for a given item.

3 Description of Complex

Harbour Cove is a 304-unit residential complex which includes both a strata corporation and a housing co-operative. We understand that this is not a sectioned strata corporation and that the strata corporation does not own any of the units. The complex was built in three phases between 1983 and 1986 beginning with the portion of the complex with the civic address of 1450 Pennyfarthing Drive

(north), followed by 1470 Pennyfarthing Drive (middle) and then 1490 Pennyfarthing Drive (south). The Architect of Record is Hamilton Doyle and Associates and RJC is the Structural Engineer of Record. The strata corporation consists of 283 units and the Harbour Cove Housing Co-Operative consists of 21 units. The housing co-operative is located in the 1490 building, but because its main entrance faces West 1st Avenue, its civic address is 1515 West 1st Avenue. The complex is bounded by Creekside Drive to the east, West 1st Avenue to the south and Pennyfarthing Drive to the west and north. Directional references in this report are based on a north/south orientation for Creekside Drive.

The three portions of the complex form a C-shaped complex with a courtyard to the east, between the north (1450 building) and south (1490 building) wings and a south courtyard below the south wing. The three main entrances of the building (strata corporation) are located adjacent to Pennyfarthing Drive, which is a private road on the west side of the property. At the north end of the complex, the road curves east and joins Creekside Drive, which is a municipal road on the east side of the property. The east courtyard is a multi-level courtyard. The north portion of the east courtyard is the upper level and the south portion of the east courtyard is the lower level. The lower level includes a water feature.

The central portion of the complex (1470 building) includes a large multi-level leisure centre which extends east past the residential portion of the complex. The leisure centre includes a squash court and racquetball court on the lowest level, a lounge overlooking the two courts on the middle level and a natatorium (with swimming pool, hot tub and sauna), change rooms, building manager's office, exercise room, washrooms, library and meeting room (with kitchen) on the main (entrance lobby) level. The squash and racquetball courts and lounge are located below the exterior grounds of the east courtyard. The upper level of the exterior grounds extends over the roof of the natatorium.

The 1450 building consists of 16 levels including parking levels. The lowest level is a dedicated parking level. The second and third lowest levels include both parking and residential units and the floors above are dedicated residential levels. The 1450 parkade is accessed from Creekside Drive. The 1470 building consists of 13 levels including parking levels. The lowest level includes parking, as well as the lowest level of the leisure centre. The second lowest level includes parking and the leisure centre lounge. The third lowest level is the lobby level and it includes parking, residential units and the upper level of the leisure centre. The 1470 parkade is accessed from Pennyfarthing Drive. The 1490 building consists of 12 levels including parking levels. The two lowest levels are dedicated parking levels and the floors above are residential levels. The 1490 parkade is accessed from Creekside Drive. The strata corporation portion of the complex is equipped with six elevators (two in each section).

4 CRF Cash Flow Models

The three cash flow models presented in this report illustrate the required CRF contributions, special levies, closing balances and forecasted expenditures for the next 30 years, beginning at the start of the 2016/2017 fiscal year (October 1, 2016). In order to produce these scenarios, a number of variables are required, including the average projected interest rate, the minimum fund balance, the projected CRF balance at the end of the current fiscal year and the expected CRF contribution in the first fiscal year of the report timeframe.

The 2015/2016 operating budget totaled $1,804,000 (excluding the CRF contribution). The minimum CRF balance for this report is based on the statutory threshold established in Part 6 of the Regulation. This part of the Regulation requires a minimum CRF balance that is 25% of the previous year's

operating budget, or approximately $451,000. It stipulates that if the fiscal year-end balance in the CRF is less, the strata corporation must contribute a sum of at least 10% of the current operating budget for the current fiscal year, and continue to do so each year until the 25% threshold is reached. Less than 10% is acceptable if less is required to reach the 25% threshold. Because this minimum fund balance value is a percentage of the operating budget, it is subject to the same inflationary increases as the operating fund. Although this statutory threshold is often enough to cover an insurance deductible or some unforeseen expenses not covered by the strata corporation's insurance, it is not enough to fund many of the capital projects described in this report.

For this report, the two reserve accounts (CRF and Capital Planning Fund) have been grouped together to create one reserve fund (CRF). At the beginning of the current fiscal year, (October 1, 2016), the CRF is projected to have a balance of $1,360,000. Because the CRF balance is expected to be greater than 25% of the 2015/2016 operating budget, the Regulation does not require a contribution to the CRF this fiscal year. Nonetheless, we have assumed that the owners will make a contribution to the CRF for the 2016/2017 fiscal year.

The three cash flow scenarios provide three different initial contributions, based on a percentage increase from the 2015/2016 CRF contribution of $597,000. The first scenario begins with an initial CRF contribution which is the same as the 2016/2017 contribution ($597,000). The second scenario begins with an initial CRF contribution which is 10% greater than the 2015/2016 CRF contribution. The third scenario begins with an initial CRF contribution which is 20% greater than the 2015/2016 CRF contribution.

It is important to note that for this report, the fiscal year is denoted with the first calendar year of the fiscal year. For example, if a project is to occur in the 2026/2027 fiscal year, 2026 is used to indicate the fiscal year.

The calculation of the annual closing balance as presented in the three funding scenarios is based on the following assumptions:

- Interest paid on the funds in the CRF is based on the average of the opening and closing balances.
- Expenditures and special levies occur at the end of the sixth month.
- The CRF is the primary source for funding expenditures and special levies are applied to make up for shortfalls.

The three scenarios provided in this report are:

Scenario 1

- Opening CRF balance of $1,745,000 for fiscal year 2016/2017
- Minimum fund balance of $451,000 for fiscal year 2016/2017
- Minimum fund balance increases annually (based on inflation)
- CRF contribution of $597,000 for fiscal year 2016/2017
- CRF contribution increases of 5% until fiscal year 2037/2038
- CRF contributions decrease in fiscal year 2040/2041
- Nine special levies totaling approximately $30,000,000 over 30 years

Scenario 2

- Opening CRF balance of $1,745,000 for fiscal year 2016/2017
- Minimum fund balance of $451,000 for fiscal year 2016/2017
- Minimum fund balance increases annually (based on inflation)
- CRF contribution of $657,000 for fiscal year 2016/2017
- CRF contribution increases of 10% until fiscal year 2029/2030
- CRF contributions decrease in fiscal year 2030/2031 and again in fiscal year 2040/2041
- Six special levies totaling approximately $22,000,000 over 30 years

Scenario 3

- Opening CRF balance of $1,745,000 for fiscal year 2016/2017
- Minimum fund balance of $451,000 for fiscal year 2016/2017
- Minimum fund balance increases annually (based on inflation)
- CRF contribution of $716,000 for fiscal year 2016/2017
- CRF contribution increases of 20% until fiscal year 2024/2025
- CRF contributions decrease in fiscal year 2025/2026 and again in fiscal year 2035/2036
- Seven special levies totaling approximately $17,000,000 over 30 years

It is important to note that the values shown in the different scenarios reflect only contributions to the CRF and are typically included in the fees which the strata council collects from the owners.

The portion of the strata fees which cover operational expenses are not included in the cash flow scenarios. Consequently, the CRF contribution increases shown in the cash flow tables do not represent the changes in overall strata fees. Because the largest projects in this report relate to the building envelope and the expenses related to the building envelope are assumed to be borne by both the strata corporation and housing co-operative, a unit count of 304 is used for this report. It is important to note that, although this provides a more realistic special levy per unit value for the shared expenses (building envelope, structure, some mechanical and electrical systems, etc.), it skews the results (lower than actual value) for expenses which are not shared (interior finishes, elevators, etc.).

Three scenarios have been provided with different CRF contribution adjustments over 30 years. The first scenario, with a CRF contribution equal to that of the 2015/2016 fiscal year and an annual increase in CRF contributions limited to 5% yields the lowest total value of CRF contributions over 30 years and the greatest number and total value of special levies over 30 years. The second scenario, with an initial CRF contribution 10% greater than that of the 2015/2016 fiscal year and an annual increase in CRF contributions limited to 10% results in a total special levy amount (over 30 years) which is less than the first scenario but more than the third scenario. The third scenario, with an initial CRF contribution 20% greater than that of the 2015/2016 fiscal year and an annual increase in CRF contributions limited to 20% results in the lowest total value of special levies over 30 years. The more quickly the owners build up the value of the CRF, the lower the total value of special levies. We do not believe that a scenario without special levies is possible because of the current CRF balance and the expenditures which we believe are required in the first years of the report's projection horizon.

Although we have already phased the window replacement project to occur over several years, the owners could consider advancing, delaying or dividing other projects into phases to reduce the annual value of the special levies. It is important to note that dividing projects into multiple phases results in higher total project costs and requires more time and effort from the strata council to manage the projects. The timing for some of the projects such as replacing the meeting room furniture, painting the guardrails or modernizing the corridor or elevator cab finishes can be adjusted without having to seek professional opinions. Before adjusting the timing for more critical projects, such as the replacement of the windows, parkade waterproofing or brick veneer, the owners should seek professional advice.

Based on our extensive experience with building enclosure projects, several of the projects outlined in the building envelope appendix were grouped together in the draft report. The consolidation of the projects was primarily based on how many years separate related projects, which components are typically replaced by the same contractor or general contractor, which other building enclosure components are impacted by the work and whether other issues (which may precede failure) would be a nuisance to occupants. The main advantages of consolidating projects include (and are not limited to) the ability to reduce overall project costs, facilitate proper transitions between different building components, reduce the workload on the strata council, reduce the inconveniences for owners and achieve a more consistent appearance between similar building components (such as windows and doors). At the request of the strata council, we were asked to separate the projects for this final revision to the report. The main advantage of separating the projects is a reduction in the annual (not total) value of special levies and the possibility of obtaining the maximum service life from each component. Attached as an addendum to this report are the Items Schedule, Expenditure Schedule and three cash flow scenarios provided in the draft report which reflect the recommended consolidation of some building envelope projects.

The depreciation report is a valuable tool in projecting the future financial requirements based on the current condition of the numerous building elements. We encourage the owners of strata corporation VR 1291 to adopt one of the three CRF funding models (or one of their own based on this report) in order to financially prepare themselves for future expenditures in a manner which is fair to current and future owners.

4.1 Items Schedule

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
BE		**Building Enclosure**		
BE.1	Replace	Roofing - Inverted Modified Bitumen Membrane	2	$375,000
BE.2	Replace	Skylights - T-Bar System	1	$70,000
BE.3		Skylights - Factory Glazed Unit		$0
BE.4	Replace	Roofing - Conventional Modified Bitumen Membrane	1	$50,000
BE.5	Replace	Roofing - Metal	1	$20,000
BE.6	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	7	$1,925,000
BE.7	Replace	Balconies - Modified Bitumen Membrane Wateproofing	1	$1,500,000
BE.8		Guardrails - Aluminum		$0
BE.9	Assess	Exterior Walls - Rainscreen Brick Veneer	1	$5,000
BE.9	Replace	Exterior Walls - Rainscreen Brick Veneer	1	$5,200,000
BE.10		Exterior Walls - Structural Brick		$0
BE.11	Repair	Privacy Screens - Brick	3	$15,000
BE.12	Replace	Exterior Windows - Aluminum Frame	4	$14,400,000
BE.13	Replace	Glazing - Storefront System	1	$200,000
BE.14		Skylights - Pressure Cap System		$0
BE.15		Glazing - Insulating Glass Units		$0
BE.16	Replace	Exterior Doors - Aluminum Sliding	1	$550,000
BE.17	Replace	Exterior Doors - Aluminum Swing	1	$425,000
BE.18	Replace	Exterior Doors - Entrance	1	$20,000
BE.19		Exterior Doors - Steel Swing		$0
BE.20	Replace	Sealants	5	$625,000
BE.21	Paint	Exterior Coatings	13	$2,444,000
BE.22		Suspended Access System		$0
BI		**Building Interior**		
BI.1	Renew	Entrance Lobby Finishes	2	$750,000
BI.2		Mailboxes		$0
BI.3	Maintain	Corridor Finishes	5	$40,000
BI.3	Renew	Corridor Finishes	1	$2,100,000
BI.4		Interior Doors - Suite Entry		$0

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
BI.5		Interior Doors - Common Areas		$0
BI.6	Renew	Parkade Elevator Lobby Finishes	1	$25,000
BI.7		Parkade Corridor Finishes		$0
BI.8	Paint	Stairwell Finishes	1	$25,000
BI.9	Renew	Amenity Room Finishes	1	$80,000
BI.10		Accordion Folding Partitions		$0
BI.11		Library Finishes		$0
BI.12	Renew	Washroom Finishes	1	$25,000
BI.13	Renew	Exercise Room Finishes	1	$18,000
BI.14		Exercise Room Equipment		$0
BI.15	Renew	Strata Corporation Office Finishes	1	$20,000
BI.16	Renew	Change Room Finishes	1	$90,000
BI.17	Paint	Pool Area Finishes	2	$17,000
BI.17	Replace	Pool Area Finishes	1	$125,000
BI.18	Replace	Sauna Finishes	1	$25,000
BI.19	Replace	Pool Tank Finishes	2	$60,000
BI.20	Replace	Hot Tub Tank Finishes	2	$20,000
BI.21	Replace	Squash Court Finishes	1	$45,000
BI.22		Storage Locker Room Finishes		$0
BI.23	Replace	Furniture	6	$30,000
EG		**Exterior Grounds**		
EG.1		Exterior Grounds Over Parkade		$0
EG.2	Repair	Road - Asphalt Pavement	2	$10,000
EG.2	Replace	Road - Asphalt Pavement	1	$45,000
EG.3	Replace	Walkways - Asphalt Pavement	2	$30,000
EG.4		Walkways - Concrete Pavement		$0
EG.5	Replace	Walkways - Tile	1	$8,000
EG.6		Walkways - Concrete Unit Pavers		$0
EG.7		Enclosures and Fencing - Concrete		$0
EG.8	Replace	Enclosures and Fencing - Wood	1	$11,000
EG.8	Stain	Enclosures and Fencing - Wood	6	$34,000
EG.9		Enclosures and Fencing - Brick		$0

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
EG.10		Retaining Walls - Concrete		$0
EG.11		Retaining Walls - Wood		$0
EG.12	Replace	Retaining Walls - Brick	1	$25,000
EG.13		Guardrails - Steel		$0
EG.14	Replace	Exterior Furniture - Wood	1	$12,000
ELEC		**Electrical Systems**		
ELEC.1	Maintain	Unit Substations	10	$30,000
ELEC.1	Repair	Unit Substations	1	$600,000
ELEC.2	Replace	Transformers	1	$40,000
ELEC.3	Replace	Electrical Distribution System	2	$20,000
ELEC.4	Maintain	Emergency Generator	6	$30,000
ELEC.4	Replace	Emergency Generator	1	$60,000
ELEC.5	Replace	Emergency Power Distribution System	1	$20,000
ELEC.6	Replace	Electric Baseboard Heaters	1	$175,000
ELEC.7	Replace	Sauna Heaters	1	$3,000
ELEC.8	Replace	Lighting - Interior	1	$15,000
ELEC.9	Replace	Lighting - Exterior	1	$10,000
ELEC.10	Replace	Lighting - Walkway	1	$15,000
ELEC.11	Replace	Lighting - Lamp Post	1	$85,000
ELEC.12	Replace	Lighting - Parkade	1	$125,000
ELEC.13		Emergency Signage		$0
ELEC.14	Replace	Fire Alarm Panel	1	$200,000
ELEC.15	Replace	Telephone Entry System	1	$18,000
ELEC.16	Replace	Access Control System	1	$75,000
ELEC.17	Replace	Video Surveillance System	1	$15,000
ELEV		**Elevators**		
ELEV.1	Renew	Controllers and Drives	1	$1,100,000
ELEV.2	Repair	Machines	1	$275,000
ELEV.3		Door Operators and Door Detectors		$0
ELEV.4	Renew	Cab Interior Finishes	1	$150,000
ELEV.5		Operating and Signal Fixtures		$0

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
MECH		**Mechanical Systems**		
MECH.1	Replace	Air Handling Units - Corridors	1	$45,000
MECH.1	Maintain	Air Handling Units - Corridors	6	$42,000
MECH.2	Repair	Swimming Pool Area - Air Handling Unit	1	$9,000
MECH.3		Supply Fans - Stairwell Pressurization		$0
MECH.4		Exhaust Fans - Parkade		$0
MECH.5		Exhaust Fans		$0
MECH.6	Replace	Mechanical Vent Terminations	1	$100,000
MECH.7	Replace	Piping - Domestic Water Distribution	3	$3,999,000
MECH.8	Replace	Domestic Water Valves and Backflow Preventers	6	$84,000
MECH.9	Replace	Boilers - Domestic Water	1	$80,000
MECH.10	Replace	Storage Tanks - Domestic Hot Water	2	$70,000
MECH.11		Pumps - Domestic Hot Water Recirculation		$0
MECH.12		Plumbing Fixtures		$0
MECH.13	Maintain	Piping - Sanitary System Drainage	6	$90,000
MECH.14	Maintain	Piping - Stormwater System Drainage	3	$30,000
MECH.15		Pumps - Stormwater Sumps		$0
MECH.16	Replace	Swimming Pool - Water Heater	1	$40,000
MECH.17	Replace	Swimming Pool - Filtration and Sanitization Equipment	1	$10,000
MECH.18	Replace	Hot Tub - Filtration and Sanitization Equipment	2	$6,000
MECH.19		Irrigation System		$0
MECH.20		Water Feature - Filtration and Circulation Equipment		$0
MECH.21	Repair	Fire Suppression - Sprinkler System Piping	6	$24,000
MECH.22	Replace	Fire Suppression - Fire Pump	1	$25,000
MECH.23	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	3	$60,000
MECH.24	Replace	Fire Suppression - Dry Pipe Sprinkler System Clapper Valves	1	$30,000
MECH.25	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	4	$12,000
MECH.26		Fire Suppression - Fire Hydrants		$0
MECH.27		Generator Fuel Supply System		$0
PKD		**Parkade**		
PKD.1	Replace	Plaza Slab Waterproofing	2	$5,075,000

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
PKD.2	Replace	Parkade Gates	3	$15,000
PKD.3	Replace	Parkade Gate Operators	5	$15,000
PKD.4	Assess	Traffic Deck Coating	6	$30,000
PKD.4	Renew	Traffic Deck Coating	5	$775,000
PKD.5	Replace	Expansion Joint Seals	1	$40,000
PKD.6		Spray-Applied Insulation		$0
PKD.7	Paint	Painted Finishes	1	$200,000
PKD.8		Parkade Doors		$0
PKD.9		Enclosures and Fencing - Metal		$0
PKD.10		Slab-On-Grade		$0
PKD.11		Bicycle Racks		$0
STR		**Structure**		
STR.1		Parkade Structure		$0
STR.2		Building Structure		$0
			Total	**$45,461,000**

[1] **Expressed in present dollar values**

4.2 Expenditure Schedule

Year	Item	Category	Work	Component	Budget[1]
2016					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$275,000
	BE.9	4	Assess	Exterior Walls - Rainscreen Brick Veneer	$5,000
	BE.11	4	Repair	Privacy Screens - Brick	$5,000
	BI.3	4	Maintain	Corridor Finishes	$8,000
	ELEC.1	4	Maintain	Unit Substations	$3,000
	ELEC.4	1	Maintain	Emergency Generator	$5,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$15,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$4,000
				Total	**$320,000**
2017					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$283,000
	BI.20	4	Replace	Hot Tub Tank Finishes	$10,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$7,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$14,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$3,000
	PKD.1	2	Replace	Plaza Slab Waterproofing	$386,000
	PKD.4	2	Assess	Traffic Deck Coating	$5,000
				Total	**$708,000**
2018					
	BE.2	4	Replace	Skylights - T-Bar System	$74,000
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$292,000
	BI.1	4	Renew	Entrance Lobby Finishes	$398,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$10,000
				Total	**$774,000**
2019					
	BE.1	4	Replace	Roofing - Inverted Modified Bitumen Membrane	$191,000
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$300,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$3,934,000
	BI.23	4	Replace	Furniture	$5,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	EG.2	4	Repair	Road - Asphalt Pavement	$5,000
	ELEC.1	4	Maintain	Unit Substations	$3,000
	ELEC.5	1	Replace	Emergency Power Distribution System	$22,000
	MECH.10	4	Replace	Storage Tanks - Domestic Hot Water	$38,000
	MECH.24	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Clapper Valves	$33,000
				Total	**$4,531,000**
2020					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$310,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,052,000
	BI.17	4	Paint	Pool Area Finishes	$10,000
	BI.19	4	Replace	Pool Tank Finishes	$34,000
	EG.3	4	Replace	Walkways - Asphalt Pavement	$17,000
	MECH.18	1	Replace	Hot Tub - Filtration and Sanitization Equipment	$3,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$23,000
				Total	**$4,449,000**
2021					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$319,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,173,000
	BE.21	4	Paint	Exterior Coatings	$217,000
	BI.3	4	Maintain	Corridor Finishes	$9,000
	ELEC.4	1	Maintain	Emergency Generator	$6,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$17,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$5,000
				Total	**$4,746,000**
2022					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$328,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,299,000
	BE.21	4	Paint	Exterior Coatings	$224,000
	ELEC.1	4	Maintain	Unit Substations	$4,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$8,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$17,000

[1]**Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	PKD.4	2	Assess	Traffic Deck Coating	$6,000
				Total	**$4,886,000**
2023					
	BE.20	4	Replace	Sealants	$154,000
	BE.21	4	Paint	Exterior Coatings	$231,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$6,000
	PKD.4	2	Renew	Traffic Deck Coating	$154,000
	PKD.5	4	Replace	Expansion Joint Seals	$49,000
				Total	**$594,000**
2024					
	BE.5	4	Replace	Roofing - Metal	$25,000
	BE.7	2	Replace	Balconies - Modified Bitumen Membrane Waterproofing	$1,900,000
	BE.16	4	Replace	Exterior Doors - Aluminum Sliding	$697,000
	BE.21	4	Paint	Exterior Coatings	$238,000
	BI.9	4	Renew	Amenity Room Finishes	$101,000
	BI.13	4	Renew	Exercise Room Finishes	$23,000
	BI.23	4	Replace	Furniture	$6,000
	EG.2	4	Repair	Road - Asphalt Pavement	$6,000
	EG.5	4	Replace	Walkways - Tile	$10,000
	ELEC.9	1	Replace	Lighting - Exterior	$13,000
	MECH.2	4	Repair	Swimming Pool Area - Air Handling Unit	$11,000
	MECH.9	4	Replace	Boilers - Domestic Water	$101,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage	$13,000
	MECH.22	1	Replace	Fire Suppression - Fire Pump	$32,000
	PKD.1	2	Replace	Plaza Slab Waterproofing	$5,954,000
				Total	**$9,130,000**
2025					
	EG.14	4	Replace	Exterior Furniture - Wood	$16,000
	ELEC.1	4	Maintain	Unit Substations	$4,000
	PKD.3	4	Replace	Parkade Gate Operators	$4,000
				Total	**$24,000**
2026					
	BE.11	4	Repair	Privacy Screens - Brick	$7,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	ELEC.4	1	Maintain	Emergency Generator	$7,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$20,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$5,000
				Total	**$39,000**
2027					
	BI.3	4	Renew	Corridor Finishes	$2,907,000
	ELEC.6	4	Replace	Electric Baseboard Heaters	$242,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$10,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$19,000
	PKD.4	2	Assess	Traffic Deck Coating	$7,000
				Total	**$3,185,000**
2028					
	BE.20	4	Replace	Sealants	$178,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$7,000
	ELEC.1	4	Maintain	Unit Substations	$4,000
	PKD.4	2	Renew	Traffic Deck Coating	$285,000
				Total	**$474,000**
2029					
	BE.9	4	Replace	Exterior Walls - Rainscreen Brick Veneer	$7,636,000
	BE.18	4	Replace	Exterior Doors - Entrance	$29,000
	BE.21	4	Paint	Exterior Coatings	$275,000
	BI.12	4	Renew	Washroom Finishes	$37,000
	BI.15	4	Renew	Strata Corporation Office Finishes	$29,000
	BI.16	4	Renew	Change Room Finishes	$132,000
	BI.17	4	Replace	Pool Area Finishes	$184,000
	BI.18	4	Replace	Sauna Finishes	$37,000
	BI.23	4	Replace	Furniture	$7,000
	ELEC.2	4	Replace	Transformers	$59,000
	ELEC.4	1	Replace	Emergency Generator	$88,000
				Total	**$8,513,000**
2030					
	BE.21	4	Paint	Exterior Coatings	$284,000
	BI.6	4	Renew	Parkade Elevator Lobby Finishes	$38,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	BI.8	4	Paint	Stairwell Finishes	$38,000
	EG.2	4	Replace	Road - Asphalt Pavement	$68,000
	EG.8	4	Replace	Enclosures and Fencing - Wood	$17,000
	MECH.1	4	Replace	Air Handling Units - Corridors	$68,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$30,000
	PKD.3	4	Replace	Parkade Gate Operators	$5,000
				Total	**$548,000**
2031					
	BE.21	4	Paint	Exterior Coatings	$292,000
	ELEC.1	4	Maintain	Unit Substations	$5,000
	ELEC.8	1	Replace	Lighting - Interior	$23,000
	ELEC.12	1	Replace	Lighting - Parkade	$195,000
	ELEC.15	4	Replace	Telephone Entry System	$28,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$23,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$6,000
				Total	**$572,000**
2032					
	BE.21	4	Paint	Exterior Coatings	$301,000
	BI.3	4	Maintain	Corridor Finishes	$13,000
	BI.20	4	Replace	Hot Tub Tank Finishes	$16,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$11,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$22,000
	PKD.4	2	Assess	Traffic Deck Coating	$8,000
				Total	**$371,000**
2033					
	BE.20	4	Replace	Sealants	$207,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$8,000
	PKD.4	2	Renew	Traffic Deck Coating	$207,000
				Total	**$422,000**
2034					
	BE.4	4	Replace	Roofing - Conventional Modified Bitumen Membrane	$85,000
	BE.17	4	Replace	Exterior Doors - Aluminum Swing	$724,000
	BI.23	4	Replace	Furniture	$9,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	ELEC.1	4	Maintain	Unit Substations	$5,000
	ELEC.1	4	Repair	Unit Substations	$1,021,000
	ELEC.4	1	Maintain	Emergency Generator	$9,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,270,000
	MECH.10	4	Replace	Storage Tanks - Domestic Hot Water	$60,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage	$17,000
	MECH.16	4	Replace	Swimming Pool - Water Heater	$68,000
	MECH.17	1	Replace	Swimming Pool - Filtration and Sanitization Equipment	$17,000
				Total	**$4,285,000**
2035					
	BI.21	4	Replace	Squash Court Finishes	$79,000
	EG.3	4	Replace	Walkways - Asphalt Pavement	$26,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,338,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$5,000
	PKD.2	4	Replace	Parkade Gates	$9,000
	PKD.3	4	Replace	Parkade Gate Operators	$5,000
				Total	**$2,462,000**
2036					
	BE.11	4	Repair	Privacy Screens - Brick	$9,000
	ELEC.7	4	Replace	Sauna Heaters	$5,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,408,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$27,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$7,000
				Total	**$2,456,000**
2037					
	BE.21	4	Paint	Exterior Coatings	$349,000
	BI.3	4	Maintain	Corridor Finishes	$15,000
	ELEC.1	4	Maintain	Unit Substations	$6,000
	ELEC.14	1	Replace	Fire Alarm Panel	$372,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$13,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$26,000
				Total	**$781,000**

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
2038					
	BE.20	4	Replace	Sealants	$240,000
	BE.21	4	Paint	Exterior Coatings	$359,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$10,000
	PKD.7	4	Paint	Painted Finishes	$383,000
				Total	**$992,000**
2039					
	BE.21	4	Paint	Exterior Coatings	$370,000
	BI.17	4	Paint	Pool Area Finishes	$16,000
	BI.23	4	Replace	Furniture	$10,000
	ELEC.3	4	Replace	Electrical Distribution System	$20,000
	ELEC.4	1	Maintain	Emergency Generator	$10,000
	ELEC.17	4	Replace	Video Surveillance System	$30,000
	ELEV.1	4	Renew	Controllers and Drives	$2,171,000
	ELEV.2	4	Repair	Machines	$543,000
				Total	**$3,170,000**
2040					
	BE.1	4	Replace	Roofing - Inverted Modified Bitumen Membrane	$407,000
	BE.21	4	Paint	Exterior Coatings	$381,000
	BI.19	4	Replace	Pool Tank Finishes	$61,000
	ELEC.1	4	Maintain	Unit Substations	$6,000
	MECH.6	4	Replace	Mechanical Vent Terminations	$203,000
	MECH.18	1	Replace	Hot Tub - Filtration and Sanitization Equipment	$6,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$41,000
	PKD.2	4	Replace	Parkade Gates	$10,000
	PKD.3	4	Replace	Parkade Gate Operators	$6,000
				Total	**$1,121,000**
2041					
	ELEC.10	1	Replace	Lighting - Walkway	$31,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$31,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$8,000
				Total	**$70,000**

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
2042					
	BI.3	4	Maintain	Corridor Finishes	$17,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$15,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$30,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$6,000
	PKD.4	2	Assess	Traffic Deck Coating	$11,000
	PKD.4	2	Assess	Traffic Deck Coating	$11,000
				Total	**$90,000**
2043					
	BE.20	4	Replace	Sealants	$278,000
	BI.1	4	Renew	Entrance Lobby Finishes	$833,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$11,000
	ELEC.1	4	Maintain	Unit Substations	$7,000
	ELEC.16	4	Replace	Access Control System	$167,000
	PKD.4	2	Renew	Traffic Deck Coating	$278,000
	PKD.4	2	Renew	Traffic Deck Coating	$444,000
				Total	**$2,018,000**
2044					
	BE.13	4	Replace	Glazing - Storefront System	$458,000
	BI.23	4	Replace	Furniture	$11,000
	EG.12	4	Replace	Retaining Walls - Brick	$57,000
	ELEC.3	4	Replace	Electrical Distribution System	$23,000
	ELEC.4	1	Maintain	Emergency Generator	$11,000
	ELEC.11	1	Replace	Lighting - Lamp Post	$194,000
	ELEV.4	4	Renew	Cab Interior Finishes	$343,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage	$23,000
				Total	**$1,120,000**
2045					
	BE.21	4	Paint	Exterior Coatings	$442,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$7,000
	PKD.2	4	Replace	Parkade Gates	$12,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	PKD.3	4	Replace	Parkade Gate Operators	$7,000
				Total	**$468,000**

[1] **Adjusted for inflation**

4.3 Cash Flow Scenario 1

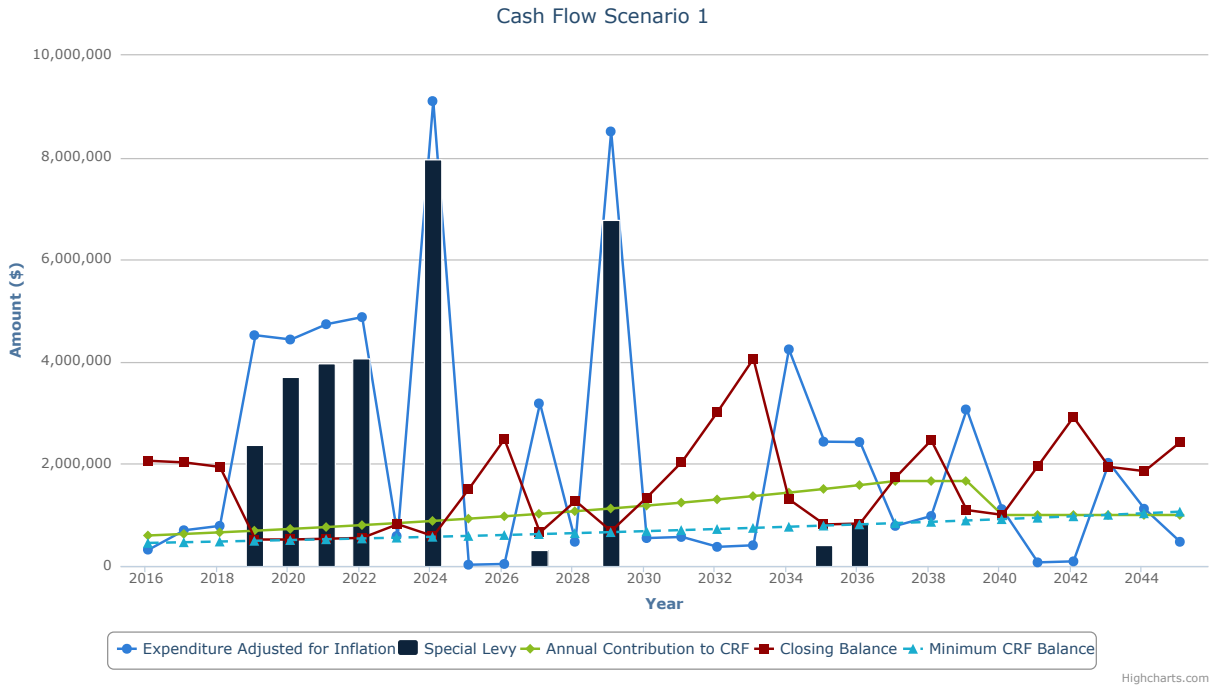
Start of Projection Period	2016	Initial CRF Contribution	$597,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	304

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$597,000	$1,964	$0	$0	$320,000	$37,670	$2,059,670	5.00%
2017	$2,059,670	$626,850	$2,062	$0	$0	$699,000	$40,472	$2,027,992	5.00%
2018	$2,027,992	$658,193	$2,165	$0	$0	$785,000	$39,292	$1,940,476	5.00%
2019	$1,940,476	$691,102	$2,273	$2,380,452	$7,830	$4,519,000	$24,335	$517,366	5.00%
2020	$517,366	$725,657	$2,387	$3,699,799	$12,170	$4,435,000	$10,252	$518,074	5.00%
2021	$518,074	$761,940	$2,506	$3,978,043	$13,086	$4,735,000	$10,411	$533,468	5.00%
2022	$533,468	$800,037	$2,632	$4,079,243	$13,419	$4,874,000	$10,722	$549,470	5.00%
2023	$549,470	$840,039	$2,763	$0	$0	$586,000	$13,530	$817,039	5.00%
2024	$817,039	$882,041	$2,901	$7,977,478	$26,242	$9,105,000	$13,886	$585,444	5.00%
2025	$585,444	$926,143	$3,047	$0	$0	$24,000	$20,730	$1,508,317	5.00%
2026	$1,508,317	$972,450	$3,199	$0	$0	$39,000	$39,501	$2,481,268	5.00%
2027	$2,481,268	$1,021,073	$3,359	$305,216	$1,004	$3,183,000	$31,058	$655,615	5.00%
2028	$655,615	$1,072,126	$3,527	$0	$0	$474,000	$19,094	$1,272,835	5.00%
2029	$1,272,835	$1,125,733	$3,703	$6,774,025	$22,283	$8,510,000	$19,354	$681,946	5.00%
2030	$681,946	$1,182,019	$3,888	$0	$0	$546,000	$19,999	$1,337,965	5.00%
2031	$1,337,965	$1,241,120	$4,083	$0	$0	$568,000	$33,490	$2,044,575	5.00%
2032	$2,044,575	$1,303,176	$4,287	$0	$0	$374,000	$50,183	$3,023,935	5.00%
2033	$3,023,935	$1,368,335	$4,501	$0	$0	$405,000	$70,112	$4,057,382	5.00%
2034	$4,057,382	$1,436,752	$4,726	$0	$0	$4,242,000	$53,095	$1,305,229	5.00%
2035	$1,305,229	$1,508,589	$4,962	$411,352	$1,353	$2,434,000	$20,964	$812,134	5.00%
2036	$812,134	$1,584,019	$5,211	$845,752	$2,782	$2,427,000	$16,270	$831,175	5.00%
2037	$831,175	$1,663,220	$5,471	$0	$0	$785,000	$25,406	$1,734,800	0.00%
2038	$1,734,800	$1,663,220	$5,471	$0	$0	$978,000	$41,548	$2,461,568	0.00%
2039	$2,461,568	$1,663,220	$5,471	$0	$0	$3,065,000	$35,214	$1,095,002	-40.00%
2040	$1,095,002	$997,932	$3,283	$0	$0	$1,113,000	$20,749	$1,000,683	0.00%
2041	$1,000,683	$997,932	$3,283	$0	$0	$70,000	$29,293	$1,957,908	0.00%
2042	$1,957,908	$997,932	$3,283	$0	$0	$90,000	$48,237	$2,914,077	0.00%
2043	$2,914,077	$997,932	$3,283	$0	$0	$2,019,000	$48,071	$1,941,079	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Con-tribution[1]	CRF Contribu-tion/Suite[2]	Special Levy	Special Levy/Suite[2]	Expend-iture[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$1,941,079	$997,932	$3,283	$0	$0	$1,120,000	$37,601	$1,856,612	0.00%
2045	$1,856,612	$997,932	$3,283	$0	$0	$473,000	$42,382	$2,423,926	0.00%
Total		**$32,301,646**		**$30,451,360**		**$62,997,000**	**$922,921**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year



4.4 Cash Flow Scenario 2

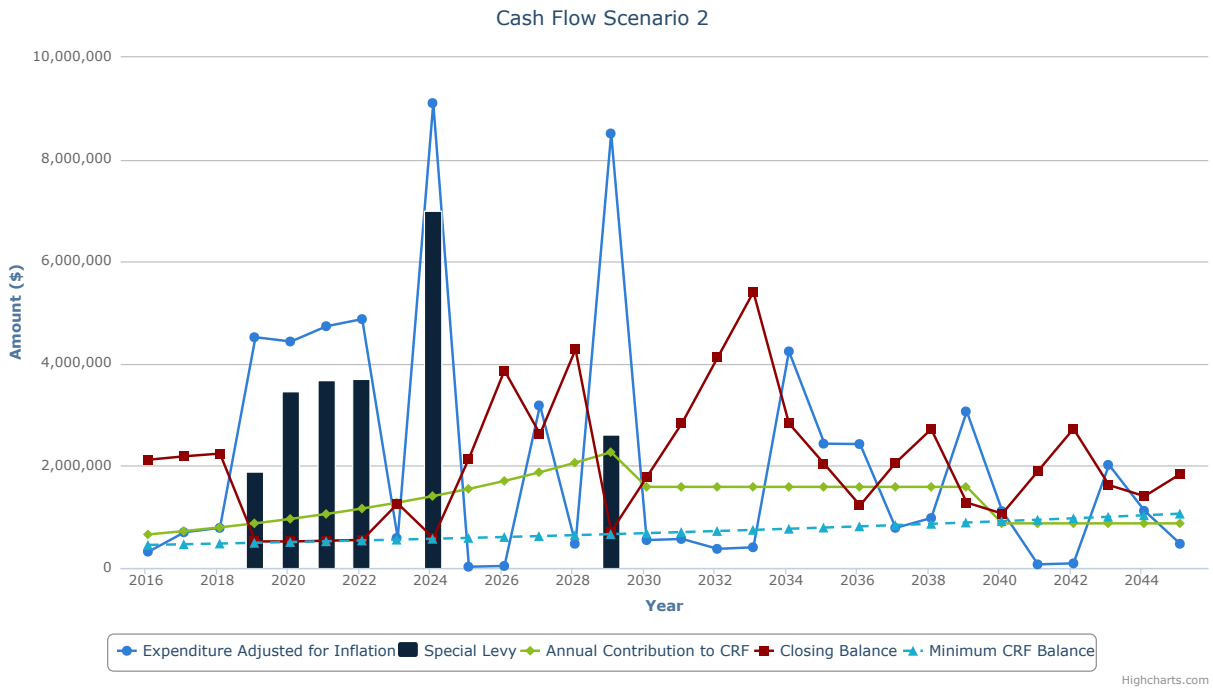
Start of Projection Period	2016	Initial CRF Contribution	$657,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	304

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$657,000	$2,161	$0	$0	$320,000	$38,270	$2,120,270	10.00%
2017	$2,120,270	$722,700	$2,377	$0	$0	$699,000	$42,642	$2,186,612	10.00%
2018	$2,186,612	$794,970	$2,615	$0	$0	$785,000	$43,832	$2,240,414	10.00%
2019	$2,240,414	$874,467	$2,877	$1,897,149	$6,241	$4,519,000	$27,334	$520,365	10.00%
2020	$520,365	$961,914	$3,164	$3,460,543	$11,383	$4,435,000	$10,282	$518,104	10.00%
2021	$518,104	$1,058,105	$3,481	$3,681,848	$12,111	$4,735,000	$10,412	$533,468	10.00%
2022	$533,468	$1,163,916	$3,829	$3,715,365	$12,222	$4,874,000	$10,722	$549,470	10.00%
2023	$549,470	$1,280,307	$4,212	$0	$0	$586,000	$17,932	$1,261,710	10.00%
2024	$1,261,710	$1,408,338	$4,633	$7,006,510	$23,048	$9,105,000	$18,333	$589,890	10.00%
2025	$589,890	$1,549,172	$5,096	$0	$0	$24,000	$27,050	$2,142,112	10.00%
2026	$2,142,112	$1,704,089	$5,606	$0	$0	$39,000	$59,493	$3,866,694	10.00%
2027	$3,866,694	$1,874,498	$6,166	$0	$0	$3,183,000	$64,249	$2,622,440	10.00%
2028	$2,622,440	$2,061,947	$6,783	$0	$0	$474,000	$68,328	$4,278,716	10.00%
2029	$4,278,716	$2,268,142	$7,461	$2,625,734	$8,637	$8,510,000	$49,413	$712,005	-30.00%
2030	$712,005	$1,587,700	$5,223	$0	$0	$546,000	$24,657	$1,778,362	0.00%
2031	$1,778,362	$1,587,700	$5,223	$0	$0	$568,000	$45,764	$2,843,826	0.00%
2032	$2,843,826	$1,587,700	$5,223	$0	$0	$374,000	$69,014	$4,126,539	0.00%
2033	$4,126,539	$1,587,700	$5,223	$0	$0	$405,000	$94,358	$5,403,596	0.00%
2034	$5,403,596	$1,587,700	$5,223	$0	$0	$4,242,000	$81,529	$2,830,824	0.00%
2035	$2,830,824	$1,587,700	$5,223	$0	$0	$2,434,000	$48,153	$2,032,677	0.00%
2036	$2,032,677	$1,587,700	$5,223	$0	$0	$2,427,000	$32,261	$1,225,637	0.00%
2037	$1,225,637	$1,587,700	$5,223	$0	$0	$785,000	$32,540	$2,060,877	0.00%
2038	$2,060,877	$1,587,700	$5,223	$0	$0	$978,000	$47,315	$2,717,891	0.00%
2039	$2,717,891	$1,587,700	$5,223	$0	$0	$3,065,000	$39,585	$1,280,175	-45.00%
2040	$1,280,175	$873,235	$2,872	$0	$0	$1,113,000	$23,206	$1,063,616	0.00%
2041	$1,063,616	$873,235	$2,872	$0	$0	$70,000	$29,305	$1,896,155	0.00%
2042	$1,896,155	$873,235	$2,872	$0	$0	$90,000	$45,755	$2,725,145	0.00%
2043	$2,725,145	$873,235	$2,872	$0	$0	$2,019,000	$43,045	$1,622,425	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Con-tribution[1]	CRF Contribu-tion/Suite[2]	Special Levy	Special Levy/Suite[2]	Expend-iture[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$1,622,425	$873,235	$2,872	$0	$0	$1,120,000	$29,981	$1,405,641	0.00%
2045	$1,405,641	$873,235	$2,872	$0	$0	$473,000	$32,115	$1,837,991	0.00%
Total		**$39,495,975**		**$22,387,149**		**$62,997,000**	**$1,206,875**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year



4.5 Cash Flow Scenario 3

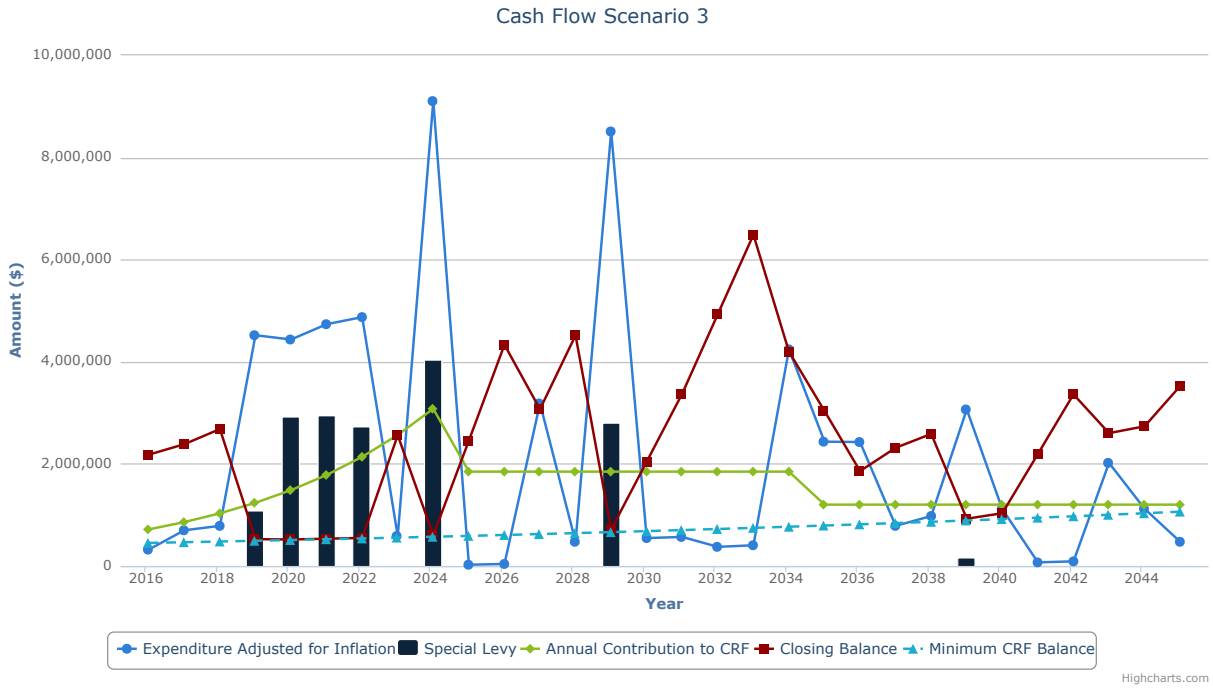
Start of Projection Period	2016	Initial CRF Contribution	$716,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	304

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$716,000	$2,355	$0	$0	$320,000	$38,860	$2,179,860	20.00%
2017	$2,179,860	$859,200	$2,826	$0	$0	$699,000	$45,199	$2,385,259	20.00%
2018	$2,385,259	$1,031,040	$3,392	$0	$0	$785,000	$50,166	$2,681,465	20.00%
2019	$2,681,465	$1,237,248	$4,070	$1,093,318	$3,596	$4,519,000	$31,745	$524,776	20.00%
2020	$524,776	$1,484,698	$4,884	$2,933,348	$9,649	$4,435,000	$10,326	$518,148	20.00%
2021	$518,148	$1,781,637	$5,861	$2,958,272	$9,731	$4,735,000	$10,412	$533,468	20.00%
2022	$533,468	$2,137,965	$7,033	$2,741,315	$9,017	$4,874,000	$10,722	$549,470	20.00%
2023	$549,470	$2,565,557	$8,439	$0	$0	$586,000	$30,785	$2,559,813	20.00%
2024	$2,559,813	$3,078,669	$10,127	$4,038,076	$13,283	$9,105,000	$31,314	$602,871	-40.00%
2025	$602,871	$1,847,201	$6,076	$0	$0	$24,000	$30,289	$2,456,362	0.00%
2026	$2,456,362	$1,847,201	$6,076	$0	$0	$39,000	$67,209	$4,331,773	0.00%
2027	$4,331,773	$1,847,201	$6,076	$0	$0	$3,183,000	$73,277	$3,069,252	0.00%
2028	$3,069,252	$1,847,201	$6,076	$0	$0	$474,000	$75,117	$4,517,570	0.00%
2029	$4,517,570	$1,847,201	$6,076	$2,807,821	$9,236	$8,510,000	$51,802	$714,394	0.00%
2030	$714,394	$1,847,201	$6,076	$0	$0	$546,000	$27,300	$2,042,895	0.00%
2031	$2,042,895	$1,847,201	$6,076	$0	$0	$568,000	$53,650	$3,375,746	0.00%
2032	$3,375,746	$1,847,201	$6,076	$0	$0	$374,000	$82,247	$4,931,195	0.00%
2033	$4,931,195	$1,847,201	$6,076	$0	$0	$405,000	$113,046	$6,486,442	0.00%
2034	$6,486,442	$1,847,201	$6,076	$0	$0	$4,242,000	$105,781	$4,197,424	-35.00%
2035	$4,197,424	$1,200,681	$3,950	$0	$0	$2,434,000	$71,615	$3,035,720	0.00%
2036	$3,035,720	$1,200,681	$3,950	$0	$0	$2,427,000	$48,451	$1,857,852	0.00%
2037	$1,857,852	$1,200,681	$3,950	$0	$0	$785,000	$41,314	$2,314,847	0.00%
2038	$2,314,847	$1,200,681	$3,950	$0	$0	$978,000	$48,524	$2,586,052	0.00%
2039	$2,586,052	$1,200,681	$3,950	$168,736	$555	$3,065,000	$34,765	$925,234	0.00%
2040	$925,234	$1,200,681	$3,950	$0	$0	$1,113,000	$19,381	$1,032,296	0.00%
2041	$1,032,296	$1,200,681	$3,950	$0	$0	$70,000	$31,953	$2,194,930	0.00%
2042	$2,194,930	$1,200,681	$3,950	$0	$0	$90,000	$55,005	$3,360,616	0.00%
2043	$3,360,616	$1,200,681	$3,950	$0	$0	$2,019,000	$59,029	$2,601,326	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Con-tribution[1]	CRF Contribu-tion/Suite[2]	Special Levy	Special Levy/Suite[2]	Expend-iture[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$2,601,326	$1,200,681	$3,950	$0	$0	$1,120,000	$52,833	$2,734,840	0.00%
2045	$2,734,840	$1,200,681	$3,950	$0	$0	$473,000	$61,974	$3,524,495	0.00%
Total		**$46,571,515**		**$16,740,886**		**$62,997,000**	**$1,464,091**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year



5 Limits of Commission

The Client recognizes that special risks occur whenever engineering or related disciplines are applied to identify hidden elements or portions of a building. Even a comprehensive sampling and testing program, implemented with the appropriate equipment and experienced personnel, under the direction of a trained professional who functions in accordance with a professional standard of practice, may fail to detect certain conditions. This is because these conditions are hidden and therefore cannot be considered in development of a repair program. For similar reasons, actual conditions that the design professional properly inferred to exist between examined conditions may differ significantly from those that actually exist.

The Client realizes that nothing can be done to eliminate these risks altogether. As a result, we cannot guarantee the accuracy of the opinions of probable cost. The opinions of probable cost are as accurate as possible with the information known, but cannot be guaranteed by the engineer, and RJC assumes no liability where the probable costs are exceeded.

Neither RJC, nor any company with which it is affiliated, nor any of their respective directors, employees, agents, servants or representatives shall in any way be liable for any claim, whether in contract or in tort including negligence, arising out of or relating in any way to mould, mildew or other fungus, including the actual, alleged or threatened existence, effects, ingestion, inhalation, abatement, testing, monitoring, remediation, enclosure, decontamination, repair, or removal, or the actual or alleged failure to detect mould, mildew or other fungus.

6 Use of Report

This depreciation report was prepared for the owners of Strata Corporation VR 1291. The material in it reflects RJC's judgement in light of information available at the time of preparation. Any reliance on, use of or decisions made by a third party based on this report are the responsibility of such third parties. RJC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Thank you for selecting RJC to provide this depreciation report. Should you have any questions, comments, or concerns, please do not hesitate to contact the undersigned.

Yours truly,

Read Jones Christoffersen Ltd.

Prepared By:

Roberto Pecora, P.Eng., BASc, LEED® AP
Project Engineer

Reviewed By:

Douglas Watts, P.Eng., Architect AIBC, CP, LEED® AP, FEC
Principal

Appendix BE
Building Enclosure

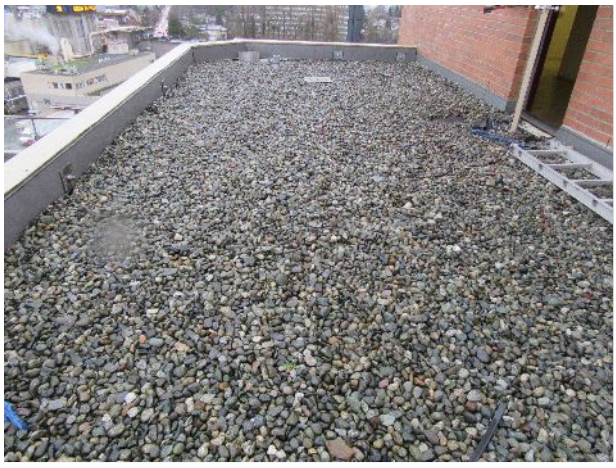
BE.1 Roofing - Inverted Modified Bitumen Membrane

Description

The original inverted roofing of the complex consists of a single-ply, modified bitumen sheet membrane, covered with 2" thick extruded polystyrene rigid insulation, filter fabric and stone ballast. Some of the original roofing of the complex has been replaced with a two-ply modified bitumen sheet membrane assembly with 2" thick insulation. We understand that newer inverted roofing is located on the 1470 roof, approximately one third of the 1490 roof, the 1450 mechanical room roof, the 1450 penthouse roofs and the 1470 elevator machine room roof. We understand that the re-roofing projects took place between 2005 and 2010.

Comments

The expected service life, present equivalent age and condition relate to the original single-ply inverted roofing assemblies. Some of the original inverted roofing was replaced after approximately 25 years of service (1450 penthouse and mechanical room roofing), but we do not believe that this is indicative of the service life of the remaining original roofing. The strata corporation meeting minutes indicate that epoxy crack injection has been done at locations below the roofing in the 1470 and 1490 buildings in the past. The first roofing replacement project includes the original roofing over the 1470 and 1490 entrance canopies and the 1490 building. The second roofing replacement project relates to the the inverted roofing over the 1450 mechanical room and penthouse roofs in the 2040/41 fiscal year given that they were replaced circa 2006.



1 – Inverted roof over 1450 penthouse unit

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	31 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2019	Replace	**$175,000**	$191,000
2040	Replace	**$200,000**	$407,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.2 Skylights - T-Bar System

Description

T-bar skylights are installed on the 1470 and 1490 roofs over suites. The skylights consist of basic aluminum T-bar framing which supports insulating glazing units (IGU).

Comments

RJC's 2014 Building Envelope Condition Assessment (BECA) documented that the T-bar skylights had poor interface detailing, which renders them susceptible to air and moisture leakage. No significant deterioration of interior finishes was noted below the T-Bar skylights at the time, but in late 2016, leakage was observed to be emanating from the 1490 skylight. We do not believe that the leakage was the result of condensation. The 2014 BECA recommended that these skylights be replaced with improved pressure cap skylight assemblies by 2019 (fiscal year 2018/2019). An upgraded skylight assembly will have better water drainage capacity and improved air tightness, resulting in a decreased likelihood of water damage to the interior finishes and improved thermal performance. Replacement of IGUs in the T-bar skylight assemblies should be avoided if replacement of the skylights is imminent.

2 – Skylight over unit in 1490 building

Service Life Stats

Expected Service Life	34 years
Present Equivalent Age	31 years
Estimated Remaining Life	3 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2018	Replace	**$70,000**	$74,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.3 Skylights - Factory Glazed Unit

Description

Rectangular and square aluminum-framed skylights with single-glazed acrylic domes are installed on the 1470 and 1490 flat roofs.

Comments

RJC's 2014 Building Envelope Condition Assessment (BECA) documented that no significant evidence of leakage was observed beneath the acrylic dome skylights and no significant issues were raised by the occupants with the exception of condensation issues. Condensation is typical of single-glazed skylights and windows. We expect that the funds for skylight replacement can be drawn from the operating budget as required. Given that a better installation can be achieved when replacing the skylight and surrounding roofing at the same time, if the skylights are close to the end or past their expected service life, we recommend that the owners replace the skylights when replacing the roofing membrane in the surrounding areas.

3 – Acrylic dome skylight on 1470 roof

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BE.4 Roofing - Conventional Modified Bitumen Membrane

Description

The roofing over the 1450 stairwell consists of two-ply modified bitumen roofing at the upper and lower roofs (over stairwell landings) and sloped metal roofing in between. The roofing over the 1470 and 1490 rooftop mechanical rooms, the 1470 stairwell and 1490 elevator machine room consists of a two-ply modified bitumen roofing assembly.

Comments

Based on a review of the strata corporation meeting minutes and our past involvement with this complex, our understanding is that most of the existing modified bitumen membrane roofing was installed between 2008 and 2012. The present equivalent age represents an average age of the modified bitumen roofing assemblies. The replacement budget includes replacement of cap flashing and insulation. Although this report consolidates replacement of all the modified bitumen roofing to generate some economies of scale, the accrued funds can be used to replace the roofing as leaks begin to occur in each roofing assembly. Separating the project into smaller projects would increase the overall cost.

4 – 1470 stairwell roof

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	6 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2034	Replace	**$50,000**	$85,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.5 Roofing - Metal

Description

The roofing over the 1450 stairwell consists of two-ply modified bitumen roofing at the upper and lower roofs (over stairwell landings) and sloped metal roofing (with exposed fasteners) in between. A 2015 review of this metal roof revealed that the metal roof assembly consists of a profiled metal deck supported on the top of the exterior brick walls, a vapour barrier, insulation and profiled metal roofing.

Comments

The roofing assembly is not designed and constructed to provide drainage, as it should have been. Active water ingress and significant evidence of past water ingress was observed at the top of the stairwell's brick walls and where adjacent roof decks tie into the stairwell walls. We understand that some repairs have been done to this roof in the past. Although the metal roofing has an estimated remaining service life of over 30 years, we recommend that the roof assembly be replaced sooner to minimize water ingress at the top of the exterior walls. The replacement budget includes re-use of the upper and lower metal panels and painting of the metal roofing panels. The budget to remediate water infiltration through the walls is addressed in the roof deck waterproofing replacement budgets.

We expect that, after the replacement project, re-painting of the metal roofing, replacement of fasteners and fasteners gaskets can be funded from the operating budget as required. If this renewal work is undertaken approximately every eight to ten years, we do not believe that the metal roofing will require replacement in the next 30 years. To generate some economies of scale, the painting of the metal roofing should be combined with the larger building painting project.

5 – Metal roofing over 1450 stairwell

6 – Exposed metal roof assembly (2015)

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2024	Replace	**$20,000**	$25,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.6 Roof Decks - Modified Bitumen Membrane Waterproofing

Description

The roof decks were originally waterproofed with a self-adhered, single-ply modified bitumen sheet membrane. The waterproofing membrane is covered in 2" thick extruded polystyrene insulation and the insulation is covered in precast concrete unit pavers. Localized waterproofing repairs have been made in the past, but approximately ten years ago, the owners began complete replacement of the waterproofing membrane on a deck by deck basis, prioritizing roof decks which leak. The new waterproofing assembly consists of a torch-applied, two-ply modified bitumen sheet membrane assembly with 2" thick insulation and salvaged precast concrete unit pavers over top.

Comments

The expected service life, present equivalent age and condition relate to the original single-ply inverted roofing assemblies. Some of the waterproofing on these decks has failed while some is approaching the end of its service life. A budget has been provided for the replacement of three decks per year. Based on our involvement with the past roof deck waterproofing membrane replacement projects and information received by the strata council, we understand that 21 of the 42 roof decks are complete. The budget is based on the 2016 costs for the replacement of the waterproofing membrane on three roof decks.

7 – Exposed roof deck membrane (2015)

8 – 1450 roof decks

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	31 years
Estimated Remaining Life	0 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2016	Replace	**$275,000**	$275,000
2017	Replace	**$275,000**	$283,000
2018	Replace	**$275,000**	$292,000
2019	Replace	**$275,000**	$300,000
2020	Replace	**$275,000**	$310,000
2021	Replace	**$275,000**	$319,000
2022	Replace	**$275,000**	$328,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.7 Balconies - Modified Bitumen Membrane Wateproofing

Description

The balcony decks of the 1490 building are painted and the balcony decks of the 1450 building are covered in tile. The tile is installed over a bed of mortar and the concrete deck is protected with a modified bitumen sheet membrane. The balcony decks with a tiled finish also have tiles installed on the balcony walls below the windows. The waterproofing membrane on a limited number of balconies of the 1450 building has recently been replaced with a two-ply modified bitumen sheet membrane assembly (with granite unit pavers over top). No balconies are located on the 1470 building.

Comments

Pronounced efflorescence was observed on the wall tiles below a balcony window and also at the base of the brick wall (below the weep holes). It is possible that poor drainage is resulting in water absorption by the walls which in turn is resulting in efflorescence. We understand that rainwater collected by some balconies is draining towards the exterior walls rather than off the balcony. The condition assessment is based on the fact that little to no significant concrete spalling, water leakage or evidence of elevated moisture content was observed on the balcony decks or on the underside of the balcony decks. The building has recently been painted and this may have temporarily hidden evidence of leakage or moisture retention. RJC's 2014 Building Envelope Condition Assessment also noted that minimal concrete spalling and staining was observed, but some peeling and bubbling paint was observed.

The owners have recently replaced the waterproofing and tile flooring at five balconies on the 1450 building. We assume that these balconies had poor drainage characteristics. The work included replacement of the tile flooring and original sheet membrane with a two-ply modified bitumen sheet membrane assembly and granite unit pavers over top. Cap flashing was also installed over the upstand wall. A budget has been provided to replace the original waterproofing on the remaining balconies of the 1450 building with the same assembly. The budget is based on the actual project costs. If additional balconies with poor drainage characteristics are discovered in the interim, the accrued funds for this replacement project can be used ahead of schedule to replace the waterproofing as required.

Although the budget is based on the scope of work already established by the owners, we recommend that the owners consider limiting the waterproofing system to a two-ply, liquid-applied traffic deck coating given its cost effectiveness as compared to a two-ply, sheet membrane assembly with unit pavers. We recommend that the owners install this more cost-effective waterproofing for the balconies on the 1490 building. We also recommend that new scuppers be installed where existing scuppers are too high to provide adequate drainage. The budget to repaint the painted balcony decks of the 1490 building is included in the building painting budget.

Given that the proper installation of a waterproofing membrane involves removal of the brick and tile on the walls surrounding the balcony decks, we recommend that the owners consider replacing or adding a waterproofing membrane together with replacement of the brick veneer.

9 – Tiled balcony at 1450 building

10 – Tiled wall below balcony window

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ ④

Work Required

2024	Replace	**$1,500,000**	$1,900,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.8 Guardrails - Aluminum

Description

Factory-finished aluminum guardrails with glass infill panels are installed at balconies, roof decks and at some areas of the 1470 and 1490 roofs. The strata corporation meeting minutes indicate that the rooftop guardrails were installed in 2011. The guardrails are either side-mounted to the concrete upstands or secured to the inside and top of the upstands with angle brackets. Most privacy screens between units sharing the same roof deck are constructed of aluminum framing and obscured glass infill panels.

Comments

Some wear and delamination of the factory finish was observed on a number of (original) guardrails. To achieve some economies of scale, the first application of paint to the guardrails (not including the rooftop guardrails) has been scheduled to occur during the next building re-painting project. The budget for this painting is included in the larger building re-painting project budget. We expect that the site-applied coating will require re-application at approximately the same interval as the paint on the rest of the building.

Many of the fasteners on the horizontal leg of the angle brackets are corroding. Approximately every two years, the fasteners should be reviewed for structural integrity and the welded connection between the angle brackets and the posts should be reviewed for cracks. We expect that the assessment can be done by the building manager and the funds for occasional fastener replacement (or installation of additional fasteners) and guardrail framing repair can be drawn from the operating budget as required without significant impact.

11 – Aluminum guardrails and privacy screens

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed
	✓			

Category

1 2 3 4

BE.9 Exterior Walls - Rainscreen Brick Veneer

Description

The steel stud walls, portions of the chimneys and a portion of the concrete walls of the complex are clad in a brick veneer (with concave mortar joints). The brick veneer is supported by concrete corbels at the 1450 building and steel shelf angles at the 1470 and 1490 buildings. A drainage cavity separates the brick veneer from the backing wall. At steel stud assemblies, building paper is installed over the exterior sheathing (gypsum board). Plastic damp-proofing membranes and modified bitumen membranes have been used as the through-wall flashing membrane at the shelf angles. At the corbels of the 1450 building, brick soaps are adhered to the face of the slab projection with epoxy. Metal parapet cap flashing is installed at the top of the brick walls and chimney cap flashing is installed at the top of the chimneys. The majority of the brick is exposed to precipitation.

Comments

Some cracked and spalling bricks, cracked mortar joints, moss growth on mortar joints and mortar erosion was observed. Corrosion was observed on a steel shelf angle supporting the brick cladding of the 1470 rooftop mechanical room. The leak staining around the angle suggests that the through-wall flashing at the angle may not be performing as intended. A budget has been provided to assess this location in greater detail.

Since at least 2006, the brick veneer has been deteriorating (cracking, spalling, mortar erosion, bulging, etc.). Many repairs have been made to the brick veneer, in particular at the courses of brick immediately above and/or below the supporting shelf angles and concrete corbels. We understand that many of the horizontal joints just below the shelf angles were filled with mortar and this contributed to the deterioration. These joints should be filled with sealant to allow for movement. We also understand that, based on a 2006 structural report and RJC's 2014 Building Envelope Condition Assessment (BECA), numerous weep holes are obstructed and not performing as intended. The slower discharge of accumulated water behind the brick veneer may be resulting in corrosion of the shelf angles. This in turn may have caused deterioration of the brick above the shelf angles. We expect that the brick veneer will continue to require repairs in the future. The service life is based on our understanding of the brick veneer deficiencies and the high likelihood of future repairs. The budget includes consulting engineering fees.

12 – Brick cladding at 1490 building

13 – Past brick veneer repairs

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2016	Assess	**$5,000**	$5,000
2029	Replace	**$5,200,000**	$7,636,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.10 Exterior Walls - Structural Brick

Description

The upper portion of the 1450 stairwell is constructed of hollow structural clay brick. Both the inside and outside faces of the through-wall brick are unfinished. Chimneys constructed on top of roof decks and portions of the multi-storey chimney chases are also constructed of structural brick.

Comments

Active leaks and widespread efflorescence were observed on the inside face of the structural brick walls of the 1450 stairwell. We believe that the leaks and efflorescence is due to inadequate or poorly installed waterproofing at the interface between the stairwell walls and adjacent roof decks. As the waterproofing is replaced on the adjacent roof decks, the portion of the stairwell wall which is accessible from the roof deck is re-pointed where necessary (to address failed mortar joints or previous mortar joint repairs with inappropriate materials) and sealed with a brick sealer. We expect that the leaks into the stairwell will be addressed with this work. Once the waterproofing membrane replacement is completed on the adjacent roof decks, we recommend that the efflorescence inside the stairwell be removed to determine if any leaks are still active.

14 – Structural clay brick wall in 1450 stairwell

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BE.11 Privacy Screens - Brick

Description

A brick privacy wall (with concave mortar joints) is installed on the sixth and seventh floors of the 1490 building (east end), between adjacent roof decks. The wall is constructed of hollow structural clay brick and the coping consists of traditional clay brick typically used for brick veneer.

Comments

Moss was observed growing in the joints of the coping, which will lead to deterioration of the joints. To increase the likelihood that that the walls will not require replacement in the next 30 years, we recommend removing the moss annually and carrying out targeted re-pointing of the mortar joints. A repair budget has been provided to re-point these walls every ten years. To significantly extend the service life of the walls, we recommend replacing the brick coping with metal cap flashing or precast concrete coping which extends past the face of the wall.

15 – Brick privacy wall

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2016	Repair	**$5,000**	$5,000
2026	Repair	**$5,000**	$7,000
2036	Repair	**$5,000**	$9,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.12 Exterior Windows - Aluminum Frame

Description

The windows consist of non-thermally broken aluminum frames which hold insulating glass units (IGU). The exterior gaskets consist of an aluminum glazing stop at the 1470 building and a rubber gasket at 1450 and 1490 buildings. The interior glazing seal consists of butyl tape on all three buildings. Sill flashing which extends past the face of the concrete upstand walls is installed below the windows. Head flashing is installed at the 1450 building, but no head flashing was observed over the windows of the 1470 and 1490 buildings. Some windows have been replaced since original construction.

Comments

Some of the exterior rubber gaskets were not properly secured in place or were not continuous. Some latches were missing on the common area windows and several window latches were loose. Leakage to the interior was observed at one window. Sealant was observed on the outside of several windows, presumably to mitigate water ingress.

RJC's 2014 Building Envelope Condition Assessment (BECA) report documented a variety of significant design and/or construction deficiencies, as well as age-related deterioration of the windows, flashing above and below windows, doors, wall assemblies and sealants. Poor water drainage characteristics were also noted. These deficiencies and age-related deterioration are resulting in water entering the wall cavity below some windows and to an increased rate of deterioration of the wall assemblies below the windows where leakage was occurring. Approximately 30% of the 60 interior recesses made by RJC revealed some form of deterioration of the wall assembly which, if not addressed, could worsen with time. The majority of these areas were adjacent to the windows, doors and beneath the solarium skylights. As a result of the findings, three solarium skylights were replaced since the 2014 report.

We believe that some of the windows have reached the end of their service life and the remaining windows will soon be at the end of their service life and require replacement. In the 2014 report, RJC recommended replacement of the windows over a ten year period, beginning in 2014. This depreciation report has reduced the project to four phases and deferred the start of the work, beginning in the 2019/2020 fiscal year. We recommend that the prioritization of the four contiguous areas of work be based on the findings of the 2014 BECA report in combination with observations of leakage from occupants. The estimated remaining service life represents the average service life of the windows. Some have already failed and some will fail after the indicated service life. The budget includes replacement of the original and recently installed windows (by individual owners) with thermally broken aluminum-framed windows, replacement of the brick around the windows (in order to achieve a proper tie-in with the adjacent wall assembly), replacement of the remaining original solarium skylights with thermally broken aluminum-framed skylights, restoration of interior finishes and consulting engineering fees.

16 – Windows overlooking east courtyard

17 – Window leak in Unit 901 - 1470

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	31 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2019	Replace	**$3,600,000**	$3,934,000
2020	Replace	**$3,600,000**	$4,052,000
2021	Replace	**$3,600,000**	$4,173,000
2022	Replace	**$3,600,000**	$4,299,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.13 Glazing - Storefront System

Description

An aluminum-framed storefront glazing system with insulating glass units (IGU) is installed at the 1450 and 1490 entrances, and the south wall of the pool area. The storefront system of the main entrances includes entrance doors and the storefront system of the pool area includes sliding and swing doors. The storefront system at the main entrances is well sheltered from precipitation. A pressure cap skylight is installed over the storefront glazing of the pool area.

Comments

The last five years of strata corporation meeting minutes and RJC's 2014 Building Envelope Condition Assessment do not document leaks from the pool area's storefront system. The expected service life represents that of the pool area's storefront system. The budget includes replacement of the storefront glazing as well as the skylight above it. In the interim, when the insulating glass units (IGU) of the storefront system or skylight above it are replaced, we recommend that a building envelope consultant be engaged to review the framing while the IGUs are removed. This will assist in determining a more accurate expected service life and replacement budget for the storefront system and skylight above.

We do not expect that the storefront glazing at the 1450 and 1490 entrances will require replacement in the next 30 years, but the entrance doors within the storefront assembly likely will. A budget for entrance door replacement has been provided in BE.18.

18 – Storefront glazing system of pool area

Service Life Stats

Expected Service Life	60 years
Present Equivalent Age	31 years
Estimated Remaining Life	29 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2044	Replace	**$200,000**	$458,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.14 Skylights - Pressure Cap System

Description

Aluminum-framed pressure cap skylights are installed at 11 solarium-style spaces within the complex and over the swimming pool area. In 2014, the solariums (bay windows and skylights) of units 501 and 803 in the 1490 building and 1002 of the 1470 building were replaced. We understand that the 1450 penthouse solarium was either repaired or replaced since original construction, prior to RJC's involvement with this complex. We also understand that the solariums which have been installed on the roof decks are not original to the building and are excluded from the report.

Comments

The expected service life, present equivalent age and condition assessment relate to the skylights over the solarium-style spaces of the units. In 2014, RJC performed an assessment of the solarium at unit 1002 - 1470 and found that the glazing assemblies at some of the solarium-style spaces were experiencing moisture ingress due to failures associated with original detailing and age-related deterioration of materials. We believe that this may be occurring or will likely occur at other solariums which are original to the complex, in particular those that are located at high (wind) exposure areas of the complex. Past failures of the solarium glazing assemblies resulted in water ingress, which in turn had deteriorated steel stud framing and damaged interior finishes. Similar consequences can be expected at other solariums as they begin to fail.

Given that the solarium skylights are of similar construction as the windows, and given that some of the original solarium skylights have reached or are approaching the end of their service life, we recommend that they be replaced during the building envelope restoration project described in BE.12. The budget for solarium skylight replacement is included in the BE.12 budget and is based on the 2014 solarium replacement costs.

The strata corporation meeting minutes and RJC's 2014 Building Envelope Condition Assessment do not document leaks through the skylight over the pool area (in the roof) and above the storefront glazing system on the south wall of the pool area, although vegetation was observed to be growing through the base of the skylight over the pool. Because a better transition between skylight and the adjacent roofing membrane can be achieved if both are replaced at the same time, the budget for replacement of the skylight over the pool is included in the plaza slab waterproofing budget which includes replacement of the roofing over the pool area. The replacement of the skylight over the storefront glazing system is included in the budget to replace the storefront system.

19 – Solarium skylights at 1490 building

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	31 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BE.15 Glazing - Insulating Glass Units

Description

Insulating glass units (IGU) are installed in the windows, storefront glazing, T-bar skylights and glazed exterior doors (except the three sets of main entrance doors). Some of the IGUs date from original construction and others were replaced as recently as last year. The IGUs of the 1470 building are constructed with a composite spacer which is more prone to failure than the metal spacers of the 1450 and 1490 buildings. In an effort to reduce solar heat gain, a window film is installed on the inside face of the IGUs along the west side of the corridors.

Comments

Given that the IGUs have a different service life than the windows, exterior doors and skylights of which they are a part of, the IGUs for the complex are categorized independently in this appendix. The strata corporation meeting minutes indicate that many IGUs have been replaced over the last five years. Several failed IGUs were observed during the field review. Some of the IGUs in the corridors on the west side of the complex were partially delaminated from the metal spacers. This may pose a safety risk and should be addressed as soon as possible.

Although an average service life has been provided, the rate of IGU failure generally follows a bell curve pattern with IGU failures taking place over a 10 to 15-year period. The IGUs of this complex are currently within the bell curve failure period of typical IGUs. Consequently, if not already done, we recommend that the strata council create a separate line item in the operating budget to fund replacement of failed IGUs on an annual basis. Owners can notify the strata council of failed IGUs in their unit and the strata council can, after verifying the claim, replace all failed IGUs once a year to achieve significant economies of scale. We recommend an annual replacement value of approximately $20,000 for this line item in the operating budget. The IGU replacement program should be terminated at least two years before replacement of the windows, exterior doors or skylights. We assume that window washing is undertaken on an annual basis and as such, is funded from the operating budget.

As noted in RJC's 2014 Building Envelope Condition Assessment (BECA), we recommend that all replacement IGUs include a low emissivity (low E) coating to reduce the solar gain in the warmer months of the year.

20 – 1985 IGU in 1490 building

21 – IGU in 1470 building

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	20 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

BE.16 Exterior Doors - Aluminum Sliding

Description

Access to most of the limited common property roof decks, balconies and patios is provided by aluminum-framed sliding glass doors. A sliding door is also installed at the meeting room.

Comments

RJC's 2014 Building Envelope Condition Assessment documented that many occupants were complaining of air leakage, water leakage and difficulty in operation. During this field review, some of the doors were difficult to open and close, presumably as a result of rollers which require replacement. Replacement sliding track rails were installed on some of the lower tracks. We recommend that rollers be assessed annually and replaced before they begin wearing out the rails of the bottom track. We expect that the assessment can be undertaken by the building manager and the funds required for roller replacement can be drawn from the operating budget without significant impact. The replacement budget includes removal and reinstatement of the exterior cladding around the doors (in order to achieve a proper tie-in with the adjacent wall assembly), restoration of interior finishes and consulting engineering fees.

22 – 1450 roof deck sliding doors

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2024	Replace	**$550,000**	$697,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.17 Exterior Doors - Aluminum Swing

Description

Access to some of the roof decks and balconies is through aluminum-framed swing doors with insulating glass units (IGU). Side lites are installed adjacent to some of these swing doors.

Comments

Some of the doors were somewhat difficult to lock due to misalignment between the door leaf and door frame. We expect that the operating budget will be used to fund maintenance of and repairs to the swing doors until they are replaced. The replacement budget includes removal and reinstatement of the exterior cladding around the doors (in order to achieve a proper tie-in with the adjacent wall assembly), restoration of interior finishes and consulting engineering fees.

23 – Aluminum-framed swing door at 1450 roof deck

Service Life Stats

Expected Service Life	50 years
Present Equivalent Age	31 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2034	Replace	**$425,000**	$724,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.18 Exterior Doors - Entrance

Description

Aluminum-framed swing doors with single pane glazing are installed at the main entrance of each building (off Pennyfarthing Drive) as well as at the courtyard entrances. The main entrance doors and some of the courtyard entrance doors are part of a storefront glazing system. These doors are well-sheltered from precipitation by overhangs. Door operators are installed on one of the two double doors at each main entrance.

Comments

Occasional maintenance and replacement of door hardware, gaskets and weather-stripping will be required and should be replaced in a timely manner to avoid reducing the service life of the doors and frames. We expect that repair or replacement of the door hardware, gaskets and weather-stripping can be funded from the operating budget as required without significant impact.

24 – 1450 main entrance doors

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2029	Replace	**$20,000**	$29,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.19 Exterior Doors - Steel Swing

Description

Metal doors are installed throughout the complex, primarily at stair and parkade exits, and service rooms. The doors consist of hollow metal door leafs set in pressed steel frames. Most doors are self-closing by means of door closers. Some of the secondary exit doors are equipped with doors operators which are manually activated by the building manager. The strata corporation meeting minutes indicate that some metal doors have been replaced in the last five years.

Comments

Some doors were missing door closers and some rooftop mechanical room doors could not close due to misalignment issues. Some of the door closers were not dampening the spring action of the door closers. We recommend that the building manager review all the metal doors of the complex and re-align the door leafs, install door closers where missing and adjust, repair or replace door closers that are not operating properly.

Occasional maintenance and replacement of door hardware, door operators, gaskets and weather-stripping will be required and should be undertaken in a timely manner to avoid reducing the service life of the door leafs. We recommend that the doors and frames be re-painted approximately every five years to reduce the rate of corrosion. Based on the condition of the paint, we expect that the rooftop doors will require re-painting before the ground level doors. We believe that the funds for maintenance, repair and re-painting can be drawn from the operating budget as required without significant impact. If the doors are regularly maintained, repaired and re-painted, and not broken by forced entry, we do not expect that they will require replacement or significant repairs in the next 30 years.

25 – Hollow metal exit door

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

BE.20 Sealants

Description

Sealant is typically installed at interfaces between dissimilar materials such as between the brick cladding and metal flashing, concrete upstands, windows and doors. Sealant is also installed at horizontal joints below brick shelf angles. We understand that most of the sealants were replaced during the recent re-painting project.

Comments

Cohesive (within sealant) and adhesive (between sealant and adjacent surface) failures were observed at many locations throughout the complex. Poor sealant application was also observed in some locations.

Because we do not expect that all of the sealants will fail at the same time, a budget has been provided to replace approximately one quarter of building sealants at five year intervals. The budget includes an assessment by a building enclosure engineer to determine which part of the building envelope to target for sealant replacement. This replacement program takes into account the sealants which will be replaced during other building envelope projects such as window replacement, brick veneer replacement and sliding door replacement. The expected service life represents an average service life. The actual service life of the sealant will vary based on exposure to UV radiation, thermal cycling, range of movement, surface preparation and application.

26 – Sealant at edge of and in brick veneer

27 – Sealant at window-to-brick interface

Service Life Stats

Expected Service Life	10 years
Present Equivalent Age	2 years
Estimated Remaining Life	8 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2023	Replace	**$125,000**	$154,000
2028	Replace	**$125,000**	$178,000
2033	Replace	**$125,000**	$207,000
2038	Replace	**$125,000**	$240,000
2043	Replace	**$125,000**	$278,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.21 Exterior Coatings

Description

Paint is applied to exposed concrete portions of the building, including the concrete soffits. The last re-painting project took place over four years, between 2012 and 2015 and included sealant replacement within the area of work.

Comments

The present equivalent age represents the age of the paint applied during the first phase of the project. Future painting projects have been phased over four years based on the precedent set when the building was last painted. The budget is based on the actual costs of the last building re-painting project and includes painting of the original guardrails (not the rooftop guardrails) and replacement of approximately 50% of the sealants.

28 – Painted concrete upstand and vent hoods

29 – Painted balcony soffit

Service Life Stats

Expected Service Life	10 years
Present Equivalent Age	4 years
Estimated Remaining Life	6 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2021	Paint	**$188,000**	$217,000
2022	Paint	**$188,000**	$224,000
2023	Paint	**$188,000**	$231,000
2024	Paint	**$188,000**	$238,000
2029	Paint	**$188,000**	$275,000
2030	Paint	**$188,000**	$284,000
2031	Paint	**$188,000**	$292,000
2032	Paint	**$188,000**	$301,000
2037	Paint	**$188,000**	$349,000
2038	Paint	**$188,000**	$359,000
2039	Paint	**$188,000**	$370,000
2040	Paint	**$188,000**	$381,000
2045	Paint	**$188,000**	$442,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BE.22 Suspended Access System

Description

The suspended access system consists of through-bolted anchors installed on the concrete upstands of the balconies, roof decks and roofs. The strata corporation meeting minutes indicate that additional anchors were installed on the 1470 and 1490 buildings in 2013.

Comments

With regular maintenance and inspection, we do not expect that the suspended access system will require replacement or significant repairs in the next 30 years. A budget for annual inspections of the anchors (as required by WorkSafe BC) is not included in this report, because it is an annual expense which we expect is funded from the operating budget.

30 – Through-bolt anchors in concrete upstand

Service Life Stats

Estimated Remaining Life: Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 ② ③ ④

Appendix BI
Building Interior

BI.1 Entrance Lobby Finishes

Description

The complex has three main entrances (one for each wing). An open mailroom is located at each main entrance. The lobby and mailroom finishes vary, but generally consist of tile and carpet flooring, stained wood baseboards, gypsum board (GWB) walls covered in mirrors (1450), stained wood panels (1450) and vinyl wall covering, brick walls (1450), painted wood columns (1490), ornamental wood trim and painted GWB ceilings. We understand that the carpeting and vinyl wall covering in the corridors and entrance lobbies were replaced in 1998.

Comments

The indicated service life of the entrance lobby's interior finishes represents an average modernization interval and not the average service life of the materials which make up the interior finishes. It is mostly dependent on the demographic profile of the building owners and the market appeal of the complex. The modernization project includes the entrance lobbies, mailrooms and in the case of the 1470 building, the short corridor between the entrance lobby and the courtyard. The budget includes the services of an interior designer, replacement of the carpet and tile flooring (with only tile flooring), baseboards, wall covering (with wall covering and a painted finish), chair rail, mailbox trim and architectural ceiling features. It also includes removal of spray-textured ceiling finishes, replacement of the interior lighting, replacement of the electric baseboard heaters and replacement of the furniture.

31 – 1450 entrance lobby

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	22 years
Estimated Remaining Life	3 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2018	Renew	**$375,000**	$398,000
2043	Renew	**$375,000**	$833,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.2 Mailboxes

Description

Recessed aluminum mailboxes are located in an open mailroom adjacent to each main entrance lobby. The openings for the mailbox assemblies are framed in a stained wood trim.

Comments

We do not expect that the mailboxes will require full replacement or major repairs in the next 30 years. We assume that the funds required to replace locks or hinges can be drawn from the operating budget as required.

32 – Mailboxes in 1470 mailroom

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed
	✓			

Category

① ② ③ **4**

BI.3 Corridor Finishes

Description

Corridor finishes generally consist of carpet flooring, stained and painted wood baseboards, gypsum board (GWB) walls covered in vinyl wall covering, and spray-textured (stippled) and painted ceilings. Painted wood crown moulding is installed in some of the corridors. Painted wood sills are installed below the corridor windows. We understand that the carpet flooring and wall covering were replaced in 1998. Ornamental wood door surrounds (see photo) are installed at the main suite entries in two of the three wings. The corridor floor in the recreation centre close to the swimming pool is finished in tiles and a tiled baseboard.

Comments

Some cracking, delamination and staining of the stippled ceiling finish were observed in isolated locations. We expect that the operating budget can be used to fund the required repairs. The wall covering was observed to be delaminating at many of the butt seams.

The indicated service life of the corridor finishes represents an average modernization interval and not the average service life of the materials which make up the interior finishes. It typically occurs less frequently than modernization of the entrance lobbies (given its secondary aesthetic importance) and is mostly dependent on the demographic profile of the building owners and the market appeal of the complex.

The modernization project include the residential corridors and the carpeted portion of the recreation centre corridor. The budget includes replacement of the wall covering (with a painted finish and wall covering in some areas), carpet flooring, wood baseboards and crown moulding, re-finishing the suite entry doors, re-painting the wood door surrounds and common doors, and replacement of the corridor lighting. It also includes replacement of the crash rail in the recreation centre corridor and re-finishing of the recessed ceiling feature outside the meeting room.

A maintenance budget has also been provided to clean the carpets every five years. The strata corporation meeting minutes indicate that this was last done in 2012.

33 – Typical corridor finishes

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	18 years
Estimated Remaining Life	12 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2016	Maintain	**$8,000**	$8,000
2021	Maintain	**$8,000**	$9,000
2027	Renew	**$2,100,000**	$2,907,000
2032	Maintain	**$8,000**	$13,000
2037	Maintain	**$8,000**	$15,000
2042	Maintain	**$8,000**	$17,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.4 Interior Doors - Suite Entry

Description

The suite entry doors, corridor fire doors, as well as the doors for the common washrooms, meeting room, library, exercise room and electrical closets consist of wood core door leafs (finished in oak veneer) set in pressed steel frames. An 8" wide ornamental brass strip is installed on the corridor face of each suite entry and electrical closet door and both faces of the fire doors. The doors are self-closing by means of door closers.

Comments

With proper maintenance and timely replacement of deficient door hardware, we do not expect that the door leafs or frames will require replacement or major repairs in the next 30 years. We expect that the door hardware (such as passage sets and door closers) will be individually repaired or replaced as required with funds from the operating budget. The budget to re-finish the doors, frames and door surrounds is included in the corridor renewal budget. Although not included in the renewal budget, when re-finishing the doors or replacing the passage sets, we recommend that the owners consider replacing the knob passage sets with lever passage sets for improved graspability by individuals with limited dexterity.

34 – 1490 suite entry door

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BI.5 Interior Doors - Common Areas

Description

Stairwell, service room, parkade vestibule and parkade corridor doors consist of a hollow metal door leaf set in a pressed steel frame. Common doors are self-closing by means of door closers. Passage sets typically consists of knob, lever and panic bar passage sets. Some of the ground level interior doors (providing access to exterior doors) are equipped with automatic door operators.

Comments

With proper maintenance and timely replacement of deficient door hardware, we do not expect that the door leafs or frames will require replacement or major repairs in the next 30 years. We expect that, for the few door leafs that may require replacement, the replacement can be funded from the operating budget. We assume that door hardware (such as passage sets and door closers) and door signage will be individually replaced or repaired as required with funds from the operating budget. The budget to re-paint the hollow metal doors and pressed steel frames is included in the interior finishes renewal budgets for the respective areas. Although not included in the renewal budgets, when re-painting the doors or replacing the passage sets, we recommend that the owners consider replacing knob passage sets with lever passage sets for improved graspability by individuals with limited dexterity.

35 – Glazed metal stairwell door and sidelite

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BI.6 Parkade Elevator Lobby Finishes

Description

The parkade elevator lobby and parkade vestibule finishes generally consist of tile flooring, rubber and tiled wall base, painted parging on concrete walls, painted gypsum board (GWB) walls, concrete ceilings finished in a spray-textured (stippled) finish and suspended acoustic tile ceilings. Some of the corridors connected to the elevator lobbies have floors finished with vinyl tile.

Comments

The expected service life represents a renewal interval for the painted finishes. Similar to corridor finishes, parkade elevator lobby finishes are often renewed at a slightly greater interval than the entrance lobbies. The renewal budget includes repainting of the walls, doors and ceilings, and replacement of the light fixtures. We do not expect that future owners will choose to replace the tile flooring or suspended acoustic tile ceilings.

36 – Parkade elevator lobby

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	15 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2030	Renew	**$25,000**	$38,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

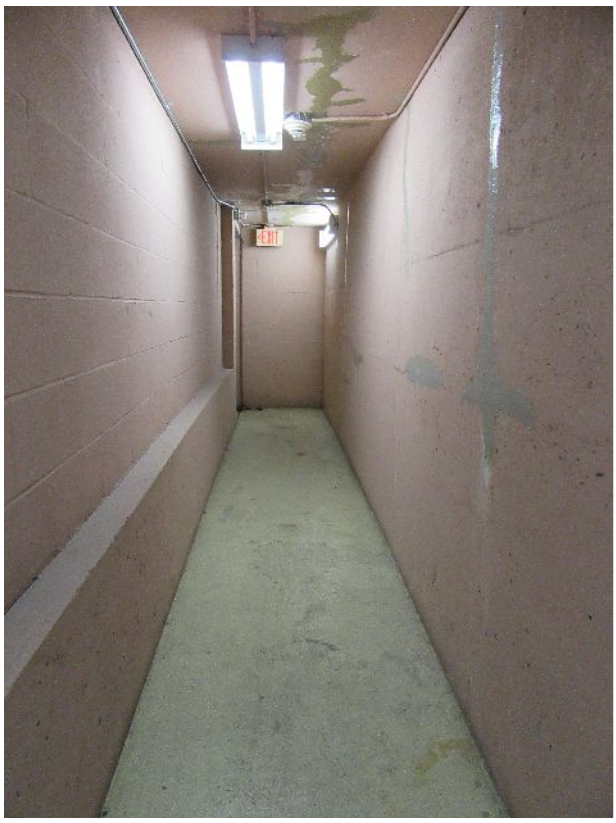
BI.7 Parkade Corridor Finishes

Description

Parkade exit corridor finishes consist of unpainted concrete floors, painted cast-in-place concrete and concrete block walls and painted cast-in-place concrete ceilings. Painted steel handrails are installed at steps. We believe that the painted finishes date from original construction.

Comments

We do not expect that the parkade exit corridors will be repainted in the next 30 years.



37 – Parkade exit corridor

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

BI.8 Stairwell Finishes

Description

The stairwell finishes generally consist of painted concrete stairs, landings, walls and ceilings. Stairwell vestibule finishes generally consist of painted concrete floors, rubber wall base, and painted concrete and gypsum board (GWB) walls and ceilings. The handrails and guardrails in the stairwells are constructed of steel and painted. The 1450 stairwell (Stair No. 2) finishes also include painted steel stairs with concrete-filled tread pans, walls constructed of structural clay brick, walls finished in painted GWB and a painted, profiled metal ceiling (metal roofing above). The stairwell leading to the squash and racquet ball courts generally consists of carpet flooring, painted GWB walls and ceilings, brass handrails and guardrails with glass infill panels and brass light fixtures.

Comments

The expected service life, present equivalent age and condition relate to the painted finishes only. The service life represents a typical repainting interval. The budget includes replacement of the carpet in the squash and racquet ball court stairwells. We do not expect that the guardrails and handrails will require re-painting, replacement or major repairs in the next 30 years. The structural brick in Stair No. 2 is addressed in the Structural Appendix.

38 – 1450 stairwell (Stair No. 2)

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	20 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2030	Paint	**$25,000**	$38,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.9 Amenity Room Finishes

Description

The meeting room finishes generally consist of carpet flooring, stained wood baseboards, gypsum board (GWB) walls covered in vinyl wall covering and a spray-textured ceiling. The furniture primarily consists of tables, chairs and couches. The meeting room kitchen finishes consist of vinyl tile flooring, GWB walls covered in vinyl wall covering and a painted GWB ceiling. The kitchen cabinetry consists of basic melamine upper and lower cabinets with a plastic laminate countertop. The bar counter is finished in plastic laminate and wood trim. A sliding accordion counter door is installed over the bar counter. Kitchen appliances include a over-the-range microwave, range, dishwasher and refrigerator.

Comments

The indicated service life represents an average modernization interval and not the average service life of the materials which make up the interior finishes. Although somewhat dependent on frequency of use, it is mostly dependent on the demographic profile of the building owners and the market appeal of the complex.

The budget includes replacement of the carpet and vinyl tile flooring, wood and rubber baseboards, wall covering (with a painted finish and wall covering in some areas), spray-textured ceiling finish (with a smooth GWB ceiling finish), interior lighting, electric baseboard heaters and furniture. It also includes repainting of the kitchen walls and ceiling, replacement of the kitchen cabinetry (including sink and faucet), bar countertop and accordion counter door. It does not include the services of an interior designer and the replacement of the kitchen appliances. We expect that replacement of the kitchen appliances can be funded from the operating budget as required.

39 – Meeting room

40 – Meeting room kitchen

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2024	Renew	**$80,000**	$101,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.10 Accordion Folding Partitions

Description

An accordion partition with a vinyl cover is installed between the library and meeting room. It is suspended from an overhead track and retracts into a wall pocket.

Comments

Given its infrequent use, we do not expect that the accordion partition will require replacement in the next 30 years. If the owners choose to modernize the partition or permanently close in the opening with a wall, an opportune time to do so would be during the amenity room and library renewal projects. The renewal budgets for these two areas does not include replacement of the folding partition.

41 – Folding accordion partition

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

BI.11 Library Finishes

Description

The library finishes are similar to those of the adjacent meeting room. The recessed ceiling feature is finished in mirrors, as well as some plastic laminate and oak trim. Furniture consists of a table, chairs and bookshelves. Shelving is also installed on some of the walls.

Comments

Given that both the amenity room and the library are likely to be renewed at the same time, the budget for the renewal of the library interior finishes is included in the larger budget for the renewal of the amenity room finishes. The budget for the library renewal includes replacement of the carpet flooring, wood baseboards, wall covering (with a painted finish and some new wall covering), spray-textured ceiling finish (with a smooth GWB ceiling finish), interior lighting, book shelves, electric baseboard heaters and furniture. It also includes removal of the mirrors in the ceiling feature and replacement with a painted finish. It does not include the services of an interior designer.

42 – Library

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BI.12 Washroom Finishes

Description

Men's and women's washrooms are located off the recreation centre corridor. The interior finishes consist of tile flooring, tiled walls (lower portion), painted gypsum board (GWB) walls (upper portion) and a painted GWB ceiling. The toilet partitions and vanities are finished in plastic laminate.

Comments

A budget has been provided to replace the floor tile, remove the wall tile, install tiled baseboards, paint the GWB walls and ceilings, and replace the toilet partitions, vanities, lavatory sinks, faucets and light fixtures.

43 – Men's washroom

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2029	Renew	**$25,000**	$37,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.13 Exercise Room Finishes

Description

The interior finishes in the exercise room consist of rubber floor tiles, stained wood baseboards, gypsum board (GWB) walls covered in vinyl wall covering, a spray-textured GWB ceiling and a recessed ceiling feature finished with mirrors, plastic laminate and stained oak trim. One of the walls is a glass wall with painted steel framing.

Comments

A budget has been provided to remove the wall covering, spray-textured ceiling finish and ceiling feature finishes, paint the walls, steel framing and ceiling, and replace the light fixtures and electric baseboard heaters. We do not expect that the rubber flooring will require replacement in the next 30 years.

44 – Glazed interior partition at exercise room

45 – Double doors to adjacent library

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2024	Renew	**$18,000**	$23,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.14 Exercise Room Equipment

Description

The exercise equipment in the exercise room includes indoor rowers, recumbent and upright exercise bicycles, elliptical trainers, treadmills and a weight machine.

Comments

The strata corporation meeting minutes indicate that the exercise equipment is being leased. No budget has been provided for repairs or replacement given that this is typically the responsibility of the equipment provider.

46 – Exercise equipment in exercise room

Service Life Stats

Expected Service Life	10 years
Present Equivalent Age	3 years
Estimated Remaining Life	7 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

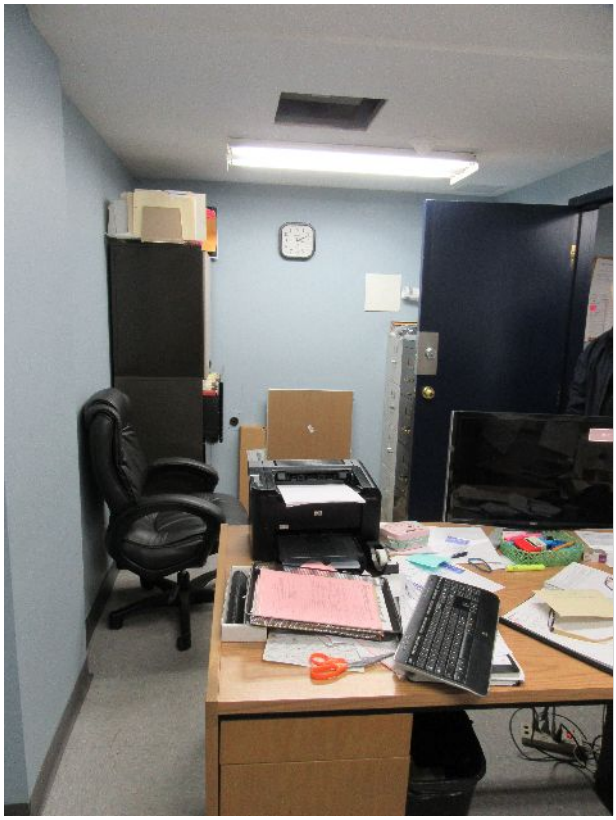
BI.15 Strata Corporation Office Finishes

Description

The strata corporation office finishes include vinyl tile flooring, painted gypsum board (GWB) walls and GWB ceilings with a spray-textured finish. The major furnishings and equipment consist of desks, chairs, filing cabinets, printers and a computer. The opening between the office and the corridor is secured with an aluminum folding accordion counter door. Lighting consists of recessed and surface-mounted ceiling fixtures with fluorescent tube lamps and screw in bulbs.

Comments

A budget has been provided to renew the interior finishes of the office when we expect the vinyl tile flooring will require replacement. The budget includes replacement of the flooring and lighting, removal of the spray-textured ceiling finish, re-painting of the walls, replacement of the baseboard heaters and a furniture allowance of $10,000. We expect that the funds required for occasional replacement of the furniture and equipment (including computer equipment) before and after the renewal project can be drawn from the operating budget as required.



47 – Strata corporation office

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2029	Renew	**$20,000**	$29,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.16 Change Room Finishes

Description

The interior finishes in the change rooms consists of tile flooring, tile baseboards, painted gypsum board (GWB) walls, tiled walls and painted GWB ceilings. The shower rooms contain one-piece pre-fabricated stalls. Toilet partitions, shower room doors and vanities are finished in plastic laminate. Two-tier metal lockers are installed in the changing area in each change room.

Comments

A budget has been provided to engage a general contractor to replace the tile flooring and baseboards, wall tile, toilet stall partitions, shower room doors, vanities, sinks, faucets, shower heads, urinal, toilets, washroom accessories, light fixtures and electric baseboard heaters. The budget also include painting the walls and ceilings.

To reduce costs, the owners could consider reducing the extent of wall tile and re-using the plumbing fixtures, faucets and electric baseboard heaters (which appear to have been replaced recently). We do not expect that the shower stalls or lockers will require replacement in the next 30 years. If not already being done, we recommend re-sealing the tile flooring at five year intervals. This will reduce the likelihood that the tiles will delaminate from the concrete deck and ensure that the moisture content of the concrete slab below remains low.

48 – Men's change room

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2029	Renew	**$90,000**	$132,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.17 Pool Area Finishes

Description

The interior finishes in the swimming pool area consist of a tiled concrete deck, tiled bench seating, a tiled knee wall around the sauna, tiled gypsum board (GWB) walls and a painted GWB ceiling. The architectural drawings indicate that a waterproofing membrane is installed below the floor tile. A glazed partition consisting of wired glass set in painted steel framing is installed at the entrance to the area. The double-door entry to the swimming pool area is located in the glazed partition.

Comments

A budget has been provided to replace the tile flooring and wall tile. Given that the floor of the recreation centre corridor adjacent to the pool area is also tiled and the two areas are visually interconnected, the budget also includes renewal of the interior finishes in this portion of the corridor. The budget includes re-painting of the pool area ceiling and glazed partition and the corridor walls and ceiling. A $5,000 allowance for replacement of the pool furniture is also included in the budget.

A separate painting budget has been provided to re-paint the ceiling and steel framing of the glazed partition. A re-painting interval of ten years has been used for the pool area given the high humidity levels typical of natatoriums. If not already being done, we recommend re-sealing the tile flooring at five year intervals. This will reduce the likelihood that the tiles will delaminate from the concrete deck.

49 – Swimming pool area

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2020	Paint	**$9,000**	$10,000
2029	Replace	**$125,000**	$184,000
2039	Paint	**$8,000**	$16,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.18 Sauna Finishes

Description

A free-standing dry sauna is located in the swimming area. Both the interior and exterior of the sauna walls and roof are finished in cedar. Some windows are installed in the sauna walls. The sauna was constructed over the swimming pool area deck; therefore the sauna flooring is identical to the swimming pool area's tiled flooring. The bench seating and heater enclosure appear to have been replaced since original construction.

Comments

A budget has been provided to replace the sauna when the tiling of the pool area is replaced. The budget includes the required plumbing and electrical work. We have not included replacement of the sauna heater in the sauna replacement budget given that it was recently replaced and will likely be able to provide many more years of service when the sauna will be replaced.

50 – Sauna in pool area

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2029	Replace	**$25,000**	$37,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

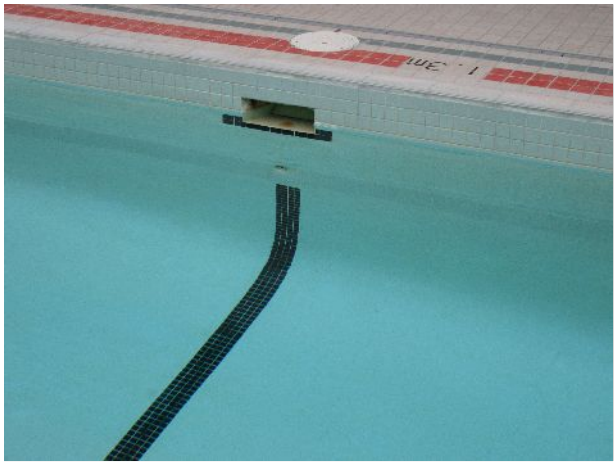
BI.19 Pool Tank Finishes

Description

The pool tank appears to be waterproofed primarily with a marcite plaster. Tiles are installed at the top of the pool tank walls and tiled accent strips are installed in the marcite plaster.

Comments

We assume that the plaster waterproofing was replaced once since original construction. Some transverse cracks were observed in the plaster and evidence of leakage was observed in the bicycle storage area under the suspended pool. Some dark staining was also observed on the grout (and to a lesser extent on the surrounding tile) in one area above the waterline (hot tub side of pool). The present equivalent age has been reduced to account for these observations.



51 – Pool tank finished in tile and marcite plaster

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	15 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2020	Replace	**$30,000**	$34,000
2040	Replace	**$30,000**	$61,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.20 Hot Tub Tank Finishes

Description

The hot tub tank is constructed of concrete and finished in tiles. The tiling appears to have been replaced since original construction.

Comments

Significant evidence of leakage (including at least one active leak) was observed below the hot tub (in the pool and hot tub filtration and sanitization service room). Because the grout is the most likely point of water infiltration, we recommend that the hot tub be re-grouted approximately every five years after the tiling is replaced. We expect that the required funds for re-grouting the hot tub can be drawn from the operating budget without significant impact.

52 – Hot tub in pool area

Service Life Stats

Expected Service Life	15 years
Present Equivalent Age	13 years
Estimated Remaining Life	2 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2017	Replace	**$10,000**	$10,000
2032	Replace	**$10,000**	$16,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.21 Squash Court Finishes

Description

The squash and racquetball court finishes consist of hardwood plank flooring, painted high density wall panels, painted gypsum board (GWB) walls in the out-of-play areas (in the squash court) and painted GWB ceilings. The light fixtures are recessed into the ceilings. An elevated opening is constructed in the rear wall of each court and a glass guardwall is installed at the opening.

Comments

A budget has been provided to replace the hardwood flooring and high density walls, and to re-paint the walls and ceilings of the squash court. Given the less frequent use of the racquetball court, we do not expect that the interior finishes of the racquetball court will require replacement in the next 30 years. We expect that the funds required to re-sand the floors and paint the walls and ceilings of the two courts can be drawn from the operating budget as required.

53 – Squash court

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	20 years
Estimated Remaining Life	20 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2035	Replace	**$45,000**	$79,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

BI.22 Storage Locker Room Finishes

Description

Storage locker room finishes consist of painted concrete floors, painted and unpainted gypsum board (GWB) and concrete walls and unpainted concrete ceilings. Storage lockers are of unfinished wood plank construction.

Comments

We do not expect that future owners will choose to renew the interior finishes of the storage locker rooms and we do not expect that the wood lockers will require replacement or major repairs in the next 30 years.

54 – 1450 storage locker room

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

BI.23 Furniture

Description

Furniture is primarily located in the entrance lobbies, mailrooms, corridors, meeting room, library and strata corporation office. The furniture in these areas includes couches, tables, planters, lamps, artwork, chairs, desks and filing cabinets.

Comments

A budget for furniture replacement is included in the renewal or modernization budget for the specific area, but because the renewal or modernization intervals are generally large, a recurring replacement budget has been provided to replace some furniture between modernization projects.

55 – Meeting room furniture

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	20 years
Estimated Remaining Life	20 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ ④

Work Required

2019	Replace	**$5,000**	$5,000
2024	Replace	**$5,000**	$6,000
2029	Replace	**$5,000**	$7,000
2034	Replace	**$5,000**	$9,000
2039	Replace	**$5,000**	$10,000
2044	Replace	**$5,000**	$11,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

Appendix EG
Exterior Grounds

EG.1 Exterior Grounds Over Parkade

Description

The hard landscaping elements of the exterior grounds located above a waterproofing membrane (in the courtyard) consist of concrete, brick and wood retaining walls, cast-in-place concrete steps, precast concrete unit pavers at patios and walkways, wood privacy screens at patios, aluminum guardrails and a water feature.

Comments

Although the components and soft landscaping which make up the exterior grounds could last significantly longer, the expected service life value is based on the expected service life of the waterproofing membrane below it given that the exterior grounds will be have to be removed to replace it. As such, we do not recommend that the owners undertake major projects in this part of the courtyard. We expect that small projects such as re-painting the retaining walls or privacy screens, can be funded from the operating budget without significant impact. The budget to replace the hard and soft landscaping elements above the waterproofing membrane is included in the PKD.1 plaza slab waterproofing membrane replacement budget.

56 – Exterior grounds over waterproofing membrane

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

EG.2 Road - Asphalt Pavement

Description

Pennyfarthing Drive is a private road for which the strata corporation is responsible. The road is surfaced in asphalt pavement and curbs are constructed of cast-in-place concrete.

Comments

Several asphalt patches were observed in the road. The strata corporation meeting minutes indicate that the most recent patches were done in 2015. A repair budget has been provided for future patches (up until two years prior to full re-surfacing). We have assumed that an average of $5,000 will be required for patching approximately every five years. A replacement budget has been provided to replace the wear course of the asphalt pavement. We do not expect that the concrete curbs will require replacement in the next 30 years.

Until full re-surfacing, we recommend that crack sealing be undertaken every two years to ensure that water run-off does not reach the compacted base through cracks and undermines the base. The saw cuts and perimeters of the asphalt patches should also be sealed. Undermining of the base often results in deterioration and settlement of the pavement which in turn results in additional and increasingly larger patches. Crack sealing should reduce the number of future patches and likely delay full re-surfacing. We assume that the operating budget can be used to fund biennial crack sealing and line painting.

57 – Pennyfarthing Drive

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	10 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2019	Repair	**$5,000**	$5,000
2024	Repair	**$5,000**	$6,000
2030	Replace	**$45,000**	$68,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

EG.3 Walkways - Asphalt Pavement

Description

The walkway south of Pennyfarthing Drive, between the concrete curb and the precast concrete fence, is surfaced in asphalt pavement. The walkway varies in width.

Comments

Although it appears to have been resurfaced in the last five years, significant settlement appears to be occurring. We expect that, based on the rate of deterioration thus far, the owners will choose to replace this asphalt pavement in approximately five years. A budget has been provided to replace the asphalt. The replacement interval assumes that settlement will reduce the service life of the asphalt pavement.

Based on the settlement issues along this walkway and the fact that it is used much less frequently the the sidewalk on the east side of Pennyfarthing Drive, we recommend that the owners consider simply replacing it with compacted gravel. Compacted gravel would be less expensive to install and easier to maintain if settlement issues are ongoing.

58 – Asphalt walkway west of Pennyfarthing Drive

Service Life Stats

Expected Service Life	15 years
Present Equivalent Age	10 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2020	Replace	**$15,000**	$17,000
2035	Replace	**$15,000**	$26,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

EG.4 Walkways - Concrete Pavement

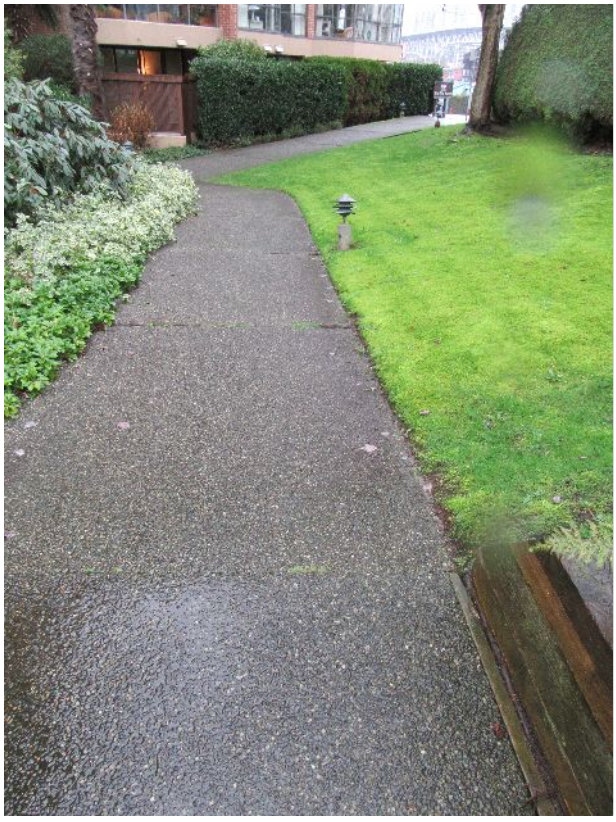
Description

The walkways in the courtyards are constructed of cast-in-place concrete panels with an exposed aggregate finish. The sidewalks and some of the steps adjacent to Pennyfarthing Drive are constructed of cast-in-place concrete panels with a smooth finish. The sidewalk in front of the 1490 entrance was recently replaced.

Comments

No significant cracks or differential settlement were observed in the concrete walkways, sidewalks and steps. The service life of concrete walkways and sidewalks varies depending on the integrity of the compacted base below the concrete panels and how quickly cracks are sealed. The estimated remaining service life relates to the walkways and sidewalks not located over a waterproofing membrane. The concrete walkways above the parkades and leisure centre will require replacement during the parkade waterproofing replacement project.

We recommend that the owners address differential settlement when a step between adjacent panels exceeds 1/2". The step can be eliminated by grinding a taper into the elevated panel. We expect that crack sealing, grinding and re-painting of the sidewalks can be undertaken with funds from the operating budget as required.



59 – Walkway in south courytard

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

EG.5 Walkways - Tile

Description

The three main Pennyfarthing Drive entrances to the complex are finished in porcelain tile. A portion of the tiled walkways and steps are sheltered from precipitation by entrance canopies above. We understand that the tiles at the 1490 entrance were replaced in 2007.

Comments

The service life represents that of porcelain tile exposed to precipitation. The present equivalent age represents the age of the tile at the 1450 and 1470 entrances. Some cracked and delaminated tiles were observed at the 1470 entrance, likely due to settlement. A replacement budget has been provided for the tile at these two entrances. We do not expect that the 1490 tile or the painted steel handrails at the 1450 entrance will require replacement in the next 30 years.

The owners should consider applying a tile and grout sealer at regular intervals to reduce the moisture absorption rate of the tile and grout. This would help reduce the likelihood of delamination, particularly for the tile which is more exposed to precipitation.

60 – Tiled walkway at 1450 entrance

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2024	Replace	**$8,000**	$10,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

EG.6 Walkways - Concrete Unit Pavers

Description

The east courtyard walkways and patios are constructed of precast concrete unit pavers over a compacted gravel base.

Comments

Although generally in good condition, the walkways and patios over the parkades and leisure centre will require replacement during the parkade waterproofing membrane replacement project. The walkway in this courtyard closest to Creekside Drive is not located over the parkades, but given that it is connected to walkways that are located over the parkade, we expect that it will be replaced during the waterproofing replacement budget to maintain a consist appearance with the new walkways The waterproofing replacement budget includes replacement of all the walkways in the east courtyard.

61 – Walkway close to Creekside Drive

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

EG.7 Enclosures and Fencing - Concrete

Description

The fence west of Pennyfarthing Drive is constructed of precast concrete panels held in place by concrete posts with grooved sides. The panels and posts are capped with precast concrete coping.

Comments

The strata corporation meeting minutes indicate that two sections of the fence were replaced in 2011 and one section was replaced in 2015. The posts appeared to be reasonably plumb. Based on the rate of deterioration of the fence since original construction and assuming that settlement will not seriously affect the fence, we do not expect that the fence will require full replacement in the next 30 years. We believe that some sections or fence posts may require replacement in the next 30 years, but we expect that the funds for occasional repairs and maintenance can be drawn from the operating budget as required.

62 – Precast concrete fence

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

EG.8 Enclosures and Fencing - Wood

Description

The (ground level) patios are enclosed with painted wood fencing or divided with painted wood privacy screens. The fencing and screens are installed on concrete curbs. The posts are secured to the curbs with steel saddle brackets.

Comments

For aesthetic reasons, a budget has been provided to stain the wood enclosure and privacy screens every five years with a high quality solid stain. Given that the wood benches in the courtyards need to be stained at more or less the same interval, staining of the wood benches is also included in the budget. Based on the condition of the finish, we expect that the next occurrence will be in approximately three years.

With the exception of the first staining project in the 2018/2019 fiscal year, the staining and replacement budgets do not include staining and replacement of the wood enclosures and privacy screens located over the parkades or leisure centre given that they will be replaced during the waterproofing membrane replacement project. The budget to replace the wood enclosures over the parkades is included in the PKD.1 plaza slab waterproofing replacement project.

When wood enclosure replacement is undertaken, the owners could consider installing aluminum enclosures and privacy screens which have a significantly longer service life than wood and much lower maintenance costs. To extend the service life of the wood enclosure (not located over the parkade), we recommend installing a sloped wood cap over the top rails of the fencing and privacy screens.

63 – Patio enclosure adjacent to Co-op housing entrance

64 – Top rails of patio enclosure

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	10 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2018	Stain	**$9,000**	$10,000
2023	Stain	**$5,000**	$6,000
2028	Stain	**$5,000**	$7,000
2030	Replace	**$11,000**	$17,000
2033	Stain	**$5,000**	$8,000
2038	Stain	**$5,000**	$10,000
2043	Stain	**$5,000**	$11,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

EG.9 Enclosures and Fencing - Brick

Description

The gas meter station adjacent to Pennyfarthing Drive is enclosed in a brick enclosure with a painted metal gate. The brick walls are installed over a concrete curb and the top of the walls are covered in a metal cap flashing.

Comments

We do not expect that the walls will require replacement or major repairs in the next 30 years. If the gate is regularly repainted, we do not expect that the gate will require replacement in the next 30 years.

65 – Brick enclosure around gas meters

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

EG.10 Retaining Walls - Concrete

Description

The majority of the cast-in-place concrete retaining walls are located in the east courtyard. Previous assessments by RJC indicate that they are cast-in-place over top the waterproofing membrane.

Comments

The estimated remaining service life represents that of the concrete retaining walls not located over the parkades and leisure centre. The concrete retaining walls installed over the waterproofing membrane will require replacement during the parkade waterproofing replacement project. The budget for their replacement is included in the waterproofing replacement budget. We do not expect that the remaining concrete retaining walls will require replacement in the next 30 years. We expect that the funds required to re-paint the retaining walls can be drawn from the operating budget as required.

66 – Concrete retaining wall in east courtyard

67 – Concrete retaining wall around patio

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

EG.11 Retaining Walls - Wood

Description

Wood retaining walls, constructed of pressure-treated lumber, are located throughout the exterior grounds.

Comments

The expected service life represents an average service life. The actual service life of each retaining wall varies considerably based on installation, exposure to precipitation and sunlight, exposure to sprinkler head spray and the surrounding plantings. We expect that the operating budget will be used to fund localized replacement of the wood retaining walls (not located over a waterproofing membrane) as required.

68 – Wood retaining walls at south courtyard

69 – Wood retaining wall on west elevation

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	10 years
Estimated Remaining Life	10 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

EG.12 Retaining Walls - Brick

Description

Some of the retaining walls in the exterior grounds are constructed of structural brick with coping constructed of brick veneer.

Comments

A budget has been provided to replace the brick retaining walls not located over the parkade and leisure centre with more durable cast-in-place concrete retaining walls. The budget to replace the brick retaining walls located over the parkades and leisure centre is included in the parkade waterproofing membrane replacement project.

70 – Brick retaining wall at lower courtyard

Service Life Stats

Expected Service Life	60 years
Present Equivalent Age	31 years
Estimated Remaining Life	29 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2044	Replace	**$25,000**	$57,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

EG.13 Guardrails - Steel

Description

Painted steel guardrails are installed at an elevated stair landing along Pennyfarthing Drive and an elevated landing along Creekside Drive.

Comments

We expect that the funds required to repaint the guardrails can be drawn from the operating budget as required. The guardrails in the east courtyard will require either replacement or removal and reinstatement during the parkade waterproofing replacement project. The replacement budget for these guardrails is included in the parkade waterproofing replacement budget.

71 – Guardrails at elevated stair landing

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

EG.14 Exterior Furniture - Wood

Description

Wood benches are located throughout the east courtyard and a wood bench is built into a wood retaining wall in the south courtyard.

Comments

The wood benches will require regular staining to achieve the indicated service life. The budget to stain the benches is included in the budget to stain the wood patio enclosures and privacy screens (not located over a waterproofing membrane). We expect that the wood benches will be reused after the parkade waterproofing replacement project. We believe that the funds required to replace the wood bench in the south courtyard can be drawn from the operating budget when required. To reduce costs, the owners may be able to simply replace the wood components of the benches while re-using the steel structure.

72 – Wood benches in east courtyard

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	10 years
Estimated Remaining Life	10 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2025	Replace	**$12,000**	$16,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

Appendix ELEC
Electrical Systems

ELEC.1 Unit Substations

Description

The complex is serviced by a dual radial 12,470 V electrical supply (one running and one standby circuit). The complex's dual radial unit substation is located in the 1470 electrical vault. A second unit substation (not dual radial) consisting of a 1,500 kVA transformer, a switchgear unit and a series of disconnect switches is also installed in the 1470 electrical vault. One unit substation is installed in each of the two electrical rooms below the other two wings of the complex. These two other unit substations consist of a switchgear unit with a 15 kV load break switch, a 750 kVA transformer and a series of disconnect switches for each meter centre in the wing.

Comments

The expected service life for the unit substations represents that of the transformer and switchgear unit within the unit substations and not that of the entire unit substation. A repair budget has been provided for transformer and switchgear unit replacement in the four unit substations. Although the owners could choose to use the accrued funds to replace unit substation components as they fail, a proactive replacement strategy would significantly minimize down time given that unit substation components may take weeks or months to acquire. We do not expect that the unit substations will require complete replacement in the next 30 years.

Service stickers indicate that the dual radial unit substation was last serviced in 2013. BC Hydro requires that dual radial unit substations be maintained at three year intervals. A maintenance budget has been provided for this maintenance.

73 – 1470 unit substation

74 – Dual radial unit substation

Service Life Stats

Expected Service Life	50 years
Present Equivalent Age	31 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2016	Maintain	**$3,000**	$3,000
2019	Maintain	**$3,000**	$3,000
2022	Maintain	**$3,000**	$4,000
2025	Maintain	**$3,000**	$4,000
2028	Maintain	**$3,000**	$4,000
2031	Maintain	**$3,000**	$5,000
2034	Maintain	**$3,000**	$5,000
2034	Repair	**$600,000**	$1,021,000
2037	Maintain	**$3,000**	$6,000
2040	Maintain	**$3,000**	$6,000
2043	Maintain	**$3,000**	$7,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.2 Transformers

Description

Several dry-type transformers are located in the elevator machine rooms, the 1470 dual radial electrical vault, the 1450 and 1490 electrical rooms and the generator room. The transformers step down the voltage from 600V to 120/208 V. They all appear to date from original construction.

Comments

Over time dielectric and insulation materials will break down making it necessary to replace the transformer. A replacement budget has been provided to replace all the transformers with the exception of the emergency transformer in the generator room and the transformers in the elevator machine rooms which we believe were replaced during the recent elevator modernization projects. Although the owners could choose to use the accrued funds to replace transformers as they fail, a proactive replacement strategy would significantly minimize down time given that transformers may take days or weeks to acquire. We recommend that replacement transformers incorporate a base which elevates them off the ground (or be installed on concrete pads).

75 – Dry type transformer installed in electrical room

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2029	Replace	**$40,000**	$59,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.3 Electrical Distribution System

Description

After passing through the unit substations and transformers, the electrical supply passes through central distribution panels, disconnect switches and panelboards located in the electrical rooms and throughout the complex. We assume that the electrical distribution equipment dates from original construction.

Comments

The expected service life and condition assessment represent an average service life and condition of the major components which make up the electrical distribution system. We expect that some of the components will require replacement in approximately 20 to 30 years. A budget has been provided to replace some electrical distribution equipment beginning in the 2039/2040 fiscal year. A recurrence interval of five years has been applied to the replacement budget to allow for gradual replacement of the majority of the electrical equipment. We expect that smaller electrical components such as small disconnect switches, contactors, light switches and receptacles can be replaced with funds from the operating budget as required. We do not expect that the electrical wiring will require replacement or major repairs in the next 30 years.

We recommend that an infrared scan of the electrical equipment be done if it has not been done in the last ten years. Infrared scanning of the distribution panels, disconnect switches and panelboards should be undertaken approximately every ten years to identify loose, over-torqued, dirty or overloaded connections.

76 – Electrical equipment in 1490 electrical room

Service Life Stats

Expected Service Life	55 years
Present Equivalent Age	31 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2039	Replace	**$10,000**	$20,000
2044	Replace	**$10,000**	$23,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.4 Emergency Generator

Description

A 275 kW diesel-powered Simpower standby generator is installed in the generator room next to the 1470 electrical vault. It produces 600 V power which is stepped down to 120/208 V by a transformer located in the generator room. We assume that the generator dates from original construction. The strata corporation meeting minutes indicate that some major repairs were done to the generator in 2013. The emergency electrical supply is distributed to a variety of electrical loads including indoor lighting, the 1470 elevators, parkade lighting, parkade gate operators, stairwell pressurization fans, sump pumps, parkade exhaust fans and corridor pressurization fans.

Comments

The strata corporation meeting minutes indicate that annual generator inspection, maintenance and testing is taking place as required by the BC Fire Code. A maintenance budget has been provided for five-year (quinquennial) maintenance as stipulated in the related standard CSA C282. The last five years of meeting minutes do not document whether this five-year maintenance has been performed; therefore, we have assumed that it has not been done in the last five years and scheduled it for the first year of the report's projection period. A replacement budget has been provided to replace the generator at a point in time when we believe it will become too difficult or expensive to source replacement parts. We expect that the occasional repairs to the generator can be funded from the operating budget.

77 – Diesel-powered generator

Service Life Stats

Expected Service Life	45 years
Present Equivalent Age	31 years
Estimated Remaining Life	14 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Work Required

2016	Maintain	**$5,000**	$5,000
2021	Maintain	**$5,000**	$6,000
2026	Maintain	**$5,000**	$7,000
2029	Replace	**$60,000**	$88,000
2034	Maintain	**$5,000**	$9,000
2039	Maintain	**$5,000**	$10,000
2044	Maintain	**$5,000**	$11,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.5 Emergency Power Distribution System

Description

An automatic transfer switch (ATS), located in the generator room, transfers the electrical supply for the emergency loads (powered by the generator) from the primary power source to the standby power system in the event of a power outage. The ATS appears to date from original construction. From the ATS, several 600V power supplies are distributed throughout the complex. A step down transformer is used to generate 120/208 V for three emergency panelboards. The emergency panelboards distribute the supply to the 120/208 V emergency loads throughout the complex. Disconnect switches are installed on the 600 V supplies and a service disconnect switch is installed between the generator and the ATS to isolate the generator during maintenance work and testing.

Comments

The expected service life represents that of the ATS. A budget has been provided for replacement of the ATS. We do not expect that 600 V disconnect switches, transformer and panelboards will require replacement in the next 30 years.

78 – Emergency power distribution equipment

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	31 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Work Required

2019	Replace	**$20,000**	$22,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.6 Electric Baseboard Heaters

Description

Heating in the service rooms, storage rooms and change rooms is provided by electric baseboard heaters. The heating in the corridors with windows is supplemented with electric baseboard heaters installed below the windows. The heating in the entrance lobbies, meeting room, library and exercise room is also supplemented with electric baseboard heaters. Some of the heaters are controlled by built-in thermostats but most appear to be controlled by remote thermostats.

Comments

The integral thermostat dials on some of the baseboard heaters did not appear to be working. A budget has been provided to replace the baseboard heaters in the corridors under the windows. For aesthetic reasons, we expect all of these baseboards to be replaced at the same time. The estimated remaining service life for the baseboard heaters has been overridden so that they are replaced at the same time as the corridor renewal project. This will ensure that the new interior finishes can be properly installed around the new baseboard heaters. If the owners are considering changing the timing of the corridor renewal project, we recommend that the timing for the replacement of the baseboard heaters be done adjusted correspondingly.

The budgets to replace the electric baseboards in the main entrances, change rooms, meeting room, library and exercise room are included in the renewal project budgets for the respective areas. We expect that the remaining standalone baseboards will be replaced as they fail with funds from the operating budget.

79 – Electric baseboard heater in entrance lobby

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	12 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2027	Replace	**$175,000**	$242,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.7 Sauna Heaters

Description

The dry sauna, located in the swimming pool area, is equipped with a dry sauna heater. The strata corporation meeting minutes indicate that it was replaced in 2011.

Comments

A budget has been provided for replacement of the dry sauna heater.

80 – Sauna heater

Service Life Stats

Expected Service Life	26 years
Present Equivalent Age	5 years
Estimated Remaining Life	21 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2036	Replace	**$3,000**	$5,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.8 Lighting - Interior

Description

Most of the common area interior lighting consists of brass wall sconces adjacent to suite entries, recessed and surface-mounted ceiling fixtures with screw-in bulbs in most common areas, surface-mounted T8 fluorescent strip light fixtures in the stairwells, washrooms and parkade exit corridors, and recessed fluorescent strip light fixtures in the workshop. The strata corporation meeting minutes indicate that the stairwell light fixtures were replaced in 2012.

Comments

The expected service life, present equivalent age and condition assessment relate to the stairwell lighting only. With the exception of stairwell lighting, most common area light fixtures are typically replaced when modernizing the interior finishes.

A budget has been provided to replace the light fixtures in the stairwells to more energy efficient lighting (LED) when the ballasts in the light fixtures fail. Until this replacement project, we believe that the replacement of failed fluorescent strip light fixtures can be funded from the operating budget as required. We do not expect that the owners will choose to modernize the light fixtures in the service rooms, parkade elevator lobbies, squash court and racquetball court in the next 30 years. The budget to replace the remaining common area interior lighting is included in the budget to renew the interior finishes of the respective areas.

81 – Corridor lighting

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	4 years
Estimated Remaining Life	16 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2031	Replace	**$15,000**	$23,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.9 Lighting - Exterior

Description

Most of the exterior lighting installed on the building consists of surface-mounted soffit light fixtures and wall lights. The exterior light fixtures installed on the building illuminate common entrances and exits.

Comments

The expected service life represents an average modernization interval for exterior lighting in residential complexes. This interval is mostly dependent on the demographic profile of the owners and the market appeal of the complex. In reality, light fixtures can last significantly longer than the modernization interval, in particular the light fixtures which are sheltered from precipitation. The present equivalent age and condition assessment represent the average age and condition of the soffit-mounted and wall-mounted light fixtures. A budget has been provided to replace the common exterior light fixtures. We assume that the exterior light fixtures which illuminate the limited common property (patios and roof decks) are the responsibility of each owner.

82 – Soffit and wall light fixtures

83 – Soffit-mounted entrance lights

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2024	Replace	**$10,000**	$13,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.10 Lighting - Walkway

Description

Walkway lighting consists of bollard light fixtures, pagoda-style light fixtures, as well as recessed and surface-mounted walkway lights installed on concrete retaining walls. The strata corporation meeting minutes indicate that the lower and upper courtyard lights were replaced in 2011 and 2012, along with some of the electrical wiring. We understand that the courtyard walkway lights are activated by a photocell.

Comments

The service life, present equivalent age and condition assessment represent an average service life, age and condition for the four types of walkway light fixtures. A budget has been provided to replace the courtyard lighting throughout the complex's exterior grounds. it does not include replacement of the associated electrical wiring. We have assumed that the walkway lighting will be removed and reinstated during the parkade waterproofing replacement project described in PKD.1.

84 – Bollard light in courtyard

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	4 years
Estimated Remaining Life	26 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2041	Replace	**$15,000**	$31,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.11 Lighting - Lamp Post

Description

Steel lamp post lighting located adjacent to the building illuminates Pennyfarthing Drive and the walkways on either side.

Comments

We recommend that the fasteners securing the lamp post to the concrete base be reviewed annually for signs of corrosion and replaced when corrosion is observed. As the light is subject to wind loading, we also recommend that the metal base of the light be reviewed annually for cracks. The light fixtures should be painted approximately every five years. We expect that the funds required for repainting can be drawn from the operating budget as required without significant impact.

85 – Lamp post lighting along Pennyfarthing Drive

86 – Lamp post base

Service Life Stats

Expected Service Life	60 years
Present Equivalent Age	31 years
Estimated Remaining Life	29 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2044	Replace	**$85,000**	$194,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.12 Lighting - Parkade

Description

Parkade lighting consists of surface-mounted T8 fluorescent strip light fixtures. The strata corporation meeting minutes indicate that the lighting was replaced in 2012.

Comments

The service life relates to the ballasts in the T8 light fixtures. The replacement budget includes replacement of the T8 lighting with LED lighting. Until the light fixtures are replaced, we expect that the required funds for replacement of ballasts (which fail before the replacement project) can be drawn from the operating budget as required.

87 – T8 fluorescent strip light in parkade

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	4 years
Estimated Remaining Life	16 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2031	Replace	**$125,000**	$195,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.13 Emergency Signage

Description

The building is equipped with plastic emergency exit signs illuminated with LED bulbs. The signage appears to have been replaced in the last ten years.

Comments

We do not expect that the exit signs will be replaced in the next 30 years due to aesthetic or functional concerns. We expect that spent light bulbs and back-up batteries will be are replaced as required after the annual BC Fire Code inspection with funds from the operating budget.

88 – Plastic emergency exit signage

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 ② ③ ④

ELEC.14 Fire Alarm Panel

Description

The fire alarm system for each wing consists of initiation devices (smoke detectors, heat detectors, manual pull stations, flow switches installed on the automatic fire suppression system piping, etc.) and notification appliances (alarm bells) which are controlled by a Siemens FireFinder XLS fire alarm control panel in each main electrical room. One heat detector, monitored by the fire alarm system, is installed in each suite. The strata corporation meeting minutes indicate that the 1490 fire alarm system was replaced in 2012, the 1470 fire alarm system in 2013 and the 1450 fire alarm system in 2014.

Comments

The expected service life represents the point in time which we believe replacement parts for the fire alarm control panels and annunciators will become problematic to find. This is likely to occur because manufacturers often phase out production of the replacement parts and most fire protection service providers are reluctant to utilize used components for repairs. The present equivalent age and condition assessment is an average of the three fire alarm panels and annunciators which were replaced between 2012 and 2014.

A budget has been provided to replace the annunciator panels in the lobbies and the fire alarm control panels in the electrical rooms. The budget does not include replacement of wiring, notification appliances or initiation devices. We expect that the operating budget is used to fund the required replacement of deficient initiation devices, notification appliances and other fire alarm system components after each annual BC Fire Code inspection. When renovating the corridors, we suggest that the owners consider lowering the manual pull stations to the height stipulated in the current building code.

89 – Siemens FireFinder XLS fire alarm control panel

90 – Siemens annunciator panel in 1490 building

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	3 years
Estimated Remaining Life	22 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2037	Replace	**$200,000**	$372,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.15 Telephone Entry System

Description

Non-resident access to each wing is controlled by independent Sentex telephone entry systems consisting of a control panel and an open voice entry panel. The strata corporation meeting minutes indicate that the 1450 system was replaced in 2007. We have assumed that all three systems were replaced in 2007.

Comments

Most telephone entry system replacement parts become increasingly difficult to source as manufacturers phase out production of the parts and subsequent inventories of new and used parts are depleted. This will mean that in the future, an otherwise minor repair may become a full replacement instead. The replacement budget includes both the entry panel and control panel, but does not include replacement of the wiring.

91 – 1490 telephone entry system panel

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	9 years
Estimated Remaining Life	16 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2031	Replace	**$18,000**	$28,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.16 Access Control System

Description

Access to each wing of the complex is controlled by independent access control systems consisting of card readers, electric strikes, a control panel and a variety of secondary components. The strata corporation meeting minutes indicate that the three systems were replaced in 2014.

Comments

A budget has provided to replace the card readers and control panels throughout the complex at a point in time when we expect new and used replacement parts will be difficult to find. The replacement budget is based on the estimate to replace the system in 2014 (without entering into a five-year monitoring contract). We expect that the replacement of electric strikes and upgrading of the software can be funded by the operating budget as required.

92 – Card reader in parkade

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	2 years
Estimated Remaining Life	28 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2043	Replace	**$75,000**	$167,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEC.17 Video Surveillance System

Description

The video surveillance system consists of 21 pan/tilt/zoom dome cameras (including three in the co-operative housing section), a digital video recorder and an LCD monitor. The strata corporation meeting minutes indicate that the surveillance system was replaced in 2015.

Comments

The expected service life represents the service life of the cameras. A replacement budget has been provided to replace the system, excluding the camera wiring. The video recorder and monitor have a shorter service life than the cameras, but we expect that they will be replaced as required with funds from the operating budget. The service life does not take into account the adequacy of the system. Upgrading the system is a discretionary decision and therefore is not included in this report.

93 – Camera at 1470 entrance lobby

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	1 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2039	Replace	**$15,000**	$30,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

Appendix ELEV
Elevators

ELEV.1 Controllers and Drives

Description

Elevator Type: Six (6) geared overhead traction passenger elevators (Two (2) elevators per building)
Original Manufacturer: Dover Elevator Corporation (1470 and 1490 Pennyfarthing Drive); Northern Elevator Ltd. (1450 Pennyfarthing Drive)
Installation: 1982
Modernization: 2010, By City Elevator Ltd.
Speed: 350 fpm
ID#: 1450 Penny farthing (9055, 9056); 1470 Pennyfarthing (9789, 9790); 1490 Pennyfarthing (10084, 10085)
Controller: Motion Control Engineering M4000
Drive: Torqmax F5 VV AC

Comments

These elevators were modernized with new solid state microprocessor controls as well as AC variable frequency drives. These controllers require less maintenance than the relay type and provide improved reliability, trouble-shooting capability, and adjustability. The controllers do not contain technology proprietary to City Elevator and may be maintained by other contractors.
The elevators appeared to be in good operation; the leveling and ride quality are considered good.
Budget for modernization is $350,000.00 per building ($1050,000.00 total).

94 – Controller

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	6 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2039	Renew	**$1,100,000**	$2,171,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEV.2 Machines

Description

Machine Manf./Type: Northern Geared (1450 Pennyfarthing Drive); Dover Geared (1470, 1490 Pennyfarthing Drive)
Machine Location: Overhead Traction

Comments

The Northern and Dover machines are of a fair design and are original to the installation. Replacement as part of the next modernization will be required.

Budget for the machines are $90,000.00 per building ($270,000.00 total).

95 – Machine

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	6 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2039	Repair	**$275,000**	$543,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEV.3 Door Operators and Door Detectors

Description

Door Operator: GAL MOVFR
Door Detector: Infrared light curtain

Comments

The modernization included GAL MOVFR door operators. The GAL MOVFR is a modern door operator using the latest closed-loop technology, and are of a robust design.
The elevators are equipped with infrared detector type door reopening devices, meeting current code requirements for passengers with disabilities. Infrared reopening devices detect an obstruction across the entire door height, and re-open the doors without making physical contact with the obstruction. Infrared door detectors offer superior reliability and control of the door operation.

Door Operator: $17,500.00 per elevator
Door Detector: $2,500.00 per elevator

This budget has been included under the modernization cost (ELEV.1 - Controllers and Drives)

96 – Door Operator

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	6 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

ELEV.4 Cab Interior Finishes

Description

The cab finishes were upgraded in 2010: glass rear walls; mirror side walls; stainless steel return, header, door panel, and door jambs; stainless steel ceiling with pot lights; tile flooring.

Comments

The cab finishes are in good condition, any upgrade to the cab finishes is at the discretion of the Owner. The cab interiors are stretcher accessible.

Budget for this work is $50,000.00 per building ($150,000.00 total).

97 – Cab Interior

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	6 years
Estimated Remaining Life	29 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2044	Renew	**$150,000**	$343,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

ELEV.5 Operating and Signal Fixtures

Description

Push Button Type: MAD BS Moon, stainless steel
Direction Indicator: Yes, raised plastic in car only
Position Indicator: LCD in-car and in-hall (at main level only)
Emergency Communications: Yes, Hands-free
Standby Power: Yes
Firefighters Operation: Yes

Comments

The operating fixtures are vandal resistant, in good condition, replaced with the modernization, and meet all requirements for disabled persons access. The mandatory requirement for emergency communication is in place. All operating fixtures will be included in a controller and drive modernization. The cost is included under ELEV.1 - Controllers and Drives.

98 – Car Operating Panel

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	6 years
Estimated Remaining Life	24 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Appendix MECH
Mechanical Systems

MECH.1 Air Handling Units - Corridors

Description

The corridors of the complex are pressurized with three indirect fired air handling units (AHU). Each AHU services one wing, with one supply outlet on each floor. The 1450 AHU was manufactured in 2006 and is installed on a rooftop adjacent to the 1450 rooftop boiler room. We have assumed that it was installed the same year it was manufactured. The 1470 AHU is installed inside a rooftop mechanical room. Although the fan housing dates from original construction, we understand that the internal components have been replaced or refurbished since original construction. The 1490 fan is also installed inside a rooftop mechanical room and it appears that several components, including the duct furnace, have been replaced since it was first installed. We understand that the AHUs run continuously. The only corridor not pressurized by the rooftop AHUs is the 1450 ground floor corridor which is pressurized by a dedicated supply fan. This fan is usually not in operation given that it is not a gas-fired supply fan.

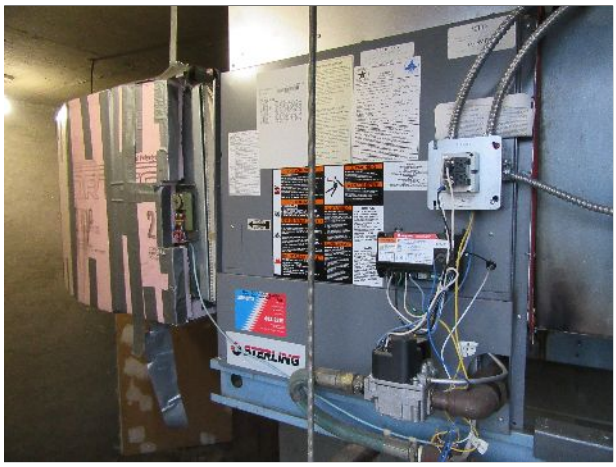
Comments

The expected service life and present equivalent age represent the average service life and estimated age of the 1450 AHU and the major components of the other two AHUs. A budget has been provided to replace the 1450 AHU and the major components (duct furnaces, blowers, etc.) of the other two fans in the 2030/2031 fiscal year, assuming that the major components of the 1470 and 1490 AHUs were replaced within a few years of when the 1450 AHU was installed (2006). Although smaller AHU components (fan belts, pulleys, bearings, etc.) may require replacement before the AHUs are replaced, a budget has not been provided for these smaller repair projects because we believe that the funds for the repairs can be drawn from the operating budget as required without significant impact. We do not expect that the ducting or supply grilles will require replacement or significant repairs in the next 30 years.

We recommend that the ducting for the supply fans be cleaned approximately every five years. A maintenance budget has been provided for this. The strata corporation meeting minutes indicate that the ducting was last cleaned in 2013, therefore the next cleaning has been scheduled to occur in the 2017/2018 fiscal year.

We also recommend that the supply fan for the 1450 ground floor corridor runs continuously. By pressurizing the corridors, smoke generated by a fire inside a unit will not spread into the corridor. If the air is too cool for the occupants, the owners should investigate whether it is possible to supply warm air from the 1450 rooftop AHU.

99 – 1450 AHU



100 – 1490 AHU inside mechanical room

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	10 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2017	Maintain	**$7,000**	$7,000
2022	Maintain	**$7,000**	$8,000
2027	Maintain	**$7,000**	$10,000
2030	Replace	**$45,000**	$68,000
2032	Maintain	**$7,000**	$11,000
2037	Maintain	**$7,000**	$13,000
2042	Maintain	**$7,000**	$15,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.2 Swimming Pool Area - Air Handling Unit

Description

The pool area is heated by a MarkHot air handling unit (AHU) which appears to date from original construction. The AHU draws fresh air through one duct and return air through a second intake duct. The heated air is then supplied to the pool area through two supply ducts. The Viessmann boiler used to heat the pool and hot tub water is also used to heat the water circulating through the copper heating coil inside the AHU. The hot water is circulated through insulated copper supply and return piping by a circulation pump. An expansion tank is also part of the AHU's closed loop hydronic heating system. The water in the piping appears to be filtered and chemically treated.

Comments

Given that the AHU is located indoors, we do not expect that full replacement will be required in the next 30 years. A repair budget has been provided to replace the heating copper heating coil. We assume that the heating coil has not been replaced since original construction, but the other internal components of the AHU have been replaced since original construction. We expect that occasional replacement of or repairs to the dampers, damper actuators, blower, blower motor, circulation pump and expansion tank can be funded from the operating budget without significant impact. The budget to replace the boiler and copper piping is provided in the Swimming Pool - Water Heater component.

101 – Swimming area AHU

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2024	Repair	**$9,000**	$11,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.3 Supply Fans - Stairwell Pressurization

Description

In the event of a fire, the stairwells and elevator shafts are pressurized by supply fans located in rooftop mechanical rooms, parkades and in ceiling plenums adjacent to the stairwells. These fans are controlled by the fire alarm panels located at the three main entrances.

Comments

Because the fans are located indoors, we do not expect that they will require full replacement in the next 30 years if motors and belts are replaced as required. Instead, we expect that the funds for occasional repairs or component replacement can be drawn from the operating budget as required without significant impact. We do not expect that the supply grilles in the stairwells and elevator shafts, or the ducting between the fans and the supply grilles, will require replacement or significant repairs in the next 30 years. If not already being done during the annual inspections mandated by the BC Fire Code, we recommend that the fans be run annually to confirm that they are fully operational.

102 – Stairwell pressurization fan

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 ② ③ ④

MECH.4 Exhaust Fans - Parkade

Description

Most parking levels are mechanically exhausted by belt-driven propeller fans mounted in exterior walls. The exhaust fan servicing the P1 level of 1470 is a floor-mounted inline duct fan installed in a storage room adjacent to the parking area. We understand that the parkade exhaust fans run continuously.

Comments

Because the fans are located indoors, we do not expect that they will require full replacement in the next 30 years if motors and belts are replaced as required. Instead, we expect that the funds for occasional repairs or component replacement (fan motors, propellers, etc.) can be drawn from the operating budget as required without significant impact. The exhaust fans should be reviewed and serviced by a qualified mechanical maintenance service provider at least annually.

Although not mandatory, we recommend installing hazardous gas detection systems in the parkades to activate the fans based on carbon monoxide concentrations. Given that the fans are on continuously, a configuration which allows the fans to operate only when required may have a relatively low payback period (less than ten years). It will also result in less frequent fan operation, which in turn would result in a longer service life for the fan motors.

103 – Parkade exhaust fan

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 ② ③ ④

MECH.5 Exhaust Fans

Description

Exhaust fans service the swimming pool area, washrooms, bicycle rooms, storage locker rooms, the garbage room, electrical rooms, elevator machine rooms and a variety of other areas in the complex.

Comments

The expected service life relates to the smaller (fractional horespower) fans which are typically replaced in their entirety. The expected service life is based on our understanding that many of the exhaust fans operate most of the time, but not continuously. The present equivalent age represents the average estimated age of the smaller fans. We expect that the funds required for component replacement or occasional repair of the larger fans, and full replacement of the smaller fans, can be drawn from the operating budget as required.

104 – Garbage room exhaust fan

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

1 ② ③ ④

MECH.6 Mechanical Vent Terminations

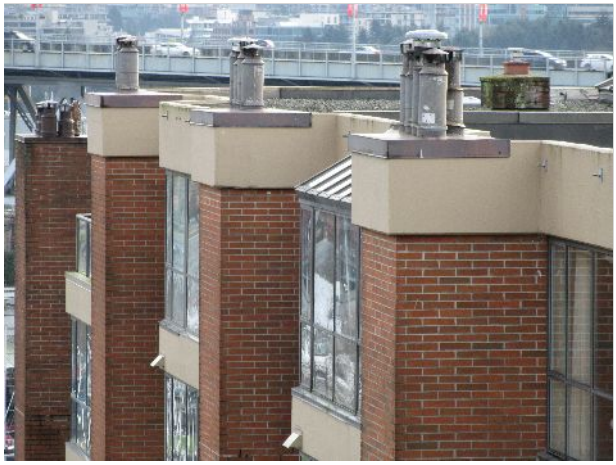
Description

Mechanical vent terminations are installed on exhaust ducting for dryers, washroom exhaust fans and kitchen range hood exhaust fans. The exhaust ducting is typically installed in the concrete slab above the unit and the vent terminations are installed on the exterior concrete walls or the balcony soffits. The boiler flues, as well as the gas and wood-burning fireplace flues project through the brick chimneys and roofs of the complex. The strata corporation meeting minutes indicate that the exhaust vent terminations on the concrete walls were replaced during the building repainting projects that took place between 2011 and 2014.

Comments

The expected service life, present equivalent age and condition assessment represent an average service life, age and condition of the different vent terminations. We recommend that the fireplace and boiler flues be painted with rust-inhibiting paint every five years to delay replacement of the flues. The strata corporation should also ensure that all flue vent caps are securely fastened to the flues. We expect that the funds for this maintenance work can be drawn from the operating budget without significant impact. The replacement budget is for flue and chimney cap flashing replacement for the entire complex. We do not expect that the remaining vent terminations will require replacement in the next 30 years.

The strata corporation meeting minutes of the last five years indicate that many of the in-slab dryer ducts have been prone to blockages and leaks, likely as a result of being crushed during original construction. The strata corporation has remediated the leaks using crack injection. Given the frequency of crack injection, we expect that the funds required for future leak remediation will be drawn from the operating budget as required. We recommend that the dryer vents (or at the very least the problematic vents) be cleaned annually (with funds from the operating budget) from both the inside and outside to reduce the frequency of blockages and subsequent leaks. The owners could also consider mandating that only ventless dryers be used in suites with problematic dryer ducts.



105 – Fireplace flues at top of chimneys

106 – Gas flues at top of chimney

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	10 years
Estimated Remaining Life	25 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2040	Replace	**$100,000**	$203,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.7 Piping - Domestic Water Distribution

Description

The building's original copper piping was replaced in 2005. We understand that the replacement piping consists of type K (thicker wall thickness) and type L (standard wall thickness) piping for main distribution and recirculation lines and PEX (plastic) piping for branch lines (supplying water to the suites). The strata corporation meeting minutes indicate that the mechanical contractor provided a 25-year warranty on the work. We understand that the recirculation piping is located above the corridor ceilings.

Comments

The expected service life represents that of hot water copper piping which has a shorter service life than cold water copper piping. The strata corporation meeting minutes indicate that some leaks have occurred (and been repaired) in the last five years.

Pinhole leaks, the most widely known cause of leaks, can result from, among other reasons, copper pitting corrosion. The point at which copper pitting corrosion appears in copper piping depends primarily on the physical and chemical characteristics of the water supply (pH level, dissolved solids, mineral content, etc.), water temperature and tubing wall thickness, but leaks can occur as a result of other factors, including soldering flux residue, concentration cells, erosion corrosion, sulfide attack, stress corrosion cracking or poor workmanship and/or design.

A budget has been provided to replace the copper piping of both the hot and cold domestic water distribution system and insulate all of the piping throughout the entire complex. It includes the installation of new isolation valves, restoration of interior finishes and engineering fees. The budget is based on using PEX piping for the branch lines and copper piping for the rest of the distribution system. Given the magnitude of the project cost, the project has been spread out over three years. Instead of piping replacement, the owners could consider engaging a contractor to line the inside of the copper piping with an epoxy coating.

The owners could also address leaks proactively by installing a water treatment system. Water treatment involves modifying the water chemistry to reduce the negative effects it has on copper piping. The water treatment system would raise the pH level and increase the water hardness, which in turn may result in a longer service life for the copper piping.

107 – Insulated copper piping in storage locker room

108 – Insulated copper piping in water entry room

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	11 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2034	Replace	**$1,333,000**	$2,270,000
2035	Replace	**$1,333,000**	$2,338,000
2036	Replace	**$1,333,000**	$2,408,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.8 Domestic Water Valves and Backflow Preventers

Description

Isolation valves, flow control valves and backflow preventers are installed at the origin of the three domestic water supply systems (in the three water entry rooms) and throughout the complex. The domestic water valve tag schedule from the 2005 re-piping project indicates that there are nearly 100 valves in the complex. The strata corporation meeting minutes indicate that several backflow preventers were installed in 2011 and new double check valve assemblies were installed on the main water supply lines in each water entry room in 2013.

Comments

The expected service life and present equivalent age represent the average service life and age of the valves in the complex. In actuality, the service life and age of the valves and backflow preventers vary significantly. We expect that replacement of the smaller valves can be funded from the operating budget as required. A budget has been provided which represents the replacement of approximately two large valves every five years, beginning in the 2017/2018 (five years after two large valves were replaced below Pennyfarthing Drive). The largest valves are typically located in the water entry rooms.

109 – Double check valve assembly

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	20 years
Estimated Remaining Life	10 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2017	Replace	**$14,000**	$14,000
2022	Replace	**$14,000**	$17,000
2027	Replace	**$14,000**	$19,000
2032	Replace	**$14,000**	$22,000
2037	Replace	**$14,000**	$26,000
2042	Replace	**$14,000**	$30,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.9 Boilers - Domestic Water

Description

Two 1,000 MBH (input) boilers are installed in the 1450 rooftop boiler room, one 750 MBH boiler is installed in the 1470 rooftop boiler room and one 1,000 MBH boiler is installed in the 1490 rooftop boiler room. All four boilers are Laars Pennant automatic circulating tank water heaters manufactured in 2005. We have assumed that the boilers were installed in the same year that they were manufactured. We understand that the 1470 boiler services the 1470 portion of the complex as well as the common amenity areas on the ground floor of the building (washrooms, change rooms, meeting room kitchenette).

Comments

No significant evidence of leakage was observed below the boilers. The strata council meeting minutes indicate that the burners on three of the four boilers have been replaced since 2011. Given that the boilers are similar in age and construction, are subject to similar operating loads, and as a result are likely to have similar service lives, a budget has been provided to replace all of the boilers at the same time. We also believe that some economy of scale can be achieved by consolidating the replacement of the boilers.

The accrued replacement funds could also be used to replace parts or boilers as required. Because these boilers are built with components that can be easily replaced (heat exchanger, aquastats, burners, gas valve, etc.), the service life can be extended with timely repairs and component replacement. If considering replacement, we recommend that two boilers be installed in each boiler room to extend the service life of the boiler plant (if both boilers are properly sized and they operate in an alternating sequence) and to eliminate interruption of service during maintenance and repair work. Alternatively, multi-stage boilers could be installed to improve efficiency and increase redundancy.

110 – Boiler in 1450 rooftop boiler room

111 – Boiler in 1490 rooftop boiler room

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	11 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2024	Replace	**$80,000**	$101,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.10 Storage Tanks - Domestic Hot Water

Description

The domestic hot water system for the complex includes 12 hot water recirculating storage tanks ranging between 115 and 119 US gallon capacities. Four tanks are installed in the 1450 rooftop boiler room, three tanks are installed in the 1470 rooftop boiler room and five tanks are installed in the 1490 rooftop boiler room. The serial numbers on the tanks indicate that they were all manufactured in 2005. We have assumed that the tanks were installed in the same year that they were manufactured.

Comments

No significant evidence of leakage was observed below the storage tanks. Given that the tanks are similar in age, are subject to similar operating loads and have similar service lives, a budget has been provided to replace all of the tanks at the same time. We believe that some economy of scale can be achieved by consolidating the replacement of the tanks.

The anode rods of the tanks should be inspected annually by the strata corporation's mechanical maintenance service provider if this is not already being undertaken. Replacing the anode rods when the inner steel core is exposed will likely extend the service life of the tanks.

112 – Storage tanks in 1450 rooftop boiler room

Service Life Stats

Expected Service Life	15 years
Present Equivalent Age	11 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2019	Replace	**$35,000**	$38,000
2034	Replace	**$35,000**	$60,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

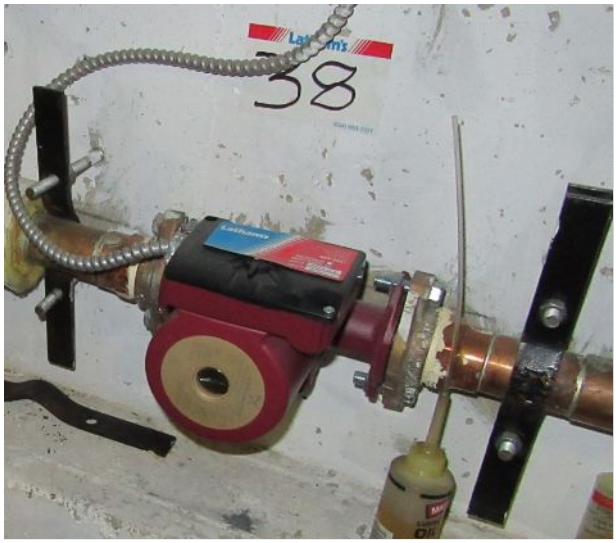
MECH.11 Pumps - Domestic Hot Water Recirculation

Description

Each of the three buildings has a separate domestic hot water system. A recirculation pump is installed in the return line of each system. Circulator pumps are also installed between the boilers and hot water storage tanks.

Comments

The expected service life and present equivalent age represent the average service life and average age of the circulation pumps in the three boiler rooms. We expect that the operating budget can be used to replace the pumps as required.



113 – Recirculation pump

Service Life Stats

Expected Service Life	13 years
Present Equivalent Age	10 years
Estimated Remaining Life	3 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

MECH.12 Plumbing Fixtures

Description

Plumbing fixtures installed in this complex include toilets, urinals, lavatories, mop sinks, utility tubs, a kitchen sink, faucets, flush valves, a drinking fountain and hose bibbs. Most of the plumbing fixtures are located in the change rooms, janitorial rooms, washrooms and meeting room kitchen.

Comments

The expected service life, present equivalent age and condition assessment represent the average service life, age and condition of the plumbing fixtures in the complex. Most plumbing fixtures are replaced when the interior finishes are renewed, therefore the budget for replacement of the plumbing fixtures is included in the budget for interior renovations. In the event that a plumbing fixture requires replacement or repair before or after an interior renovation, we expect that the operating budget can be used to fund its replacement or repair. We recommend that the faucets in the men's washroom be replaced or repaired.

114 – Plumbing fixtures in men's change room

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	25 years
Estimated Remaining Life	10 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

MECH.13 Piping - Sanitary System Drainage

Description

Plastic (ABS), copper and cast iron sanitary drainage piping connects the plumbing fixtures of the complex to the municipal sanitary drainage system.

Comments

Although no obvious evidence of leaks from the joints or piping was observed, the strata council meeting minutes document that some leaks have occurred over the last five years. We expect that the funds for replacement of the required sections of piping or for the occasional replacement of mechanical joints (on the cast iron and copper piping) can be drawn from the operating budget.

Given the use of garburators in many units, a budget has been provided to hydro-flush the vertical plumbing stacks and horizontal piping in the parkade every five years. The strata council meeting minutes do not indicate that (full building) hydro-flushing took place in the last five years, therefore a hydro-flushing is recommended in the first fiscal year of the report.

115 – Copper sanitary piping in parkade

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2016	Maintain	**$15,000**	$15,000
2021	Maintain	**$15,000**	$17,000
2026	Maintain	**$15,000**	$20,000
2031	Maintain	**$15,000**	$23,000
2036	Maintain	**$15,000**	$27,000
2041	Maintain	**$15,000**	$31,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.14 Piping - Stormwater System Drainage

Description

The building's stormwater drainage system consists of rainwater collection fixtures (roof drains, deck drains, trench drains, parkade and courtyard catch basins and presumably, perimeter drainage piping) and routing components (plastic, cast iron and concrete piping).

Comments

Although no obvious evidence of leaks from the joints or piping was observed where the plastic or cast iron piping was visible, the strata council meeting minutes document that some leaks have occurred over the last five years. We expect that the funds for replacement of the required sections of plastic or cast iron piping or for the occasional replacement of mechanical joints (on the cast iron piping) can be drawn from the operating budget.

A budget has been provided to hydro-flush the vertical and horizontal piping every ten years. We understand that a full-building hydro-flushing took place in 2015, after the parkade restoration project was completed. All drains should be cleared at least annually by owners (roof decks and patios) or by the strata corporation (common areas). We do not expect that the underground piping will require replacement or major repairs in the next 30 years.

116 – Cast iron drainage piping in parkade

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2024	Maintain	**$10,000**	$13,000
2034	Maintain	**$10,000**	$17,000
2044	Maintain	**$10,000**	$23,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.15 Pumps - Stormwater Sumps

Description

The water collected below the complex's connection with the municipal stormwater drainage main is directed to a sump in the lowest (P2) parkade level below the 1450 and 1470 buildings. The sump pump stations consists of two sump pumps located in the sump and a control panel installed on the wall adjacent to the sump. The sump pumps eject the water up to an elevation which allows it to drain by gravity into the municipal stormwater main.

Comments

We have assumed that the sump pumps have been replaced once since original construction of the 1450 building (1983). Given that we could not review the pumps, the condition assessment relates to the control panel. We expect that the funds required to repair or replace the pumps can be drawn from the operating budget as required. We recommend that the pumps be tested annually if the mechanical maintenance contractor is not already doing so.

Sump pump control panels are basic devices, often with readily available parts. Consequently, we do not expect the control panel to require full replacement in the next 30 years. In the event that some of the internal components require replacement in the next 30 years, we believe that the required repair funds can be drawn from the operating fund without significant impact.

117 – Sump pump control panel

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	8 years
Estimated Remaining Life	17 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

MECH.16 Swimming Pool - Water Heater

Description

The pool and hot tub water is heated by a Viessmann Vitogas 50 hot water heating boiler installed on the P1 level of the 1470 building. We understand that this boiler was installed in 2005. The boiler also supplies hot water to the heating coil in the pool area air handling unit (AHU), which is located next to the boiler. The combined hot water circulation system for the pool and hot tub consists of a circulation pump and plastic and insulated copper piping.

Comments

A budget has been provided to replace the boiler. Similar to the automatic circulating tank water heaters, the accrued replacement funds could also be used to replace parts as required. Because the boiler is built with components that can be easily replaced (heat exchanger, aquastats, burners, gas valve, etc.), the service life can be extended with timely repairs and component replacement. We expect that occasional replacement of piping, valves or the circulation pump can be funded from the operating budget.

118 – Viessmann pool and hot tub water heating boiler

Service Life Stats

Expected Service Life	30 years
Present Equivalent Age	11 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **④**

Work Required

2034	Replace	**$40,000**	$68,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.17 Swimming Pool - Filtration and Sanitization Equipment

Description

The major components of the pool filtration system are the side-mount sand filter with a multi-port valve, circulation pump and PVC piping with isolation valves. The pool water is sanitized and its pH level is automatically regulated with an automatic water chemistry control system. This system consists of a liquid chlorine holding tank, a muriatic acid holding tank, a chemical feeding controller, a metering pump for each chemical and plastic tubing connected to the filtration system piping. The strata corporation meeting minutes indicate that this system was installed in 2015.

Comments

The expected service life, present equivalent and condition assessment represent the service life, age and condition assessment of the automatic water chemistry control system. A budget has been provided for replacement of this automatic water chemistry control system. The budget is based on the costs incurred in 2015. We expect that occasional replacement of the piping, valves, filter and pump can be funded from the operating budget as required without significant impact.

119 – Chlorine generation and pH control system

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	1 years
Estimated Remaining Life	19 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

1 2 3 4

Work Required

2034	Replace	**$10,000**	$17,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.18 Hot Tub - Filtration and Sanitization Equipment

Description

The major components of the hot tub filtration system are the top-mount sand filter with a multi-port valve, circulation pump and PVC piping with isolation valves. We understand that the circulation pump was replaced in 2009. A jet pump also circulates the hot tub water. The hot tub water is sanitized and its pH level is automatically regulated with the same automatic water chemistry control system used for the pool.

Comments

Given that the automatic water chemistry control system has already been addressed elsewhere in this appendix, the expected service life, present equivalent age and condition assessment represent the average service life, age and condition of the sand filter and two pumps. A budget has been provided to replace the sand filter. We expect that the funds required for occasional replacement or repair of the piping, valves or pumps can be drawn from the operating budget as required without significant impact.

120 – Sand filter and pumps for hot tub

Service Life Stats

Expected Service Life	15 years
Present Equivalent Age	10 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 ② ③ ④

Work Required

2020	Replace	**$3,000**	$3,000
2040	Replace	**$3,000**	$6,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.19 Irrigation System

Description

The complex's automatic irrigation sprinkler systems provide water to the exterior grounds based on a programmed schedule. The irrigation systems consists of backflow preventers, copper and PVC piping, irrigation control valves, sprinkler heads and controllers (located in the water entry rooms) which control the irrigation control valves located throughout the complex.

Comments

The expected service life represents what we believe to be the average service life of the various components which make up the irrigation systems. The present equivalent age and condition assessment relate to the visually accessible components of the irrigation system, such as the sprinkler heads and controllers.

We do not believe that the irrigation system will require full replacement or significant repairs in the next 30 years. Occasional replacement of the controllers, control valves and sprinkler heads, as well as repairs to broken supply lines will likely be required over the next 30 years. We expect that the funds for component replacement or repairs can be drawn from the operating budget as required without significant impact. If not already installed, we recommend that rain sensors be incorporated into the systems to ensure that the sprinkler systems do not water the exterior grounds when not required.

121 – Irrigation system controller

Service Life Stats

Expected Service Life	15 years
Present Equivalent Age	10 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

MECH.20 Water Feature - Filtration and Circulation Equipment

Description

The mechanical components of the water feature in the exterior grounds of the complex consist of a circulation pump, sand filter, fountain heads, as well as copper piping, valves and a backflow preventer. The strata corporation meeting minutes indicate that the pump was replaced in 2015 and some of the piping was replaced in 2011.

Comments

The expected service life, present equivalent age and condition assessment represent an average service life, age and condition of the various mechanical components of the water feature. We expect that occasional repairs or component replacement can be funded from the operating budget without significant impact.

122 – Water feature in courtyard

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	15 years
Estimated Remaining Life	5 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

MECH.21 Fire Suppression - Sprinkler System Piping

Description

Steel dry and wet pipe sprinkler system piping supplies water to the dry pipe sprinkler heads in the parkades and service rooms (accessed from the parkades) and to the wet pipe sprinkler heads in nine units in 1470. The dry pipe sprinkler system piping is pressurized with air until a dry pipe sprinkler head is activated, at which time water enters the piping via a clapper valve. A dry pipe sprinkler system protects unheated areas and the wet pipe system protects heated areas. The piping is interconnected with grooved and threaded fittings.

Comments

Although we do not expect full replacement of the piping In the next 30 years, some leaks are likely to occur due to internal corrosion. The strata corporation meeting minutes document that sprinkler piping leaks have occurred in the last five years. A repair budget has been provided to replace some pipe segments. This has been approximated to occur every five years on average, beginning five years after the last know sprinkler pipe segment replacement (2012).

The BC Fire Code (BCFC) requires that the sprinkler systems be visually inspected annually by a qualified fire protection services maintenance contractor. We assume that funds required to repair the smaller deficiencies noted by the fire protection services maintenance provider after each annual BCFC inspection are drawn from the operating budget.

The National Fire Protection Association (NFPA) standards referenced by the BCFC require that dry pipe sprinkler heads be tested every ten years and wet pipe sprinkler heads be tested after 50 years of service. We recommend that the strata council discuss testing and replacement with the fire protection service provider.

123 – Dry pipe sprinkler system piping and head

124 – Srpinkler piping in bicycle storage room

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Work Required

2016	Repair	**$4,000**	$4,000
2021	Repair	**$4,000**	$5,000
2026	Repair	**$4,000**	$5,000
2031	Repair	**$4,000**	$6,000
2036	Repair	**$4,000**	$7,000
2041	Repair	**$4,000**	$8,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.22 Fire Suppression - Fire Pump

Description

The complex's wet pipe sprinkler and standpipe systems are maintained at a set pressure with a jockey pump (excess pressure pump) while in static mode. When a sprinkler is activated and the water pressure decreases, a 25 hp electric fire pump boosts the pressure of the municipal water supply to ensure that the water pressure throughout the wet pipe system attains the system's design pressure. The two pumps work in tandem and are installed in the 1450 water entry room. The fire pump is controlled by a Sylvania GTE electric fire pump controller and the jockey pump is controlled by a Wilron Equipment electric jockey pump controller.

Comments

The service life is based on the pump's infrequent use. The replacement budget includes both the fire pump and the control panel. We expect that replacement of the jockey pump, jockey pump control panel or occasional repairs to the pumps and control panels can be drawn from the operating budget without significant impact.

125 – Fire pump in 1450 water entry room

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Work Required

2024	Replace	**$25,000**	$32,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.23 Fire Suppression - Standpipe and Fire Hose Cabinets

Description

The complex is equipped with a wet standpipe system (filled with pressurized water) for manual fire suppression. The standpipe's fire hose connections are located in the stairwells and in the some of the water entry rooms. Class II fire hose cabinets (with a 1 1/2" fire hose) are installed in the corridors, parkades and some of the stairwells. They are supplied by the standpipe system. The standpipe system piping in the stairwells is insulated.

Comments

The strata corporation meeting minutes indicate that deficient fire hoses were replaced in 2011. A repair budget has been provided to replace additional deficient fire hoses at ten year intervals and the budget is based on the costs incurred in 2011. We expect that the operating budget is used to fund the required replacement of valves, fittings or couplings after each annual BC Fire Code inspection.

126 – Wet standpipe connection in stairwell

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Work Required

2020	Repair	**$20,000**	$23,000
2030	Repair	**$20,000**	$30,000
2040	Repair	**$20,000**	$41,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.24 Fire Suppression - Dry Pipe Sprinkler System Clapper Valves

Description

The clapper valves of the dry pipe sprinkler systems are installed at the origin of each sprinkler zone (one zone for each parkade level) of the three dry pipe sprinkler systems (in the water entry rooms). These valves prevent the pressurized municipal water supply from entering the dry pipe sprinkler system piping until the air pressure in the sprinkler system piping drops below a specified level. The air pressure in the system drops when a dry pipe sprinkler head is activated. Based on our observations, it appears that the majority of the clapper valves date from original construction.

Comments

A budget has been provided to replace the eight clapper valves at the same time. The service life of the clapper valves can likely be extended by replacing the rubber seals on the clapper if leaks begin to occur.

127 – Clapper valves in 1490 water entry room

128 – Clapper valves in 1470 water entry room

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	31 years
Estimated Remaining Life	4 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

Work Required

2019	Replace	**$30,000**	$33,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.25 Fire Suppression - Dry Pipe Sprinkler System Air Compressor

Description

The air in the dry pipe sprinkler system piping is pressurized by an air compressor which maintains sufficient pressure in the dry pipe sprinkler system piping to keep the clapper valves closed. A compressor is installed in each of the three water entry rooms. The strata corporation meeting minutes indicate that the 1450 compressor was replaced in 2015.

Comments

The present equivalent age and condition assessment represent the average estimated age and condition of the three air compressors. We understand that the 1470 compressor was replaced circa 2008. A budget has been provided to replace the 1490 compressor in two years, the 1470 compressor in 20 years and the 1450 compressor in 27 years. The replacement budget for the 2045/2046 fiscal year is for replacement of the 1490 air compressor.

If air leaks exist in the dry pipe sprinkler system piping, the compressor will be activated more frequently to continually pressurize the system and this will result in a decreased service life for the compressor. The owners should test the dry pipe sprinkler piping for leaks if the compressor begins to run more frequently.

129 – Dry pipe sprinkler system air compressor in 1450

Service Life Stats

Expected Service Life	28 years
Present Equivalent Age	13 years
Estimated Remaining Life	15 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2017	Replace	**$3,000**	$3,000
2035	Replace	**$3,000**	$5,000
2042	Replace	**$3,000**	$6,000
2045	Replace	**$3,000**	$7,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

MECH.26 Fire Suppression - Fire Hydrants

Description

Three private fire hydrants are located on the property.

Comments

We understand that the fire hydrants are inspected and serviced based on the requirements of the BC Fire Code (hydrants inspected and flow-tested annually, piping flow-tested every five years, etc.). We do not expect that the fire hydrants or underground piping which connect them to the municipal water supply will require replacement or significant repairs in the next 30 years. We assume that the funds required for repainting can be drawn from the operating budget without significant impact.

130 – Fire hydrant adjacent to Pennyfarthing Drive

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

1 ② ③ ④

MECH.27 Generator Fuel Supply System

Description

The generator fuel supply system consists of a day tank installed in the generator room, a horizontal bulk storage tank in the parkade (adjacent to the generator room) and a fuel transfer pump which pumps diesel fuel from the main tank to the day tank. The main tank includes secondary containment.

Comments

We do not believe that the day and bulk storage tanks will require replacement in the next 30 years. We expect that the repair or replacement of the fuel transfer pump or fuel lines can be funded from the operating budget without significant impact.

Diesel fuel has a limited storage life depending upon initial fuel quality, contaminant levels, and storage conditions. To extend fuel life, it is recommended that periodic filtering and treatment of the fuel be conducted to remove water, scale, and bacterial growth. We recommend that the fuel be tested (and polished and filtered if required) during the annual emergency generator inspection and testing. Use of clean fuel will increase the likelihood that the generator will reach its expected service life.

131 – Main fuel storage tank next to generator room

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

1 2 3 4

Appendix PKD
Parkade

PKD.1 Plaza Slab Waterproofing

Description

A significant area of the east courtyard is located over the parkades and a smaller central area is located over the leisure centre's upper and lower levels. Based on an assessment of a portion of the plaza slab waterproofing performed by RJC in 2014, we know that the concrete slab (with sloped concrete topping) is waterproofed with a single ply, self-adhered bituminous sheet membrane. This membrane is located below the hard and soft landscaping. Above the indoor areas, rigid Insulation is installed between the landscaping and the waterproofing membrane. Concrete curbs and retaining walls are cast in place over top of the membrane. We assume that the waterproofing located under the landscaping throughout the rest of the east courtyard is of similar construction.

Comments

RJC's 2014 Recreation Centre Plaza Waterproofing Design Development report and the strata corporation meeting minutes of the last five years indicate that numerous leaks have been occurring into the parkades and leisure centre, most of which have been temporarily remediated using epoxy crack injection. Some of the crack injection dates back to more than 12 years ago. The report also indicates that some of the expansion joint seals have been repaired and some of the waterproofing has been repaired or replaced. Some of the repaired expansion joint seals were leaking when the report was prepared.

In the 2014 report, based on the strata corporation's desire to address the most problematic areas only, RJC recommended replacing the waterproofing at the lowest courtyard level (the area just south of the natatorium) and approximately 2,500 square feet south and west of this area at the mid-level (water feature level). This work has been scheduled for the 2017/2018 fiscal year. The replacement budget for this work is based on the budget value provided in the 2014 report and adjusted for inflation.

A second larger replacement budget has been provided for replacement of the remainder of the waterproofing above the parkade and leisure centre. The expected service life relates to this area of the waterproofing. The area includes the roof over the swimming area and the waterproofing under the water feature, which will involve demolition and reconstruction of the water feature. It has been scheduled for a point in time when we believe the number of leaks in the remaining area will warrant replacement of the waterproofing membrane. If any leaks occur at the remaining area in the interim, we recommend that epoxy crack injection be undertaken to remediate the leaks.

The budgets include replacement of the exterior grounds (including irrigation system piping, water feature, concrete stairs, patios, etc.), replacement of the pressure cap skylight over the pool areas, replacement of the waterproofing membrane with a torch-applied, two-ply, modified bitumen sheet membrane assembly, replacement of expansion joint seals and drains, installation of a drainage mat and metal flashing, and replacement of insulation above interior spaces. The budgets also include consulting fees. To reduce costs, the owners should consider re-using certain components such as the precast unit pavers and guardrails.

The main purpose of the waterproofing membrane is to protect the suspended concrete slabs from moisture ingress and subsequent corrosion of the reinforcing steel inside the slab. The primary concern with leaks through a suspended slab is the potentially negative impact they can have on the structural integrity of the slab. With sufficient exposure to oxygen, water and chlorides, isolated sections of the steel reinforcing

within the suspended slab will eventually begin to corrode and, if left unattended for an extended period of time, may weaken to the point of failure. In the shorter term, ongoing corrosion of the reinforcing steel increases the likelihood of spalling concrete (which could damage vehicles and cause personal injury). Deferring remediation of the leaks increases the likelihood of future reinforcing steel repairs.

Epoxy crack injection is often undertaken to stop nuisance leaks and prevent them from damaging vehicle finishes, but it does not address the root cause of the issue. The best way to remediate leaks through the suspended slab is from above the parkade, but depending on the number of leaks, isolated leak remediation from above may not be worthwhile if full replacement of the membrane is more cost effective or the membrane has almost reached its expected service life, which we believe is the case for this building.

132 – Exterior grounds over parkades

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	9 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ ④

Work Required

2017	Replace	**$375,000**	$386,000
2024	Replace	**$4,700,000**	$5,954,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

PKD.2 Parkade Gates

Description

The parkade entrance and exit to and from the 1470 building's visitors parking area are secured with picketed aluminum swing gates. The other parkade entrances are secured with two-piece, picketed aluminum overhead gates. The strata corporation meeting minutes indicate that one of the overhead gates for a parkade accessed from Creekside Drive was replaced in 2014 as a result of an accident.

Comments

The present equivalent age and condition assessment represent an average age and condition for the parkade gates. A budget has been provided to replace a parkade gate every five years beginning in the 2035/36 fiscal year. We expect that repairs or replacement of parts (torsion spring, hinges, pulleys, etc.) can be funded from the operating budget without significant impact.

133 – 1470 parkade gate

Service Life Stats

Expected Service Life	35 years
Present Equivalent Age	15 years
Estimated Remaining Life	20 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2035	Replace	**$5,000**	$9,000
2040	Replace	**$5,000**	$10,000
2045	Replace	**$5,000**	$12,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

PKD.3 Parkade Gate Operators

Description

The entry and exit of the visitor parking area accessed from Pennyfarthing Drive are secured with swing gates operated by Liftmaster operators. The strata corporation meeting minutes indicate that one of the swing gate operators was replaced in 2011. The remaining parkade gates are overhead gates operated by Manaras and Liftmaster operators. The 1470 overhead gate is operated by an operator manufactured in 2007.

Comments

The indicated service life is an average of the service life of the overhead gate operators and the shorter service life of the swing gate operators (due to more frequent use). The present equivalent age and condition assessment represent an average age and condition of the parkade gate operators. A budget has been provided to replace a parkade gate operator every five years beginning in the 2025/26 fiscal year. The budget is an average replacement cost of the swing gate operators (more expensive) and the overhead gate operators (less expensive). Until replacement occurs, we expect that replacement parts will be readily available for repairs and the cost for repairs will not exceed half of the value of a new operator. We expect that the funds for repairs can be drawn from the operating budget.

134 – Overhead gate operator

Service Life Stats

Expected Service Life	20 years
Present Equivalent Age	10 years
Estimated Remaining Life	10 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2025	Replace	**$3,000**	$4,000
2030	Replace	**$3,000**	$5,000
2035	Replace	**$3,000**	$5,000
2040	Replace	**$3,000**	$6,000
2045	Replace	**$3,000**	$7,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

PKD.4 Traffic Deck Coating

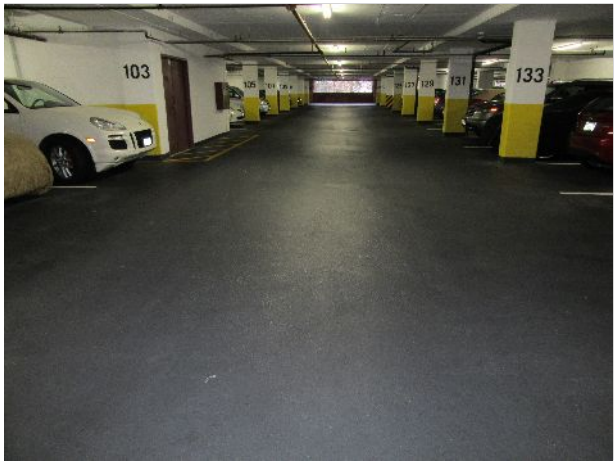
Description

A polyurethane traffic deck coating (TDC) system was applied to the suspended slabs of the parkades in 2014. Previous to this project, there was no TDC in the parkade. The base coat of the TDC system is 30 mil (thousandths of an inch) thick. The wear course (applied over the base coast) is 18 mil thick in stalls, 25 mil thick in drive lanes and 35 mil thick in turning areas.

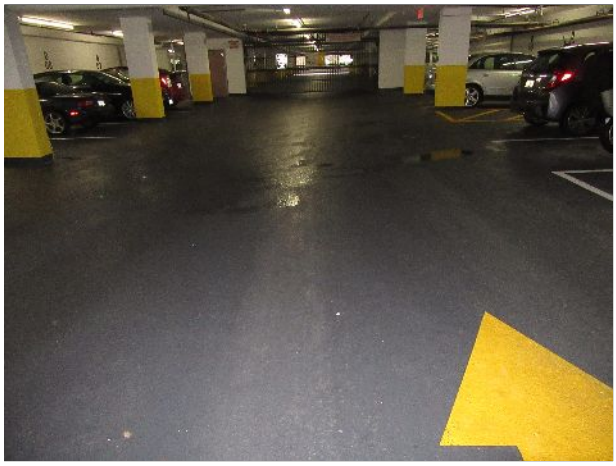
Comments

If the wear course of the TDC system is re-applied regularly, we do not expect that the full TDC system will require replacement in the next 30 years. A renewal budget has been provided to re-apply the wear course to the drive lanes every ten years after original application of the TDC system. The budget includes a small allowance for some concrete restoration work. A second renewal budget has been provided to re-apply the wear course to the parking stalls every 15 years after original application of the TDC system. This budget also include a small allowance for some concrete restoration work.

Approximately one year prior to each TDC renewal project, we recommend that an assessment be undertaken to determine the extent of the concrete restoration work. A budget has been provided for these assessments. The TDC system comes with a five year warranty. Another assessment budget has been provided for this warranty review, one year prior to the expiry of the warranty. The warranty review budget also includes updating the 2013 RJC Parking Structure Evaluation.



135 – 1450 upper parkade level



136 – 1470 upper parkade

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

① ② ③ ④

Work Required

2017	Assess	**$5,000**	$5,000
2022	Assess	**$5,000**	$6,000
2023	Renew	**$125,000**	$154,000
2027	Assess	**$5,000**	$7,000
2028	Renew	**$200,000**	$285,000
2032	Assess	**$5,000**	$8,000
2033	Renew	**$125,000**	$207,000
2042	Assess	**$5,000**	$11,000
2042	Assess	**$5,000**	$11,000
2043	Renew	**$125,000**	$278,000
2043	Renew	**$200,000**	$444,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

PKD.5 Expansion Joint Seals

Description

A portion of the expansion joint seals in the parkade were replaced during the 2014 parkade restoration project with a low density closed cell joint seal that is bonded to either side of the joint. The remaining expansions joint seals date from original construction.

Comments

The service life, present equivalent age and condition assessment relate to the original expansion joint seals. We recommend that the original expansion joint seals in the parkade be replaced when the wear course of the traffic deck coating is first renewed. Doing so will likely reduce the cost of the project slightly. A budget has been provided for this work.

137 – Expansion joint in 1450 parkade

Service Life Stats

Expected Service Life	40 years
Present Equivalent Age	31 years
Estimated Remaining Life	8 years

Condition Assessment

Very Good | Good | **Fair** | Poor | Failed

Category

① ② ③ **4**

Work Required

2023	Replace	**$40,000**	$49,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

PKD.6 Spray-Applied Insulation

Description

Spray-applied insulation is located on the underside of the parkade soffit slabs where heated areas are located above.

Comments

We do not expect that the spray-applied insulation will delaminate from the underside of the concrete slabs in the next 30 years. Some insulation has been removed to allow for crack injection in the parkades. We expect that the funds required to reinstate this insulation can be drawn from the operating budget.

138 – Spray-applied insulation in parkade

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

PKD.7 Painted Finishes

Description

The parkade walls, columns and ceilings are painted. The parkade was re-painted during the traffic deck coating replacement project in 2014.

Comments

A budget has been provided to re-paint the parkades in a colour scheme similar to the existing one. The budget also includes painting the security screens, parkade doors, stall numbers and line painting.

139 – Painted parkade walls and ceiling

140 – 1470 lower parkade level

Service Life Stats

Expected Service Life	25 years
Present Equivalent Age	2 years
Estimated Remaining Life	23 years

Condition Assessment

Very Good | Good | Fair | Poor | Failed

Category

① ② ③ **4**

Work Required

2038	Paint	**$200,000**	$383,000

Present values (black) are rounded as described in Section 2.5 and future values (blue) are rounded to the nearest $1,000.

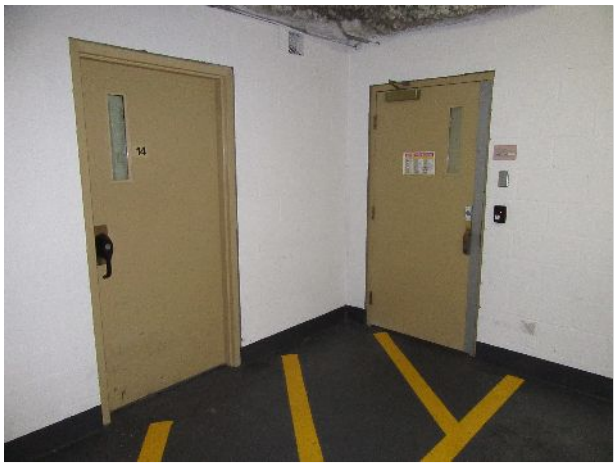
PKD.8 Parkade Doors

Description

The parkade doors (providing access to and from the parkade and to and from service and storage rooms in the parkade) consist of painted hollow metal door leafs set in painted pressed steel frames. Many of the steel doors have a glass lite. The doors are self-closing by means of doors closers.

Comments

The budget to re-paint the doors is included in the re-painting budget for the parkades. We recommend that all the parkade doors be reviewed annually by the strata council to ensure that the door closers and door hardware are operating properly and the doors and frames are properly aligned. If repairs are undertaken soon after issues are observed by the strata council, we do not expect that the door leafs will require replacement in the next 30 years. We assume that occasional replacement delaminated door leafs or occasional replacement or repair of door hardware can be funded from the operating budget.



141 – Parkade doors

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

PKD.9 Enclosures and Fencing - Metal

Description

Security screens constructed of metal mesh are installed adjacent to some of the parkade gates. Security screens constructed of chain link fencing are installed at wall openings on the topmost level of the 1470 parkade.

Comments

We do not expect that the metal mesh and chain link fencing security screens will require replacement or major repairs in the next 30 years. The budget to re-paint the security screens is included in the re-painting budget for the parkades.

We recommend that the posts for the chain link security screens be reviewed annually by the building manager to ensure that the baseplates (in particular the bottom baseplates secured to the brick) are securely anchored and the fasteners have not corroded to the point of failure. One of the bottom baseplates was not anchored. We recommend that the building manager secure the baseplate to the brick sill.

142 – Metal mesh security screen

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed

Category

① ② ③ **4**

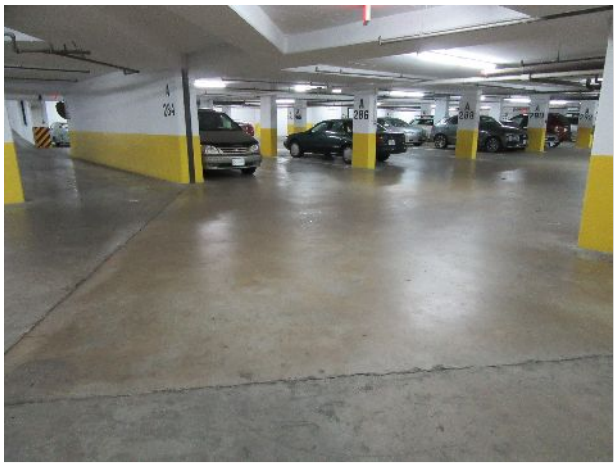
PKD.10 Slab-On-Grade

Description

The floors of the lowest parkade levels consist of a cast-in-place concrete slab-on-grade.

Comments

Only minor cracks were observed in the slabs-on-grade. We do not expect that they will require full replacement or significant repairs in the next 30 years.



143 – Slab-on-grade

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

PKD.11 Bicycle Racks

Description

Floor and wall-mounted bicycle racks are installed in the bicycle storage rooms accessed from the parkades. The strata corporation meeting minutes indicate that the bicycle racks were installed in 2011.

Comments

We do not expect that the bicycle racks will require replacement or major repairs in the next 30 years. We recommend that the building manager verify that the racks are securely anchored to the floor on an annual basis.

144 – Floor-mounted bicycle rack

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① ② ③ **4**

Appendix STR
Structure

STR.1 Parkade Structure

Description

The parkade structure is constructed of conventionally reinforced concrete. The suspended slabs span to slab bands which are supported by concrete columns and walls. The soffit slab of the topmost parking levels support the exterior grounds of the east courtyard and the ground floor slab of the residential buildings. The estimated total parking area of 84,000 sq. ft

Comments

RJC evaluated the parkade structure in 2013 and provided consulting engineering services during the 2015 parkade restoration project. The restoration work and traffic deck coating done in 2015 will significantly reduce the rate of structural deterioration in the future. The budget to assess the concrete structure before each re-application of the traffic deck coating (TDC) is included in the Parkade appendix. The budget to renew the TDC includes a small allowance for some concrete restoration work.

145 – Slab band supported by concrete columns

Service Life Stats

Estimated Remaining Life — Over 30 years

Condition Assessment

Very Good | **Good** | Fair | Poor | Failed

Category

① **②** ③ ④

STR.2 Building Structure

Description

The structure above the parkade generally consists of conventionally reinforced concrete walls, columns and suspended slabs. Some of the exterior walls around exterior windows and doors are constructed with steel studs and some of the mechanical penthouse structures incorporate structural steel. The upper portion of the 1450 stairwell walls and portions of the chimneys are constructed of structural clay brick. The brick is unfinished on the interior and has had some application of sealer to localized areas of the exterior faces.

Comments

Deterioration of a horizontal cold joint (in the concrete) was observed in the 1450 stairwell (refer to photo). As opposed to the parkade structure, most of the building structure is covered by interior finishes, brick veneer or roofing. As a result, the visual assessment of the building structure is inherently limited in nature. The evaluation of building structure is based on a review of the exposed structure in stairwells, balconies and service rooms, and non-structural building elements which are most impacted by structural distress (interior finishes, sealants, door openings, etc.). We did not observe significant evidence that would indicate structural distress and do not believe that the structure will require major repairs or replacement in the next 30 years.

146 – 1450 stairwell wall

Service Life Stats

Estimated Remaining Life	Over 30 years

Condition Assessment

Very Good	Good	Fair	Poor	Failed
	Good			

Category

① **②** ③ ④

Addendum

4.1 Items Schedule

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
BE		**Building Enclosure**		
BE.1	Replace	Roofing - Inverted Modified Bitumen Membrane	2	$375,000
BE.2		Skylights - T-Bar System		$0
BE.3		Skylights - Factory Glazed Unit		$0
BE.4	Replace	Roofing - Conventional Modified Bitumen Membrane	1	$50,000
BE.5	Replace	Roofing - Metal	1	$20,000
BE.6	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	7	$1,925,000
BE.7		Balconies - Modified Bitumen Membrane Wateproofing		$0
BE.8		Guardrails - Aluminum		$0
BE.9	Assess	Exterior Walls - Rainscreen Brick Veneer	1	$5,000
BE.10		Exterior Walls - Structural Brick		$0
BE.11	Repair	Privacy Screens - Brick	3	$15,000
BE.12	Replace	Exterior Windows - Aluminum Frame	4	$16,800,000
BE.13	Replace	Glazing - Storefront System	1	$200,000
BE.14		Skylights - Pressure Cap System		$0
BE.15		Glazing - Insulating Glass Units		$0
BE.16		Exterior Doors - Aluminum Sliding		$0
BE.17		Exterior Doors - Aluminum Swing		$0
BE.18	Replace	Exterior Doors - Entrance	1	$20,000
BE.19		Exterior Doors - Steel Swing		$0
BE.20	Replace	Sealants	3	$750,000
BE.21	Paint	Exterior Coatings	13	$2,444,000
BE.22		Suspended Access System		$0
BI		**Building Interior**		
BI.1	Renew	Entrance Lobby Finishes	2	$750,000
BI.2		Mailboxes		$0
BI.3	Maintain	Corridor Finishes	5	$40,000
BI.3	Renew	Corridor Finishes	1	$2,100,000
BI.4		Interior Doors - Suite Entry		$0
BI.5		Interior Doors - Common Areas		$0

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
BI.6	Renew	Parkade Elevator Lobby Finishes	1	$25,000
BI.7		Parkade Corridor Finishes		$0
BI.8	Paint	Stairwell Finishes	1	$25,000
BI.9	Renew	Amenity Room Finishes	1	$80,000
BI.10		Accordion Folding Partitions		$0
BI.11		Library Finishes		$0
BI.12	Renew	Washroom Finishes	1	$25,000
BI.13	Renew	Exercise Room Finishes	1	$18,000
BI.14		Exercise Room Equipment		$0
BI.15	Renew	Strata Corporation Office Finishes	1	$20,000
BI.16	Renew	Change Room Finishes	1	$90,000
BI.17	Paint	Pool Area Finishes	2	$17,000
BI.17	Replace	Pool Area Finishes	1	$125,000
BI.18	Replace	Sauna Finishes	1	$25,000
BI.19	Replace	Pool Tank Finishes	2	$60,000
BI.20	Replace	Hot Tub Tank Finishes	2	$20,000
BI.21	Replace	Squash Court Finishes	1	$45,000
BI.22		Storage Locker Room Finishes		$0
BI.23	Replace	Furniture	6	$30,000
EG		**Exterior Grounds**		
EG.1		Exterior Grounds Over Parkade		$0
EG.2	Repair	Road - Asphalt Pavement	2	$10,000
EG.2	Replace	Road - Asphalt Pavement	1	$45,000
EG.3	Replace	Walkways - Asphalt Pavement	2	$30,000
EG.4		Walkways - Concrete Pavement		$0
EG.5	Replace	Walkways - Tile	1	$8,000
EG.6		Walkways - Concrete Unit Pavers		$0
EG.7		Enclosures and Fencing - Concrete		$0
EG.8	Replace	Enclosures and Fencing - Wood	1	$11,000
EG.8	Stain	Enclosures and Fencing - Wood	6	$34,000
EG.9		Enclosures and Fencing - Brick		$0
EG.10		Retaining Walls - Concrete		$0

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
EG.11		Retaining Walls - Wood		$0
EG.12	Replace	Retaining Walls - Brick	1	$25,000
EG.13		Guardrails - Steel		$0
EG.14	Replace	Exterior Furniture - Wood	1	$12,000
ELEC		**Electrical Systems**		
ELEC.1	Maintain	Unit Substations	10	$30,000
ELEC.1	Repair	Unit Substations	1	$600,000
ELEC.2	Replace	Transformers	1	$40,000
ELEC.3	Replace	Electrical Distribution System	2	$20,000
ELEC.4	Maintain	Emergency Generator	6	$30,000
ELEC.4	Replace	Emergency Generator	1	$60,000
ELEC.5	Replace	Emergency Power Distribution System	1	$20,000
ELEC.6	Replace	Electric Baseboard Heaters	1	$175,000
ELEC.7	Replace	Sauna Heaters	1	$3,000
ELEC.8	Replace	Lighting - Interior	1	$15,000
ELEC.9	Replace	Lighting - Exterior	1	$10,000
ELEC.10	Replace	Lighting - Walkway	1	$15,000
ELEC.11	Replace	Lighting - Lamp Post	1	$85,000
ELEC.12	Replace	Lighting - Parkade	1	$125,000
ELEC.13		Emergency Signage		$0
ELEC.14	Replace	Fire Alarm Panel	1	$200,000
ELEC.15	Replace	Telephone Entry System	1	$18,000
ELEC.16	Replace	Access Control System	1	$75,000
ELEC.17	Replace	Video Surveillance System	1	$15,000
ELEV		**Elevators**		
ELEV.1	Renew	Controllers and Drives	1	$1,100,000
ELEV.2	Repair	Machines	1	$275,000
ELEV.3		Door Operators and Door Detectors		$0
ELEV.4	Renew	Cab Interior Finishes	1	$150,000
ELEV.5		Operating and Signal Fixtures		$0
MECH		**Mechanical Systems**		
MECH.1	Replace	Air Handling Units - Corridors	1	$45,000

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
MECH.1	Maintain	Air Handling Units - Corridors	6	$42,000
MECH.2	Repair	Swimming Pool Area - Air Handling Unit	1	$9,000
MECH.3		Supply Fans - Stairwell Pressurization		$0
MECH.4		Exhaust Fans - Parkade		$0
MECH.5		Exhaust Fans		$0
MECH.6	Replace	Mechanical Vent Terminations	1	$100,000
MECH.7	Replace	Piping - Domestic Water Distribution	3	$3,999,000
MECH.8	Replace	Domestic Water Valves and Backflow Preventers	6	$84,000
MECH.9	Replace	Boilers - Domestic Water	1	$80,000
MECH.10	Replace	Storage Tanks - Domestic Hot Water	2	$70,000
MECH.11		Pumps - Domestic Hot Water Recirculation		$0
MECH.12		Plumbing Fixtures		$0
MECH.13	Maintain	Piping - Sanitary System Drainage	6	$90,000
MECH.14	Maintain	Piping - Stormwater System Drainage	3	$30,000
MECH.15		Pumps - Stormwater Sumps		$0
MECH.16	Replace	Swimming Pool - Water Heater	1	$40,000
MECH.17	Replace	Swimming Pool - Filtration and Sanitization Equipment	1	$10,000
MECH.18	Replace	Hot Tub - Filtration and Sanitization Equipment	2	$6,000
MECH.19		Irrigation System		$0
MECH.20		Water Feature - Filtration and Circulation Equipment		$0
MECH.21	Repair	Fire Suppression - Sprinkler System Piping	6	$24,000
MECH.22	Replace	Fire Suppression - Fire Pump	1	$25,000
MECH.23	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	3	$60,000
MECH.24	Replace	Fire Suppression - Dry Pipe Sprinkler System Clapper Valves	1	$30,000
MECH.25	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	4	$12,000
MECH.26		Fire Suppression - Fire Hydrants		$0
MECH.27		Generator Fuel Supply System		$0
PKD		**Parkade**		
PKD.1	Replace	Plaza Slab Waterproofing	2	$5,075,000
PKD.2	Replace	Parkade Gates	3	$15,000
PKD.3	Replace	Parkade Gate Operators	5	$15,000

[1] **Expressed in present dollar values**

Item	Work	Component	Occurrences	Total Budget Over 30 Years[1]
PKD.4	Assess	Traffic Deck Coating	6	$30,000
PKD.4	Renew	Traffic Deck Coating	5	$775,000
PKD.5	Replace	Expansion Joint Seals	1	$40,000
PKD.6		Spray-Applied Insulation		$0
PKD.7	Paint	Painted Finishes	1	$200,000
PKD.8		Parkade Doors		$0
PKD.9		Enclosures and Fencing - Metal		$0
PKD.10		Slab-On-Grade		$0
PKD.11		Bicycle Racks		$0
STR		**Structure**		
STR.1		Parkade Structure		$0
STR.2		Building Structure		$0
			Total	**$40,241,000**

[1] **Expressed in present dollar values**

4.2 Expenditure Schedule

Year	Item	Category	Work	Component	Budget[1]
2016					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$275,000
	BE.9	4	Assess	Exterior Walls - Rainscreen Brick Veneer	$5,000
	BE.11	4	Repair	Privacy Screens - Brick	$5,000
	BI.3	4	Maintain	Corridor Finishes	$8,000
	ELEC.1	4	Maintain	Unit Substations	$3,000
	ELEC.4	1	Maintain	Emergency Generator	$5,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$15,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$4,000
				Total	**$320,000**
2017					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$283,000
	BI.20	4	Replace	Hot Tub Tank Finishes	$10,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$7,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$14,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$3,000
	PKD.1	2	Replace	Plaza Slab Waterproofing	$377,000
	PKD.4	2	Assess	Traffic Deck Coating	$5,000
				Total	**$699,000**
2018					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$292,000
	BI.1	4	Renew	Entrance Lobby Finishes	$410,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$10,000
				Total	**$712,000**
2019					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$300,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,589,000
	BI.23	4	Replace	Furniture	$5,000
	EG.2	4	Repair	Road - Asphalt Pavement	$5,000
	ELEC.1	4	Maintain	Unit Substations	$3,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	ELEC.5	1	Replace	Emergency Power Distribution System	$22,000
	MECH.10	4	Replace	Storage Tanks - Domestic Hot Water	$39,000
	MECH.24	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Clapper Valves	$33,000
				Total	**$4,996,000**
2020					
	BE.1	4	Replace	Roofing - Inverted Modified Bitumen Membrane	$198,000
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$310,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,727,000
	BI.17	4	Paint	Pool Area Finishes	$10,000
	BI.19	4	Replace	Pool Tank Finishes	$34,000
	EG.3	4	Replace	Walkways - Asphalt Pavement	$17,000
	MECH.18	1	Replace	Hot Tub - Filtration and Sanitization Equipment	$3,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$23,000
				Total	**$5,322,000**
2021					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$319,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$4,869,000
	BE.21	4	Paint	Exterior Coatings	$220,000
	BI.3	4	Maintain	Corridor Finishes	$9,000
	ELEC.4	1	Maintain	Emergency Generator	$6,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$17,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$5,000
				Total	**$5,445,000**
2022					
	BE.6	4	Replace	Roof Decks - Modified Bitumen Membrane Waterproofing	$328,000
	BE.12	4	Replace	Exterior Windows - Aluminum Frame	$5,015,000
	BE.21	4	Paint	Exterior Coatings	$227,000
	ELEC.1	4	Maintain	Unit Substations	$4,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$8,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$17,000
	PKD.4	2	Assess	Traffic Deck Coating	$6,000
				Total	**$5,605,000**

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component		Budget[1]
2023						
	BE.21	4	Paint	Exterior Coatings		$233,000
	EG.8	4	Stain	Enclosures and Fencing - Wood		$6,000
	PKD.4	2	Renew	Traffic Deck Coating		$141,000
	PKD.5	4	Replace	Expansion Joint Seals		$52,000
					Total	**$432,000**
2024						
	BE.5	4	Replace	Roofing - Metal		$25,000
	BE.21	4	Paint	Exterior Coatings		$240,000
	BI.9	4	Renew	Amenity Room Finishes		$103,000
	BI.13	4	Renew	Exercise Room Finishes		$23,000
	BI.23	4	Replace	Furniture		$6,000
	EG.2	4	Repair	Road - Asphalt Pavement		$6,000
	EG.5	4	Replace	Walkways - Tile		$10,000
	ELEC.9	1	Replace	Lighting - Exterior		$13,000
	MECH.2	4	Repair	Swimming Pool Area - Air Handling Unit		$11,000
	MECH.9	4	Replace	Boilers - Domestic Water		$101,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage		$13,000
	MECH.22	1	Replace	Fire Suppression - Fire Pump		$32,000
	PKD.1	2	Replace	Plaza Slab Waterproofing		$5,944,000
					Total	**$6,527,000**
2025						
	ELEC.1	4	Maintain	Unit Substations		$4,000
	PKD.3	4	Replace	Parkade Gate Operators		$4,000
					Total	**$8,000**
2026						
	BE.11	4	Repair	Privacy Screens - Brick		$7,000
	ELEC.4	1	Maintain	Emergency Generator		$7,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage		$20,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping		$5,000
					Total	**$39,000**
2027						
	BI.3	4	Renew	Corridor Finishes		$2,903,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	ELEC.6	4	Replace	Electric Baseboard Heaters	$244,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$10,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$19,000
	PKD.4	2	Assess	Traffic Deck Coating	$7,000
				Total	**$3,183,000**
2028					
	EG.8	4	Stain	Enclosures and Fencing - Wood	$7,000
	ELEC.1	4	Maintain	Unit Substations	$4,000
	PKD.4	2	Renew	Traffic Deck Coating	$285,000
				Total	**$296,000**
2029					
	BE.18	4	Replace	Exterior Doors - Entrance	$29,000
	BE.21	4	Paint	Exterior Coatings	$279,000
	BI.12	4	Renew	Washroom Finishes	$40,000
	BI.15	4	Renew	Strata Corporation Office Finishes	$31,000
	BI.16	4	Renew	Change Room Finishes	$132,000
	BI.17	4	Replace	Pool Area Finishes	$169,000
	BI.18	4	Replace	Sauna Finishes	$37,000
	BI.23	4	Replace	Furniture	$7,000
	ELEC.2	4	Replace	Transformers	$62,000
	ELEC.4	1	Replace	Emergency Generator	$88,000
				Total	**$874,000**
2030					
	BE.21	4	Paint	Exterior Coatings	$287,000
	BI.6	4	Renew	Parkade Elevator Lobby Finishes	$36,000
	BI.8	4	Paint	Stairwell Finishes	$38,000
	EG.2	4	Replace	Road - Asphalt Pavement	$65,000
	EG.8	4	Replace	Enclosures and Fencing - Wood	$17,000
	EG.14	4	Replace	Exterior Furniture - Wood	$18,000
	MECH.1	4	Replace	Air Handling Units - Corridors	$68,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$30,000
	PKD.3	4	Replace	Parkade Gate Operators	$5,000
				Total	**$564,000**

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
2031					
	BE.21	4	Paint	Exterior Coatings	$296,000
	ELEC.1	4	Maintain	Unit Substations	$5,000
	ELEC.8	1	Replace	Lighting - Interior	$23,000
	ELEC.12	1	Replace	Lighting - Parkade	$187,000
	ELEC.15	4	Replace	Telephone Entry System	$28,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$23,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$6,000
				Total	**$568,000**
2032					
	BE.21	4	Paint	Exterior Coatings	$304,000
	BI.3	4	Maintain	Corridor Finishes	$13,000
	BI.20	4	Replace	Hot Tub Tank Finishes	$16,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$11,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$22,000
	PKD.4	2	Assess	Traffic Deck Coating	$8,000
				Total	**$374,000**
2033					
	BE.20	4	Replace	Sealants	$413,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$8,000
	PKD.4	2	Renew	Traffic Deck Coating	$190,000
				Total	**$611,000**
2034					
	BE.4	4	Replace	Roofing - Conventional Modified Bitumen Membrane	$85,000
	BI.23	4	Replace	Furniture	$9,000
	ELEC.1	4	Maintain	Unit Substations	$5,000
	ELEC.1	4	Repair	Unit Substations	$1,021,000
	ELEC.4	1	Maintain	Emergency Generator	$9,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,243,000
	MECH.10	4	Replace	Storage Tanks - Domestic Hot Water	$61,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage	$17,000
	MECH.16	4	Replace	Swimming Pool - Water Heater	$68,000

[1]Adjusted for inflation

Year	Item	Category	Work	Component	Budget[1]
	MECH.17	1	Replace	Swimming Pool - Filtration and Sanitization Equipment	$17,000
				Total	**$3,535,000**
2035					
	BI.21	4	Replace	Squash Court Finishes	$79,000
	EG.3	4	Replace	Walkways - Asphalt Pavement	$26,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,310,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$5,000
	PKD.2	4	Replace	Parkade Gates	$9,000
	PKD.3	4	Replace	Parkade Gate Operators	$5,000
				Total	**$2,434,000**
2036					
	BE.11	4	Repair	Privacy Screens - Brick	$9,000
	ELEC.7	4	Replace	Sauna Heaters	$5,000
	MECH.7	4	Replace	Piping - Domestic Water Distribution	$2,379,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$27,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$7,000
				Total	**$2,427,000**
2037					
	BE.21	4	Paint	Exterior Coatings	$353,000
	BI.3	4	Maintain	Corridor Finishes	$15,000
	ELEC.1	4	Maintain	Unit Substations	$6,000
	ELEC.14	1	Replace	Fire Alarm Panel	$372,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$13,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$26,000
				Total	**$785,000**
2038					
	BE.20	4	Replace	Sealants	$479,000
	BE.21	4	Paint	Exterior Coatings	$364,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$10,000
	PKD.7	4	Paint	Painted Finishes	$364,000
				Total	**$1,217,000**

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
2039					
	BE.21	4	Paint	Exterior Coatings	$374,000
	BI.17	4	Paint	Pool Area Finishes	$16,000
	BI.23	4	Replace	Furniture	$10,000
	ELEC.3	4	Replace	Electrical Distribution System	$20,000
	ELEC.4	1	Maintain	Emergency Generator	$10,000
	ELEC.17	4	Replace	Video Surveillance System	$30,000
	ELEV.1	4	Renew	Controllers and Drives	$2,072,000
	ELEV.2	4	Repair	Machines	$533,000
				Total	**$3,065,000**
2040					
	BE.1	4	Replace	Roofing - Inverted Modified Bitumen Membrane	$390,000
	BE.21	4	Paint	Exterior Coatings	$386,000
	BI.19	4	Replace	Pool Tank Finishes	$61,000
	ELEC.1	4	Maintain	Unit Substations	$6,000
	MECH.6	4	Replace	Mechanical Vent Terminations	$207,000
	MECH.18	1	Replace	Hot Tub - Filtration and Sanitization Equipment	$6,000
	MECH.23	1	Repair	Fire Suppression - Standpipe and Fire Hose Cabinets	$41,000
	PKD.2	4	Replace	Parkade Gates	$10,000
	PKD.3	4	Replace	Parkade Gate Operators	$6,000
				Total	**$1,113,000**
2041					
	ELEC.10	1	Replace	Lighting - Walkway	$31,000
	MECH.13	4	Maintain	Piping - Sanitary System Drainage	$31,000
	MECH.21	1	Repair	Fire Suppression - Sprinkler System Piping	$8,000
				Total	**$70,000**
2042					
	BI.3	4	Maintain	Corridor Finishes	$17,000
	MECH.1	4	Maintain	Air Handling Units - Corridors	$15,000
	MECH.8	4	Replace	Domestic Water Valves and Backflow Preventers	$30,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$6,000
	PKD.4	2	Assess	Traffic Deck Coating	$11,000

[1] **Adjusted for inflation**

Year	Item	Category	Work	Component	Budget[1]
	PKD.4	2	Assess	Traffic Deck Coating	$11,000
				Total	**$90,000**
2043					
	BE.20	4	Replace	Sealants	$555,000
	BI.1	4	Renew	Entrance Lobby Finishes	$857,000
	EG.8	4	Stain	Enclosures and Fencing - Wood	$11,000
	ELEC.1	4	Maintain	Unit Substations	$7,000
	ELEC.16	4	Replace	Access Control System	$167,000
	PKD.4	2	Renew	Traffic Deck Coating	$255,000
	PKD.4	2	Renew	Traffic Deck Coating	$444,000
				Total	**$2,296,000**
2044					
	BE.13	4	Replace	Glazing - Storefront System	$458,000
	BI.23	4	Replace	Furniture	$11,000
	EG.12	4	Replace	Retaining Walls - Brick	$57,000
	ELEC.3	4	Replace	Electrical Distribution System	$23,000
	ELEC.4	1	Maintain	Emergency Generator	$11,000
	ELEC.11	1	Replace	Lighting - Lamp Post	$194,000
	ELEV.4	4	Renew	Cab Interior Finishes	$343,000
	MECH.14	4	Maintain	Piping - Stormwater System Drainage	$23,000
				Total	**$1,120,000**
2045					
	BE.21	4	Paint	Exterior Coatings	$447,000
	MECH.25	4	Replace	Fire Suppression - Dry Pipe Sprinkler System Air Compressor	$7,000
	PKD.2	4	Replace	Parkade Gates	$12,000
	PKD.3	4	Replace	Parkade Gate Operators	$7,000
				Total	**$473,000**

[1] **Adjusted for inflation**

4.3 Cash Flow Scenario 1

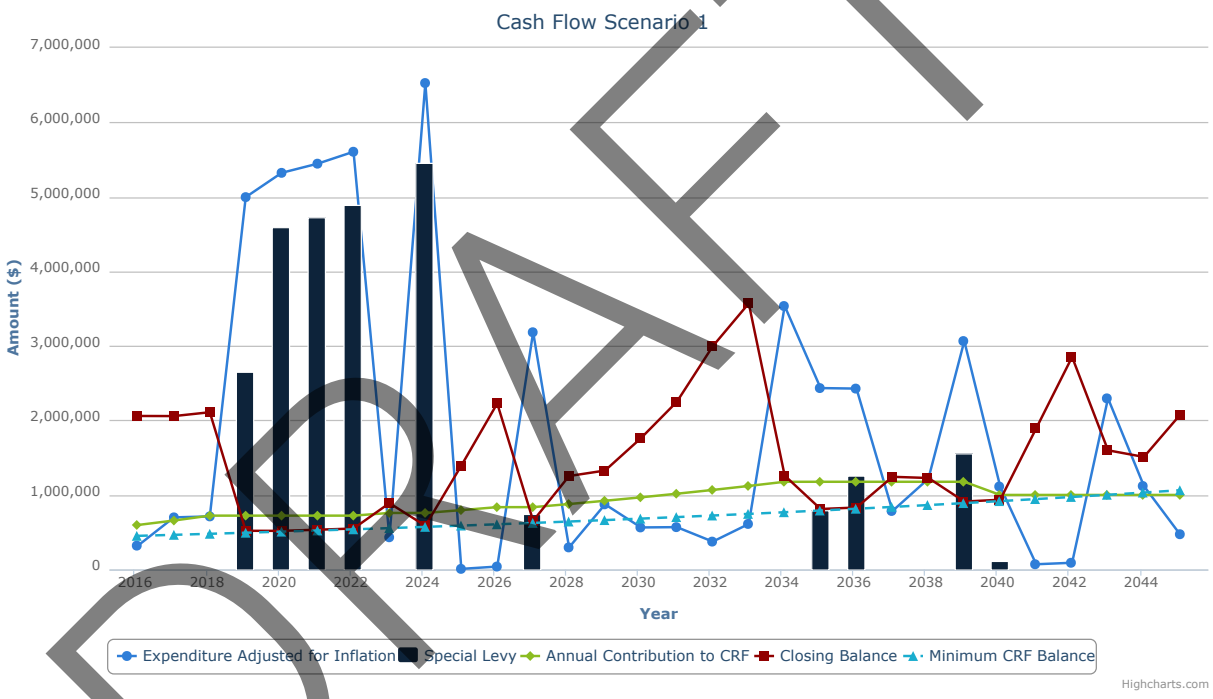
Start of Projection Period	2016	Initial CRF Contribution	$597,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	283

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$597,000	$2,110	$0	$0	$320,000	$37,670	$2,059,670	10.00%
2017	$2,059,670	$656,700	$2,320	$0	$0	$699,000	$40,770	$2,058,140	10.00%
2018	$2,058,140	$722,370	$2,553	$0	$0	$712,000	$41,267	$2,109,777	0.00%
2019	$2,109,777	$722,370	$2,553	$2,656,884	$9,388	$4,996,000	$26,028	$519,059	0.00%
2020	$519,059	$722,370	$2,553	$4,588,393	$16,213	$5,322,000	$10,269	$518,091	0.00%
2021	$518,091	$722,370	$2,553	$4,727,596	$16,705	$5,445,000	$10,411	$533,468	0.00%
2022	$533,468	$722,370	$2,553	$4,887,910	$17,272	$5,605,000	$10,722	$549,470	5.00%
2023	$549,470	$758,489	$2,680	$0	$0	$432,000	$14,254	$890,213	0.00%
2024	$890,213	$758,489	$2,680	$5,449,856	$19,257	$6,527,000	$14,618	$586,176	5.00%
2025	$586,176	$796,413	$2,814	$0	$0	$8,000	$19,608	$1,394,196	5.00%
2026	$1,394,196	$836,234	$2,955	$0	$0	$39,000	$35,856	$2,227,286	0.00%
2027	$2,227,286	$836,234	$2,955	$744,037	$2,629	$3,183,000	$28,518	$653,075	5.00%
2028	$653,075	$878,045	$3,103	$0	$0	$296,000	$18,882	$1,254,002	5.00%
2029	$1,254,002	$921,948	$3,258	$0	$0	$874,000	$25,560	$1,327,509	5.00%
2030	$1,327,509	$968,045	$3,421	$0	$0	$564,000	$30,591	$1,762,145	5.00%
2031	$1,762,145	$1,016,447	$3,592	$0	$0	$568,000	$39,727	$2,250,319	5.00%
2032	$2,250,319	$1,067,269	$3,771	$0	$0	$374,000	$51,939	$2,995,528	5.00%
2033	$2,995,528	$1,120,633	$3,960	$0	$0	$611,000	$65,007	$3,570,168	5.00%
2034	$3,570,168	$1,176,665	$4,158	$0	$0	$3,535,000	$47,820	$1,259,652	0.00%
2035	$1,259,652	$1,176,665	$4,158	$788,853	$2,787	$2,434,000	$20,508	$811,678	0.00%
2036	$811,678	$1,176,665	$4,158	$1,253,562	$4,430	$2,427,000	$16,266	$831,171	0.00%
2037	$831,171	$1,176,665	$4,158	$0	$0	$785,000	$20,540	$1,243,375	0.00%
2038	$1,243,375	$1,176,665	$4,158	$0	$0	$1,217,000	$24,464	$1,227,504	0.00%
2039	$1,227,504	$1,176,665	$4,158	$1,551,300	$5,482	$3,065,000	$21,180	$911,648	-15.00%
2040	$911,648	$1,000,165	$3,534	$118,369	$418	$1,113,000	$18,288	$935,471	0.00%
2041	$935,471	$1,000,165	$3,534	$0	$0	$70,000	$28,011	$1,893,647	0.00%
2042	$1,893,647	$1,000,165	$3,534	$0	$0	$90,000	$46,975	$2,850,786	0.00%
2043	$2,850,786	$1,000,165	$3,534	$0	$0	$2,296,000	$44,057	$1,599,009	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Con-tribution[1]	CRF Contribu-tion/Suite[2]	Special Levy	Special Levy/Suite[2]	Expend-iture[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$1,599,009	$1,000,165	$3,534	$0	$0	$1,120,000	$30,782	$1,509,955	0.00%
2045	$1,509,955	$1,000,165	$3,534	$0	$0	$473,000	$35,471	$2,072,591	0.00%
Total		**$27,884,776**		**$26,766,760**		**$55,200,000**	**$876,059**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year



4.4 Cash Flow Scenario 2

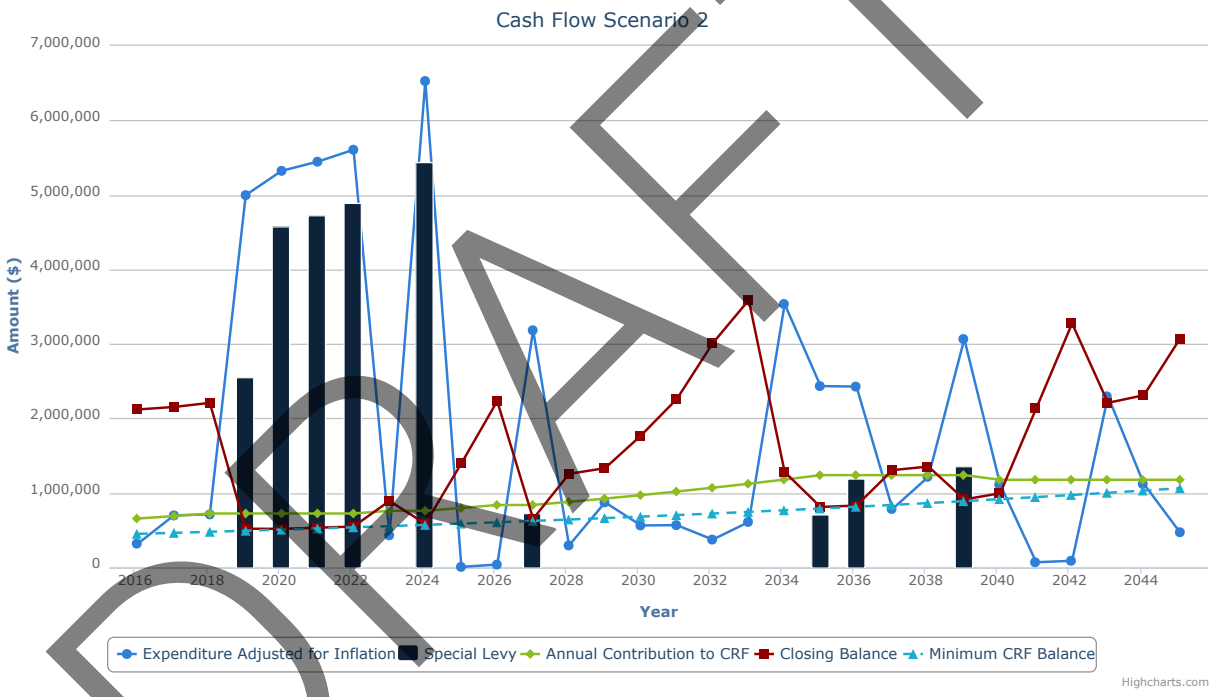
Start of Projection Period	2016	Initial CRF Contribution	$657,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	283

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$657,000	$2,322	$0	$0	$320,000	$38,270	$2,120,270	5.00%
2017	$2,120,270	$689,850	$2,438	$0	$0	$699,000	$42,314	$2,153,434	5.00%
2018	$2,153,434	$724,343	$2,560	$0	$0	$712,000	$43,192	$2,208,969	0.00%
2019	$2,208,969	$724,343	$2,560	$2,555,720	$9,031	$4,996,000	$27,020	$520,051	0.00%
2020	$520,051	$724,343	$2,560	$4,585,428	$16,203	$5,322,000	$10,279	$518,100	0.00%
2021	$518,100	$724,343	$2,560	$4,725,613	$16,698	$5,445,000	$10,412	$533,468	0.00%
2022	$533,468	$724,343	$2,560	$4,885,938	$17,265	$5,605,000	$10,722	$549,470	5.00%
2023	$549,470	$760,560	$2,687	$0	$0	$432,000	$14,275	$892,305	0.00%
2024	$892,305	$760,560	$2,687	$5,445,693	$19,243	$6,527,000	$14,639	$586,196	5.00%
2025	$586,196	$798,588	$2,822	$0	$0	$8,000	$19,630	$1,396,414	5.00%
2026	$1,396,414	$838,517	$2,963	$0	$0	$39,000	$35,923	$2,231,854	0.00%
2027	$2,231,854	$838,517	$2,963	$737,185	$2,605	$3,183,000	$28,564	$653,121	5.00%
2028	$653,121	$880,443	$3,111	$0	$0	$296,000	$18,907	$1,256,470	5.00%
2029	$1,256,470	$924,465	$3,267	$0	$0	$874,000	$25,634	$1,332,569	5.00%
2030	$1,332,569	$970,688	$3,430	$0	$0	$564,000	$30,718	$1,769,976	5.00%
2031	$1,769,976	$1,019,223	$3,601	$0	$0	$568,000	$39,912	$2,261,110	5.00%
2032	$2,261,110	$1,070,184	$3,782	$0	$0	$374,000	$52,184	$3,009,478	5.00%
2033	$3,009,478	$1,123,693	$3,971	$0	$0	$611,000	$65,316	$3,587,488	5.00%
2034	$3,587,488	$1,179,878	$4,169	$0	$0	$3,535,000	$48,199	$1,280,564	5.00%
2035	$1,280,564	$1,238,871	$4,378	$705,734	$2,494	$2,434,000	$20,717	$811,887	0.00%
2036	$811,887	$1,238,871	$4,378	$1,191,146	$4,209	$2,427,000	$16,268	$831,173	0.00%
2037	$831,173	$1,238,871	$4,378	$0	$0	$785,000	$21,162	$1,306,206	0.00%
2038	$1,306,206	$1,238,871	$4,378	$0	$0	$1,217,000	$26,343	$1,354,421	0.00%
2039	$1,354,421	$1,238,871	$4,378	$1,362,176	$4,813	$3,065,000	$22,449	$912,917	-5.00%
2040	$912,917	$1,176,928	$4,159	$0	$0	$1,113,000	$18,898	$995,743	0.00%
2041	$995,743	$1,176,928	$4,159	$0	$0	$70,000	$30,984	$2,133,655	0.00%
2042	$2,133,655	$1,176,928	$4,159	$0	$0	$90,000	$53,542	$3,274,125	0.00%
2043	$3,274,125	$1,176,928	$4,159	$0	$0	$2,296,000	$54,292	$2,209,345	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$2,209,345	$1,176,928	$4,159	$0	$0	$1,120,000	$44,756	$2,311,029	0.00%
2045	$2,311,029	$1,176,928	$4,159	$0	$0	$473,000	$53,260	$3,068,217	0.00%
Total		**$29,389,804**		**$26,194,633**		**$55,200,000**	**$938,781**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year



4.5 Cash Flow Scenario 3

Start of Projection Period	2016	Initial CRF Contribution	$716,000
Projection Interval (Years)	30	Opening CRF Balance	$1,745,000
Interest Rate	2%	Initial CRF Minimum Balance	$451,193
Inflation Rate	3%	Number of Strata Lots	283

Fiscal Yr Start	Opening Balance	CRF Contribution[1]	CRF Contribution/Suite[2]	Special Levy	Special Levy/Suite[2]	Expenditure[3]	Interest	Closing Balance	CRF % Increase[4]
2016	$1,745,000	$716,000	$2,530	$0	$0	$320,000	$38,860	$2,179,860	5.00%
2017	$2,179,860	$751,800	$2,657	$0	$0	$699,000	$44,125	$2,276,785	5.00%
2018	$2,276,785	$789,390	$2,789	$0	$0	$712,000	$46,310	$2,400,485	0.00%
2019	$2,400,485	$789,390	$2,789	$2,299,156	$8,124	$4,996,000	$28,935	$521,966	0.00%
2020	$521,966	$789,390	$2,789	$4,518,466	$15,966	$5,322,000	$10,298	$518,120	0.00%
2021	$518,120	$789,390	$2,789	$4,660,547	$16,468	$5,445,000	$10,412	$533,468	0.00%
2022	$533,468	$789,390	$2,789	$4,820,890	$17,035	$5,605,000	$10,722	$549,470	5.00%
2023	$549,470	$828,860	$2,929	$0	$0	$432,000	$14,958	$961,288	0.00%
2024	$961,288	$828,860	$2,929	$5,308,411	$18,758	$6,527,000	$15,328	$586,886	5.00%
2025	$586,886	$870,302	$3,075	$0	$0	$8,000	$20,361	$1,469,549	5.00%
2026	$1,469,549	$913,818	$3,229	$0	$0	$39,000	$38,139	$2,382,506	0.00%
2027	$2,382,506	$913,818	$3,229	$511,233	$1,806	$3,183,000	$30,071	$654,627	5.00%
2028	$654,627	$959,508	$3,390	$0	$0	$296,000	$19,728	$1,337,863	5.00%
2029	$1,337,863	$1,007,484	$3,560	$0	$0	$874,000	$28,092	$1,499,439	5.00%
2030	$1,499,439	$1,057,858	$3,738	$0	$0	$564,000	$34,927	$2,028,225	5.00%
2031	$2,028,225	$1,110,751	$3,925	$0	$0	$568,000	$45,992	$2,616,968	5.00%
2032	$2,616,968	$1,166,289	$4,121	$0	$0	$374,000	$60,262	$3,469,519	5.00%
2033	$3,469,519	$1,224,603	$4,327	$0	$0	$611,000	$75,526	$4,158,648	5.00%
2034	$4,158,648	$1,285,833	$4,544	$0	$0	$3,535,000	$60,681	$1,970,162	5.00%
2035	$1,970,162	$1,350,125	$4,771	$0	$0	$2,434,000	$28,564	$914,852	0.00%
2036	$914,852	$1,350,125	$4,771	$976,928	$3,452	$2,427,000	$17,298	$832,202	5.00%
2037	$832,202	$1,417,631	$5,009	$0	$0	$785,000	$22,970	$1,487,804	5.00%
2038	$1,487,804	$1,488,513	$5,260	$0	$0	$1,217,000	$32,471	$1,791,787	0.00%
2039	$1,791,787	$1,488,513	$5,260	$675,168	$2,386	$3,065,000	$26,823	$917,291	-25.00%
2040	$917,291	$1,116,384	$3,945	$0	$0	$1,113,000	$18,380	$939,055	0.00%
2041	$939,055	$1,116,384	$3,945	$0	$0	$70,000	$29,245	$2,014,684	0.00%
2042	$2,014,684	$1,116,384	$3,945	$0	$0	$90,000	$50,558	$3,091,626	0.00%
2043	$3,091,626	$1,116,384	$3,945	$0	$0	$2,296,000	$50,036	$1,962,047	0.00%

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year

Fiscal Yr Start	Opening Balance	CRF Con-tribution[1]	CRF Contribu-tion/Suite[2]	Special Levy	Special Levy/Suite[2]	Expend-iture[3]	Interest	Closing Balance	CRF % Increase[4]
2044	$1,962,047	$1,116,384	$3,945	$0	$0	$1,120,000	$39,205	$1,997,636	0.00%
2045	$1,997,636	$1,116,384	$3,945	$0	$0	$473,000	$46,387	$2,687,407	0.00%
Total		**$31,375,945**		**$23,770,799**		**$55,200,000**	**$995,664**		

[1] Annual contribution
[2] Average (not based on unit entitlement)
[3] Adjusted for inflation
[4] Contribution increase applies to following year