Depreciation Report Update | Project R-01794.028

The Max, 928 Beatty Street and 939 Expo Boulevard, Vancouver, BC

To: The Owners, Strata Plan BCS1437
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Site Visit: April 1, 2022
Submitted: April 13, 2023 by
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1 Introduction

RDH Building Science Inc. (RDH) was retained by The Owners, Strata Plan BCS1437 (Owners) to prepare a Depreciation Report Update (Report) for the residential and commercial complex known as The Max, which is located at 928 Beatty Street and 939 Expo Boulevard, Vancouver, BC. The complex includes two sections: Commercial and Residential. The Report considers the common property and limited common property components (the Assets) that the Owners are responsible to maintain, repair, and replace.

The Report is intended to help the Owners, the Strata Council, and the Management Team make informed decisions about the allocation of resources to the common property Assets (such as roofs, windows, boilers, and interior finishes).

This Report meets the requirements stipulated in the current Strata Property Act and Regulations. The Report includes a physical inventory of the common property Assets; estimated costs for capital expenditures over a 30-year horizon; and four funding models. Refer to the appendices for RDH's qualifications and information on errors and omissions insurance. In accordance with the requirements of the Act, RDH declares that there is no relationship between the employees of RDH and the Owners.

This Report is an update to the previous Depreciation Report Update that was issued by RDH on November 21, 2018. As part of our work for this Report, a site visit was completed on April 1, 2022. The financial data is based on the 2021/2022 fiscal year. A draft Report was distributed to Council and Strata Management on November 7, 2022. The final Report was issued on February 14, 2023. Feedback from the Strata Council and Management was incorporated into the final Report, and the revised final Report was issued on April 13, 2023.

The Report is a synopsis of a significant volume of data and has two parts: the summary and the appendices. The summary is intended to provide an overview of the Depreciation Report Update. The appendices provide detailed information to support the summary report. The appendices include a glossary of terms. Words that are *italicized* are defined in the glossary.

As the physical and financial status of the Assets change over time, the Report will require updating. The Strata Property Act requires updates to the Report every three years; however, the Owners can choose to update portions of the Report more frequently, at their discretion, to reflect changes to their financial status and completed work.

2 The Max

The Max is a mixed-use strata complex with commercial and residential sections, constructed in approximately 2005. The complex consists of two cast-in-place concrete towers, eight townhouse units, and an amenity building, all constructed over a three-level, below-grade parkade.

The principal systems in the complex include the building enclosure (the separation of the interior from exterior space), electrical (the electrical distribution, communications, and security equipment), mechanical (heating, cooling, and plumbing), elevators, fire safety (sprinklers, fire detection, and egress equipment), interior finishes, amenities, and site work. The Assets within each system are described in detail in Appendix B.

Key physical parameters of The Max are summarized in Table 2.1, Figure 2.1, Figure 2.2, and Figure 2.3 below.

TABLE 2.1 KEY PHYSICAL PARAMETERS

Figure 2.1 Elevation photograph of Tower B at The Max.

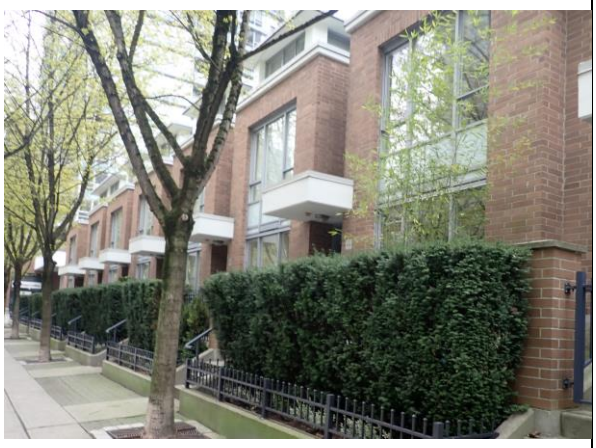

Figure 2.2 Partial elevation photograph of Townhouses at The Max.

Date of first occupancy (approximate)	2005
Approximate gross floor area, including the parkade (ft²)	411,981
Stories above-grade including mechanical penthouse	
→ Tower A (928 Beatty Street)	34
→ Tower B (939 Expo Boulevard)	28
→ Amenity	3
→ Townhouses	3
Total number of strata lots	
→ Residential Section	526
→ Commercial Section	15
TOTAL	**541**

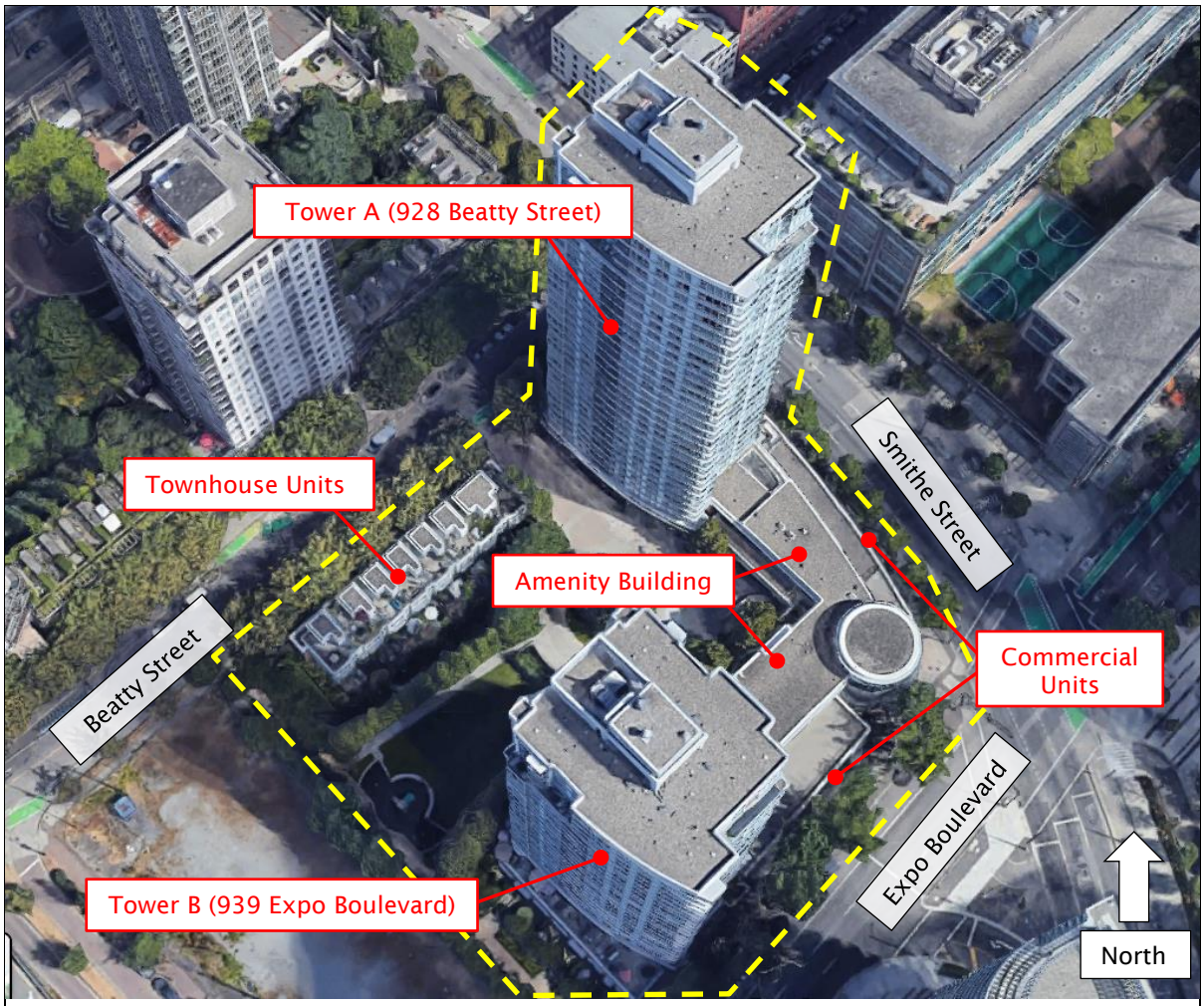

Figure 2.3 Aerial photograph of The Max (©Google Maps 2022). Approximate extent of site is indicated in yellow dashed lines.

3 Assessments

The Report combines two distinct types of analysis: a *physical assessment,* and a *financial assessment.* The assessments are used to determine what the Owners possess, what condition the Assets are in, what the Owners are responsible for, and the *capital costs* associated with the Assets.

The process of preparing the Depreciation Report Update is summarized in Figure 3.1 below:

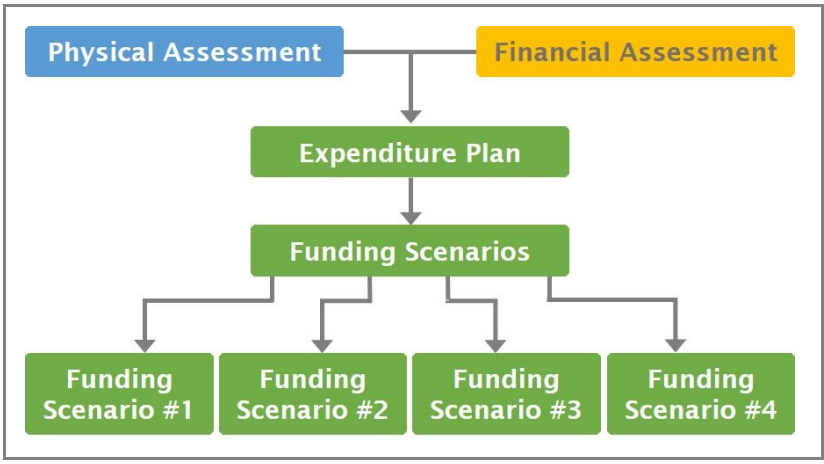

Figure 3.1

Depreciation Report Update Process.

Funding models are built based on the Strategic Plan (30 years).

The following sections provide a brief overview of the physical assessment and financial assessment.

3.1 Physical Assessment

The physical assessment has two parts: an inventory and an evaluation.

The *Asset Inventory* identifies "the common property, the common Assets and those parts of a strata lot or limited common property, or both, that the Owners are responsible to maintain or repair under the Act, the Strata Corporation's bylaws or an agreement with an Owner" (*Strata Property Act Regulation,* BC Reg 43/2000, Ch. 6.2). In other words, it identifies what the Owners possess and must repair and maintain. The Asset Inventory is included as an appendix to this Report.

The evaluation is used to forecast common repairs, replacements, and maintenance activities that "usually occur less often than once a year or that do not usually occur" (*Strata Property Act Regulation*, BC Reg 43/2000, Ch.6.2). In other words, the evaluation predicts only events that occur at intervals greater than one year.

The evaluation is typically based on:

→ A review of historical documentation, such as meeting minutes,

→ Discussions with Strata Corporation representatives,

→ A visual review of the complex, limited to a sample of readily accessible Assets, and

→ A review of other technical information, such as construction drawings, and previous reports.

Destructive testing, disassembly, and performance testing are not included in the physical evaluation; this Report does not replace a Warranty Review or Condition Assessment. Please visit www.rdh.com for additional information on Warranty Reviews and Condition Assessments.

The condition of some Assets may be concealed, for example, buried infrastructure (such as sanitary drainage lines) or building enclosure Assets (such as cladding). For Assets with the potential for concealed

failure, a number of tools are used to assign a reasonable expected service life including the typical performance of the Asset in other, similar properties; the performance history reported by the Owners; the original drawings; and any previous investigation reports commissioned by the Owners. It is expected that the Owners will need more detailed reviews as Assets approach the end of their service lives. A summary of the Asset service lives is provided in the appendices of the Report. Allowances for additional reviews or investigations are included, as appropriate. Recommendations taken from any additional reviews should be incorporated into future Report updates.

As part of the physical assessment, RDH compiled a history of completed projects by reviewing the documents provided by the Owners and interviewing Strata Corporation representatives. The history is summarized in Table 3.1 below. The history of renewals establishes the chronological age of the Assets while the history of major maintenance may affect the effective age of the Assets.

TABLE 3.1 MAINTENANCE AND RENEWALS HISTORY

Building Enclosure

- 2022 – Commissioned a Localized Building Enclosure Review of the parkade entrance ramp by RDH.
- 2020/2019 – Completed a roof inspection and repaired the roof deficiencies.
- 2019 – Completed repairs to the parkade ramp with urethane crack injections.
- 2019 – Completed a Building Enclosure Renewal Project which included:
  - Repainted all the exposed exterior concrete walls with localized concrete repairs,
  - Recoated all the concrete balcony and eyebrow waterproofing membranes with localized concrete repairs, and
  - Locally replaced the sealant.
- 2019 – Repainted the metal awnings.
- 2017 – Conducted a Building Enclosure Condition Assessment (BECA) by RDH.
- 2016 – Locally repaired the traffic-bearing membrane in the parkade.

Electrical

- 2021 – Installed the key fob scanners and security cameras at the fire exit stairwells.
- 2019 – Replaced all five enterphone panels.
- 2019 – Installed a security camera at the mailbox area of Tower B.
- 2015 – Retrofitted the interior lights with LED bulbs in the common areas.

Mechanical

- 2021 & 2016 – Inspected and hydro-jetted the drain lines.
- 2021 – Repaired the heat pump compressors on the Level 3 amenity area.
- 2021 – Replaced the condensing unit for the electrical room.
- 2021 – Installed a flow meter on the irrigation line.
- 2020 – Installed the 1Clearwater water treatment system.
- 2020 – Commissioned a mechanical/plumbing review.
- 2019 – Repaired the domestic water booster pumps.

TABLE 3.1 MAINTENANCE AND RENEWALS HISTORY
→ 2019, 2018 & 2016 – Locally replaced the domestic hot water (DHW) tank in the rooftop mechanical rooms. → 2018 – Replaced the heat trace controller. → 2016 – Repaired the expansion tank in pool mechanical room. → As required – Locally replace the pumps, fans, and motors.
Fire Safety → 2021 – Flushed the dry sprinkler lines. → 2021 – Locally repaired the sprinkler line at the amenity lounge. → 2019 – Locally repaired the sprinkler line on Level 37 of Tower A.
Elevator → 2021/2022 – Modernized the elevator gearless machines, controls, and drive systems. → 2020 – Commissioned an elevator review by Gunn Consultants. → 2013 – Repaired the elevators and replaced the door operators (damaged by a water leak).
Interior Finishes → 2021 – Repainted the garbage room floors. → 2019 – Installed the stainless steel corner guards in the common hallways. → 2014 – Repainted the interior walls in the common areas. → 2013 – Replaced the carpet flooring in the common areas.
Amenities → 2021 – Repaired the fitness room equipment. → 2016 – Replaced the outdoor BBQ grill by the lounge. → 2014 – Replaced the furniture in amenity areas. → 2014 – Replaced the fitness room equipment.
Sitework → 2021 – Locally repaired the concrete roundabout. → 2021/2020 – Replaced the fencing and gates along the townhouses on Beatty Street.

On April 1, 2022, representatives of RDH visited the site to visually review the Assets. While the Report does not constitute a maintenance review or condition assessment, some observations regarding the general condition, design, and construction of the Assets were made as part of the visual review. These observations were used to determine a reasonable estimated remaining service life of various Assets. Table 3.2 includes examples of some observations made during the review.

TABLE 3.2 OBSERVATIONS BY SYSTEM	
SYSTEM	OBSERVATION
Building Enclosure	→ Localized cracks and dirt accumulation on the EIFS clad walls acrylic finish coat located on the roof levels of the high-rise buildings. → Localized delamination and damage of the parkade traffic-bearing membrane, particularly in high-traffic areas. → Localized efflorescence and hairline cracks on the concrete soffit of the suspended slab within the parkade. → Organic growth in between the deck pavers adjacent to the amenity building.

3.2 Financial Assessment

The financial assessment estimates the future costs associated with the Assets, and examines how future funding requirements will be affected by current financial practises. More specifically, the financial assessment identifies:

→ The opening balance in the *Contingency Reserve Fund* (CRF).

→ The estimated value of capital expenditures, expressed in *Current Year Dollars* (CYD).

→ The estimated future value of capital expenditures, expressed in *Future Year Dollars* (FYD). These costs are calculated by applying an inflation rate (3% per year) to the current costs.

The future value of major maintenance and renewals costs can be compared against the building reproduction cost. The building reproduction cost is the cost to reproduce the buildings in similar materials, in accordance with current market prices, and is obtained from the most recent insurance appraisal.

The financial assessment begins with a review of the current financial situation of the Owners. Table 3.3 below summarizes the key financial parameters reviewed as part of the financial assessment.

TABLE 3.3 KEY FINANCIAL PARAMETERS		
PARAMETER	PREVIOUS REPORT (2016/2017)	UPDATE REPORT (2021/2022)
Fiscal year end	September 30	
Building reproduction cost	$153,591,100	$161,974,000
Operating budget (excluding CRF contribution)		
→ Residential	$676,020	$691,324
→ Commercial	$26,098	N/A
→ Joint	$1,691,500	$1,814,000
TOTAL	**$2,393,618**	**$2,505,324**
Annual CRF contribution		
→ Residential	$110,000	$125,000
→ Commercial	$0	N/A

TABLE 3.3 KEY FINANCIAL PARAMETERS		
PARAMETER	PREVIOUS REPORT (2016/2017)	UPDATE REPORT (2021/2022)
→ Joint	$260,000	$350,000
TOTAL	**$370,000**	**$475,000**
Accumulated CRF Balance*		
→ Residential	$1,561,000	$1,198,427
→ Commercial	$54,000	N/A
→ Joint	$787,000	$1,763,688
TOTAL	**$2,402,000**	**$2,962,115**

**The balance in the CRF varies each month as contributions are made and funds are withdrawn for capital renewal projects and major maintenance activities. The accumulated CRF balance is reconciled as of September 2022.*

3.3 Governance

The Max also has sections; the Residential Section and the Commercial Section. The capital costs associated with several Assets are shared according to a cost sharing ratio or bylaws. The Assets that are not exclusive to either sections are the responsibility of the Strata Corporation, or Joint, and are identified as "[SC]" in the Asset Inventory. The Assets that are exclusively the responsibility of Residential Section have been identified as "[R]" in the Asset Inventory. The Assets that are exclusively the responsibility of Commercial Section have been identified as "[C]" in the Asset Inventory. The cost sharing ratios are summarized in Table 3.4 below.

TABLE 3.4 DIVISION OF COSTS ASSOCIATED WITH SECTIONS				
ASSET ID	ASSETS	RESIDENTIAL (SECTION)	COMMERCIAL (SECTION)	JOINT (SECTION)
	All shared Assets by Unit Entitlement	95.8%	4.2%	0%
Struct 01	Concrete Foundation [SC]	0%	0%	100%
Struct 02	Walls and Columns [SC]	0%	0%	100%
Encl 01	Protected Membrane Deck with Pavers [R]	100%	0%	0%
Encl 02	Protected Membrane Roof with Ballast [R]	100%	0%	0%
Encl 03	Protected Membrane Roof & Deck Amenity [SC]	0%	0%	100%
Encl 04	Guardrails Aluminum [R]	100%	0%	0%
Encl 05	Fall Protection Equipment [R]	100%	0%	0%
Encl 06	Coated Architectural Concrete Wall [SC]	0%	0%	100%
Encl 07	EIFS Walls [R]	100%	0%	0%
Encl 08	Metal Clad Walls [R]	100%	0%	0%
Encl 09	Masonry Veneer Walls [SC]	0%	0%	100%

TABLE 3.4 DIVISION OF COSTS ASSOCIATED WITH SECTIONS				
ASSET ID	ASSETS	RESIDENTIAL (SECTION)	COMMERCIAL (SECTION)	JOINT (SECTION)
Encl 10	Window Walls & Aluminum Framed Windows [R]	100%	0%	0%
Encl 11	Curtain Wall [C]	0%	100%	0%
Encl 12	Aluminum Storefront [C]	0%	100%	0%
Encl 13	Aluminum Storefront [R]	100%	0%	0%
Encl 14	Lobby Door Assemblies [R]	100%	0%	0%
Encl 15	Townhouse Entry Doors [R]	100%	0%	0%
Encl 16	Aluminum Sliding Glass Doors [R]	100%	0%	0%
Encl 17	Aluminum Swing Doors [R]	100%	0%	0%
Encl 18	Metal Clad Swing Door [SC]	0%	0%	100%
Encl 19	Exposed Urethane Membranes - Balconies & Eyebrows [R]	100%	0%	0%
Encl 20	Metal & Glass Canopies [C]	0%	100%	0%
Encl 21	At-Grade Waterproofing [SC]	0%	0%	100%
Encl 22	Traffic-Bearing Membrane [R]	100%	0%	0%
Encl 23	Traffic-Bearing Membrane [SC]	0%	0%	100%
Encl 24	Exterior Sealant [SC]	0%	0%	100%
Encl 25	Miscellaneous & Inspections [SC]	0%	0%	100%
Elec 01	Distribution Transformers [R]	100%	0%	0%
Elec 02	Emergency Generator [SC]	0%	0%	100%
Elec 03	Unit Substation [SC]	0%	0%	100%
Elec 04	Electrical Distribution [R]	100%	0%	0%
Elec 05	Exterior Light Fixtures [R]	100%	0%	0%
Elec 06	Interior Light Fixtures [R]	100%	0%	0%
Elec 07	Enterphone System [R]	100%	0%	0%
Elec 08	Proximity Access Control [R]	100%	0%	0%
Elec 09	Security Surveillance [R]	100%	0%	0%
Mech 01	Heat Tracing – Freeze Protection [SC]	0%	0%	100%
Mech 02	Controls – Electronic Actuators [SC]	0%	0%	100%
Mech 03	Gas Detection – Parking Garage [SC]	0%	0%	100%
Mech 04	Controls - HVAC Instrumentation [R]	100%	0%	0%
Mech 05	Boiler - DHW - Heating - Gas Fired [R]	100%	0%	0%
Mech 06	Tank - DHW - Storage [R]	100%	0%	0%
Mech 07	Pump - Domestic Water Booster [R]	100%	0%	0%
Mech 08	Fixtures - Toilets [R]	100%	0%	0%

TABLE 3.4 DIVISION OF COSTS ASSOCIATED WITH SECTIONS				
ASSET ID	ASSETS	RESIDENTIAL (SECTION)	COMMERCIAL (SECTION)	JOINT (SECTION)
Mech 09	Piping - Domestic Water Distribution [R]	100%	0%	0%
Mech 10	Pump - DHW - Circulation and Recirculation [R]	100%	0%	0%
Mech 11	Drainage – Sanitary [SC]	0%	0%	100%
Mech 12	Drainage – Perimeter and Foundation [SC]	0%	0%	100%
Mech 13	Drainage – Storm – Internal [SC]	0%	0%	100%
Mech 14	Valves – Plumbing Flow Control and Directional [SC]	0%	0%	100%
Mech 15	Valves – Cross Connection & Backflow Prevention [SC]	0%	0%	100%
Mech 16	Tank - Expansion - DHW - Diaphragm [R]	100%	0%	0%
Mech 17	Fixtures - Showers [R]	100%	0%	0%
Mech 18	Fixtures - Taps & Sinks [R]	100%	0%	0%
Mech 19	Pumps - Sanitary Lift and Control Panels [R]	100%	0%	0%
Mech 20	Pumps - Storm Lift and Control Panels [R]	100%	0%	0%
Mech 21	Tank - DHW - Booster/Heater [R]	100%	0%	0%
Mech 22	Boiler - Hydronic - Heating - Gas Fired [R]	100%	0%	0%
Mech 23	Domestic Water Treatment Equipment [SC]	0%	0%	100%
Mech 24	Pump - Hydronic Loop - Basemount [R]	100%	0%	0%
Mech 25	Heat Exchanger - Shell & Tube [R]	100%	0%	0%
Mech 26	Chemical Treatment Equipment [R]	100%	0%	0%
Mech 27	Split System Air Conditioner [C]	0%	100%	0%
Mech 28	Electric Baseboards [R]	100%	0%	0%
Mech 29	Condensing Unit - Outdoor Section - Heat Pump [R]	100%	0%	0%
Mech 30	Fan Coil Unit [R]	100%	0%	0%
Mech 31	Condensing Unit – Outdoor – Split System A/C [R]	100%	0%	0%
Mech 32	Exhaust Fan Parkade – Inline [SC]	0%	0%	100%
Mech 33	Coil – Electric – Duct Heater [SC]	0%	0%	100%
Mech 34	Exhaust Fan Parkade – Propellor [SC]	0%	0%	100%
Mech 35	General Exhaust Fans [R]	100%	0%	0%

TABLE 3.4 DIVISION OF COSTS ASSOCIATED WITH SECTIONS				
ASSET ID	ASSETS	RESIDENTIAL (SECTION)	COMMERCIAL (SECTION)	JOINT (SECTION)
Mech 36	Packaged Dehumidification Unit [R]	100%	0%	0%
Mech 37	Outdoor Air Handler - Makeup Air - Gas [R]	100%	0%	0%
Mech 38	Gas Appliance Powerventer Draft Fan [R]	100%	0%	0%
Mech 39	Rollup Doors [R]	100%	0%	0%
Mech 40	Trash Compactor [R]	100%	0%	0%
Mech 41	Overhead Gate Motors [R]	100%	0%	0%
Elev 01	Handicap Lift [R]	0%	0%	100%
Elev 02	Overhead Traction, Gearless [R]	0%	0%	100%
Elev 03	Elevator Cabs & Hoistway [R]	0%	0%	100%
Fire 01	Pressurization/Smoke Control Dampers [R]	100%	0%	0%
Fire 02	Fire Alarm Panel [SC]	0%	0%	100%
Fire 03	Fire Detection & Alarm [SC]	0%	0%	100%
Fire 04	Dry Sprinkler Compressor [SC]	0%	0%	100%
Fire 05	Fire & Jockey Pumps [SC]	0%	0%	100%
Fire 06	Fire Hose Cabinets [R]	100%	0%	0%
Fire 07	Portable Fire Extinguishers [R]	100%	0%	0%
Fire 08	Sprinkler Systems – Dry [SC}	0%	0%	100%
Fire 09	Sprinkler Valve Assemblies [SC]	0%	0%	100%
Fire 10	Sprinklers & Standpipe - Wet [R]	100%	0%	0%
Fire 11	Emergency Egress Equipment [SC]	0%	0%	100%
Finish 01	Rubber Sports Flooring [R]	100%	0%	0%
Finish 02	Ceramic Tiled Flooring [R]	100%	0%	0%
Finish 03	Tiled Flooring [R]	100%	0%	0%
Finish 04	Painted Concrete Flooring [SC]	0%	0%	100%
Finish 05	Resilient Sheet Flooring [R]	100%	0%	0%
Finish 06	Carpet Flooring [R]	100%	0%	0%
Finish 07	Ceramic Tile [R]	100%	0%	0%
Finish 08	Mirrors [R]	100%	0%	0%
Finish 09	Interior Painting [R]	100%	0%	0%
Finish 10	Wood Paneling [R]	100%	0%	0%
Finish 11	Window Covering [R]	100%	0%	0%
Finish 12	Carpentry & Millwork [R]	100%	0%	0%

TABLE 3.4 DIVISION OF COSTS ASSOCIATED WITH SECTIONS				
ASSET ID	ASSETS	RESIDENTIAL (SECTION)	COMMERCIAL (SECTION)	JOINT (SECTION)
Finish 13	Interior Swing Doors [R]	100%	0%	0%
Amen 01	Computer Equipment [R]	100%	0%	0%
Amen 02	Domestic Appliances [R]	100%	0%	0%
Amen 03	Fitness Equipment [R]	100%	0%	0%
Amen 04	Outdoor Barbecue [R]	100%	0%	0%
Amen 05	Metal Screen Storage Lockers [R]	100%	0%	0%
Amen 06	Washroom Partitions [R]	100%	0%	0%
Amen 07	Bicycle Racks [R]	100%	0%	0%
Amen 08	Central Mailbox [R]	100%	0%	0%
Amen 09	Public Signage [R]	100%	0%	0%
Amen 10	Interior Furniture [R]	100%	0%	0%
Amen 11	Audio Visual Equipment [R]	100%	0%	0%
Amen 12	Steam Generator [R]	100%	0%	0%
Amen 13	Dry Sauna [R]	100%	0%	0%
Amen 14	Pool and Spa Circulation & Sanitation [R]	100%	0%	0%
Amen 15	Pool Tank [R]	100%	0%	0%
Amen 16	Spa Tank [R]	100%	0%	0%
Site 01	Playground Equipment [R]	100%	0%	0%
Site 02	Rubber Tiles [R]	100%	0%	0%
Site 03	Concrete Paving [SC]	0%	0%	100%
Site 04	Concrete Unit Paving [R]	100%	0%	0%
Site 05	Site Furniture [R]	100%	0%	0%
Site 06	Irrigation System [SC]	0%	0%	100%
Site 07	Soft Landscaping [SC]	0%	0%	100%

The Report includes capital costs only: the costs for activities that occur at intervals greater than one year. Activities that occur annually or more frequently than once a year are considered operating expenses and are not included in the Report funding models and calculations.

Capital costs can be distributed into three general categories:

→ *Catch-up costs*. The cost to complete any deferred maintenance and renewals.

→ *Keep-up costs*. The cost to complete planned cyclical maintenance and renewals.

→ *Get-ahead costs*. The cost to adapt, upgrade, and improve.

The Report is based on keep-up costs. Get-ahead costs (improvements) may also be included, but only if they are required to meet changing codes or standards.

Costs are considered *Class D* estimates (±50%), as defined by the Engineers and Geoscientists of British Columbia (EGBC), or unless noted otherwise. Unless otherwise noted, soft costs, such as consulting fees and contingency allowances are not included, because these costs are highly dependent on the scope of work for a particular project. Scopes of work for specific projects should be developed well in advance so that project budgets, including soft costs, can be refined.

The current value of many major maintenance and renewal activities is calculated by multiplying the quantity of an Asset by standard unit rates (for example, the cost per square foot or cost per linear foot). Quantities are measured from original construction documents and visual observations on site. The unit rates are based on historical information, construction trends, information from contractors, and other sources, as appropriate. Unit rates will fluctuate over time. Basic unit rates are adjusted for the relative complexity of the property. A detailed list of activities and their associated costs are available through the appendices of this Report.

Costing Caveats

The capital costs given in the Report provide a basic estimate for long term planning. They are intended to help guide priority setting and provide a clearer sense of timing. They are not suitable for planning specific projects as they cannot account for project soft costs (such as taxes, grants, engineering or design, municipal permits, etc.), or for project specific construction costs (such as access to the work (e.g., scaffold, contingencies, hazardous materials, disposal, project management, etc.). Such costs cannot be estimated without more information, including a project scope and preliminary design work. Once a project reaches the planning stages, a reasonable assumption of soft costs should be made based on the actual needs of the project. It is recommended that this happens well in advance of predicted work to allow time to plan for the funding of the soft costs.

4 Expenditures

There are three types of activities that relate to expenditures:

- *Renewal* refers to the replacement or refurbishment of an Asset at the end of its useful service life.
- *Maintenance* refers to activities that preserve the Assets, to ensure the Assets will last their predicted service lives and perform as expected.
  - *Major Maintenance* refers to maintenance that occurs at intervals greater than one year, for example, every 18 months, two years, five years. Major Maintenance typically includes activities such as testing and inspecting, and is considered a capital expense.
  - *Minor Maintenance* includes maintenance activities that occur once a year or more frequently such as quarterly or monthly.

The costs associated with Major Maintenance and renewals are included in the Report funding models, as required by the Strata Property Act. Costs associated with Minor Maintenance are included in the Owners' operating budget.

4.1 Major Maintenance and Renewal Expenditures

Table 4.1 below summarizes all Major Maintenance and renewal costs by system, including costs forecasted for the next 30 years. The values are rounded.

TABLE 4.1 CAPITAL EXPENDITURES SUMMARY BY SYSTEM

SYSTEM	10 YEAR CAPITAL COSTS (WITHOUT INFLATION)	10 YEAR CAPITAL COSTS (WITH INFLATION)	30 YEAR CAPITAL COSTS (WITHOUT INFLATION)	30 YEAR CAPITAL COSTS (WITH INFLATION)
Building Enclosure	$2,100,000	$2,500,000	$34,000,000	$60,000,000
Electrical	$160,000	$180,000	$1,200,000	$2,000,000
Mechanical	$1,100,000	$1,300,000	$9,400,000	$14,000,000
Elevator	$40,000	$44,000	$2,000,000	$4,200,000
Fire Safety	$420,000	$450,000	$1,000,000	$1,500,000
Interior Finishes	$600,000	$710,000	$1,700,000	$2,700,000
Amenities	$120,000	$140,000	$350,000	$530,000
Sitework	$18,000	$20,000	$220,000	$390,000
Building Total	**$4,558,000**	**$5,344,000**	**$49,870,000**	**$85,320,000**

Approximately 10% of the Owners' capital expenditures may occur in the next 10 years. The distribution of estimated capital expenditures over the next 10 years is shown in Figure 4.1 below.

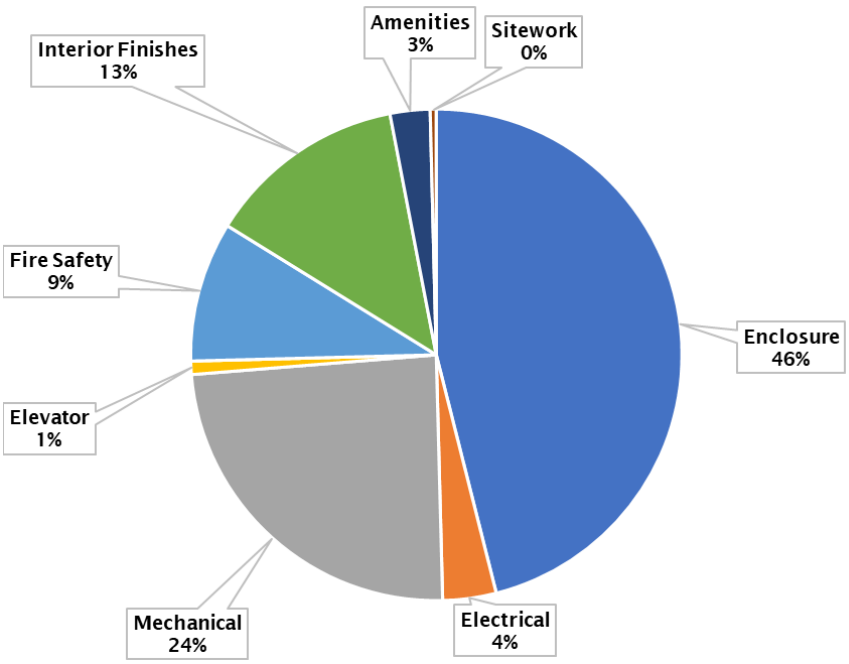

Figure 4.1 Distribution of estimated capital expenditures over 10 years by system.

Section 5 discusses the timing and size of renewal projects forecast for the next 30 years. A detailed list of each Major Maintenance and renewals activity, including the frequency, costs expressed in Current Year Dollars (CYD), and costs including inflation rates, expressed in Future Year Dollars (FYD) are available to the Owners.

5 Major Maintenance and Renewals Planning Horizons

There are three common planning horizons, used for making different types of capital planning decisions:

- ***Strategic*** (30 years): The average service life of many Assets is approximately 25 years (such as roofs) so a long-range view captures most renewal projects. In some cases, an Asset may be replaced more than once in the 30-year horizon.
- ***Tactical*** (5-10 years): Many residential Owners will own their strata lot for less than 10 years; the Tactical Plan captures projects that may occur while current Owners still have an interest in the Strata Corporation.
- ***Operational*** (1 year): The annual operating period encompasses one fiscal cycle (12 months). Typically, the budget is presented and approved at the Annual General Meeting (AGM) and will include any capital expenditures paid from the CRF, as well as the CRF contributions for the year. As a minimum, the decision on the CRF contribution should consider projects forecast for the next five to ten years.

5.1 Strategic Planning Horizon

Estimated Major Maintenance and Renewal costs over the next 30 years are shown on the graph below (Figure 5.1). The blue bars represent the estimated value of capital costs.

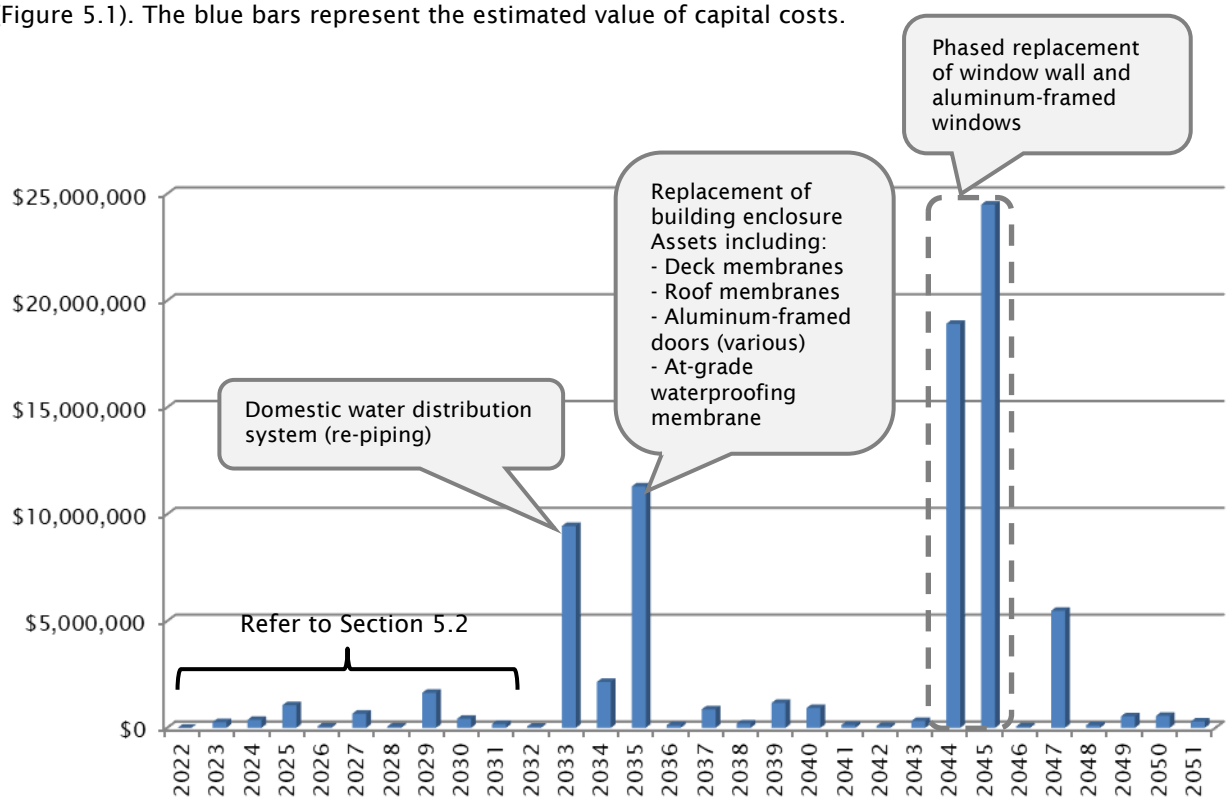

Figure 5.1 Strategic Forecast (30 Years), showing the approximate timing and value of some key capital expenditures.

Each bar on the graph represents a collection of different Major Maintenance and Renewals activities, each with different values. Detailed information about each year, including a description of the maintenance and renewal activities and estimated costs, is available in the appendices.

The Strategic Plan represents an estimate of future projects. The actual timing of projects will likely vary. Assets may be replaced earlier or later, depending on the quality of maintenance, in-service conditions, and other factors. The Owners can anticipate changes to the Strategic Plan with each update of the Report.

5.2 Tactical Planning Horizon

The graph below shows the projected Major Maintenance and Renewal costs for the next 10 years (Figure 5.2). Commonly, building managers refer to a 5-Year Tactical Plan; however, a 10-Year Plan allows the Owners to see a wider range of projects.

The bars indicate the years in which an event (or bundle of events) is most likely to occur, as well as the total magnitude of Major Maintenance and Renewal costs for that year and the costs broken down by system. The costs associated to correct any warranty defects are not included. The soft costs associated with project implementation, such as site access, design, and contract administration are not included.

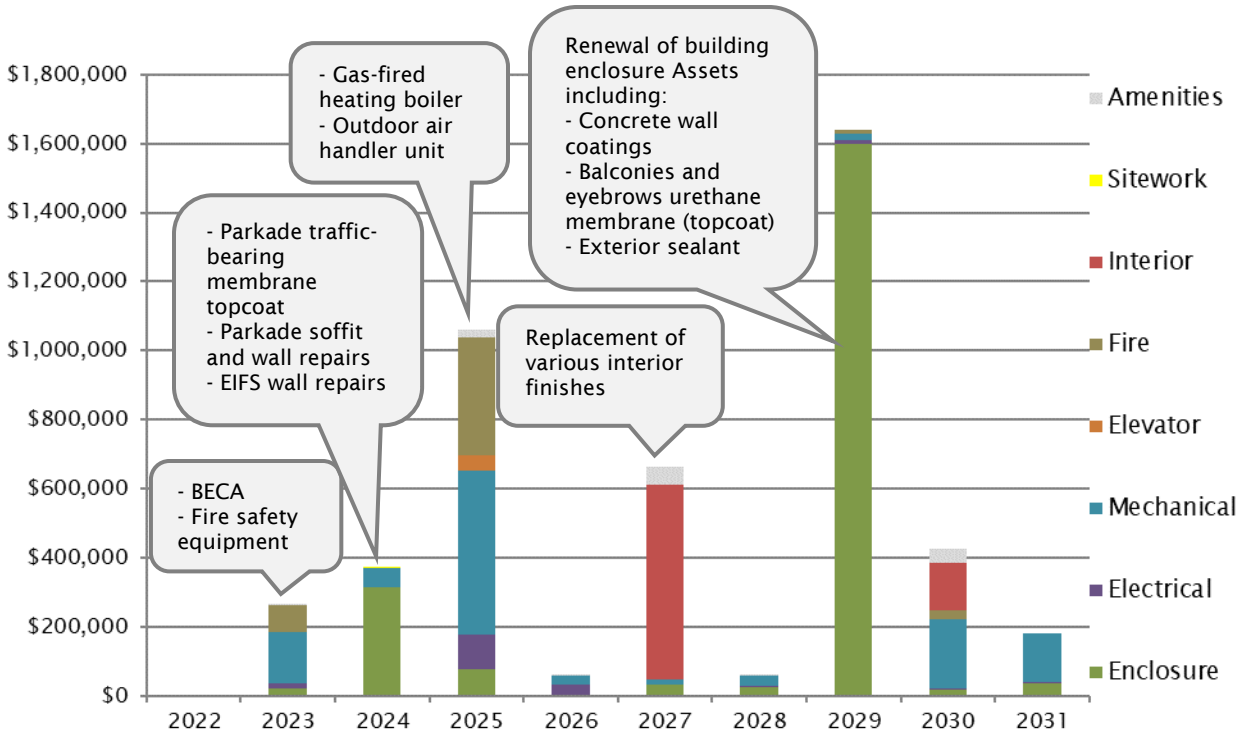

Figure 5.2 Tactical Forecast (10 years), showing the approximate timing and value of some key capital expenditures.

The Tactical Plan above represents one of many possible approaches to planning Major Maintenance and Renewal activities. The Owners can use this initial plan as a tool, a starting point to identify probable projects, priorities, and strategies. The actual cost, timing, and scope of projects will be determined by the Owners and may be reflected in updates to the Report.

To help the Owners start the project planning process, some of the events forecast for the next 10 years are listed below. The list below is not comprehensive; all renewals and major maintenance activities are

included in the Asset Inventory Appendix. The list focuses on significant renewals, major maintenance events, assessments, and repairs that are needed to ensure the Assets achieve their full service life.

Building Enclosure

- → Commission a Building Enclosure Condition Assessment (BECA). The BECA would provide the Owners with detail on the existing conditions of the building enclosure Assets, such as the exterior cladding, windows, roofing, balconies, and podium membrane. The Owners may also be interested in learning about assemblies that will help mitigate or adapt to the effects of climate change and discuss which building Assets can be considered to help meet impending legislative requirements. The assessment should be completed in advance of the various building enclosure renewals to assist with the planning process.
- → Depending on the findings from the BECA, anticipate a replacement of the parkade traffic-bearing membrane top-coat. In addition, plan to locally repair and repaint the EIFS clad walls located at the buildings' roof levels in the near future.
- → Plan for the next cycle of exterior recoating and sealant renewals towards the end of the Tactical Plan, depending on the findings of the BECA. The renewal of the balcony membranes may also be required in coordination with this major maintenance.
- → Anticipate localized replacement of the window and door hardware and failed insulating glazing units (IGU's), as required.

Electrical

- → Conduct infrared thermography, ultrasonic scanning, and cleaning of the main components of the electrical distribution equipment to detect hidden hazards (every three years).

Elevator

- → Anticipate replacement of the vertical platform lift handicap lift) located in Tower B lobby. The Owners should consult with their elevator maintenance contractor to confirm the dependability of the equipment and confirm its upcoming renewal requirements.

Interior Finishes and Amenities

- → Interior finishes are completed to refurbish the interior common areas and are typically renewed at the Owners' discretion. The Assets would include the replacement of various floor finishes, such as carpet, tiled flooring, and resilient sheet flooring, and repainting of the interior walls.
- → Anticipate replacement of various amenity Assets including the fitness equipment, interior furniture, pool and spa circulation and sanitation equipment, and the sauna.

Fire Safety

- → Anticipate replacing or modernizing various fire safety Assets, such as the fire detection and alarm panels, and devices, as required due to technological obsolescence. The Owners should consult with their fire safety maintenance contractor to confirm the age and dependability of the equipment and confirm upcoming renewal requirements.

Ongoing Mechanical, Electrical, & Fire Safety

Many of the complex mechanical, electrical, and fire safety Assets are assessed on an ongoing basis as a part of maintenance contracts. Major Maintenance and Renewal expenses pertaining to these Asset categories have been indicated throughout the Tactical Plan. It should be noted that these have been included for the purposes of cost forecasting; however, the exact timing, the dependability of the equipment, and the upcoming renewal requirements should be considered by the appropriate maintenance contractor. The specific activities can be seen in the appendices.

5.3 Project Implementation

The projects identified in the previous section represent a preliminary step that is only intended to help the Owners identify, prioritize, and plan projects. Most significant renewal projects identified in the Report will subsequently go through four basic steps before implementing the work: Assessment, Design, Documentation, and Quotation (Figure 5.3).

- → Assessment – Determines what work must be done, what should be done, and what could be done in general terms. The evaluation will help the Owners understand the risks and opportunities associated with deferring or implementing renewals work.
- → Design – Refines the recommendations from the evaluation and defines what work will be done in a specific project. The Design may include recommendations for different project strategies, such as phasing or bundling projects or may include recommendations for upgrades.
- → Documentation – Describes the project in enough technical detail to get competitive pricing.
- → Quotation – Obtains competitive pricing from different contractors or service providers to perform the work described in the documents, including alternate prices for optional work.

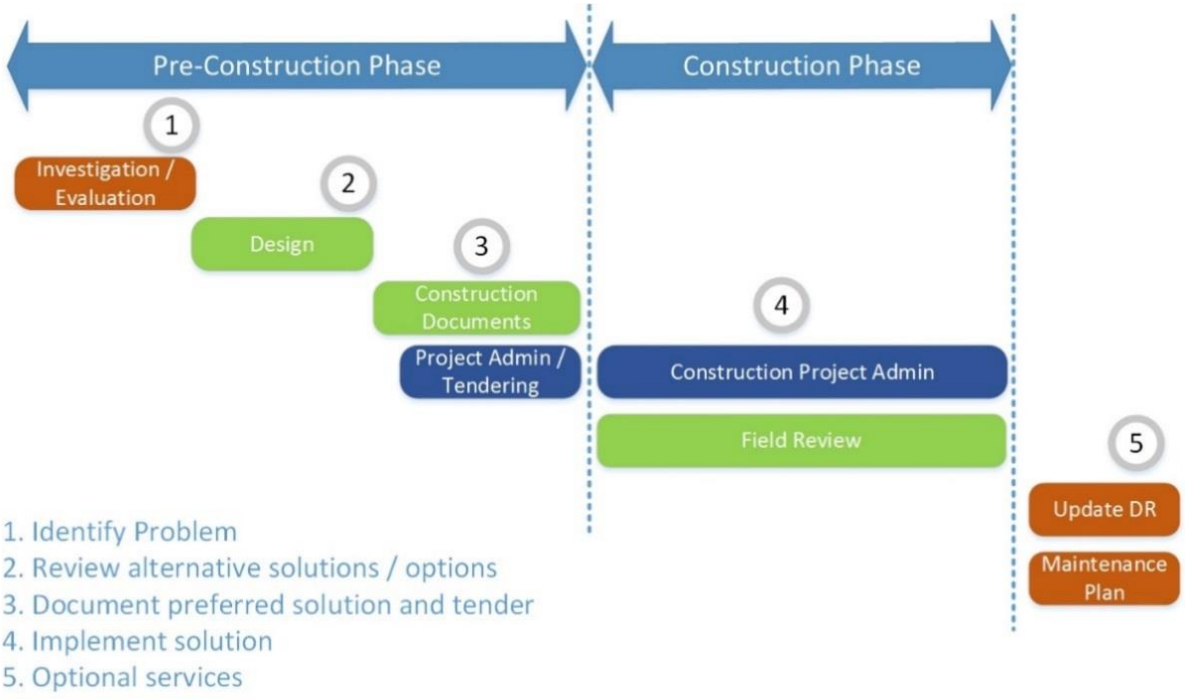

Figure 5.3 Typical phases and sub-phases associated with implementation of a renewal project.

The time period for each step can range from a few days to a few months or more, depending on the scale of the project under consideration. The budget and scope of work will be refined in each step. Most

estimates currently included in the Report are considered Class D (±50%) due to the lack of information regarding specific projects and are based on a number of general assumptions regarding scopes of work.

The Owners can implement projects in a variety of ways, including:

- *Targeted Projects*. These projects are localized to particular portions of the building. Different exposure conditions and wear patterns may require that only some sections of the building require renewal at one point in time.
- *Phased Projects*. These projects are carried out in multiple stages rather than as a single coordinated project. Phased projects can reduce the financial burden by spreading the costs over a longer time period.
- *Comprehensive Projects*. These projects are implemented as one coordinated undertaking. Comprehensive projects may allow the Owners to leverage the best economies of scale, shorten the overall duration, and lower the overall costs.
- *Bundled Projects*. These projects bundle or combine various related renewals activities (e.g., renewals that are located in close physical proximity, or that require the same type of trade workers). Bundled projects may allow the Owners to leverage economies of scale and lower the overall costs, improve the quality of the work, and incorporate upgrades.

The scope of the Report does not compare different implementation methods.

6 Funding Scenarios

The physical assessment and financial assessment were used to create a tentative schedule and budget for forecasted major maintenance and renewal projects. Within this section, hypothetical *funding scenarios*, also known as *funding models*, based on different annual contributions to the Contingency Reserve Fund (CRF) are presented.

The Owners can use the funding scenarios to choose an appropriate funding strategy, based on their tolerance for risk and desired standard of care for the property. RDH provides the tools so the Owners can determine a CRF contribution that suits their needs.

6.1 Minimum Funding Requirements

The Strata Property Act Regulations, BC Reg 43/2000, Ch. 6.1. (Figure 6.1), dictates that if the CRF closing balance at the end of the fiscal year is less than 25% of the operating budget for the fiscal year that just ended, then the Owners must contribute the lesser of:

- → 10% of the total amount budgeted for the contribution to the operating fund for the current fiscal year, or
- → The amount required to bring the CRF to at least 25% of the total amount budgeted for the contribution to the operating fund for the current fiscal year.

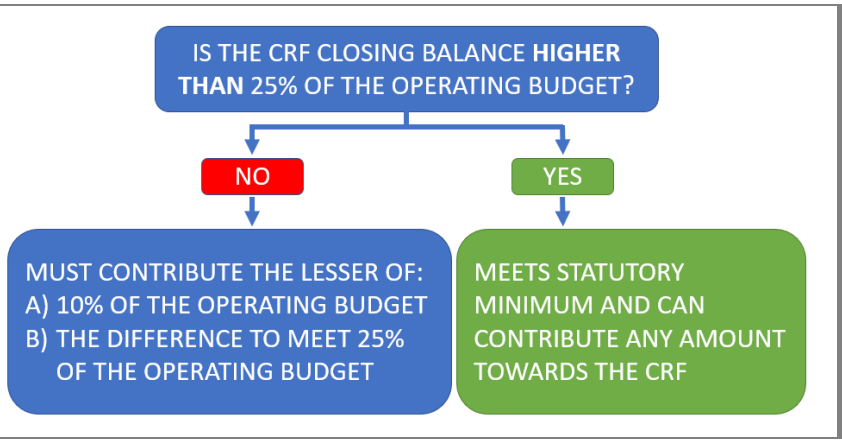

Figure 6.1

Contributions to the CRF per the Strata Property Act Regulations, BC Reg 43/2000, Ch.6.1.

Table 6.1 below shows the calculation to confirm the Owners meet the minimum requirements set out in the Strata Property Act Regulation.

TABLE 6.1 MINIMUM FUNDING REQUIREMENT CALCULATION

PARAMETER	VALUE
2021/2022 operating budget (excluding CRF contribution)	$ 2,505,324
→ 25% of the operating budget	$ 626,331
→ 10% of the operating budget	$ 250,532
2021/2022 CRF opening balance	$ 2,962,115
2021/2022 CRF Contribution	$ 475,000
Does the CRF opening balance exceed 25% of the operating budget?	Yes
Does the CRF contribution exceed 10% of the operating budget?	Yes

Although the Owners exceed the statutory minimum contribution to the CRF, it is important to note that the statutory guideline is not a good measure of the financial preparedness of the Corporation. It is the

Report Update, not the operating fund, which provides information about the longer-term repair, maintenance, and replacement costs for the Owners.

6.2 Alternative Funding Scenarios

The funding scenarios below compare the financial impact of different funding levels over the next 30 years. The scenarios serve as a sensitivity analysis that allow the Owners to evaluate how changes to the CRF impact the number and size of special levies. The actual size and timing of special levies will be affected by how the Owners choose to implement the renewal projects.

While there are many different scenarios that can be generated, Table 6.2 below compares the following alternatives:

- → ***Current (2021/2022)***. The CRF allocation that was approved by the Owners at the last AGM.
- → ***Alternative #1***. This Funding Scenario is based on an initial contribution of $475,000 and continues with a three percent (3%) annual increase thereafter.
- → ***Alternative #2***. This Funding Scenario is based on an initial contribution of $800,000 and continues with a three percent (3%) annual increase thereafter. The Alternative Funding Scenarios are just two of many possible scenarios for the Owners' consideration.
- → ***Progressive***. This is the annual contribution that would need to be set aside, commencing in the first fiscal year of this Report, to ensure that the reserve balance is sufficient to eliminate or bring special levies over a 30-year period to a minimum. With "Progressive" reserve allocation, older Stratas with underfunded reserves may still require some special levies at some point in their Strategic Plan. The "Progressive" reserve contribution is an optimum target that the Owners could use as a guide. The Progressive reserve allocation is an idealistic target that typically represents an upper bound for the CRF allocation amount.

TABLE 6.2 COMPARISON OF DIFFERENT FUNDING SCENARIOS

	CURRENT (2021/2022)	ALTERNATIVE #1	ALTERNATIVE #2	PROGRESSIVE RESERVE
Annual CRF allocation	$475,000	Starting at $475,000+	Starting at $800,000+	$2,455,000
Annual CRF increase	0%	3%	3%	0%
Percent of Progressive reserve	19%	19%+	33%+	100%
CRF contribution per average strata lot		Starting at	Starting at	
Per month	$73	$73+	$123+	$378
Per year	$876	$876+	$1,476+	$4,536
Approximate number of special levies (over 30 years)	9	6	4	2
Approximate value of special levies (over 30 years)	$64.4M	$58.2M	$44.7M	$4.7M
Minimum Closing Balance	$251,000			
Assumed Inflation Rate	3%			
Assumed Interest Rate	2%			

The following sections of the Report provide more detailed information about each funding scenario, including a graph showing the closing balance of the CRF, annual CRF contributions, and the approximate value of special levies. Tables with 10 years of cash flow data are also provided.

Appendix E includes 30 years of cash flow data for each funding scenario.

6.3 Current (2021/2022) Funding Scenario

The Current Funding Scenario is based on the CRF contribution approved by the Owners at the last AGM. The scenario is based on a fixed annual CRF contribution (no increases).

TABLE 6.3 CURRENT (2021/2022) FUNDING SCENARIO: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CLOSING BALANCE
2022	$2,962,115	$475,000	$0	$59,242	$0	$3,496,357
2023	$3,496,357	$475,000	$0	$69,927	$266,520	$3,774,764
2024	$3,774,764	$475,000	$0	$75,495	$374,500	$3,950,760
2025	$3,950,760	$475,000	$0	$79,015	$1,061,630	$3,443,145
2026	$3,443,145	$475,000	$0	$68,863	$62,300	$3,924,708
2027	$3,924,708	$475,000	$0	$78,494	$663,180	$3,815,022
2028	$3,815,022	$475,000	$0	$76,300	$63,800	$4,302,522
2029	$4,302,522	$475,000	$0	$86,050	$1,638,200	$3,225,373
2030	$3,225,373	$475,000	$0	$64,507	$425,090	$3,339,790
2031	$3,339,790	$475,000	$0	$66,796	$180,900	$3,700,686

The graph below shows the annual contribution to the CRF, the closing balance of the CRF, and the size of the special levies forecast for the next 30 years.

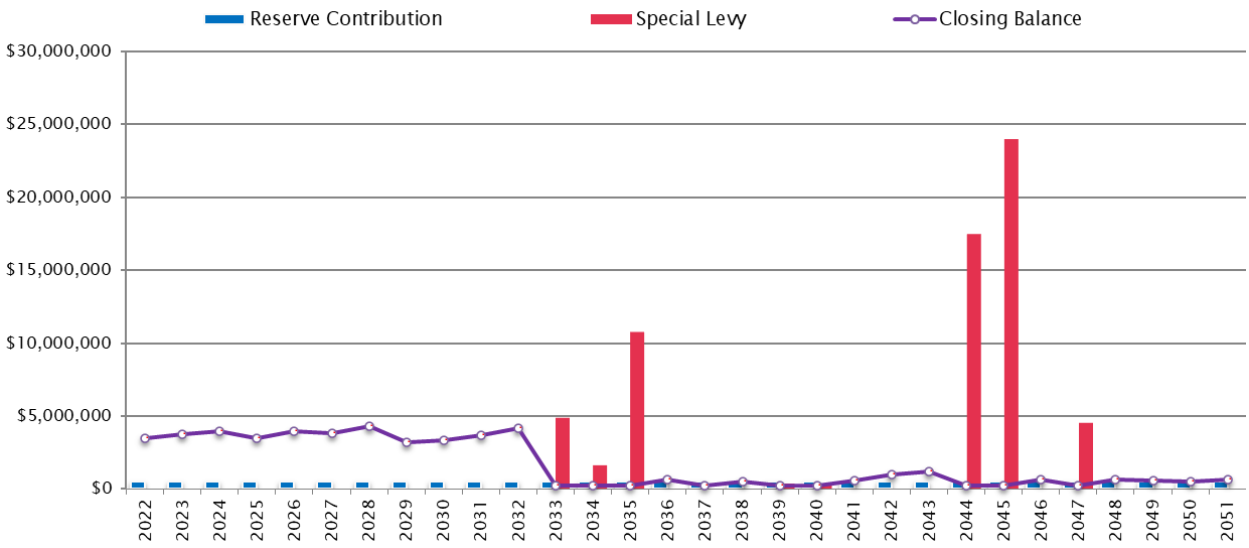

Figure 6.2 CRF balance, contribution, and special levies based on the Current funding.

6.4 Alternative Funding Scenario #1

Alternative Funding Scenario #1 is based on the current CRF contribution of $475,000 and continues with a 3% annual increase.

TABLE 6.4 ALTERNATIVE FUNDING SCENARIO #1: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CLOSING BALANCE
2022	$2,962,115	$475,000	$0	$59,242	$0	$3,496,357
2023	$3,496,357	$489,250	$0	$69,927	$266,520	$3,789,014
2024	$3,789,014	$503,928	$0	$75,780	$374,500	$3,994,222
2025	$3,994,222	$519,045	$0	$79,884	$1,061,630	$3,531,522
2026	$3,531,522	$534,617	$0	$70,630	$62,300	$4,074,469
2027	$4,074,469	$550,655	$0	$81,489	$663,180	$4,043,434
2028	$4,043,434	$567,175	$0	$80,869	$63,800	$4,627,677
2029	$4,627,677	$584,190	$0	$92,554	$1,638,200	$3,666,221
2030	$3,666,221	$601,716	$0	$73,324	$425,090	$3,916,171
2031	$3,916,171	$619,767	$0	$78,323	$180,900	$4,433,362

Alternative Funding Scenario #1 eliminates some of the smaller levies, but it is not adequate to offset all the special levies over the 30-year planning horizon. The graph below shows the annual contribution to the CRF, the closing balance of the CRF, and the size of the special levies forecast for the next 30 years.

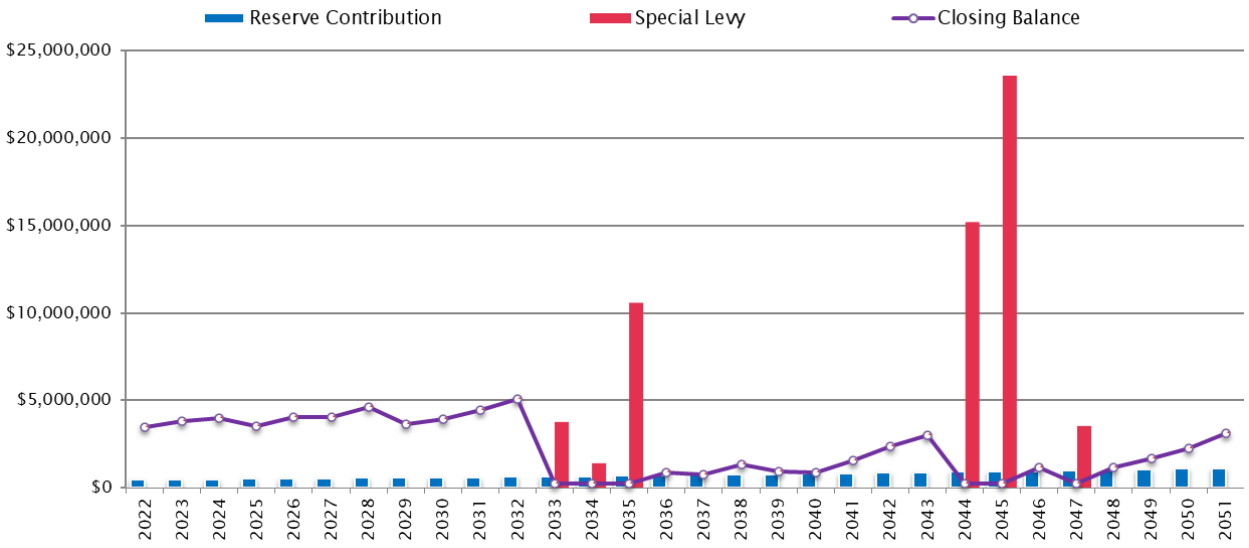

Figure 6.3 CRF balance, contribution, and special levies based on Alternative #1.

6.5 Alternative Funding Scenario #2

Alternative Funding Scenario #2 is based on an initial annual CRF contribution of $800,000, with a 3% annual increase. The initial annual contribution is approximately a $325,000 increase of the Current contribution.

TABLE 6.5 ALTERNATIVE FUNDING SCENARIO #2: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CLOSING BALANCE
2022	$2,962,115	$800,000	$0	$59,242	$0	$3,821,357
2023	$3,821,357	$824,000	$0	$76,427	$266,520	$4,455,264
2024	$4,455,264	$848,720	$0	$89,105	$374,500	$5,018,590
2025	$5,018,590	$874,182	$0	$100,372	$1,061,630	$4,931,513
2026	$4,931,513	$900,407	$0	$98,630	$62,300	$5,868,250
2027	$5,868,250	$927,419	$0	$117,365	$663,180	$6,249,855
2028	$6,249,855	$955,242	$0	$124,997	$63,800	$7,266,294
2029	$7,266,294	$983,899	$0	$145,326	$1,638,200	$6,757,319
2030	$6,757,319	$1,013,416	$0	$135,146	$425,090	$7,480,791
2031	$7,480,791	$1,043,819	$0	$149,616	$180,900	$8,493,325

Alternative Funding Scenario #2 eliminates most of the smaller levies, but it is not adequate to offset all the special levies over the 30-year planning horizon. The graph below shows the annual contribution to the CRF, the closing balance of the CRF, and the size of the special levies forecast for the next 30 years.

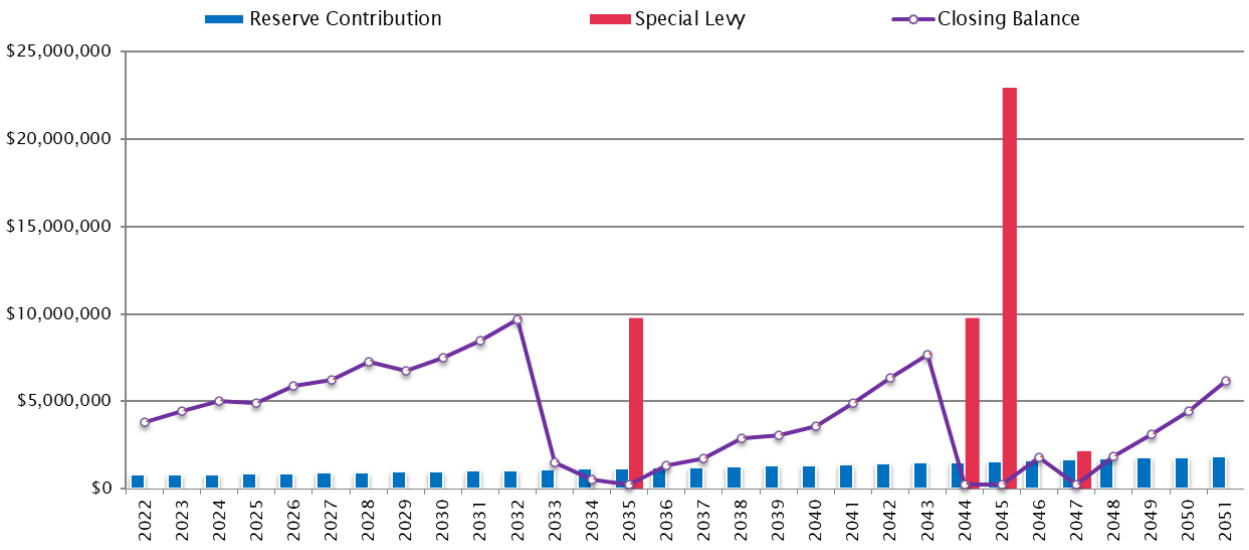

Figure 6.4 CRF balance, contribution, and special levies based on Alternative #2.

6.6 Progressive Funding Scenario

The Progressive Funding Scenario is based on a fixed annual CRF contribution.

TABLE 6.6 PROGRESSIVE FUNDING SCENARIO: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CLOSING BALANCE
2022	$2,962,115	$2,455,000	$0	$59,242	$0	$5,476,357
2023	$5,476,357	$2,455,000	$0	$109,527	$266,520	$7,774,364
2024	$7,774,364	$2,455,000	$0	$155,487	$374,500	$10,010,352
2025	$10,010,352	$2,455,000	$0	$200,207	$1,061,630	$11,603,929
2026	$11,603,929	$2,455,000	$0	$232,079	$62,300	$14,228,707
2027	$14,228,707	$2,455,000	$0	$284,574	$663,180	$16,305,101
2028	$16,305,101	$2,455,000	$0	$326,102	$63,800	$19,022,404
2029	$19,022,404	$2,455,000	$0	$380,448	$1,638,200	$20,219,652
2030	$20,219,652	$2,455,000	$0	$404,393	$425,090	$22,653,955
2031	$22,653,955	$2,455,000	$0	$453,079	$180,900	$25,381,134

The Progressive reserve would offset all smaller special levies. However, because of the timing of forecasted renewal projects, a fixed annual contribution will not eliminate all special levies over the 30-year planning horizon. The graph below shows the annual contribution to the CRF, the closing balance of the CRF, and the size of the special levies forecast for the next 30 years.

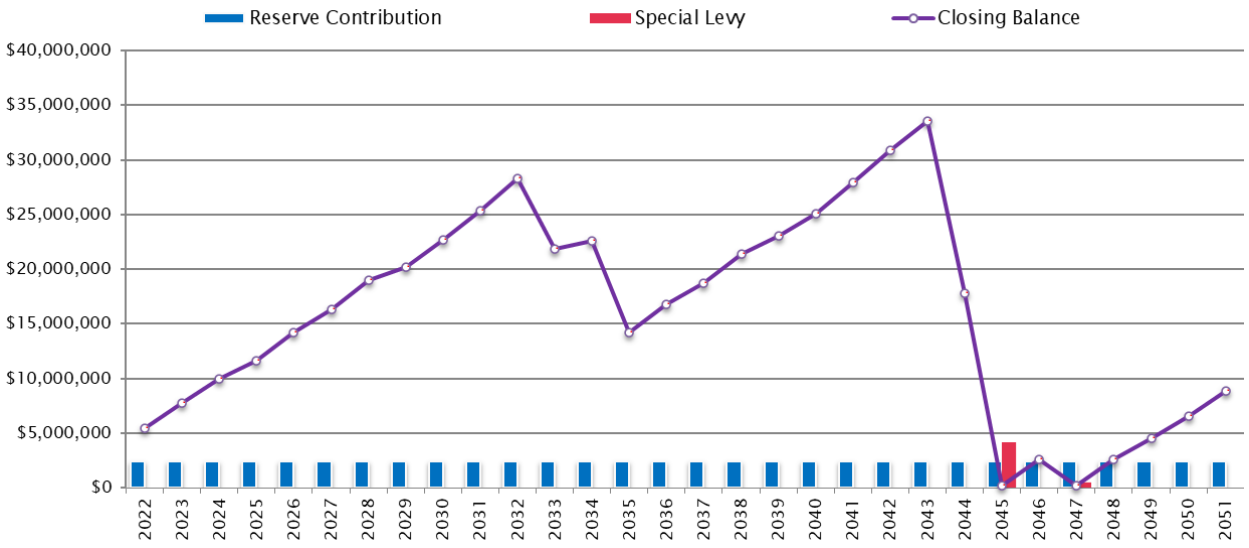

Figure 6.5 CRF balance, contribution, and special levies based on a Progressive reserve calculation.

7 Next Steps

The Report identifies the possible major maintenance and renewal expenditures that The Max may encounter over the next 30 years. Estimated timelines have been provided to assist the Owners with the planning process; however, the Report should be considered a first step when planning for renewals. Funding scenarios have been developed to provide the Owners with an objective basis for determining appropriate Contingency Reserve Fund (CRF) contributions.

The Max is a 17-year-old complex that has undergone a building enclosure major maintenance program in 2019 including the repainting of the exterior concrete walls, recoating of all concrete balcony and eyebrows waterproofing membranes, and locally replacing failed exterior sealants. However, as of 2022, other Assets appear to be approaching their anticipated service life, which has contributed to a variety of potential expenditures being forecasted over the next 10 years. Some of these Assets include the parkade traffic bearing membrane and EIFS wall cladding. As the Report is limited to visual review, the Owners would benefit from completing a Building Enclosure Condition Assessment (BECA) to review the physical conditions of the original Assets in more detail and refine the capital expenditure forecasts accordingly.

In addition, Assets, such as fire safety equipment and plumbing and HVAC equipment may also require renewal within the next 10 years. Similar to the building enclosure system, it is recommended that the Owners consider additional investigations of these systems to confirm renewal requirements, particularly for the life safety Assets, such as the fire safety equipment, and update the renewal forecast accordingly.

Additional expenditures that may occur over the next 10 years relate to the major maintenance, such as cleaning and inspection of drainage and electrical equipment, as well as the cyclical renewal of aging and high-use mechanical equipment. The Owners should continue to be diligent in performing maintenance tasks so Assets may achieve their full service life. It is unlikely that the Owners can avoid special levies in this time period; however, there may be opportunities to reduce the scope of work needed or otherwise manage projects to alleviate the financial impact on individual Owners.

The recommendations below are intended to aid the Owners in the next steps of the renewals planning process.

Recommendations

- → **Project Planning.** Review the information in Section 5.2, and begin planning for significant projects, including commissioning condition assessments, requesting information, and preparing construction budgets, well in advance of the forecasted date of renewal. The planning process will assist the Owners in refining the actual timing, scope of work, and project budget.
- → **Major Maintenance Planning.** Review the appendices for a detailed checklist of forecasted major maintenance activities and renewals on an annual basis.
- → **Record Keeping.** Continue to record significant renewals, repairs, and maintenance activities. These records will be used to improve the forecast at the time of the next Depreciation Report Update.
- → **Climate Action Plan.** Consider a comprehensive review of the complex's needs and the likely impacts of climate change at that location. RDH would work with the Owners to devise this plan into a series of stages that are achievable with funds available, and leave the building climate-ready before the 2050 deadline. The Climate Action Plan would be mapped out against what is known about forthcoming government requirements.
- → **Contingency Reserve Fund Planning (CRF).** On a yearly basis, review and update the CRF funding strategy based on the estimated forecasts presented in the Report and update information obtained from assessments, investigations, and quotation.
- → **Building Enclosure Condition Assessment (BECA).** Conduct a BECA of the building enclosure prior to or in conjunction with the update to the Depreciation Report in three years' time. The BECA would confirm the estimated remaining service lives of enclosure Assets. Update the Report with these findings and recommendations, as may be required.
- → **Further Investigations.** Conduct additional condition assessments/investigations, as required to refine the data and confirm assumptions.
- → **Updates.** Plan for an update to the Report in three years' time. On a yearly basis, the Stata Corporation should review and update their CRF funding strategy based on the estimated forecasts presented in the Report.

Yours truly,

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Appendix A

Glossary of Terms

Glossary

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

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

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

Chronological Age – The age of an asset relative to its date of installation (current year minus year of installation).

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

- → **Class A Estimate** (±10-15%): A detailed estimate based on quantity take-offs from final drawings and specifications. It is used to evaluate tenders or as a basis of cost control during day-labour construction.
- → **Class B Estimate** (±15-25%): An estimate prepared after site investigations and studies have been completed, and the major systems defined. It is based on a project brief and preliminary design. It is used for obtaining effective project approval and for budgetary control.
- → **Class C Estimate** (±25-40%): An estimate prepared with limited site information and based on probable conditions affecting the project. It represents the summation of all identifiable project elemental costs and is used for program planning, to establish a more specific definition of client needs and to obtain preliminary project approval.
- → **Class D Estimate** (±50%): A preliminary estimate which, due to little or no site information, indicates the approximate magnitude of cost of the proposed project, based on the client's broad requirements. This overall cost estimate may be derived from lump sum or unit costs for a similar project. It may be used in developing long term capital plans and for preliminary discussion of proposed capital projects.

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

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

Contribution Threshold - A dollar value which dictates the size of the Contingency Reserve Fund (CRF) contribution based on whether the accumulated CRF balance is greater than or less than the specified dollar value. For example, the Strata Property Act indicates that if the closing balance of the CRF at the end of the fiscal year is less than 25% of the operating budget for the next fiscal year, then the CRF contribution for the next fiscal year should be a minimum of 10% of the operating budget. In this case, the threshold is 25% of the operating budget.

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

Effective Age – An assessment of the age of an asset relative to its condition and how that condition may have accelerated or decelerated the chronological age of the asset (service life minus remaining service life).

Funding Model – A mathematical model used to establish an appropriate funding level for sustaining the assets in a building. Running a number of scenarios out of the funding model using different parameters (such as inflation rates and interest rates) can serve as a sensitivity analysis to determine the financial impact of different funding levels.

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

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

- → Functional obsolescence
- → Legal obsolescence
- → Style obsolescence

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

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

Keep-up Costs – The monies required for renewal projects as each asset reaches the end of its useful service life. If an asset is not replaced at the end of its useful service life

and is kept in operation, through targeted repairs, then these costs get reclassified into the "catch-up" category.

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

Next Renewal Year - The forecasted date of asset replacement or renewal.

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

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

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

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

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

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

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

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

Reserve Contribution – See Annual Contribution.

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

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

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

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

Service Life - The estimated period of time over which an asset (and its components or assembly) provides adequate performance and function.

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

Statutory Funding Model - A funding model which uses the Strata Property Act and Regulations to determine the minimum amount of money to contribute to the Contingency Reserve Fund on an annual basis.

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

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

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

Appendix B

Asset Inventory

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Asset Inventory - 2022

Structural

Struct 01 - Concrete Foundation [SC]

Location

Building foundations and parkade structure.

Description

Concrete strip and spread foundations, and slab-on-grade supported directly on grade.

Information

Service Life:	75	Install Year:	2005
Chronological Age:	17	Next Event Year:	2080
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Concrete foundation is not deemed to be a renewal component.	2080	75 Yrs (0)	$0	$0	$0

Struct 02 - Walls and Columns - Concrete [SC]

Location

Walls, ceilings, and floors above parkade.

Description

Reinforced concrete walls and columns supporting floor and roof structures.

Information

Service Life:	75	Install Year:	2005
Chronological Age:	17	Next Event Year:	2080
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Review concrete walls and columns for signs of distress, such as cracking, spalling, and delamination.	2023	3 Yrs (10)	$0	$0	$0
R01	Concrete walls and columns are not deemed to be a renewable asset.	2080	75 Yrs (0)	$0	$0	$0

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Enclosure

Encl 01 - Protected Membrane Deck with Pavers [R]

Location

Levels 3, 5, and 33 in Tower A, levels 3 and 27 in Tower B, and the townhouse locations.

Description

Liquid-applied (hot rubber), fully reinforced membrane overlaid with combination of drainage mat, insulation, and pavers. The term deck refers to a horizontal surface exposed to the outdoors, located over a living space, and intended for pedestrian use in addition to performing the function of a roof.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace deck membrane and associated components, including flashings. Some of the overburden (pavers) may be salvageable.	2035	30 Yrs (1)	$460,600	$460,600	$680,000

Encl 02 - Protected Membrane Roof with Ballast [R]

Location

Towers A and B, level 33, level 3, and the townhouses.

Description

Liquid-applied (hot rubber), fully reinforced membrane overlaid with combination of drainage mat, insulation, and ballast. Localized repairs were last completed in 2020.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace roof membrane and associated components, including flashings. Ballast may be salvageable.	2035	30 Yrs (1)	$612,500	$612,500	$900,000

Encl 03 - Protected Membrane Roof & Deck Amenity [SC]

Location

Roof of amenity area.

Description

Liquid-applied (hot rubber), fully reinforced membrane overlaid with combination of drainage mat, insulation, and ballast/pavers.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

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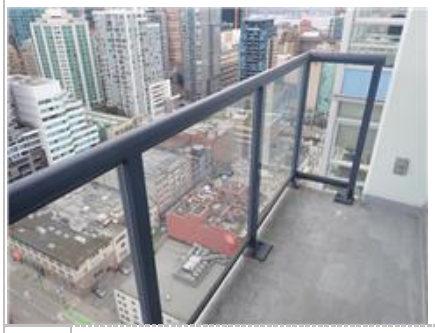
Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R04	Replace roof membrane and associated components, including flashings. Ballast may be salvageable.	2035	30 Yrs (1)	$695,800	$695,800	$1,000,000

Encl 04 - Guardrails Aluminum [R]



Location

Perimeter of decks and balconies.

Description

Side and top mounted framed guardrails composed of metal frames and glass inserts.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R06	Replace exterior guardrails.	2035	30 Yrs (1)	$390,000	$390,000	$570,000

Encl 05 - Fall Protection Equipment [R]

Location

Strategically mounted throughout Tower A and B. Most are located at main roof levels.

Description

Safety anchoring system for work on exterior walls and roofs.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace components of fall protection system, as required.	2045	40 Yrs (1)	$72,000	$72,000	$140,000

Encl 06 - Coated Architectural Concrete Wall [SC]

Location

Exterior concrete walls, columns, and soffits throughout the complex.

Description

Poured-in-place concrete with protective coating. Reapplication of coating on unprotected vertical surfaces was completed in 2019.

Information

Service Life:	10	Install Year:	2019
Chronological Age:	3	Next Event Year:	2029
Effective Age:	3		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J07	Repair of delaminated or spalled concrete should be carried out prior to recoating.	2039	10 Yrs (0)	$0	$0	$0

R04	Reapplication of the protective coating as required, including preparation of the concrete substrate.	2029	10 Yrs (3)	$182,250	$650,025	$1,050,000

Encl 07 - EIFS Walls [R]

Location

Tower A and B roof level machine room walls and architectural surround walls, lobby soffits.

Description

Textured acrylic finish applied over reinforced cementitious lamina applied to expanded polystyrene foam board. EIFS panels are likely installed with grooved channels on the side of the panels in contact with the concrete backup wall, and with thick adhesive bands to facilitate drainage in the case of incidental water ingress behind the plane of the EIFS panels.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J04	Locally repair and repaint EIFS walls, as required.	2024	10 Yrs (3)	$38,000	$138,000	$210,000
R04	Replace EIFS cladding along with associated insulation, flashing and sealants.	2035	30 Yrs (1)	$159,600	$159,600	$230,000

Encl 08 - Metal Clad Walls [R]

Location

Elevator machine rooms at the main roof levels of Tower A and B.

Description

Corrugated metal clad wall assembly with exposed fasteners.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace metal cladding along with associated flashing and sealants.	2045	40 Yrs (1)	$144,000	$144,000	$280,000

Encl 09 - Masonry Veneer Walls [SC]

Location

Along storefront and townhouse units.

Description

Brick masonry veneer wall assembly installed with a drained and vented cavity over exterior sheathing membrane. It is likely that only localized sections of masonry will be required at the time of renewal.

Information

Service Life:	45	Install Year:	2005
Chronological Age:	17	Next Event Year:	2050
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J04	Repoint mortar joints in clay masonry veneer wall, as required.	2029	10 Yrs (3)	$14,000	$42,000	$71,000
J05	Re-apply sealer over masonry, as required.	2029	10 Yrs (3)	$0	$0	$0
R05	Replace sections of masonry veneer cladding along with associated flashing and sealants.	2050	10 Yrs (1)	$105,000	$105,000	$240,000

Encl 10 - Window Walls & Aluminum Framed Windows [R]

Location

Tower A levels 3-37, Tower B levels 3-30, townhouses levels 1-2, and Beatty St. townhouses levels 1-3.

Description

Aluminum-framed windows with double glazed insulated units and awning operable vents. Includes window assemblies of punch windows and window wall configurations.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	2025	2 Yrs (10)	$10,000	$136,500	$187,000
R02	Phased replacement of window wall assembly at one tower.	2044	40 Yrs (1)	$8,912,500	$8,912,500	$17,000,000
R03	Phased replacement of window wall assembly at one tower.	2045	40 Yrs (1)	$8,912,500	$8,912,500	$18,000,000

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Encl 11 - Curtain Wall [C]

Location

Northeast corner (Expo Blvd & Smithe) at rotunda at retail unit 10.

Description

Curtain wall, capped 4 sides, with double insulating glazing units, and aluminum framing.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	2025	2 Yrs (13)	$2,700	$35,100	$57,100
R04	Replace curtain wall assembly.	2045	40 Yrs (1)	$362,880	$362,880	$720,000

Encl 12 - Aluminum Storefront [C]

Location

West, east, and north elevations at ground floor retail units.

Description

Aluminum framed, storefront system with insulating glazing units, and no operable vents. The aluminum storefront windows are typically recessed and are protected by awnings.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	2025	2 Yrs (13)	$6,000	$78,000	$127,100
R04	Replace storefront window system.	2045	40 Yrs (1)	$660,000	$660,000	$1,300,000

Encl 13 - Aluminum Storefront [R]

Location

Residential lobbies and amenity area.

Description

Aluminum framed, storefront system with insulating glazing units, and no operators. The aluminum storefront windows are protected by awnings.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	2025	2 Yrs (13)	$0	$0	$0

R04	Replace storefront window system.	2045	40 Yrs (1)	$480,000	$480,000	$950,000

Encl 14 - Lobby Door Assemblies [R]

Location
Entrances to main lobbies of both towers.

Description
Commercial glazing system with swing doors, closers, and electric strike.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass. Cost included in Aluminum Framed Window's IGU replacement.	2025	2 Yrs (13)	$0	$0	$0
R01	Complete localized repairs such as hardware replacement, as required.	2025	10 Yrs (2)	$5,000	$10,000	$15,400
R02	Replace lobby door assemblies.	2035	30 Yrs (1)	$20,000	$20,000	$29,000

Encl 15 - Townhouse Entry Doors [R]

Location
Entrances to the townhouse units.

Description
Protected in-swing entrance doors are manufactured from a metal-clad door with glazed inserts and hardware.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J06	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass. Cost included in Aluminum Framed Window's IGU replacement.	2025	2 Yrs (13)	$0	$0	$0
R05	Replace townhouse entry doors.	2035	30 Yrs (1)	$52,000	$52,000	$76,000

Encl 16 - Aluminum Sliding Glass Doors [R]

Location
Access doors to patios, decks, and balconies throughout the complex.

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

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J07	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	2025	2 Yrs (13)	$8,640	$112,320	$185,400
R05	Replace sliding glass doors.	2035	30 Yrs (1)	$720,000	$720,000	$1,100,000

Encl 17 - Aluminum Swing Doors [R]

Location

Access doors to various balconies and decks throughout the complex Some doors are also located at the mechanical room above the amenity area.

Description

Aluminum swing door with insulating glazing units.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass. Cost included in Aluminum Framed Window's IGU replacement.	2025	2 Yrs (9)	$0	$0	$0
R05	Replace swing doors in high traffic locations, as required.	2035	30 Yrs (1)	$1,640,000	$1,640,000	$2,400,000

Encl 18 - Metal Clad Swing Door [SC]

Location

At service hallway exits, and mechanical room entrances on the main roofs.

Description

Painted metal swing doors in pressed steel frames.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R06	Replace swing door.	2030	25 Yrs (1)	$15,000	$15,000	$19,000

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Encl 19 - Exposed Urethane Membranes - Balconies & Eyebrows [R]

Location

Balcony surfaces throughout the complex and eyebrows on Towers A and B, stairs and gutters at main roof levels, and storefront curbs.

Description

Concrete slabs with a liquid-applied urethane coating. The membrane consists of a base coat for waterproofing, and a topcoat for UV protection. The term 'balcony' refers to an exterior horizontal surface that is intended for pedestrian use, but which projects from the building such that it is not located over occupied space. Urethane balcony renewal and concrete repairs were completed in 2019.

Information

Service Life:	25	Install Year:	2019
Chronological Age:	3	Next Event Year:	2044
Effective Age:	3		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Repair locally damaged and delaminated balcony membrane prior to re-application of top coat. Refer to membrane warranty if applicable.	2029	10 Yrs (2)	$43,920	$131,760	$204,000
R01	Prepare and re-apply membrane top coat.	2029	10 Yrs (2)	$183,000	$805,200	$1,070,000
R02	Full replacement of exposed urethane membrane and associated components.	2044	25 Yrs (1)	$402,600	$402,600	$770,000

Encl 20 - Metal & Glass Canopies [C]

Location

Storefront canopies on the north and east elevations of the complex at ground level.

Description

Metal framing supporting single glazing. Metal canopies at commercial units were painted in 2019.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R04	Replace metal and glass canopy assembly.	2045	40 Yrs (1)	$150,000	$150,000	$300,000

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Encl 21 - At-Grade Waterproofing [SC]

Location

Roof of the parkade.

Description

Liquid-applied (hot rubber - Tremproof 150 HRA), fully reinforced membrane overlaid with combination of drainage mat, insulation, pavers and landscaping overburden. Localized crack repairs of the parkade concrete soffit was completed in 2019.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Locally repair cracks in the soffit and walls of the parkade, as required.	2024	5 Yrs (6)	$10,000	$85,000	$140,000
R02	Replace at-grade waterproofing assembly, removing overburden as required.	2035	30 Yrs (1)	$2,592,000	$2,592,000	$3,800,000

Encl 22 - Traffic-Bearing Membrane [R]

Location

Parking garage, levels P1 (portion) - P2 (all).

Description

Traffic-bearing membrane on suspended concrete parking garage floor slab.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2034
Effective Age:	13		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J03	Re-apply traffic demarcation striping and directional signage as required. Frequency will depend on traffic volume and other factors.	2024	5 Yrs (5)	$5,000	$25,000	$40,300
J04	Review traffic-bearing membrane for signs of distress, such tears, peeling, delamination, and discolouration, particularly at high traffic areas.	2024	5 Yrs (5)	$0	$0	$0
J05	Repair damaged and delaminated membrane and complete concrete repairs prior to re-application of top coat.	2024	10 Yrs (2)	$40,800	$81,600	$121,000
R01	Re-apply membrane top coat in high traffic areas (e.g. drive aisles).	2024	10 Yrs (2)	$153,000	$306,000	$450,000
R06	Prepare concrete surface and re-apply traffic-bearing membrane.	2034	25 Yrs (1)	$1,224,000	$1,224,000	$1,700,000

Encl 23 - Traffic-Bearing Membrane [SC]

Location

Parking garage, common portion of the P1.

Description

Traffic-bearing membrane on suspended concrete parking garage floor slab.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2034
Effective Age:	13		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J03	Re-apply traffic demarcation striping and directional signage as required. Frequency will depend on traffic volume and other factors.	2024	5 Yrs (5)	$0	$0	$0
J04	Review traffic-bearing membrane for signs of distress, such tears, peeling, delamination, and discolouration, particularly at high traffic areas.	2024	5 Yrs (5)	$0	$0	$0
J05	Repair damaged and delaminated membrane and complete concrete repairs prior to re-application of top coat.	2024	10 Yrs (2)	$7,400	$14,800	$21,900
R01	Re-apply membrane top coat in high traffic areas (e.g. drive aisles).	2024	10 Yrs (2)	$46,250	$92,500	$138,000
R04	Prepare concrete surface and re-apply traffic-bearing membrane.	2034	25 Yrs (1)	$222,000	$222,000	$320,000

Encl 24 - Exterior Sealant [SC]

Location

Interfaces and service penetrations at the exterior walls, roofs and other locations.

Description

A flexible material used to seal a gap between two surfaces to prevent leakage of water and air. Localized sealant renewal was completed in 2019.

Information

Service Life:	15	Install Year:	2019
Chronological Age:	3	Next Event Year:	2029
Effective Age:	8		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace sealant at perimeter of windows, joints, vents and other penetrations throughout, as required.	2029	15 Yrs (2)	$280,525	$561,050	$890,000

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Encl 25 - Miscellaneous & Inspections [SC]

Location

All building elevations and all levels throughout the complex.

Description

Miscellaneous interior and exterior components, such as service penetrations and interface details, not related to any particular assembly. Warranty and general reviews.

Information

Service Life:	75	Install Year:	2005
Chronological Age:	17	Next Event Year:	2080
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Review metal flashing at all location and touch-up paint as required.	2025	3 Yrs (9)	$0	$0	$0
J02	Repaint dryer, kitchen and bathroom exhaust vents as required.	2029	3 Yrs (8)	$0	$0	$0
J07	Update depreciation report.	2025	3 Yrs (9)	$0	$0	$0
J12	Perform full condition assessment of all enclosure systems.	2023	5 Yrs (6)	$20,000	$120,000	$185,000
R02	This is not a renewable asset.	2080	75 Yrs (0)	$0	$0	$0

Electrical

Elec 01 - Distribution Transformers [R]

Location

Electrical rooms in parking garage level P1 and rooftop mechanical rooms.

Description

Rex Manufacturing, various ratings ranging from 30 KVA - 112.5 KVA, 3 phase, dry-type, with Nema enclosure, coil and vibration isolators that provide power to receptacles and low voltage loads.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	2025	5 Yrs (6)	$3,000	$18,000	$29,400
J02	Check for tightness of electrical connections.	2023	5 Yrs (6)	$0	$0	$0
J03	Tighten bolted connections.	2023	5 Yrs (6)	$0	$0	$0

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J04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	2023	5 Yrs (6)	$3,000	$18,000	$27,800
R01	Cyclical replacement of distribution transformers, as required.	2025	20 Yrs (2)	$12,000	$24,000	$37,000
R02	Cyclical replacement of distribution transformers, as required.	2045	40 Yrs (1)	$60,000	$60,000	$120,000

Elec 02 - Emergency Generator [SC]

Location

Emergency generator room in parking garage level 1.

Description

Katolight, 600KW, 750KVA, 3 phase, 346/700V, 1800 rpm, AC/DC generator with fuel tanks to provide emergency power.

Information

Service Life:	35	Install Year:	2005
Chronological Age:	17	Next Event Year:	2040
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace generator hoses.	2023	10 Yrs (3)	$0	$0	$0
R02	Rebuild emergency generator.	2026	17 Yrs (2)	$15,000	$30,000	$45,000
R03	Replace generator battery packs.	2023	4 Yrs (8)	$0	$0	$0
R04	Replace emergency generator and transfer switch.	2040	35 Yrs (1)	$120,000	$120,000	$200,000

Elec 03 - Unit Substation [SC]

Location

Main energy distribution room in parking garage level P1.

Description

Cutler-Hammer, 3750 KVA, 3 phase, dry type transformer; main breaker, load break switches and metering compartments contained within unit substation to provide primary electrical service.

Information

Service Life:	35	Install Year:	2005
Chronological Age:	17	Next Event Year:	2040
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Lubricate all moving contacts.	2023	5 Yrs (6)	$0	$0	$0
J02	Perform mechanical tests in accordance with manufacturer guidelines to verify mechanical integrity of unit substation equipment and main secondary disconnects (e.g. check switches for correct operation and alignment; megger and verify equipment phase colours; inspect candles for damage or cracking, oil leakage and oil level for oil circuit breakers).	2023	5 Yrs (6)	$0	$0	$0

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J03	Calibrate electrical relays to match documented (or utility company) settings.	2023	5 Yrs (6)	$0	$0	$0
J04	Prior to cleaning verify nameplate information; check insulator chips, cracks and tracking; inspect lightning arrestors and visually inspect contacts and bus.	2023	5 Yrs (6)	$0	$0	$0
J05	Verify that unit substation grounding network is adequate to ensure safety during work and while equipment is in operation.	2023	5 Yrs (6)	$0	$0	$0
J06	Check tightness and torque all electrical connections. To be coordinated with 5-year system shutdown and cleaning.	2023	5 Yrs (6)	$0	$0	$0
R03	Service shutdown event. Inspect, clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	2023	3 Yrs (10)	$5,000	$50,000	$78,300
R04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	2023	3 Yrs (10)	$2,000	$20,000	$31,800
R07	Replace unit substation equipment.	2040	35 Yrs (1)	$250,000	$250,000	$430,000

Elec 04 - Electrical Distribution [R]

Location

Main energy distribution room in parking garage level P1.

Description

Cutler-Hammer 3500A, 3 phase switchgear unit; downstream switchboards, panelboards, breakers, switches, disconnects and wiring to mechanical, lighting and power loads throughout the building and to individual suites through BC Hydro owned metering devices.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Check for any exposed wiring and visually inspect wiring, where accessible, for signs of distress. Repair as required.	2023	2 Yrs (15)	$0	$0	$0
J02	Check raceways and cables for proper mechanical support, check insulation for abrasion or cracks at support points, examine raceway joints for clean and tight connections. Check busducts connections for proper tightness and evidence of overheating, corrosion, arcing or other deterioration. Clean and torque dirty and loose connections.	2023	2 Yrs (15)	$0	$0	$0

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R01	Conduct infrared thermography and ultrasonic scanning tests on all switchgear, distribution panels, cable and bus connections, and other critical equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated prior to planned maintenance to identify areas that require immediate attention. Tests should be conducted on energized equipment during peak demand periods if possible.	2023	3 Yrs (10)	$3,000	$30,000	$47,600
R02	Cyclical replacement of components of the electrical distribution equipment, as required.	2045	40 Yrs (1)	$60,000	$60,000	$120,000

Elec 05 - Exterior Light Fixtures [R]

Location

Mounted to walls, soffits, and posts at various locations.

Description

A mixture of wall-mounted and recessed soffit fixtures.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of lighting controls (timers, motion sensors, etc.) as required.	2023	6 Yrs (5)	$0	$0	$0
R05	Replace exterior light fixtures, as required, for aesthetic purposes, to match ballast replacement cycles, or technological obsolescence.	2025	20 Yrs (2)	$35,000	$70,000	$107,000

Elec 06 - Interior Light Fixtures [R]

Location

All common area rooms throughout the buildings and parking garage.

Description

A variety of fixture types, including fixed surface (pendant, track and sconce) and recessed (pot, troffer and cove). A variety of lamp types, including fluorescent, compact fluorescent, halogen, incandescent, LED, etc. for interior direct, indirect and accent lighting applications. A variety of light fixture controls, including switches, motion sensors, timers, dimmers and photocells. Interior lights were upgraded to LED, as required.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost

R02	Cyclical replacement of lighting controls (timers, motion sensors, etc.) as required.	2023	6 Yrs (5)	$0	$0	$0
R05	Replace interior light fixtures, as required, for aesthetic purposes, to match ballast replacement cycles, or technological obsolescence.	2025	20 Yrs (2)	$45,000	$90,000	$138,000

Elec 07 - Enterphone System [R]

Location

Entrance to lobbies, and parking garage.

Description

Sentex systems, flush mounted, enterphone panels with associated key pads and display panels.

Information

Service Life:	25	Install Year:	2019
Chronological Age:	3	Next Event Year:	2044
Effective Age:	3		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace enterphone panels, excluding field wiring.	2044	25 Yrs (1)	$40,000	$40,000	$77,000

Elec 08 - Proximity Access Control [R]

Location

Lobbies, parking garage, elevators, and common area entrances.

Description

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

Information

Service Life:	12	Install Year:	2021
Chronological Age:	1	Next Event Year:	2033
Effective Age:	1		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace media in recording device to maintain continuous records from proximity access control devices. Retain records in secure archive for period determined by policy.	2027	6 Yrs (5)	$500	$2,500	$4,290
R02	Modernize components of the proximity access control system, excluding field wiring, as required by technological obsolescence.	2033	12 Yrs (2)	$100,000	$200,000	$340,000

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Elec 09 - Security Surveillance [R]

Location

At the entrances and exits to the building and parking garage and throughout the building in common areas, service areas, and stairwells.

Description

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

Information

Service Life:	14	Install Year:	2021
Chronological Age:	1	Next Event Year:	2035
Effective Age:	1		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Service the multiplex unit, update software as required.	2026	5 Yrs (6)	$5,000	$30,000	$50,500
R02	Modernize components of the security surveillance system, excluding field wiring, as required by technological obsolescence.	2035	14 Yrs (2)	$25,000	$50,000	$93,000

Mechanical

Mech 01 - Heat Tracing - Freeze Protection [SC]

Location

Attached to piping throughout the parking garage.

Description

Raychem heat trace controller for piping systems exposed to freezing (self regulating heater cable with parallel circuit heater strip and outer thermoplastic elastomer jacket); UL listed for pipe freeze protection on fire sprinkler system.

Information

Service Life:	15	Install Year:	2018
Chronological Age:	4	Next Event Year:	2033
Effective Age:	4		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of components of electric heat tracing cable, including control module and pipe insulation.	2033	15 Yrs (2)	$5,000	$10,000	$17,900

Mech 02 - Controls - Electronic Actuators [SC]

Location

Pool entry room.

Description

Electronic motor-driven control devices on valves, dampers etc to control heating, air-conditioning, domestic hot water system and boilers etc.

Information

Service Life:	10	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	7		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	2025	10 Yrs (3)	$3,000	$9,000	$13,600

Mech 03 - Gas Detection - Parking Garage [SC]

Location

Mounted to columns in the parking garage, on levels P1 - P3.

Description

QEL, Model QAS-20217A-1600000, electronic sensing devices for detection of dangerous gases, carbon monoxide (CO) and propane (C3H8) produced by vehicles and to activate the exhaust fans accordingly.

Information

Service Life:	10	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of gas detection sensors.	2025	5 Yrs (6)	$13,500	$81,000	$133,000

Mech 04 - Controls - HVAC Instrumentation [R]

Location

Mounted to walls in common areas and equipment service rooms.

Description

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

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	2025	3 Yrs (9)	$1,000	$9,000	$14,400

Mech 05 - Boiler - DHW - Heating - Gas Fired [R]

Location

Rooftop mechanical rooms.

Description

RBI coppertube natural gas fired, domestic hot water heater, 1,900,000 BTU input. Atmospherically vented. Water Heaters are connected to glass-lined storage tanks.

Information

Service Life:	14	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	11		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of gas fired domestic hot water heaters.	2025	14 Yrs (2)	$100,000	$200,000	$280,000

Mech 06 - Tank - DHW - Storage [R]

Location

Rooftop mechanical rooms.

Description

Rheem Ruud ST120, 117.5 gallon tanks, glass-lined hot water storage tanks connected to domestic boiler system. Three (3) domestic hot water tanks were replaced circa 2019.

Information

Service Life:	8	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Dismantle, inspect and clean tube bundle on immersion heating tanks.	2025	5 Yrs (6)	$0	$0	$0
J02	Replace anode rods in hot water heaters.	2025	5 Yrs (6)	$0	$0	$0
R03	Cyclical replacement of domestic hot water storage tanks.	2027	8 Yrs (4)	$13,500	$54,000	$93,000
R04	Cyclical replacement of domestic hot water storage tanks.	2023	8 Yrs (4)	$40,500	$162,000	$247,000

Mech 07 - Pump - Domestic Water Booster [R]

Location

Water entry room in parking garage level P1.

Description

Bell & Gosset Super E & Torna ITTTBC600, triplex system with 30 HP lead pump, 20 HP lag pumps, to supply constant boosted pressure to fixtures and equipment on all levels. The domestic water booster pumps were last repaired in 2019.

Information

Service Life:	14	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	11		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Inspect brushes and remove brush dust from motor.	2023	2 Yrs (15)	$0	$0	$0
R01	Replace motor bearings, pump bearings and housing, as required.	2023	7 Yrs (5)	$5,000	$25,000	$40,900
R02	Replace domestic booster pumps and motor control panel.	2025	14 Yrs (2)	$15,000	$30,000	$41,000

Mech 08 - Fixtures - Toilets [R]

Location

Pool area change rooms.

Description

Gerber, 6.0 LPF, floor mounted toilets.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of toilets, as required.	2035	30 Yrs (1)	$4,000	$4,000	$5,900

Mech 09 - Piping - Domestic Water Distribution [R]

Location

Connected to fixtures throughout the buildings.

Description

Mixture of insulated K and L copper for vertical/horizontal mains system and piping within the suites. Soldered connections. Piping assessment was last completed in 2020.

Information

Service Life:	28	Install Year:	2005
Chronological Age:	17	Next Event Year:	2033
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Check that pipe hangars are properly fastened.	2025	5 Yrs (6)	$500	$3,000	$4,850
J02	Check piping and supports for mechanical damage, proper clearance, adequate insulation, and labeling.	2025	5 Yrs (6)	$500	$3,000	$4,850
J03	Check integrity of all soldered pipe connections and couplings.	2025	5 Yrs (6)	$500	$3,000	$4,850
J04	Comprehensive third party testing and inspection of the copper domestic water distribution system.	2025	20 Yrs (1)	$12,500	$12,500	$14,000
R01	Replace components of domestic plumbing distribution system, including domestic valves.	2033	28 Yrs (1)	$6,575,000	$6,575,000	$9,100,000

Mech 10 - Pump - DHW - Circulation and Recirculation [R]

Location

Rooftop mechanical rooms.

Description

Bell & Gossett, 1/12 HP, pipe-mounted bronze body domestic hot water recirculation pumps.

Information

Service Life:	10	Install Year:	2019
Chronological Age:	3	Next Event Year:	2029
Effective Age:	3		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of recirculating pumps, as required.	2029	8 Yrs (3)	$12,000	$36,000	$58,000

Mech 11 - Drainage - Sanitary [SC]

Location
Connected to fixtures throughout.

Description
Cast iron DWV piping, with mechanical joints, p-traps, and fittings.

Information

Service Life:	50	Install Year:	2005
Chronological Age:	17	Next Event Year:	2055
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Insert video cameras into main lines to conduct pipe inspection.	2026	5 Yrs (6)	$3,000	$18,000	$30,300
J02	Auger lateral drain lines.	2026	5 Yrs (6)	$4,000	$24,000	$40,300
R01	Repair components of sanitary drainage collection system, as required.	2055	50 Yrs (0)	$0	$0	$0

Mech 12 - Drainage - Perimeter and Foundation [SC]

Location
Perimeter of P3 parkade.

Description
Perforated PVC piping forming part of a sub-surface foundation perimeter drainage system around perimeter of underground structures.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	By means of pipe camera service, visually inspect underground piping runs. Look for build up of silts and dirt fines, tree roots, and other obstructions. Look for standing water indicating saturated soil conditions or impermeable conditions.	2026	5 Yrs (6)	$3,200	$19,200	$32,200
J02	Flush perimeter and foundation piping to clear and remove any buildup of debris.	2026	5 Yrs (6)	$4,000	$24,000	$40,300
R01	Repair and/replace components of perimeter drainage system, as required.	2045	40 Yrs (1)	$96,000	$96,000	$190,000

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Mech 13 - Drainage - Storm - Internal [SC]

Location
Throughout the site.

Description
Roof drains, trench drains, catch basins and associated piping systems for rainwater runoff.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Insert video cameras into drainage piping to conduct pipe inspection.	2026	5 Yrs (6)	$5,000	$30,000	$50,500
J02	Hydroflush drainage piping to clear and remove any buildup of debris.	2026	5 Yrs (6)	$4,000	$24,000	$40,300
R01	Repair and/replace components of storm water drainage collection system, as required.	2045	40 Yrs (1)	$70,000	$70,000	$140,000

Mech 14 - Valves - Plumbing Flow Control and Directional [SC]

Location
Rooftop mechanical rooms and water entry room in parking garage level P1.

Description
Various types and sizes of valves, including pressure reducing valves, isolation valves, two-way and three way valves, circuit flow control valves and check valves to regulate the flow of water through domestic plumbing systems.

Information

Service Life:	20	Install Year:	2014
Chronological Age:	8	Next Event Year:	2034
Effective Age:	8		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of valves, as required.	2034	20 Yrs (1)	$20,000	$20,000	$29,000

Mech 15 - Valves - Cross Connection & Backflow Prevention [SC]

Location
Rooftop mechanical rooms and water entry room in parking garage level P1.

Description
Various types and sizes of backflow prevention valves, including vacuum breakers, double check, reduced pressure valves on systems. New double check valves installed in conjunction with the installation of the water treatment system in 2020.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of cross connection & back flow prevention valves, as required.	2025	20 Yrs (2)	$18,000	$36,000	$56,000

Mech 16 - Tank - Expansion - DHW - Diaphragm [R]

Location
Rooftop mechanical rooms.

Description
Amtrol floor mounted diaphragm expansion tank for domestic water system.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of buffer tanks, as required.	2025	20 Yrs (2)	$20,000	$40,000	$61,000

Mech 17 - Fixtures - Showers [R]

Location
Pool area change rooms and main pool area.

Description
Acrylic shower bases and enclosures, including faucets and trim.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of faucets and trim, as required.	2030	25 Yrs (1)	$3,000	$3,000	$3,800

Mech 18 - Fixtures - Taps & Sinks [R]

Location
Pool area change rooms and amenity room kitchen

Description
Sinks and other plumbing supply fixtures.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of sinks and faucets, as required.	2030	20 Yrs (2)	$6,000	$12,000	$21,600

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Mech 19 - Pumps - Sanitary Lift and Control Panels [R]

Location
Parking garage level P3 by stall # 405.

Description
Northwest Tech-Con Systems, Duplex, 7.5 HP, sanitary sump pumps and control panels for sanitary lift/drainage.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Coat exposed shaft of impeller with anti-seize compound.	2025	2 Yrs (14)	$0	$0	$0
R01	Overhaul sanitary sump pumps.	2028	5 Yrs (5)	$2,000	$10,000	$16,400
R02	Cyclical replacement of sump pumps.	2023	15 Yrs (2)	$8,000	$16,000	$21,200

Mech 20 - Pumps - Storm Lift and Control Panels [R]

Location
Parking garage level P3, by stall # 405.

Description
Northwest Tech-Con Systems, duplex, 7.5 HP, storm sump pumps and control panels for storm water runoff and sub-surface drainage.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Coat exposed shaft of impeller with anti-seize compound.	2025	2 Yrs (14)	$0	$0	$0
R01	Overhaul sanitary sump pumps.	2028	5 Yrs (5)	$2,000	$10,000	$16,400
R02	Cyclic replacement of sump pump storm lift and control panels.	2023	15 Yrs (2)	$4,000	$8,000	$10,500

Mech 21 - Tank - DHW - Booster/Heater [R]

Location
P1 Water Entry room and P1 Mechanical room.

Description
Rheem Ruud electric booster water heaters,12 KW, electric water heater with 10 gallon tank. Installation year is the blended age of both heaters.

Information

Service Life:	10	Install Year:	2014
Chronological Age:	8	Next Event Year:	2023
Effective Age:	9		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost

R01	Replace electric hot water heater.	2023	10 Yrs (3)	$6,000	$18,000	$25,500

Mech 22 - Boiler - Hydronic - Heating - Gas Fired [R]

Location

Pool equipment room on level 2.

Description

RBI coppertube, natural gas fired, hot water heater, 735,000 BTU input, atmospheric vented, to provide hot water to the pool and spa's heat exchangers.

Information

Service Life:	14	Install Year:	2005
Chronological Age:	17	Next Event Year:	2024
Effective Age:	12		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Tighten electrode mounting clamp.	2026	2 Yrs (13)	$0	$0	$0
J02	Replace sacrificial anodes in storage tanks.	2026	2 Yrs (13)	$0	$0	$0
J03	Replace nozzle assembly.	2029	5 Yrs (4)	$0	$0	$0
R01	Cyclical replacement of the gas fired domestic hot water heater.	2024	14 Yrs (2)	$50,000	$100,000	$133,000

Mech 23 - Domestic Water Treatment Equipment [SC]

Location

Water Entry Room.

Description

1Clearwater pH control system including treatment tanks, filters, chemical dosers, metering pumps and other associated equipment to provide treatment for potable water system.

Information

Service Life:	3	Install Year:	2012
Chronological Age:	10	Next Event Year:	2023
Effective Age:	2		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replacement of components of water treatment equipment by 1Clearwater. Not a strata owned asset	2023	3 Yrs (0)	$0	$0	$0

Mech 24 - Pump - Hydronic Loop - Basemount [R]

Location

Pool equipment room on level 2.

Description

Bell & Gossett, centrifugal base mount pumps for heating water hydronic loop.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	12		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost

R01	Replacement of hydronic piping and accessories, trim, and etc.	2025	10 Yrs (3)	$3,300	$9,900	$14,900
R02	Cyclical replacement of circulating pumps for hydronic loop - heating.	2025	5 Yrs (6)	$7,260	$43,560	$71,100

Mech 25 - Heat Exchanger - Shell & Tube [R]

Location
Pool equipment room on level 2.

Description
Shell and Tube heat exchangers to separate secondary HVAC and plumbing systems from the main loop.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace shell and tube heat exchanger.	2030	20 Yrs (2)	$16,000	$32,000	$57,000

Mech 26 - Chemical Treatment Equipment [R]

Location
Pool equipment room on level 2.

Description
Pot feeder, chemicals (such as biocide, scale, corrosion and oxygen inhibitor, glycol), metering pumps and other associated equipment to provide corrosion protection to boilers, loops and piping.

Information

Service Life:	8	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of components of water treatment equipment.	2023	8 Yrs (4)	$2,000	$8,000	$12,200

Mech 27 - Split System Air Conditioner [C]

Location
Throughout the parking garage.

Description
York condensing units for air conditioning. Owned and operated by commercial strata lots.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replacement of components of split system AC for individual suites.	2023	15 Yrs (0)	$0	$0	$0

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Mech 28 - Electric Baseboards [R]

Location

Hallways, stairwells, service rooms, and common areas.

Description

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

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of electric baseboard heaters, as required.	2045	40 Yrs (1)	$22,500	$22,500	$44,000

Mech 29 - Condensing Unit - Outdoor Section - Heat Pump [R]

Location

Roof of amenity building and throughout the parkade.

Description

York heat pump outdoor units, 2-4 tons and associated ceiling mounted indoor fan coil units for forced air conditioning and heating in amenity spaces. Repairs were completed in an as-needed basis.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	12		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of components of condensing units and fan coil units on split system AC.	2025	5 Yrs (6)	$15,840	$95,040	$154,000

Mech 30 - Fan Coil Unit [R]

Location

In ceiling of amenity areas, service rooms, and lobbies.

Description

York ceiling suspended fan coil units on a ducted system for air conditioning; matched condensing units on rooftop and parkade level.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of split system AC unit fan coils.	2023	5 Yrs (6)	$21,780	$130,680	$201,000

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Mech 31 - Condensing Unit - Outdoor - Split System A/C [R]

Location

Parking level P1 adjacent to electrical rooms.

Description

15-20 ton condensing units serving split system for air conditioning to electrical rooms. Ceiling mounted indoor units, with remote and wall mounted controllers.

Information

Service Life:	15	Install Year:	2021
Chronological Age:	1	Next Event Year:	2036
Effective Age:	1		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replacement of components of split system AC for individual suites.	2036	15 Yrs (2)	$50,000	$100,000	$196,000

Mech 32 - Exhaust Fan Parkade - Inline [SC]

Location

Throughout parking garage.

Description

Inline axial fans suspended from structure. SF-1-7 are dedicated to parkade ventilation. SF-10-16 are dedicated to smoke control.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of motors, fan blades and bearings on supply and exhaust fans, as required.	2023	3 Yrs (10)	$0	$0	$0
R02	Rebuild of supply and exhaust fans, as required.	2025	5 Yrs (6)	$16,250	$97,500	$160,000

Mech 33 - Coil - Electric - Duct Heater [SC]

Location

Various service rooms.

Description

Electric duct heaters, duct-mounted with stainless steel elements, controller.

Information

Service Life:	17	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of electric duct heaters.	2025	17 Yrs (2)	$10,000	$20,000	$29,000

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Mech 34 - Exhaust Fan - Parkade - Propellor [SC]

Location
Parking garage levels P1-P3.

Description
Marathon belt driven propellor exhaust fan mounted in exterior wall to supply and exhaust air from the parking garage.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of motors, fan blades and bearings on supply and exhaust fans, as required.	2023	3 Yrs (10)	$0	$0	$0
R02	Rebuild of supply and exhaust fans, as required.	2025	20 Yrs (2)	$8,000	$16,000	$24,700

Mech 35 - General Exhaust Fans [R]

Location
Service rooms throughout parking garage.

Description
Direct drive fans, ceiling and cabinet fans, and centrifugal inline blower fans.

Information

Service Life:	12	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	11		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of failed or damaged general purpose exhaust fans, as required.	2023	12 Yrs (3)	$9,000	$27,000	$41,300

Mech 36 - Packaged Dehumidification Unit [R]

Location
Rooftop mechanical room above the amenity building.

Description
Packaged roof-mounted dehumidification unit, belt-driven centrifugal fans, direct expansion dehumidifier with hot water reheat, for supplying dry air to the interior pool spaces. Currently operating in full outdoor mode. Two remote condensers.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Half-life refit of unit, including compressor replacement and rebuild/replacement of fans, dampers and devices.	2023	8 Yrs (4)	$40,000	$160,000	$243,000
R02	Replacement of dehumidification unit.	2030	25 Yrs (1)	$65,000	$65,000	$82,000

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Mech 37 - Outdoor Air Handler - Makeup Air - Gas [R]

Location

Rooftop of Tower A and B.

Description

Engineered Air DJ140/0 and DJ100/0, 13,000 & 16,120 CFM outdoor rooftop units, belt-driven, centrifugal fan with indirect natural gas fired heating to supply tempered make-up air to the interior spaces. 1,100,000 btuh max input, 891,000 btuh max output on Tower A. 900,000 btuh max input, 720,000 btuh max output on Tower B.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Motor mount - Inspect for damage, cracks or corrosion.	2023	2 Yrs (15)	$0	$0	$0
J02	Conduct measurements and assessment of indoor air quality (IAQ) to ensure that desirable levels are being attained.	2023	5 Yrs (6)	$0	$0	$0
R01	Cyclical replacement of pulleys and motors and vibration isolation, as required.	2023	8 Yrs (4)	$0	$0	$0
R02	Cyclical rebuild or replacement of make-up air units.	2025	20 Yrs (2)	$150,000	$300,000	$460,000

Mech 38 - Gas Appliance Powerventer Draft Fan [R]

Location

Pool equipment room on level 2.

Description

Fractional hp, exhaust fan mounted in pool water heater vent assembly.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	14		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Rebuild of powerventer, as required.	2023	20 Yrs (2)	$1,000	$2,000	$2,900

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Mech 39 - Rollup Doors [R]

Location
Adjacent to garbage rooms.

Description
Commercial-grade, overhead roll-up door for vehicular access into garbage room, controlled by an electric operator.

Information

Service Life:	6	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace rollup doors.	2025	20 Yrs (2)	$0	$0	$0
R02	Replace rollup door motors and controllers.	2023	6 Yrs (5)	$3,000	$15,000	$22,800

Mech 40 - Trash Compactor [R]

Location
Garbage room in parking garage level P1.

Description
Smithrite horizontal hydraulic ram compactor.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace hydraulic pumps.	2023	10 Yrs (3)	$0	$0	$0
R02	Replace compactor hoses.	2023	10 Yrs (3)	$0	$0	$0
R03	Replace trash compactor.	2025	20 Yrs (2)	$40,000	$80,000	$123,000

Mech 41 - Overhead Gate Motors [R]

Location
Entrance to the residents parking areas.

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

Information

Service Life:	7	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	6		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Locally repaint garage overhead gates.	2023	10 Yrs (3)	$0	$0	$0
R01	Replace overhead door motors and operators, as required.	2023	7 Yrs (5)	$7,500	$37,500	$61,200

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Elevator

Elev 01 - Handicap Lift [SC]

Location
Tower B lobby.

Description
Savaria V-1504 vertical platform lift between lower and upper lobbies, 750 lbs. capacity, glass door panels, painted steel door frames, painted steel sidewalls, vinyl flooring.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace vertical platform lift.	2025	20 Yrs (2)	$40,000	$80,000	$123,000

Elev 02 - Overhead Traction, Gearless [SC]

Location
Elevator machine room at roof level.

Description
Imperial Electric gearless overhead traction elevators; MCE I-Control, MCE isolation transformer; KEB F5 variable voltage frequency drive systems; Imperial Electric #525 gearless machines.

Information

Service Life:	25	Install Year:	2022
Chronological Age:	0	Next Event Year:	2047
Effective Age:	0		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J02	Check and test overload device.	2024	2 Yrs (14)	$0	$0	$0
J03	Conduct full load performance test.	2024	2 Yrs (14)	$0	$0	$0
R01	Replace gearless machines, controls and drive systems. Note: Fire alarm upgrades may be required if this asset is implemented. The budget for fire alarm upgrade is not included in the estimate.	2047	25 Yrs (1)	$1,440,000	$1,440,000	$3,000,000

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Elev 03 - Elevator Cabs & Hoistway [SC]

Location

Elevator cab interior, fixture, and hoistway.

Description

Elevators A to F Single speed side opening doors, stainless steel Dupar US91 car and hall pushbuttons, one (1) car operating panel per car, GAL / MOVFR door operators, Memco Panachrome door detector , stainless steel doors and front return, plastic laminate and glass sidewalls with stainless steel reveals, stainless steel tubular handrails on all non-access walls, stainless steel ceilings, tile flooring, firefighter's emergency operation, standby power provisions, hands-free voice communication device, no seismic provisions.

Information

Service Life:	25	Install Year:	2022
Chronological Age:	0	Next Event Year:	2047
Effective Age:	0		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace elevator operating and signal fixtures, replace door operators, upgrade cab interiors (to be completed in conjunction with asset 1).	2047	25 Yrs (1)	$510,000	$510,000	$1,100,000

Fire Safety

Fire 01 - Pressurization/Smoke Control Dampers [R]

Location

Throughout the tower core area.

Description

Motorized smoke dampers for control of building pressure and smoke in a building.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace damper operators and seals.	2025	20 Yrs (2)	$25,000	$50,000	$76,000

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Fire 02 - Fire Alarm Panel - Addressable [SC]

Location
Main lobbies.

Description
Edwards Signal Technologies microprocessor and supervised unit with graphic annunciator and LCD display.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Replace battery packs for fire alarm control panels.	2023	5 Yrs (6)	$0	$0	$0
R01	Replace battery packs.	2023	5 Yrs (6)	$500	$3,000	$4,640
R02	Replace fire alarm annunciator panels and control panel, excluding field wiring and field devices.	2025	20 Yrs (2)	$150,000	$300,000	$460,000

Fire 03 - Fire Detection & Alarm [SC]

Location
Mounted to walls and ceilings in various strategic locations throughout the buildings.

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

Information

Service Life:	10	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	9		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of speakers, heat detectors, smoke detectors and related modules, excluding field wiring.	2023	10 Yrs (3)	$61,600	$184,800	$258,000

Fire 04 - Dry Sprinkler Compressor [SC]

Location
Water entry room in parking garage level P1.

Description
Pro Air II compressor with 6 HP motor and 25 gallons capacity to maintain the pressure of air in the dry fire sprinkler lines.

Information

Service Life:	14	Install Year:	2005
Chronological Age:	17	Next Event Year:	2023
Effective Age:	13		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace fire sprinkler compressor.	2023	14 Yrs (3)	$4,000	$12,000	$19,700

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Fire 05 - Fire & Jockey Pumps [SC]

Location

Water entry room in parking garage level P1.

Description

Motor control centre connected to 120HP fire pump and 1.5 HP jockey pump, which work in tandem to supply water flow and pressure to the sprinkler system and standpipe system.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Conduct flow test.	2023	5 Yrs (6)	$0	$0	$0
R01	Replace jockey pump.	2023	12 Yrs (3)	$2,000	$6,000	$9,200
R02	Rebuild fire pump.	2023	15 Yrs (2)	$5,000	$10,000	$13,200
R03	Replace fire pump and motor control centre.	2035	30 Yrs (1)	$40,000	$40,000	$59,000

Fire 06 - Fire Hose Cabinets [R]

Location

Adjacent to townhouse units.

Description

Fire hose cabinets, wall mounted with swinging glass door, complete with angle valve, fire hose, and wrench. Replaced cabinets in 2014.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace fire hoses.	2025	40 Yrs (1)	$12,000	$12,000	$13,000

Fire 07 - Portable Fire Extinguishers [R]

Location

Mounted to walls in various strategic locations throughout the buildings.

Description

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

Information

Service Life:	24	Install Year:	2005
Chronological Age:	17	Next Event Year:	2029
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Conduct hydrotest on fire extinguishers.	2023	12 Yrs (3)	$0	$0	$0
R01	Cyclical replacement of fire extinguishers, as required.	2029	6 Yrs (4)	$6,800	$27,200	$44,400

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Fire 08 - Sprinkler Systems - Dry [SC]

Location
Throughout the parking garage

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

Information

Service Life:	60	Install Year:	2005
Chronological Age:	17	Next Event Year:	2065
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Sprinkler Piping - Conduct flow test on piping, both exposed and underground.	2023	5 Yrs (6)	$0	$0	$0
J02	Sprinkler Heads - Test extra high temperature on sprinkler heads.	2023	5 Yrs (6)	$0	$0	$0
R02	Replace all heads, or submit representative sample of heads for testing by recognized testing agency at the 50th anniversary, to the satisfaction of the authority having jurisdiction, in accordance with NFPA 25.	2055	10 Yrs (0)	$0	$0	$0
R04	Replace damaged sprinkler heads, hangers and leaking gaskets, cages, sway-braces, drains etc as required.	2025	5 Yrs (6)	$900	$5,400	$8,780
R05	Replace entire system including risers, branch piping, valves, heads, swaybracing, and all related trim, back to Sprinkler Room.	2065	60 Yrs (0)	$0	$0	$0

Fire 09 - Sprinkler Valve Assemblies - Dry [SC]

Location
Water entry room in parking garage level P1.

Description
Viking dry sprinkler valves, trim and gauges, steel piping.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Phased replacement of sprinkler zone control valves, as required.	2025	20 Yrs (2)	$8,750	$17,500	$26,600
R02	Replace gaskets in dry sprinkler valves.	2025	20 Yrs (2)	$2,100	$4,200	$6,400
R03	Rebuild dry sprinkler valves.	2025	20 Yrs (2)	$14,000	$28,000	$43,000
R04	Replace sprinkler valves, as required.	2045	40 Yrs (1)	$21,000	$21,000	$41,000

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Fire 10 - Sprinklers & Standpipe - Wet [R]

Location

Distributed throughout the common areas, hallways, and suites.

Description

Standard upright, pendant and sidewall sprinkler heads, flow switches and indicating devices, gauges, and PVC and steel distribution lines.

Information

Service Life:	100	Install Year:	2005
Chronological Age:	17	Next Event Year:	2105
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J01	Sprinkler Piping - Conduct flow test on piping, both exposed and underground.	2023	5 Yrs (6)	$0	$0	$0
J02	Sprinkler Heads - Test extra high temperature on sprinkler heads.	2023	5 Yrs (6)	$0	$0	$0
R01	Phased replacement of sprinkler zone control valves, as required.	2025	20 Yrs (2)	$17,500	$35,000	$54,000
R02	Renew compromised portions of piping, gaskets, connections, valves, devices and trim to maintain required function.	2025	5 Yrs (6)	$19,800	$118,800	$194,000
R03	Replace all heads, or submit representative sample of heads for testing by recognised testing agency at the 50th anniversary, to the satisfaction of the authority having jurisdiction at the 50th anniversary, in accordance with NFPA 25.	2055	10 Yrs (0)	$0	$0	$0
R04	Replace sprinkler heads.	2105	100 Yrs (0)	$0	$0	$0

Fire 11 - Emergency Egress Equipment [SC]

Location

Mounted to walls and ceilings near doors and in various strategic locations throughout the buildings.

Description

Exit lights and emergency lighting equipment to facilitate evacuation from the interior of the building in the event of an emergency.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclicacl replacement of batteries and lamps in DC battery packs.	2023	5 Yrs (6)	$0	$0	$0
R02	Cyclical replacement of LED exit signs.	2025	15 Yrs (2)	$67,500	$135,000	$184,000

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Interior Finishes

Finish 01 - Rubber Sports Flooring [R]

Location
Fitness room and aerobics room.

Description
High density, impact resistant rubber sports flooring tiles.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2027
Effective Age:	15		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace rubber sports flooring.	2027	20 Yrs (2)	$14,000	$28,000	$45,000

Finish 02 - Ceramic Tiled Flooring [R]

Location
Pool area and adjacent change rooms

Description
Ceramic tiles and grout laid on substrate.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R02	Replace floor tiles.	2030	25 Yrs (1)	$22,000	$22,000	$28,000

Finish 03 - Tiled Flooring [R]

Location
Lobby areas of both towers.

Description
Tiles and grout laid on concrete substrate.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R02	Replace floor tiles.	2030	25 Yrs (1)	$35,000	$35,000	$44,000

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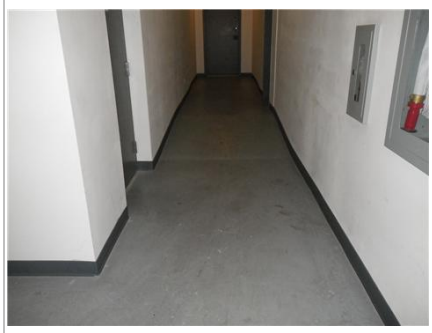
Finish 04 - Painted Concrete Flooring [SC]



Location

Parkade access hallways, service rooms, and various mechanical rooms at the roof levels of both towers.

Description

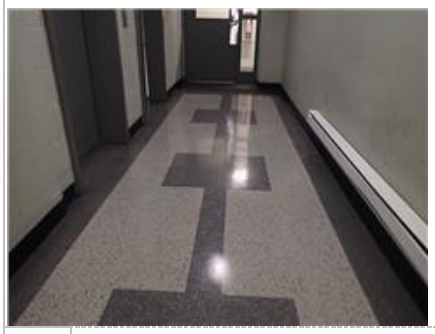
Exposed concrete floors, painted in some locations to provide a cleaner finish. This flooring asset does not include the concrete slab, which is not considered to be a renewable asset.

Information

Service Life:	10	Install Year:	2014
Chronological Age:	8	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Repaint concrete floor surfaces at high traffic areas.	2032	10 Yrs (2)	$5,000	$10,000	$15,700
R02	Repaint concrete flooring in service rooms, as required. Repaint faded stair tread safety markings.	2027	10 Yrs (3)	$10,000	$30,000	$49,000

Finish 05 - Resilient Sheet Flooring [R]



Location

Elevator vestibules in the parking garage.

Description

Vinyl sheet with adhesive to the substrate, including door thresholds and transitions to adjoining floor finishes.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2027
Effective Age:	15		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace resilient flooring.	2027	20 Yrs (2)	$10,000	$20,000	$33,000

Finish 06 - Carpet Flooring [R]

Location

Common hallways and all the amenity rooms.

Description

Synthetic, low level loop, textile sheet floor covering glued over floor substrate.

Information

Service Life:	10	Install Year:	2013
Chronological Age:	9	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Renew carpet.	2027	10 Yrs (3)	$216,000	$648,000	$1,040,000

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Finish 07 - Ceramic Tile [R]

Location
Pool area and adjacent change rooms.

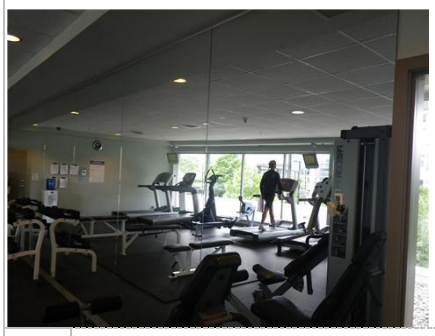
Description
Ceramic tile on mortar bed and substrate with grout and caulking at interfaces.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace ceramic wall tiles.	2030	25 Yrs (1)	$12,000	$12,000	$15,000

Finish 08 - Mirrors [R]



Location
Fitness room and pool area changerooms.

Description
Mirrored glass with structural fasteners to the substrate.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace mirrored wall, as required.	2045	40 Yrs (1)	$9,000	$9,000	$18,000

Finish 09 - Interior Painting [R]

Location
Hallways, stairwells, service rooms, parking garage and vestibules.

Description
Primers and multiple pigmented coating finishes applied to interior gypsum wallboard, mill work trim details, and metal trim.

Information

Service Life:	10	Install Year:	2014
Chronological Age:	8	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Repaint interior wall in high traffic area, as required.	2032	5 Yrs (2)	$28,125	$56,250	$89,000
R02	Re-coat painted wall surface including preparation of substrate.	2027	10 Yrs (3)	$225,000	$675,000	$1,080,000

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Finish 10 - Wood Paneling [R]

Location
Wall finishes throughout the lobbies of both towers.

Description
Decorative wood paneling; solid or wood veneer on substrate sheathing and structural framing.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace wood paneling.	2030	25 Yrs (1)	$40,000	$40,000	$51,000

Finish 11 - Window Covering [R]

Location
Throughout the amenity areas.

Description
Composite blinds with head rails, lift cords, control cords; mounted to the interior of windows.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2027
Effective Age:	15		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace window covering, as required.	2027	20 Yrs (2)	$9,800	$19,600	$32,000

Finish 12 - Carpentry & Millwork [R]

Location
Kitchen in the amenity room and front desk at tower A.

Description
Shop fabricated custom casework, built-in counter-tops with laminate surface, and wood veneer cabinets.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace damaged components of carpentry and millwork, as required.	2035	30 Yrs (1)	$10,000	$10,000	$15,000

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Finish 13 - Interior Swing Doors [R]

Location
All common area and interior service room doors throughout the buildings.

Description
Hollow metal swing doors hung in framed opening including hardware. Exterior doors are considered separately as part of the building enclosure system. Only localized replacement has been accounted for.

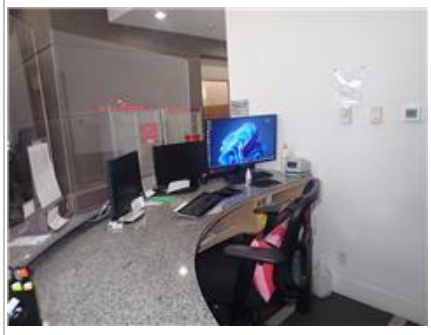
Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
J08	Repaint door and frame in high-traffic locations as required. Cost is included in the repainting of interior walls.	2027	10 Yrs (3)	$0	$0	$0
R03	Cyclical replacement of interior swing door in low traffic/exposure locations, as required.	2045	10 Yrs (1)	$74,000	$74,000	$150,000

Amenities

Amen 01 - Computer Equipment [R]



Location
Office room in Tower A.

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

Information

Service Life:	6	Install Year:	2022
Chronological Age:	0	Next Event Year:	2028
Effective Age:	0		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace components of electronic equipment.	2028	6 Yrs (4)	$3,000	$12,000	$19,100

Amen 02 - Domestic Appliances [R]

Location
Kitchen in the amenity room.

Description
Frigidaire Refrigerator, microwave oven, electric range, and dishwasher.

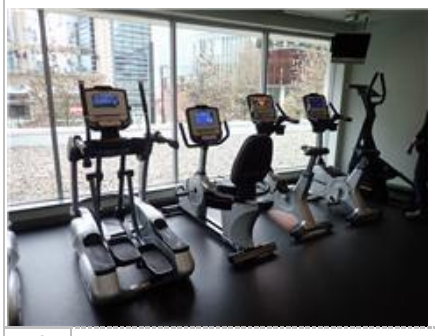
Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2027
Effective Age:	10		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost

R01	Replace domestic appliances.	2027	15 Yrs (2)	$2,500	$5,000	$7,400

Amen 03 - Fitness Equipment [R]



Location
Fitness room.

Description
Various fitness machines and equipment. Fitness equipment repairs completed in an as needed basis.

Information

Service Life:	10	Install Year:	2014
Chronological Age:	8	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace components of fitness equipment, as required.	2027	10 Yrs (3)	$20,000	$60,000	$96,000

Amen 04 - Outdoor Barbecue [R]

Location
Deck adjacent to the common area lounge.

Description
Outdoor BBQ grill.

Information

Service Life:	10	Install Year:	2016
Chronological Age:	6	Next Event Year:	2026
Effective Age:	6		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace barbecue equipment.	2026	10 Yrs (3)	$2,000	$6,000	$9,400

Amen 05 - Metal Screen Storage Lockers [R]

Location
Storage rooms throughout parking garage.

Description
Painted metal screen storage lockers with steel framing and hardware. Only localized replacement has been accounted for.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace/repair metal storage lockers, as required.	2030	25 Yrs (1)	$10,000	$10,000	$13,000

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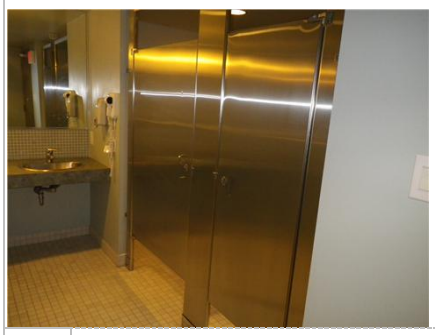
Amen 06 - Washroom Partitions [R]



Location
Pool area change rooms.

Description
Privacy panels and miscellaneous hardware fittings such as pilaster, panel, door, anchors, hinges, latches and brackets.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace washroom partitions and associated hardware.	2035	30 Yrs (1)	$4,000	$4,000	$5,900

Amen 07 - Bicycle Racks [R]

Location
Bicycle storage rooms and exterior of the lobby entrances at each tower.

Description
Floor and wall mounted, steel frame bicycle racks.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace bicycle racks, as required.	2035	30 Yrs (1)	$12,000	$12,000	$18,000

Amen 08 - Central Mailbox [R]

Location
Lobby areas at each tower.

Description
Flush mounted, front loading, brushed aluminum finish, extruded aluminum trim.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace central mail boxes as required.	2035	30 Yrs (1)	$20,000	$20,000	$29,000

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Amen 09 - Public Signage [R]

Location
Various locations throughout the buildings and site.

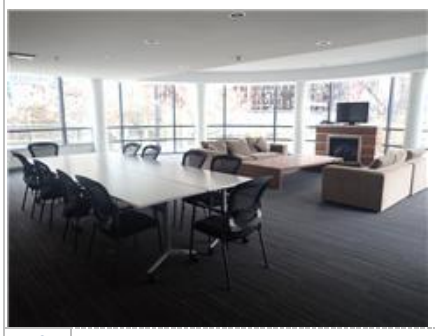
Description
Variety of permanently displayed information placards in the common areas of the buildings and site.

Information

Service Life:	25	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace damaged and outdated signage, as required.	2030	25 Yrs (1)	$6,000	$6,000	$7,600

Amen 10 - Interior Furniture [R]



Location
Common area lounges and lobbies.

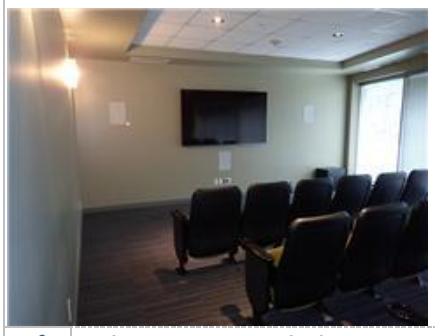
Description
Tables, chairs, sofas, and other furniture.

Information

Service Life:	10	Install Year:	2014
Chronological Age:	8	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace furniture and associated component.	2027	10 Yrs (3)	$20,000	$60,000	$96,000

Amen 11 - Audio Visual Equipment [R]



Location
Common area amenity and media rooms.

Description
Projector, screen, seating, speakers and other miscellaneous equipment.

Information

Service Life:	10	Install Year:	2005
Chronological Age:	17	Next Event Year:	2027
Effective Age:	5		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement and upgrade of components of audiovisual equipment, excluding field wiring, as required.	2027	10 Yrs (3)	$4,000	$12,000	$19,200

Amen 12 - Steam Generator [R]

Location

Pool mechanical equipment room.

Description

Relax-a-Mist electric steam generator for the steam room, complete with thermostats, timeclock, drain and flush valves, water level sensor, and scent pump dispenser.

Information

Service Life:	10	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace pressure regulator, humidistat, and thermostat for steam room.	2030	5 Yrs (3)	$0	$0	$0
R02	Replace steam generator.	2025	10 Yrs (3)	$5,000	$15,000	$22,700

Amen 13 - Dry Sauna [R]

Location

Pool area.

Description

Wood paneling, wood benches, wood door, electric heater and timer control.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2030
Effective Age:	12		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace heating element.	2037	7 Yrs (3)	$2,000	$6,000	$9,100
R02	Refurbish sauna interior finish and element.	2030	20 Yrs (2)	$10,000	$20,000	$36,000

Amen 14 - Pool and Spa Circulation & Sanitation [R]

Location

Pool equipment room on level 2.

Description

36" TR140 and 30" TA 100 PacFab sand filters, PacFab Hydropump - 1.5 HP and Whisperfl - 2 HP pump, LM liquid chlorine pump, cantilevered tile coping, standard PVC and CPVC piping, Pentair skimmer (x2), chemical feeders and other components to distribute sanitized water to the pool and spa.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2025
Effective Age:	12		

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Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of components of water circulation and sanitation equipment for spa, as required.	2030	5 Yrs (5)	$5,000	$25,000	$39,700
R02	Cyclical replacement of pool/spa circulation and sanitation equipment, as required.	2025	15 Yrs (2)	$13,500	$27,000	$38,000

Amen 15 - Pool Tank [R]

Location

Pool area.

Description

Concrete, plaster lined pool with concrete and tiled deck surface in 15'-5" x 61'-5" tank, 29,000 gallons, and jacuzzi Q500 quartz underwater lighting unit.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Refinish interior surface of pool tank.	2035	30 Yrs (1)	$25,000	$25,000	$37,000

Amen 16 - Spa Tank [R]

Location

Pool area.

Description

Concrete and tile spa tank with concrete and tile deck surface in 15'-8" x 7'-0" (half-moon) tank, 17,000 gallons, and jacuzzi Q500 quartz underwater lighting unit.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Refinish interior surface of spa tank.	2035	30 Yrs (1)	$8,700	$8,700	$13,000

Sitework

Site 01 - Playground Equipment [R]

Location

Central courtyard of the complex.

Description

Modular plastic and metal framed playground equipment.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	7		

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Asset Inventory - 2022

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace outdoor playground equipment.	2035	20 Yrs (1)	$10,000	$10,000	$15,000

Site 02 - Rubber Tiles [R]

Location
Playground in the central courtyard.

Description
Tiled overburden for high impact applications.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Replace rubber flooring.	2035	20 Yrs (1)	$10,000	$10,000	$15,000

Site 03 - Concrete Paving [SC]

Location
Roundabout entrance area, sidewalks, and adjacent to the parkade entrance.

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

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R03	Replace sections of concrete paving, as required.	2045	40 Yrs (1)	$49,000	$49,000	$97,000

Site 04 - Concrete Unit Paving [R]

Location
Courtyard adjacent to Tower B lobby entrance, Tower B ground floor lounge patio, and at townhouse unit patios.

Description
Precast concrete unit pavers, combination of chip seal joint filler and jointing sand, bedding sand, compacted base.

Information

Service Life:	40	Install Year:	2005
Chronological Age:	17	Next Event Year:	2045
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Rebuild sections of interlocking paving, including sub-grade, as required.	2035	10 Yrs (2)	$7,200	$14,400	$25,000
R02	Replace interlocking paving, as required.	2045	40 Yrs (1)	$72,000	$72,000	$140,000

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Site 05 - Site Furniture [R]

Location
Adjacent to the tower lobby entrances and by amenity area courtyard.

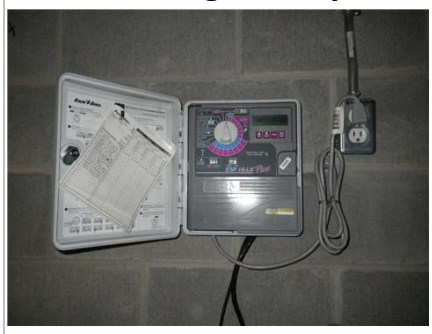
Description
Metal and wooden picnic tables and other miscellaneous urban furniture.

Information

Service Life:	30	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	17		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R02	Replace outdoor furniture, as required.	2035	30 Yrs (1)	$2,000	$2,000	$2,900

Site 06 - Irrigation System [SC]



Location
Water entry room in parking garage level P1.

Description
Rain Bird controller with time clock, network of PVC pipes, valves, and exposed irrigation heads distributed around the soft landscaping.

Information

Service Life:	15	Install Year:	2005
Chronological Age:	17	Next Event Year:	2024
Effective Age:	13		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Cyclical replacement of components of irrigation sprinkler system, as required.	2024	15 Yrs (2)	$5,000	$10,000	$13,600

Site 07 - Soft Landscaping [SC]

Location
Throughout the site.

Description
Lawn, ground cover, shrubs, perennials and trees.

Information

Service Life:	20	Install Year:	2005
Chronological Age:	17	Next Event Year:	2035
Effective Age:	7		

Ref	Maintenance Description	Next Event	Frequency (30 Yr Count)	Current Cost	30 Year Current Cost	30 Year Future Cost
R01	Renovate sections of the soft landscaping, as required.	2035	20 Yrs (1)	$15,750	$15,750	$23,000

Appendix C

10-Year Tactical Plan

The Max

10 Year Costing - 2022 through 2031

	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2022						
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2023						
Enclosure						
Encl 25 - Miscellaneous & Inspections [SC]						
J12	Perform full condition assessment of all enclosure systems.	Assessment	5 Yrs	2023	$20,000	$21,000
Electrical						
Elec 01 - Distribution Transformers [R]						
J04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	Maintenance Level 3	5 Yrs	2023	$3,000	$3,100
Elec 03 - Unit Substation [SC]						
R03	Service shutdown event. Inspect, clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	Renew Component	3 Yrs	2023	$5,000	$5,200
R04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	Renew Component	3 Yrs	2023	$2,000	$2,100
Elec 04 - Electrical Distribution [R]						
R01	Conduct infrared thermography and ultrasonic scanning tests on all switchgear, distribution panels, cable and bus connections, and other critical equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated prior to planned maintenance to identify areas that require immediate attention. Tests should be conducted on energized equipment during peak demand periods if possible.	Renew Component	3 Yrs	2023	$3,000	$3,100
Mechanical						
Mech 06 - Tank - DHW - Storage [R]						
R04	Cyclical replacement of domestic hot water storage tanks.	Renew Assembly	8 Yrs	2023	$40,500	$42,000
Mech 07 - Pump - Domestic Water Booster [R]						
R01	Replace motor bearings, pump bearings and housing, as required.	Renew Component	7 Yrs	2023	$5,000	$5,200
Mech 19 - Pumps - Sanitary Lift and Control Panels [R]						
R02	Cyclical replacement of sump pumps.	Renew Assembly	15 Yrs	2023	$8,000	$8,200
Mech 20 - Pumps - Storm Lift and Control Panels [R]						
R02	Cyclic replacement of sump pump storm lift and control panels.	Renew Assembly	15 Yrs	2023	$4,000	$4,100
Mech 21 - Tank - DHW - Booster/Heater [R]						
R01	Replace electric hot water heater.	Renew Assembly	10 Yrs	2023	$6,000	$6,200

The Max

10 Year Costing - 2022 through 2031

	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Mech 26 - Chemical Treatment Equipment [R]						
R01	Cyclical replacement of components of water treatment equipment.	Renew Assembly	8 Yrs	2023	$2,000	$2,100
Mech 30 - Fan Coil Unit [R]						
R01	Cyclical replacement of split system AC unit fan coils.	Renew Assembly	5 Yrs	2023	$21,780	$22,000
Mech 35 - General Exhaust Fans [R]						
R01	Cyclical replacement of failed or damaged general purpose exhaust fans, as required.	Renew Assembly	12 Yrs	2023	$9,000	$9,300
Mech 36 - Packaged Dehumidification Unit [R]						
R01	Half-life refit of unit, including compressor replacement and rebuild/replacement of fans, dampers and devices.	Renew Component	8 Yrs	2023	$40,000	$41,000
Mech 38 - Gas Appliance Powerventer Draft Fan [R]						
R01	Rebuild of powerventer, as required.	Renew Assembly	20 Yrs	2023	$1,000	$1,000
Mech 39 - Rollup Doors [R]						
R02	Replace rollup door motors and controllers.	Renew Assembly	6 Yrs	2023	$3,000	$3,100
Mech 41 - Overhead Gate Motors [R]						
R01	Replace overhead door motors and operators, as required.	Renew Assembly	7 Yrs	2023	$7,500	$7,700
Fire Safety						
Fire 02 - Fire Alarm Panel - Addressable [SC]						
R01	Replace battery packs.	Renew Component	5 Yrs	2023	$500	$520
Fire 03 - Fire Detection & Alarm [SC]						
R01	Cyclical replacement of speakers, heat detectors, smoke detectors and related modules, excluding field wiring.	Renew Assembly	10 Yrs	2023	$61,600	$63,000
Fire 04 - Dry Sprinkler Compressor [SC]						
R01	Replace fire sprinkler compressor.	Renew Assembly	14 Yrs	2023	$4,000	$4,100
Fire 05 - Fire & Jockey Pumps [SC]						
R01	Replace jockey pump.	Renew Component	12 Yrs	2023	$2,000	$2,100
R02	Rebuild fire pump.	Renew Component	15 Yrs	2023	$5,000	$5,200
Amenities						
Amen 14 - Pool and Spa Circulation & Sanitation [R]						
R01	Cyclical replacement of components of water circulation and sanitation equipment for spa, as required.	Renew Component	5 Yrs	2023	$5,000	$5,200
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2024						
Enclosure						
Encl 07 - EIFS Walls [R]						
J04	Locally repair and repaint EIFS walls, as required.	Maintenance Level 2	10 Yrs	2024	$38,000	$40,000
Encl 21 - At-Grade Waterproofing [SC]						
R01	Locally repair cracks in the soffit and walls of the parkade, as required.	Renew Component	5 Yrs	2024	$10,000	$11,000

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Encl 22 - Traffic-Bearing Membrane [R]						
J03	Re-apply traffic demarcation striping and directional signage as required. Frequency will depend on traffic volume and other factors.	Maintenance Level 1	5 Yrs	2024	$5,000	$5,300
J05	Repair damaged and delaminated membrane and complete concrete repairs prior to re-application of top coat.	Maintenance Level 3	10 Yrs	2024	$40,800	$43,000
R01	Re-apply membrane top coat in high traffic areas (e.g. drive aisles).	Renew Component	10 Yrs	2024	$153,000	$160,000
Encl 23 - Traffic-Bearing Membrane [SC]						
J05	Repair damaged and delaminated membrane and complete concrete repairs prior to re-application of top coat.	Maintenance Level 3	10 Yrs	2024	$7,400	$7,900
R01	Re-apply membrane top coat in high traffic areas (e.g. drive aisles).	Renew Component	10 Yrs	2024	$46,250	$49,000
Mechanical						
Mech 22 - Boiler - Hydronic - Heating - Gas Fired [R]						
R01	Cyclical replacement of the gas fired domestic hot water heater.	Renew Assembly	14 Yrs	2024	$50,000	$53,000
Sitework						
Site 06 - Irrigation System [SC]						
R01	Cyclical replacement of components of irrigation sprinkler system, as required.	Renew Assembly	15 Yrs	2024	$5,000	$5,300
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2025						
Enclosure						
Encl 10 - Window Walls & Aluminum Framed Windows [R]						
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2025	$46,500	$51,000
Encl 11 - Curtain Wall [C]						
R01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2025	$2,700	$3,000
Encl 12 - Aluminum Storefront [C]						
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2025	$6,000	$6,600
Encl 14 - Lobby Door Assemblies [R]						
R01	Complete localized repairs such as hardware replacement, as required.	Renew Component	10 Yrs	2025	$5,000	$5,500
Encl 16 - Aluminum Sliding Glass Doors [R]						
J07	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2025	$8,640	$9,400
Electrical						
Elec 01 - Distribution Transformers [R]						
J01	Clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	Maintenance Level 3	5 Yrs	2025	$3,000	$3,300
R01	Cyclical replacement of distribution transformers, as required.	Renew Component	20 Yrs	2025	$12,000	$13,000

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Elec 05 - Exterior Light Fixtures [R]						
R05	Replace exterior light fixtures, as required, for aesthetic purposes, to match ballast replacement cycles, or technological obsolescence.	Renew Assembly	20 Yrs	2025	$35,000	$38,000
Elec 06 - Interior Light Fixtures [R]						
R05	Replace interior light fixtures, as required, for aesthetic purposes, to match ballast replacement cycles, or technological obsolescence.	Renew Assembly	20 Yrs	2025	$45,000	$49,000
Mechanical						
Mech 02 - Controls - Electronic Actuators [SC]						
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	Renew Assembly	10 Yrs	2025	$3,000	$3,300
Mech 03 - Gas Detection - Parking Garage [SC]						
R01	Cyclical replacement of gas detection sensors.	Renew Assembly	5 Yrs	2025	$13,500	$15,000
Mech 04 - Controls - HVAC Instrumentation [R]						
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	Renew Assembly	3 Yrs	2025	$1,000	$1,100
Mech 05 - Boiler - DHW - Heating - Gas Fired [R]						
R01	Cyclical replacement of gas fired domestic hot water heaters.	Renew Assembly	14 Yrs	2025	$100,000	$110,000
Mech 07 - Pump - Domestic Water Booster [R]						
R02	Replace domestic booster pumps and motor control panel.	Renew Assembly	14 Yrs	2025	$15,000	$16,000
Mech 09 - Piping - Domestic Water Distribution [R]						
J01	Check that pipe hangars are properly fastened.	Maintenance Level 3	5 Yrs	2025	$500	$550
J02	Check piping and supports for mechanical damage, proper clearance, adequate insulation, and labeling.	Maintenance Level 3	5 Yrs	2025	$500	$550
J03	Check integrity of all soldered pipe connections and couplings.	Maintenance Level 3	5 Yrs	2025	$500	$550
J04	Comprehensive third party testing and inspection of the copper domestic water distribution system.	Assessment	20 Yrs	2025	$12,500	$14,000
Mech 15 - Valves - Cross Connection & Backflow Prevention [SC]						
R01	Cyclical replacement of cross connection & back flow prevention valves, as required.	Renew Assembly	20 Yrs	2025	$18,000	$20,000
Mech 16 - Tank - Expansion - DHW - Diaphragm [R]						
R01	Cyclical replacement of buffer tanks, as required.	Renew Assembly	20 Yrs	2025	$20,000	$22,000
Mech 24 - Pump - Hydronic Loop - Basemount [R]						
R01	Replacement of hydronic piping and accessories, trim, and etc.	Renew Component	10 Yrs	2025	$3,300	$3,600
R02	Cyclical replacement of circulating pumps for hydronic loop - heating.	Renew Assembly	5 Yrs	2025	$7,260	$7,900
Mech 29 - Condensing Unit - Outdoor Section - Heat Pump [R]						
R01	Cyclical replacement of components of condensing units and fan coil units on split system AC.	Renew Assembly	5 Yrs	2025	$15,840	$17,000
Mech 32 - Exhaust Fan Parkade - Inline [SC]						
R02	Rebuild of supply and exhaust fans, as required.	Renew Assembly	5 Yrs	2025	$16,250	$18,000
Mech 33 - Coil - Electric - Duct Heater [SC]						
R01	Cyclical replacement of electric duct heaters.	Renew Assembly	17 Yrs	2025	$10,000	$11,000

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Mech 34 - Exhaust Fan - Parkade - Propellor [SC]						
R02	Rebuild of supply and exhaust fans, as required.	Renew Assembly	20 Yrs	2025	$8,000	$8,700
Mech 37 - Outdoor Air Handler - Makeup Air - Gas [R]						
R02	Cyclical rebuild or replacement of make-up air units.	Renew Assembly	20 Yrs	2025	$150,000	$160,000
Mech 40 - Trash Compactor [R]						
R03	Replace trash compactor.	Renew Assembly	20 Yrs	2025	$40,000	$44,000
Elevator						
Elev 01 - Handicap Lift [SC]						
R01	Replace vertical platform lift.	Renew Assembly	20 Yrs	2025	$40,000	$44,000
Fire Safety						
Fire 01 - Pressurization/Smoke Control Dampers [R]						
R01	Replace damper operators and seals.	Renew Assembly	20 Yrs	2025	$25,000	$27,000
Fire 02 - Fire Alarm Panel - Addressable [SC]						
R02	Replace fire alarm annunciator panels and control panel, excluding field wiring and field devices.	Renew Assembly	20 Yrs	2025	$150,000	$160,000
Fire 06 - Fire Hose Cabinets [R]						
R01	Replace fire hoses.	Renew Assembly	40 Yrs	2025	$12,000	$13,000
Fire 08 - Sprinkler Systems - Dry [SC]						
R04	Replace damaged sprinkler heads, hangers and leaking gaskets, cages, sway-braces, drains etc as required.	Renew Component	5 Yrs	2025	$900	$980
Fire 09 - Sprinkler Valve Assemblies - Dry [SC]						
R01	Phased replacement of sprinkler zone control valves, as required.	Renew Component	20 Yrs	2025	$8,750	$9,600
R02	Replace gaskets in dry sprinkler valves.	Renew Component	20 Yrs	2025	$2,100	$2,300
R03	Rebuild dry sprinkler valves.	Renew Component	20 Yrs	2025	$14,000	$15,000
Fire 10 - Sprinklers & Standpipe - Wet [R]						
R01	Phased replacement of sprinkler zone control valves, as required.	Renew Component	20 Yrs	2025	$17,500	$19,000
R02	Renew compromised portions of piping, gaskets, connections, valves, devices and trim to maintain required function.	Renew Component	5 Yrs	2025	$19,800	$22,000
Fire 11 - Emergency Egress Equipment [SC]						
R02	Cyclical replacement of LED exit signs.	Renew Assembly	15 Yrs	2025	$67,500	$74,000
Amenities						
Amen 12 - Steam Generator [R]						
R02	Replace steam generator.	Renew Assembly	10 Yrs	2025	$5,000	$5,500
Amen 13 - Dry Sauna [R]						
R01	Replace heating element.	Renew Component	7 Yrs	2025	$2,000	$2,200
Amen 14 - Pool and Spa Circulation & Sanitation [R]						
R02	Cyclical replacement of pool/spa circulation and sanitation equipment, as required.	Renew Assembly	15 Yrs	2025	$13,500	$15,000
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2026						
Electrical						
Elec 02 - Emergency Generator [SC]						
R02	Rebuild emergency generator.	Renew Component	17 Yrs	2026	$15,000	$17,000
Elec 03 - Unit Substation [SC]						
R03	Service shutdown event. Inspect, clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	Renew Component	3 Yrs	2026	$5,000	$5,600
R04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	Renew Component	3 Yrs	2026	$2,000	$2,300
Elec 04 - Electrical Distribution [R]						
R01	Conduct infrared thermography and ultrasonic scanning tests on all switchgear, distribution panels, cable and bus connections, and other critical equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated prior to planned maintenance to identify areas that require immediate attention. Tests should be conducted on energized equipment during peak demand periods if possible.	Renew Component	3 Yrs	2026	$3,000	$3,400
Elec 09 - Security Surveillance [R]						
R01	Service the multiplex unit, update software as required.	Renew Component	5 Yrs	2026	$5,000	$5,600
Mechanical						
Mech 11 - Drainage - Sanitary [SC]						
J01	Insert video cameras into main lines to conduct pipe inspection.	Maintenance Level 3	5 Yrs	2026	$3,000	$3,400
J02	Auger lateral drain lines.	Maintenance Level 3	5 Yrs	2026	$4,000	$4,500
Mech 12 - Drainage - Perimeter and Foundation [SC]						
J01	By means of pipe camera service, visually inspect underground piping runs. Look for build up of silts and dirt fines, tree roots, and other obstructions. Look for standing water indicating saturated soil conditions or impermeable conditions.	Maintenance Level 3	5 Yrs	2026	$3,200	$3,600
J02	Flush perimeter and foundation piping to clear and remove any buildup of debris.	Maintenance Level 3	5 Yrs	2026	$4,000	$4,500
Mech 13 - Drainage - Storm - Internal [SC]						
J01	Insert video cameras into drainage piping to conduct pipe inspection.	Maintenance Level 3	5 Yrs	2026	$5,000	$5,600
J02	Hydroflush drainage piping to clear and remove any buildup of debris.	Maintenance Level 3	5 Yrs	2026	$4,000	$4,500
Amenities						
Amen 04 - Outdoor Barbecue [R]						
R01	Replace barbecue equipment.	Renew Assembly	10 Yrs	2026	$2,000	$2,300
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)

The Max

10 Year Costing - 2022 through 2031

	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2027						
Enclosure						
Encl 10 - Window Walls & Aluminum Framed Windows [R]						
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2027	$10,000	$12,000
Encl 11 - Curtain Wall [C]						
R01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2027	$2,700	$3,100
Encl 12 - Aluminum Storefront [C]						
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2027	$6,000	$7,000
Encl 16 - Aluminum Sliding Glass Doors [R]						
J07	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2027	$8,640	$10,000
Electrical						
Elec 08 - Proximity Access Control [R]						
R01	Replace media in recording device to maintain continuous records from proximity access control devices. Retain records in secure archive for period determined by policy.	Renew Component	6 Yrs	2027	$500	$580
Mechanical						
Mech 06 - Tank - DHW - Storage [R]						
R03	Cyclical replacement of domestic hot water storage tanks.	Renew Assembly	8 Yrs	2027	$13,500	$16,000
Interior Finishes						
Finish 01 - Rubber Sports Flooring [R]						
R01	Replace rubber sports flooring.	Renew Assembly	20 Yrs	2027	$14,000	$16,000
Finish 04 - Painted Concrete Flooring [SC]						
R02	Repaint concrete flooring in service rooms, as required. Repaint faded stair tread safety markings.	Renew Assembly	10 Yrs	2027	$10,000	$12,000
Finish 05 - Resilient Sheet Flooring [R]						
R01	Replace resilient flooring.	Renew Assembly	20 Yrs	2027	$10,000	$12,000
Finish 06 - Carpet Flooring [R]						
R01	Renew carpet.	Renew Assembly	10 Yrs	2027	$216,000	$250,000
Finish 09 - Interior Painting [R]						
R02	Re-coat painted wall surface including preparation of substrate.	Renew Assembly	10 Yrs	2027	$225,000	$260,000
Finish 11 - Window Covering [R]						
R01	Replace window covering, as required.	Renew Assembly	20 Yrs	2027	$9,800	$11,000
Amenities						
Amen 02 - Domestic Appliances [R]						
R01	Replace domestic appliances.	Renew Assembly	15 Yrs	2027	$2,500	$2,900
Amen 03 - Fitness Equipment [R]						
R01	Replace components of fitness equipment, as required.	Renew Assembly	10 Yrs	2027	$20,000	$23,000

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Amen 10 - Interior Furniture [R]						
R01	Replace furniture and associated component.	Renew Assembly	10 Yrs	2027	$20,000	$23,000
Amen 11 - Audio Visual Equipment [R]						
R01	Cyclical replacement and upgrade of components of audiovisual equipment, excluding field wiring, as required.	Renew Assembly	10 Yrs	2027	$4,000	$4,600
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)

Year 2028

Enclosure

Encl 25 - Miscellaneous & Inspections [SC]						
J12	Perform full condition assessment of all enclosure systems.	Assessment	5 Yrs	2028	$20,000	$24,000

Electrical

Elec 01 - Distribution Transformers [R]						
J04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	Maintenance Level 3	5 Yrs	2028	$3,000	$3,600

Mechanical

Mech 04 - Controls - HVAC Instrumentation [R]						
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	Renew Assembly	3 Yrs	2028	$1,000	$1,200
Mech 19 - Pumps - Sanitary Lift and Control Panels [R]						
R01	Overhaul sanitary sump pumps.	Renew Component	5 Yrs	2028	$2,000	$2,400
Mech 20 - Pumps - Storm Lift and Control Panels [R]						
R01	Overhaul sanitary sump pumps.	Renew Component	5 Yrs	2028	$2,000	$2,400
Mech 30 - Fan Coil Unit [R]						
R01	Cyclical replacement of split system AC unit fan coils.	Renew Assembly	5 Yrs	2028	$21,780	$26,000

Fire Safety

Fire 02 - Fire Alarm Panel - Addressable [SC]						
R01	Replace battery packs.	Renew Component	5 Yrs	2028	$500	$600

Amenities

Amen 01 - Computer Equipment [R]						
R01	Replace components of electronic equipment.	Renew Assembly	6 Yrs	2028	$3,000	$3,600

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2029						
Enclosure						
Encl 06 - Coated Architectural Concrete Wall [SC]						
R04	Reapplication of the protective coating as required, including preparation of the concrete substrate.	Renew Assembly	10 Yrs	2029	$285,525	$350,000
Encl 09 - Masonry Veneer Walls [SC]						
J04	Repoint mortar joints in clay masonry veneer wall, as required.	Maintenance Level 2	10 Yrs	2029	$14,000	$17,000
Encl 10 - Window Walls & Aluminum Framed Windows [R]						
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2029	$10,000	$12,000
Encl 11 - Curtain Wall [C]						
R01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2029	$2,700	$3,300
Encl 12 - Aluminum Storefront [C]						
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2029	$6,000	$7,400
Encl 16 - Aluminum Sliding Glass Doors [R]						
J07	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2029	$8,640	$11,000
Encl 19 - Exposed Urethane Membranes - Balconies & Eyebrows [R]						
J01	Repair locally damaged and delaminated balcony membrane prior to re-application of top coat. Refer to membrane warranty if applicable.	Maintenance Level 3	10 Yrs	2029	$43,920	$54,000
R01	Prepare and re-apply membrane top coat.	Renew Component	10 Yrs	2029	$622,200	$770,000
Encl 21 - At-Grade Waterproofing [SC]						
R01	Locally repair cracks in the soffit and walls of the parkade, as required.	Renew Component	5 Yrs	2029	$15,000	$18,000
Encl 22 - Traffic-Bearing Membrane [R]						
J03	Re-apply traffic demarcation striping and directional signage as required. Frequency will depend on traffic volume and other factors.	Maintenance Level 1	5 Yrs	2029	$5,000	$6,100
Encl 24 - Exterior Sealant [SC]						
R01	Replace sealant at perimeter of windows, joints, vents and other penetrations throughout, as required.	Renew Assembly	15 Yrs	2029	$280,525	$350,000
Electrical						
Elec 03 - Unit Substation [SC]						
R03	Service shutdown event. Inspect, clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	Renew Component	3 Yrs	2029	$5,000	$6,100
R04	Conduct infrared thermography and ultrasonic scanning tests on unit substation equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated with maintenance activities.	Renew Component	3 Yrs	2029	$2,000	$2,500

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Elec 04 - Electrical Distribution [R]						
R01	Conduct infrared thermography and ultrasonic scanning tests on all switchgear, distribution panels, cable and bus connections, and other critical equipment. Results may diagnose hidden hazards; contractor should provide certificate for insurance purposes. To be coordinated prior to planned maintenance to identify areas that require immediate attention. Tests should be conducted on energized equipment during peak demand periods if possible.	Renew Component	3 Yrs	2029	$3,000	$3,700
Mechanical						
Mech 10 - Pump - DHW - Circulation and Recirculation [R]						
R01	Cyclical replacement of recirculating pumps, as required.	Renew Assembly	8 Yrs	2029	$12,000	$15,000
Mech 39 - Rollup Doors [R]						
R02	Replace rollup door motors and controllers.	Renew Assembly	6 Yrs	2029	$3,000	$3,700
Fire Safety						
Fire 07 - Portable Fire Extinguishers [R]						
R01	Cyclical replacement of fire extinguishers, as required.	Renew Assembly	6 Yrs	2029	$6,800	$8,400
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2030						
Enclosure						
Encl 18 - Metal Clad Swing Door [SC]						
R06	Replace swing door.	Renew Assembly	25 Yrs	2030	$15,000	$19,000
Electrical						
Elec 01 - Distribution Transformers [R]						
J01	Clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	Maintenance Level 3	5 Yrs	2030	$3,000	$3,800
Mechanical						
Mech 03 - Gas Detection - Parking Garage [SC]						
R01	Cyclical replacement of gas detection sensors.	Renew Assembly	5 Yrs	2030	$13,500	$17,000
Mech 07 - Pump - Domestic Water Booster [R]						
R01	Replace motor bearings, pump bearings and housing, as required.	Renew Component	7 Yrs	2030	$5,000	$6,300
Mech 09 - Piping - Domestic Water Distribution [R]						
J01	Check that pipe hangars are properly fastened.	Maintenance Level 3	5 Yrs	2030	$500	$630
J02	Check piping and supports for mechanical damage, proper clearance, adequate insulation, and labeling.	Maintenance Level 3	5 Yrs	2030	$500	$630
J03	Check integrity of all soldered pipe connections and couplings.	Maintenance Level 3	5 Yrs	2030	$500	$630
Mech 17 - Fixtures - Showers [R]						
R01	Cyclical replacement of faucets and trim, as required.	Renew Assembly	25 Yrs	2030	$3,000	$3,800

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	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Mech 18 - Fixtures - Taps & Sinks [R]						
R01	Cyclical replacement of sinks and faucets, as required.	Renew Assembly	20 Yrs	2030	$6,000	$7,600
Mech 24 - Pump - Hydronic Loop - Basemount [R]						
R02	Cyclical replacement of circulating pumps for hydronic loop - heating.	Renew Assembly	5 Yrs	2030	$7,260	$9,200
Mech 25 - Heat Exchanger - Shell & Tube [R]						
R01	Replace shell and tube heat exchanger.	Renew Assembly	20 Yrs	2030	$16,000	$20,000
Mech 29 - Condensing Unit - Outdoor Section - Heat Pump [R]						
R01	Cyclical replacement of components of condensing units and fan coil units on split system AC.	Renew Assembly	5 Yrs	2030	$15,840	$20,000
Mech 32 - Exhaust Fan Parkade - Inline [SC]						
R02	Rebuild of supply and exhaust fans, as required.	Renew Assembly	5 Yrs	2030	$16,250	$21,000
Mech 36 - Packaged Dehumidification Unit [R]						
R02	Replacement of dehumidification unit.	Renew Assembly	25 Yrs	2030	$65,000	$82,000
Mech 41 - Overhead Gate Motors [R]						
R01	Replace overhead door motors and operators, as required.	Renew Assembly	7 Yrs	2030	$7,500	$9,500
Fire Safety						
Fire 08 - Sprinkler Systems - Dry [SC]						
R04	Replace damaged sprinkler heads, hangers and leaking gaskets, cages, sway-braces, drains etc as required.	Renew Component	5 Yrs	2030	$900	$1,100
Fire 10 - Sprinklers & Standpipe - Wet [R]						
R02	Renew compromised portions of piping, gaskets, connections, valves, devices and trim to maintain required function.	Renew Component	5 Yrs	2030	$19,800	$25,000
Interior Finishes						
Finish 02 - Ceramic Tiled Flooring [R]						
R02	Replace floor tiles.	Renew Assembly	25 Yrs	2030	$22,000	$28,000
Finish 03 - Tiled Flooring [R]						
R02	Replace floor tiles.	Renew Assembly	25 Yrs	2030	$35,000	$44,000
Finish 07 - Ceramic Tile [R]						
R03	Replace ceramic wall tiles.	Renew Assembly	25 Yrs	2030	$12,000	$15,000
Finish 10 - Wood Paneling [R]						
R01	Replace wood paneling.	Renew Assembly	25 Yrs	2030	$40,000	$51,000
Amenities						
Amen 05 - Metal Screen Storage Lockers [R]						
R01	Replace/repair metal storage lockers, as required.	Renew Assembly	25 Yrs	2030	$10,000	$13,000
Amen 09 - Public Signage [R]						
R01	Replace damaged and outdated signage, as required.	Renew Assembly	25 Yrs	2030	$6,000	$7,600
Amen 13 - Dry Sauna [R]						
R02	Refurbish sauna interior finish and element.	Renew Assembly	20 Yrs	2030	$10,000	$13,000

The Max
10 Year Costing - 2022 through 2031

	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Amen 14 - Pool and Spa Circulation & Sanitation [R]						
R01	Cyclical replacement of components of water circulation and sanitation equipment for spa, as required.	Renew Component	5 Yrs	2030	$5,000	$6,300
	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Year 2031						
Enclosure						
Encl 10 - Window Walls & Aluminum Framed Windows [R]						
J04	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2031	$10,000	$13,000
Encl 11 - Curtain Wall [C]						
R01	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2031	$2,700	$3,500
Encl 12 - Aluminum Storefront [C]						
R03	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Renew Component	2 Yrs	2031	$6,000	$7,800
Encl 16 - Aluminum Sliding Glass Doors [R]						
J07	Replace insulating glazing units (IGUs) with condensation or misting between panes of glass.	Maintenance Level 3	2 Yrs	2031	$8,640	$11,000
Electrical						
Elec 09 - Security Surveillance [R]						
R01	Service the multiplex unit, update software as required.	Renew Component	5 Yrs	2031	$5,000	$6,500
Mechanical						
Mech 04 - Controls - HVAC Instrumentation [R]						
R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	Renew Assembly	3 Yrs	2031	$1,000	$1,300
Mech 06 - Tank - DHW - Storage [R]						
R04	Cyclical replacement of domestic hot water storage tanks.	Renew Assembly	8 Yrs	2031	$40,500	$53,000
Mech 11 - Drainage - Sanitary [SC]						
J01	Insert video cameras into main lines to conduct pipe inspection.	Maintenance Level 3	5 Yrs	2031	$3,000	$3,900
J02	Auger lateral drain lines.	Maintenance Level 3	5 Yrs	2031	$4,000	$5,200
Mech 12 - Drainage - Perimeter and Foundation [SC]						
J01	By means of pipe camera service, visually inspect underground piping runs. Look for build up of silts and dirt fines, tree roots, and other obstructions. Look for standing water indicating saturated soil conditions or impermeable conditions.	Maintenance Level 3	5 Yrs	2031	$3,200	$4,200
J02	Flush perimeter and foundation piping to clear and remove any buildup of debris.	Maintenance Level 3	5 Yrs	2031	$4,000	$5,200
Mech 13 - Drainage - Storm - Internal [SC]						
J01	Insert video cameras into drainage piping to conduct pipe inspection.	Maintenance Level 3	5 Yrs	2031	$5,000	$6,500
J02	Hydroflush drainage piping to clear and remove any buildup of debris.	Maintenance Level 3	5 Yrs	2031	$4,000	$5,200
Mech 26 - Chemical Treatment Equipment [R]						
R01	Cyclical replacement of components of water treatment equipment.	Renew Assembly	8 Yrs	2031	$2,000	$2,600

The Max

10 Year Costing - 2022 through 2031

	Description	Task	Frequency	Next Event	Cost (CYD)	Cost (FYD)
Mech 36 - Packaged Dehumidification Unit [R]						
R01	Half-life refit of unit, including compressor replacement and rebuild/replacement of fans, dampers and devices.	Renew Component	8 Yrs	2031	$40,000	$52,000

Appendix D

Disclosures and Disclaimers

Disclosures and Disclaimers

Condition of the Assets

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

Cost Estimating for Assets

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

Maintenance of the Assets:

The maintenance checklists are not exhaustive and are intended as a framework for the ongoing refinement of the maintenance program.

- Work must only be carried out by appropriately qualified personnel who have the necessary and sufficient knowledge about the maintenance tasks and maintenance intervals.
- The manufacturers' latest printed instructions should take precedence in the event of any conflict with the maintenance checklists.
- The Owners' maintenance staff and/or service contractors are responsible to verify what is contained in the manufacturers' documentation regarding recommended maintenance procedures and intervals.
- The maintenance checklists and maintenance intervals should be reviewed annually and adjusted, as required, to reflect the service environment, feedback from contractors, etc.

Specialist and Non-Specialist Reviews

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

Forecasting the Useful Service Life of Assets

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

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

Funding Models

The funding models for Depreciation Reports are based on a 30-year horizon and use "future year dollars termed" methodology. This methodology projects the costs (in future year dollars) over the planning horizon and not beyond the terminus year of the planning horizon. The current year is the starting year of the planning horizon. The term,

therefore, matches the initial horizon and does not respect a shifting horizon. This means that in year 1 the funding scenarios will look forward for 30 years.

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

Appendix E

Funding Scenario Cash Flow Tables

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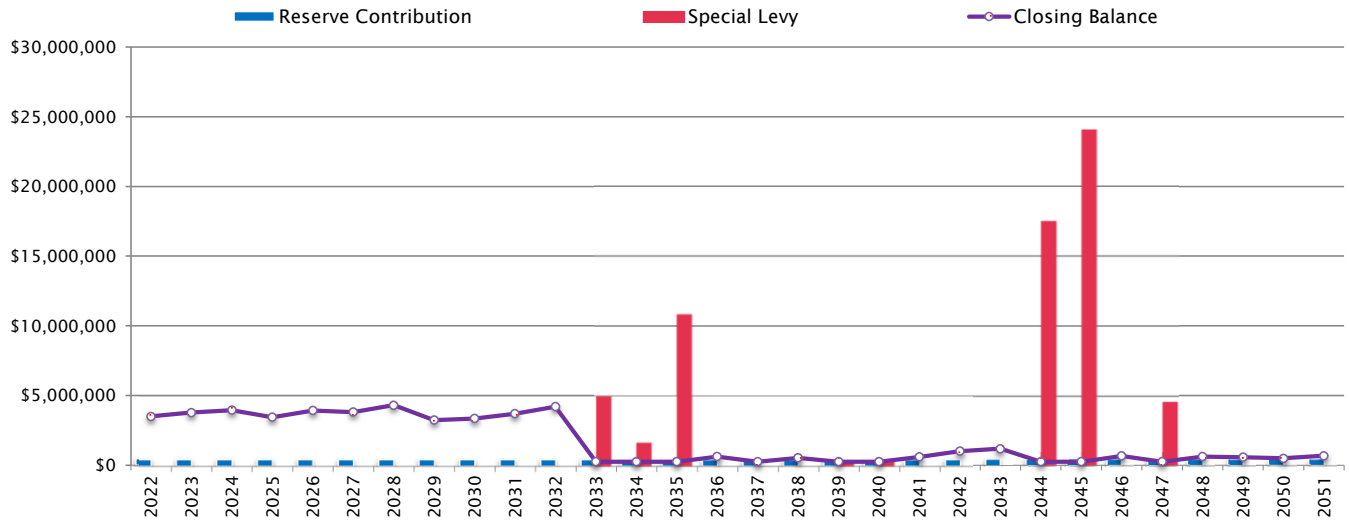
Current Funding Model

The Max

Fixed Annual Contribution of $475,000		Starting Reserve Balance	$2,962,115
Building	The Max	Minimum Closing Balance	$251,000
Interest/Investment Rate	2.0%	Annual Reserve Contribution	$475,000
Planning Horizon	**30**	Reserve Contribution Increase	0.0%
Number of Units	541	Monthly Avg. Unit Contribution	$73

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Closing Balance
2022	$2,962,115	$475,000	$0	$59,242	$0	$3,496,357
2023	$3,496,357	$475,000	$0	$69,927	$266,520	$3,774,764
2024	$3,774,764	$475,000	$0	$75,495	$374,500	$3,950,760
2025	$3,950,760	$475,000	$0	$79,015	$1,061,630	$3,443,145
2026	$3,443,145	$475,000	$0	$68,863	$62,300	$3,924,708
2027	$3,924,708	$475,000	$0	$78,494	$663,180	$3,815,022
2028	$3,815,022	$475,000	$0	$76,300	$63,800	$4,302,522
2029	$4,302,522	$475,000	$0	$86,050	$1,638,200	$3,225,373
2030	$3,225,373	$475,000	$0	$64,507	$425,090	$3,339,790
2031	$3,339,790	$475,000	$0	$66,796	$180,900	$3,700,686
2032	$3,700,686	$475,000	$0	$74,014	$58,100	$4,191,600
2033	$4,191,600	$475,000	$4,947,948	$83,832	$9,447,380	$251,000
2034	$251,000	$475,000	$1,666,680	$5,020	$2,146,700	$251,000
2035	$251,000	$475,000	$10,823,070	$5,020	$11,303,090	$251,000
2036	$251,000	$475,000	$0	$5,020	$121,800	$609,220
2037	$609,220	$475,000	$20,996	$12,184	$866,400	$251,000
2038	$251,000	$475,000	$0	$5,020	$202,400	$528,620
2039	$528,620	$475,000	$403,938	$10,572	$1,167,130	$251,000
2040	$251,000	$475,000	$448,930	$5,020	$928,950	$251,000
2041	$251,000	$475,000	$0	$5,020	$133,100	$597,920
2042	$597,920	$475,000	$0	$11,958	$82,500	$1,002,378
2043	$1,002,378	$475,000	$0	$20,048	$320,730	$1,176,696
2044	$1,176,696	$475,000	$17,489,870	$23,534	$18,914,100	$251,000
2045	$251,000	$475,000	$24,014,840	$5,020	$24,494,860	$251,000
2046	$251,000	$475,000	$0	$5,020	$69,100	$661,920
2047	$661,920	$475,000	$4,579,142	$13,238	$5,478,300	$251,000
2048	$251,000	$475,000	$0	$5,020	$117,200	$613,820
2049	$613,820	$475,000	$0	$12,276	$538,200	$562,896
2050	$562,896	$475,000	$0	$11,258	$559,800	$489,354
2051	$489,354	$475,000	$0	$9,787	$299,800	$674,341
		$14,250,000	$64,395,413	$1,052,573	$81,985,760	



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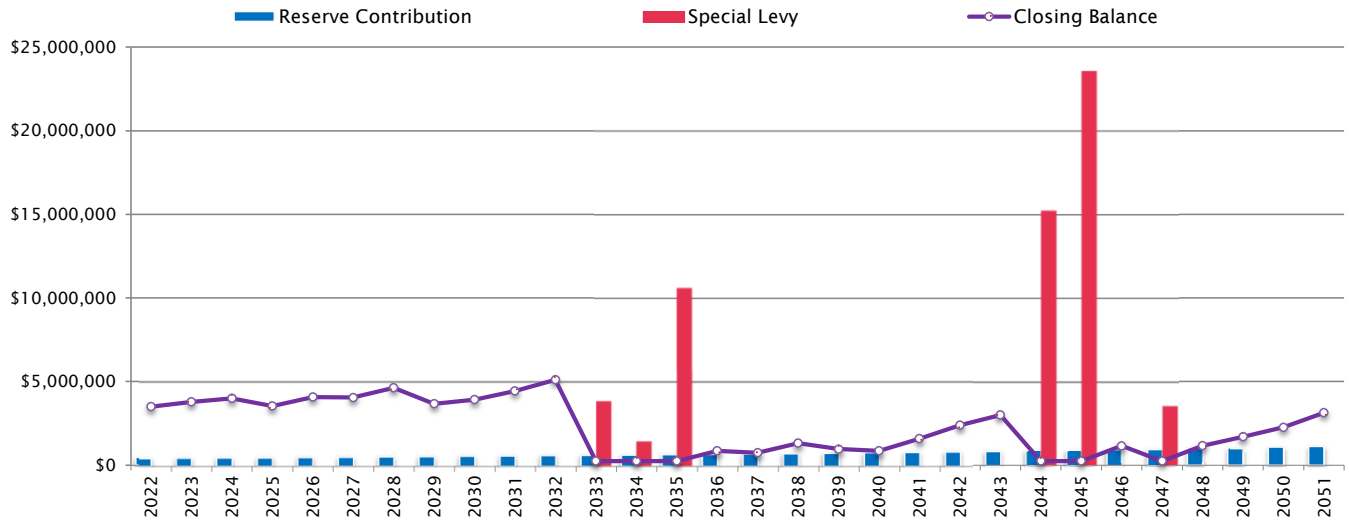
Alternative #1 Funding Model

The Max

Increasing Annual Contribution, Starting at $475,000 + 3%		Starting Reserve Balance	$2,962,115
Building	The Max	Minimum Closing Balance	$251,000
Interest/Investment Rate	2.0%	Annual Reserve Contribution	$475,000
Planning Horizon	30	Reserve Contribution Increase	3.0%
Number of Units	541	Monthly Avg. Unit Contribution	$73

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Closing Balance
2022	$2,962,115	$475,000	$0	$59,242	$0	$3,496,357
2023	$3,496,357	$489,250	$0	$69,927	$266,520	$3,789,014
2024	$3,789,014	$503,928	$0	$75,780	$374,500	$3,994,222
2025	$3,994,222	$519,045	$0	$79,884	$1,061,630	$3,531,522
2026	$3,531,522	$534,617	$0	$70,630	$62,300	$4,074,469
2027	$4,074,469	$550,655	$0	$81,489	$663,180	$4,043,434
2028	$4,043,434	$567,175	$0	$80,869	$63,800	$4,627,677
2029	$4,627,677	$584,190	$0	$92,554	$1,638,200	$3,666,221
2030	$3,666,221	$601,716	$0	$73,324	$425,090	$3,916,171
2031	$3,916,171	$619,767	$0	$78,323	$180,900	$4,433,362
2032	$4,433,362	$638,360	$0	$88,667	$58,100	$5,102,289
2033	$5,102,289	$657,511	$3,836,534	$102,046	$9,447,380	$251,000
2034	$251,000	$677,236	$1,464,444	$5,020	$2,146,700	$251,000
2035	$251,000	$697,554	$10,600,516	$5,020	$11,303,090	$251,000
2036	$251,000	$718,480	$0	$5,020	$121,800	$852,700
2037	$852,700	$740,035	$0	$17,054	$866,400	$743,389
2038	$743,389	$762,236	$0	$14,868	$202,400	$1,318,092
2039	$1,318,092	$785,103	$0	$26,362	$1,167,130	$962,426
2040	$962,426	$808,656	$0	$19,249	$928,950	$861,381
2041	$861,381	$832,915	$0	$17,228	$133,100	$1,578,424
2042	$1,578,424	$857,903	$0	$31,568	$82,500	$2,385,395
2043	$2,385,395	$883,640	$0	$47,708	$320,730	$2,996,013
2044	$2,996,013	$910,149	$15,199,018	$59,920	$18,914,100	$251,000
2045	$251,000	$937,454	$23,552,386	$5,020	$24,494,860	$251,000
2046	$251,000	$965,577	$0	$5,020	$69,100	$1,152,497
2047	$1,152,497	$994,545	$3,559,208	$23,050	$5,478,300	$251,000
2048	$251,000	$1,024,381	$0	$5,020	$117,200	$1,163,201
2049	$1,163,201	$1,055,112	$0	$23,264	$538,200	$1,703,377
2050	$1,703,377	$1,086,766	$0	$34,068	$559,800	$2,264,410
2051	$2,264,410	$1,119,369	$0	$45,288	$299,800	$3,129,267
		$22,598,322	$58,212,107	$1,342,483	$81,985,760	



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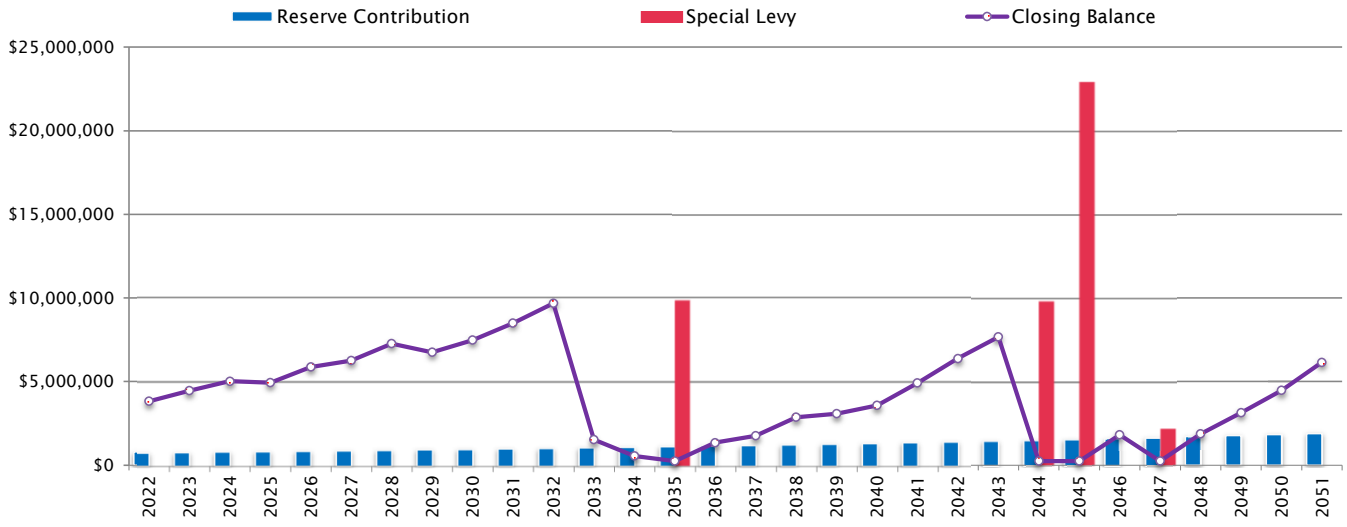
Alternative #2 Funding Model

The Max

Increasing Annual Contribution, Starting at $800,000 + 3%		Starting Reserve Balance	$2,962,115
Building	The Max	Minimum Closing Balance	$251,000
Interest/Investment Rate	2.0%	Annual Reserve Contribution	$800,000
Planning Horizon	30	Reserve Contribution Increase	3.0%
Number of Units	541	Monthly Avg. Unit Contribution	$123

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Closing Balance
2022	$2,962,115	$800,000	$0	$59,242	$0	$3,821,357
2023	$3,821,357	$824,000	$0	$76,427	$266,520	$4,455,264
2024	$4,455,264	$848,720	$0	$89,105	$374,500	$5,018,590
2025	$5,018,590	$874,182	$0	$100,372	$1,061,630	$4,931,513
2026	$4,931,513	$900,407	$0	$98,630	$62,300	$5,868,250
2027	$5,868,250	$927,419	$0	$117,365	$663,180	$6,249,855
2028	$6,249,855	$955,242	$0	$124,997	$63,800	$7,266,294
2029	$7,266,294	$983,899	$0	$145,326	$1,638,200	$6,757,319
2030	$6,757,319	$1,013,416	$0	$135,146	$425,090	$7,480,791
2031	$7,480,791	$1,043,819	$0	$149,616	$180,900	$8,493,325
2032	$8,493,325	$1,075,133	$0	$169,867	$58,100	$9,680,225
2033	$9,680,225	$1,107,387	$0	$193,605	$9,447,380	$1,533,837
2034	$1,533,837	$1,140,609	$0	$30,677	$2,146,700	$558,422
2035	$558,422	$1,174,827	$9,809,673	$11,168	$11,303,090	$251,000
2036	$251,000	$1,210,072	$0	$5,020	$121,800	$1,344,292
2037	$1,344,292	$1,246,374	$0	$26,886	$866,400	$1,751,152
2038	$1,751,152	$1,283,765	$0	$35,023	$202,400	$2,867,540
2039	$2,867,540	$1,322,278	$0	$57,351	$1,167,130	$3,080,039
2040	$3,080,039	$1,361,946	$0	$61,601	$928,950	$3,574,636
2041	$3,574,636	$1,402,805	$0	$71,493	$133,100	$4,915,833
2042	$4,915,833	$1,444,889	$0	$98,317	$82,500	$6,376,539
2043	$6,376,539	$1,488,236	$0	$127,531	$320,730	$7,671,576
2044	$7,671,576	$1,532,883	$9,807,210	$153,432	$18,914,100	$251,000
2045	$251,000	$1,578,869	$22,910,971	$5,020	$24,494,860	$251,000
2046	$251,000	$1,626,235	$0	$5,020	$69,100	$1,813,155
2047	$1,813,155	$1,675,022	$2,204,859	$36,263	$5,478,300	$251,000
2048	$251,000	$1,725,273	$0	$5,020	$117,200	$1,864,093
2049	$1,864,093	$1,777,031	$0	$37,282	$538,200	$3,140,206
2050	$3,140,206	$1,830,342	$0	$62,804	$559,800	$4,473,552
2051	$4,473,552	$1,885,252	$0	$89,471	$299,800	$6,148,476
		$38,060,333	$44,732,713	$2,379,075	$81,985,760	



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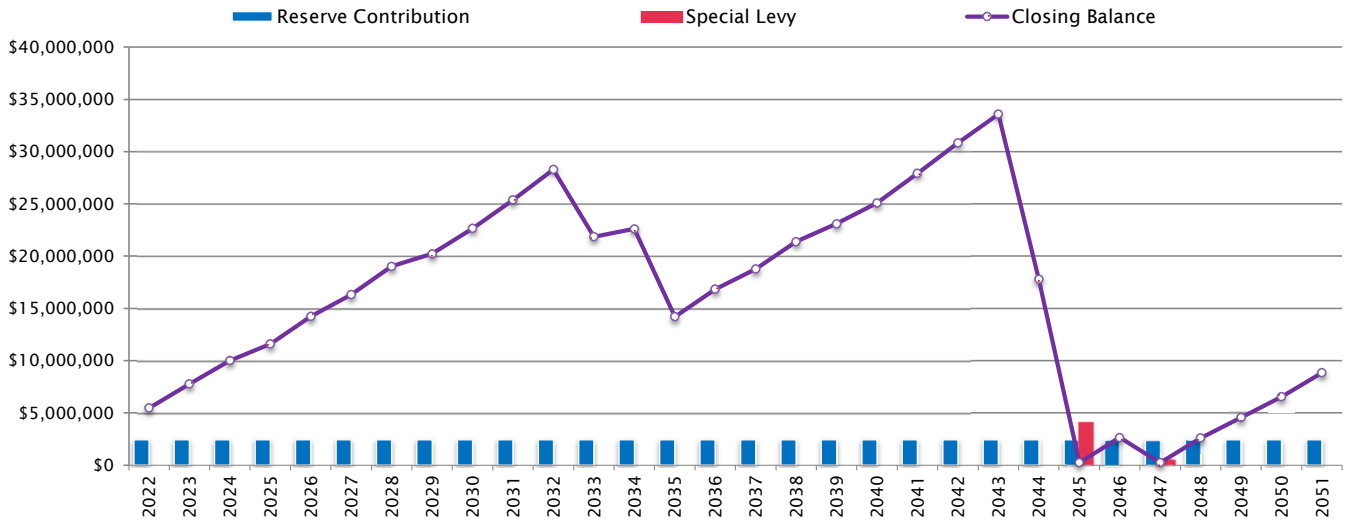
Progressive Funding Model

The Max

Fixed Annual Contribution of $2,455,000		Starting Reserve Balance	$2,962,115
Building	The Max	Minimum Closing Balance	$251,000
Interest/Investment Rate	2.0%	Annual Reserve Contribution	$2,455,000
Planning Horizon	30	Reserve Contribution Increase	0.0%
Number of Units	541	Monthly Avg. Unit Contribution	$378

Year	Opening Balance	Reserve Contribution	Special Levy	Reserve Income	Renewal Costs	Closing Balance
2022	$2,962,115	$2,455,000	$0	$59,242	$0	$5,476,357
2023	$5,476,357	$2,455,000	$0	$109,527	$266,520	$7,774,364
2024	$7,774,364	$2,455,000	$0	$155,487	$374,500	$10,010,352
2025	$10,010,352	$2,455,000	$0	$200,207	$1,061,630	$11,603,929
2026	$11,603,929	$2,455,000	$0	$232,079	$62,300	$14,228,707
2027	$14,228,707	$2,455,000	$0	$284,574	$663,180	$16,305,101
2028	$16,305,101	$2,455,000	$0	$326,102	$63,800	$19,022,404
2029	$19,022,404	$2,455,000	$0	$380,448	$1,638,200	$20,219,652
2030	$20,219,652	$2,455,000	$0	$404,393	$425,090	$22,653,955
2031	$22,653,955	$2,455,000	$0	$453,079	$180,900	$25,381,134
2032	$25,381,134	$2,455,000	$0	$507,623	$58,100	$28,285,656
2033	$28,285,656	$2,455,000	$0	$565,713	$9,447,380	$21,858,990
2034	$21,858,990	$2,455,000	$0	$437,180	$2,146,700	$22,604,469
2035	$22,604,469	$2,455,000	$0	$452,089	$11,303,090	$14,208,469
2036	$14,208,469	$2,455,000	$0	$284,169	$121,800	$16,825,838
2037	$16,825,838	$2,455,000	$0	$336,517	$866,400	$18,750,955
2038	$18,750,955	$2,455,000	$0	$375,019	$202,400	$21,378,574
2039	$21,378,574	$2,455,000	$0	$427,571	$1,167,130	$23,094,015
2040	$23,094,015	$2,455,000	$0	$461,880	$928,950	$25,081,946
2041	$25,081,946	$2,455,000	$0	$501,639	$133,100	$27,905,485
2042	$27,905,485	$2,455,000	$0	$558,110	$82,500	$30,836,094
2043	$30,836,094	$2,455,000	$0	$616,722	$320,730	$33,587,086
2044	$33,587,086	$2,455,000	$0	$671,742	$18,914,100	$17,799,728
2045	$17,799,728	$2,455,000	$4,135,138	$355,995	$24,494,860	$251,000
2046	$251,000	$2,455,000	$0	$5,020	$69,100	$2,641,920
2047	$2,641,920	$2,455,000	$579,542	$52,838	$5,478,300	$251,000
2048	$251,000	$2,455,000	$0	$5,020	$117,200	$2,593,820
2049	$2,593,820	$2,455,000	$0	$51,876	$538,200	$4,562,496
2050	$4,562,496	$2,455,000	$0	$91,250	$559,800	$6,548,946
2051	$6,548,946	$2,455,000	$0	$130,979	$299,800	$8,835,125
		$73,650,000	$4,714,679	$9,494,091	$81,985,760	



Appendix F

RDH Qualifications

Maintenance and Planning (MaP)

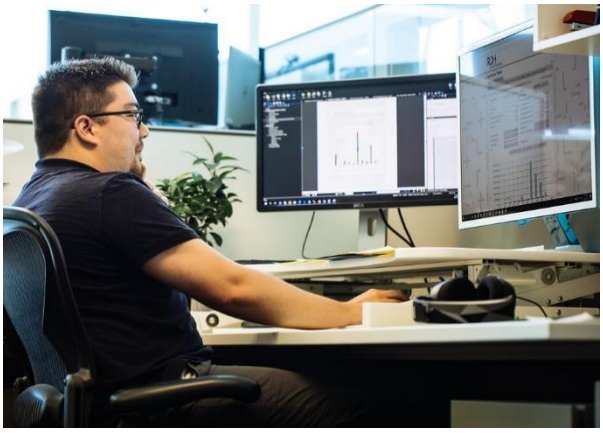
Our Maintenance and Planning (MaP) group works with your owner group to plan and develop strategies for the long- and short-term needs of your building—everything from roof maintenance to boiler replacement. As the acronym suggests, our services are designed so that we can provide you with a comprehensive roadMaP for the management of your assets.

RDH staff have broad practical experience assisting building owners with all aspects of planning for the long-term stewardship of their building(s). Our reserve fund analysts, engineers, architects, and technologists have a wide variety of formal training—including building science, structural engineering, and mechanical engineering. We believe that by using a team approach, we can ensure an appropriate level of thoroughness and quality. We have prepared hundreds of Depreciation Reports and are recognized as industry leaders.

Depreciation Reports

A Depreciation Report is a long-range financial planning tool. It's used to identify funding requirements for costs associated with future repair, renewal, and replacement projects. The report establishes where you need to focus resources and is a good place to start developing your roadMaP.

The first step in preparing the report is to compile an inventory of all of your building's assets (roofs, boilers, carpets, etc.). Using the inventory as a foundation, we estimate the remaining life of each asset, forecast the replacement costs in future year dollars, and display the financial analysis with graphs and cash flow tables.



Principals

Mark Will | B.A. Econ.
Principal, Vancouver Regional Manager

- → B.A., Economics
- → Has worked in project management since 1997
- → Member of the Board of Directors, Condominium Home Owner's Association (CHOA)
- → Member of Professional Association of Managing Agents (PAMA)

Jason Dunn | B.Arch.Sc., CCCA
Principal, Senior Project Manager

- → B.Arch.Sc., Building Science Option
- → Certified Construction Contract Administrator, CSC
- → Has worked in building science consulting since 2004

David Taguchi | Eng.L., RRO
Principal, Building Science Specialist

- → Eng.L., Engineers and Geoscientists of British Columbia
- → Registered Roof Observer (RRO), Roof Consultants Institute Inc.
- → Member of Applied Science Technologists and Technicians of British Columbia
- → Has 19 years of building science experience

Associates and Project Managers

Brandon Carreira | Dipl.T.
Project Manager

- → MaP Service Area Leader
- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Has worked in maintenance and planning consulting since 2011
- → Prepared 150+ Depreciation Reports and has been involved with 200+ MaP projects

Jesse Listoen | Dipl.T.
Associate, Estimator

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Has 5+ years experience in maintenance and planning consulting
- → Has been involved in the preparation of 70+ Depreciation Reports

Josh Chambers | RSE, RRO
Associate, Project Manager

- → B.Tech., Construction Management Program
- → Red Seal Endorsement (RSE), Industry Training Authority
- → Registered Roof Observer (RRO), Roof Consultants Institute Inc.
- → Has worked in maintenance and planning consulting since 2021
- → Joined RDH as a Building Science Technologist in 2015

Len Sakuragi | P.Eng.
Associate, Building Science Engineer

- → B.A.Sc., Mechanical Engineering
- → Has worked in maintenance and planning consulting since 2020
- → Registered Professional Engineer, Engineers, and Geoscientists of BC

Michael Grummett | P.Eng.
Associate, Building Science Engineer

- → B.Eng., Structural Engineering
- → Has worked in maintenance and planning consulting since 2015
- → Registered Professional Engineer, Engineers, and Geoscientists of BC

Robyn Edgar | P.Eng.
Associate, Building Science Engineer

- → Associate Certificate (hons), Project Management
- → B.A.Sc. (with Distinction), Civil Engineering
- → Has worked in maintenance and planning consulting since 2019
- → Has 10 years of building science experience
- → Registered Professional Engineer, Engineers, and Geoscientists of BC

Technical Staff

Alex Seto | Dipl.T.
Building Science Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Has worked in maintenance and planning consulting since 2012

Joseph Hildebrandt | B.A.Sc., EIT
Building Science Engineer (EIT)

- → B.A.Sc., Mechanical Engineering (Thermofluids Option)
- → Has worked in maintenance and planning consulting since 2020

Joshua Villanueva | Dipl.T.
Building Science Technologist

- → Diploma in Architectural and Building Technology
- → Has worked in maintenance and planning consulting since 2021

Preston Wu | Dipl.T.
Building Science Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Has worked in maintenance and planning consulting since 2016

Riley Doyle | B.A.Sc., EIT
Building Science Engineer (EIT)

- → B.A.Sc., Mechanical Engineering
- → Has worked in maintenance and planning consulting since 2022

Torrance Beamish | B.F.A., Dipl.T.
Building Science Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Has worked in maintenance and planning consulting since 2017

Yan Marineau-Brachmann | B.A.Sc.
Building Science Engineer (EIT)

- → B.A.Sc., Civil Engineering
- → Has worked in maintenance and planning consulting since 2018

Administrators and Client Support

Aurelie Stoeckel
Project Assistant

- → Master's degree in Management
- → Prepares Maintenance and Planning estimates and proposals

Lyka Alodaga
Project Assistant

- → Certificate, Administrative Professional
- → Has worked in administration within engineering/architectural firms since 2018

Vanessa Jumawan
Maintenance and Planning Coordinator

- → Has worked in administration within engineering/architecture since 2008
- → Maintenance and Planning Proposal Coordinator, prepares Maintenance and Planning estimates and proposals

Software Support and Programmer

Matthew Branch | P.Eng.
Software Developer

- → B.Sc., Civil Engineering
- → Registered Professional Engineer, Engineers and Geoscientists of BC
- → Has worked in engineering data analysis since 2000

Acknowledgements

Serge Desmarais | B.Arch. Architect AIBC, CP
Principal (In Memoriam), Senior Building Science Specialist

- → RDH gratefully acknowledges the contributions of Serge Desmarais as the building science technical lead for the MaP group.
- → Registered Architect AIBC, Certified Professional
- → 30+ years' experience in building design and construction capital renewal projects
- → RDH 2004–2017
- → Worked in administration within engineering/architecture firms since 2004

Appendix G

Certificate of Insurance

Ref. No. 320009316541

CERTIFICATE OF INSURANCE

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

Re: Evidence of Insurance:

To Whom It May Concern
Suite 400, 4333 Still Creek Drive
Burnaby, BC V5C 6S6

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

Insured

RDH Building Science Inc.
Suite 400, 4333 Still Creek Drive
Burnaby, BC V5C 6S6

Coverage

Commercial General Liability	**Insurer**	Zurich Insurance Company Ltd	
	Policy #	8850746	
	Effective	01-Jul-2022	**Expiry** 01-Jul-2023
	Limits of Liability	Bodily Injury & Property Damage, Each Occurrence $1,000,000 Products and Completed Operations, Aggregate $2,000,000 Non-Owned Automobile Liability $1,000,000 Legal Liability for Damage to Hired Automobiles $100,000 Policy may be subject to a general aggregate and other aggregates where applicable	
Architects & Engineers Professional Liability	**Insurer**	Lloyd's Underwriters	
	Policy #	PSDEF2100249	
	Effective	01-Jul-2022	**Expiry** 01-Jul-2023
		Per Claim $1,000,000 Policy Term Aggregate $2,000,000	

Terms and / or Additional Coverage

Commercial General Liability includes:
General Aggregate: $2,000,000

THE POLICY CONTAINS A CLAUSE THAT MAY LIMIT THE AMOUNT PAYABLE
OR, IN THE CASE OF AUTOMOBILE INSURANCE,
THE POLICY CONTAINS A PARTIAL PAYMENT OF LOSS CLAUSE
THIS CERTIFICATE DOES NOT AMEND, EXTEND, OR ALTER THE COVERAGE AFFORDED BY THE POLICY

AON

Ref. No. 320009316541

CERTIFICATE OF INSURANCE

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

Dated : 04-July-2022

Aon Reed Stenhouse Inc

THE POLICY CONTAINS A CLAUSE THAT MAY LIMIT THE AMOUNT PAYABLE
OR, IN THE CASE OF AUTOMOBILE INSURANCE,
THE POLICY CONTAINS A PARTIAL PAYMENT OF LOSS CLAUSE
THIS CERTIFICATE DOES NOT AMEND, EXTEND, OR ALTER THE COVERAGE AFFORDED BY THE POLICY

AON