Depreciation Report Update | Project 1922.052

The Hudson, 610 Granville Street, Vancouver, BC

To The Owners, Strata Plan BCS2044
c/o Ms. Oxana Cherepinskaya,
Property Manager
Strata Plan BCS2044
#627 - 610 Granville Street
Vancouver BC V6C 3T3

Site Visit: June 27, 2016
Submitted: October 21, 2016
By RDH Building Science Inc.
224 West 8th Avenue
Vancouver BC V5Y 1N5

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1 Introduction

RDH Building Science Inc. (RDH) was retained by The Owners, Strata Plan BCS2044 (the Owners) to prepare a Depreciation Report Update (the Report) for the residential and commercial complex known as The Hudson. The property is located at 610 Granville Street, Vancouver, BC. The Report considers the common property and limited common property components (the Assets) that the Strata Corporation is 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 and mechanical equipment).

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 at RDH and the Owners.

This report is an update to the Depreciation Report issued on January 12, 2012. A site visit was completed on June 27, 2016, and the financial data is based on the 2016 fiscal year. A report was distributed to the strata council and strata management on October 21, 2016.

The Depreciation Report Update 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 changes, the Report will require updating. The Strata Property Act requires updates to the Report every three years; however, the Strata Corporation can choose to update portions of the Report to reflect changes to their financial status and completed work more frequently at their discretion.

2 The Hudson

The Hudson is a ten-year-old strata development. The building is of non-combustible construction with cast-in-place concrete structure and steel stud infill walls. The property also incorporates a number of heritage components at the lower levels.

The principal systems in the building include the building enclosure (the separation of the interior from exterior space), electrical (e.g. the electrical distribution, communications and security equipment), mechanical (heating, cooling, and plumbing), elevators (cabs and hoistway), fire safety (sprinklers, fire detection, and egress equipment), interior finishes (wall and floor finishes), amenities (e.g. fitness equipment and public signage), and sitework (e.g. hard and soft landscaping). The Assets within each system are described in detail in Appendix B.

The Hudson is party to an air space parcel agreement. Based on a review of the document, Strata Corporation BCS2044 (The Hudson) comprise the Air Space Parcel and the commercial portion of the building comprise the Remainder in the air space parcel agreement. Some of the forecasted expenditures in this report may be shared between Air Space Parcel and the Remainder.

Key physical parameters of The Hudson are summarized in Table 2.1and Figures 2.1 to 2.3.

TABLE 2.1 KEY PHYSICAL PARAMETERS

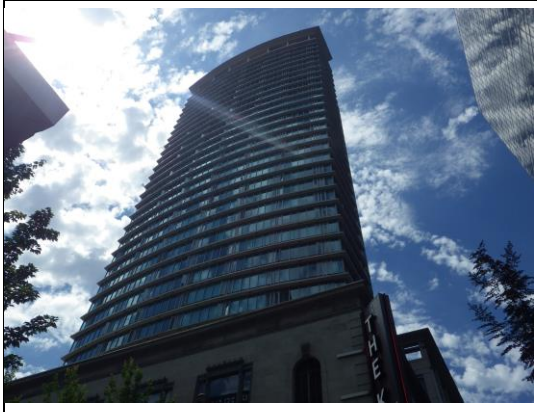

Figure 2.1Elevation photo of The Hudson.

Approximate date of first occupancy	2006
Approximate gross floor area, including the parkade (square foot)	608,000
Stories above grade	30 to 33
Total number of strata lots	423

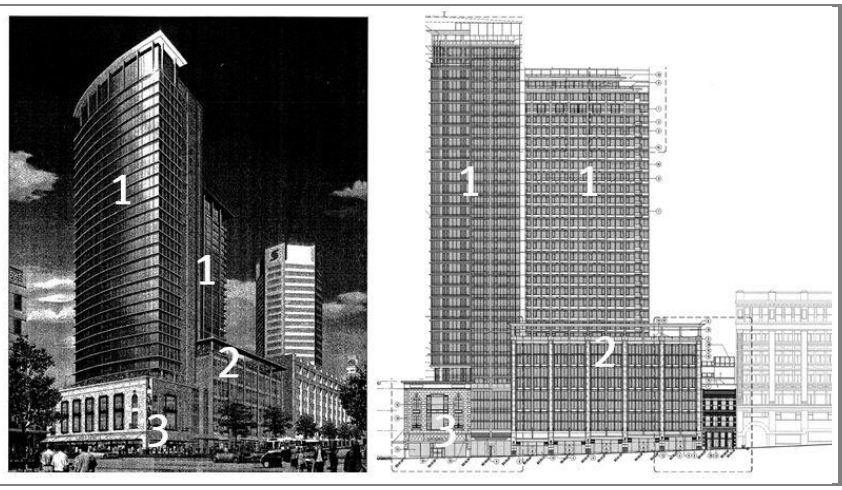

Figure 2.2

Rendering and elevation drawing of The Hudson, showing the residential tower (1), the residential portion of the podium (2) and the commercial portion (3).

Rendering and drawing © 2002 Stantec Architecture Ltd.

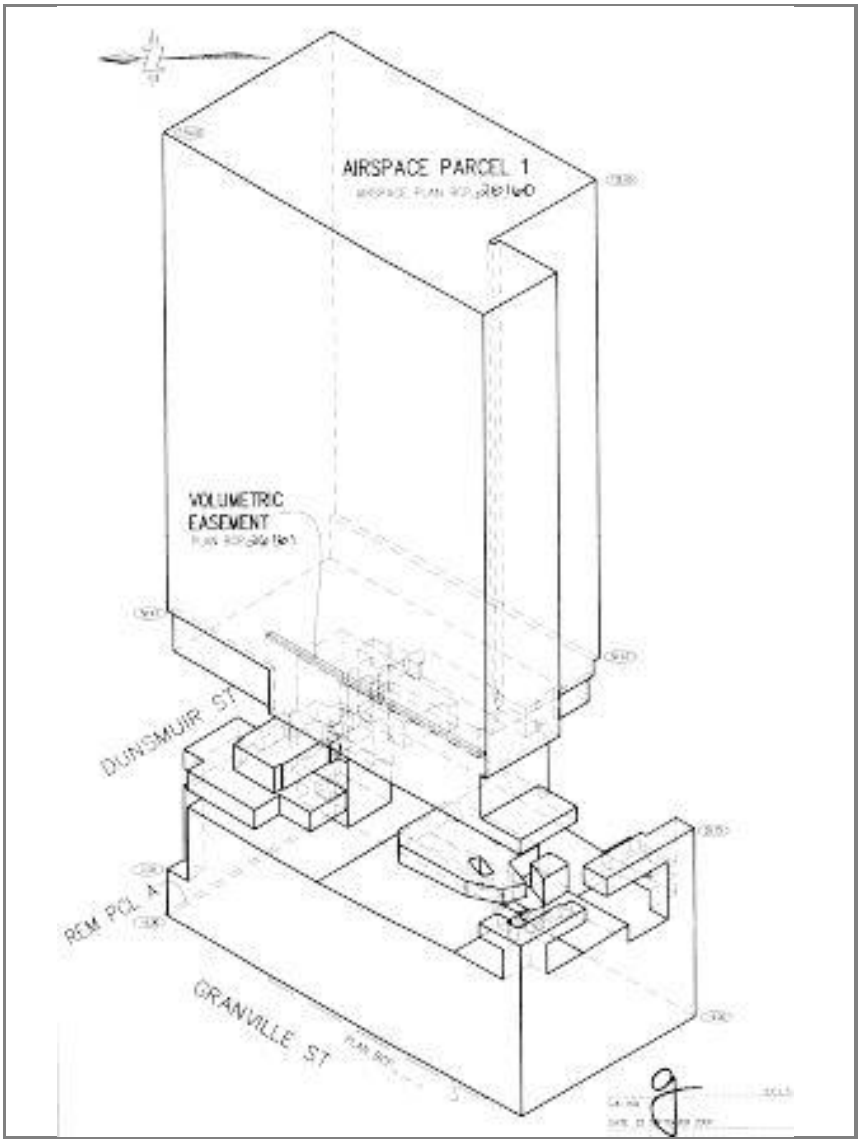

Figure 2.3

Excerpt from the strata plan indicating the boundaries of the Air Space Parcel (The Hudson) and the Remainder (commercial strata lots).

3 Assessments

Depreciation Reports combine two distinct types of analysis: a *physical assessment,* and a *financial assessment.* The assessments are used to determine what the Strata Corporation owns, what condition the Assets are in, what the strata is responsible for, and the *capital costs* associated with the Assets.

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

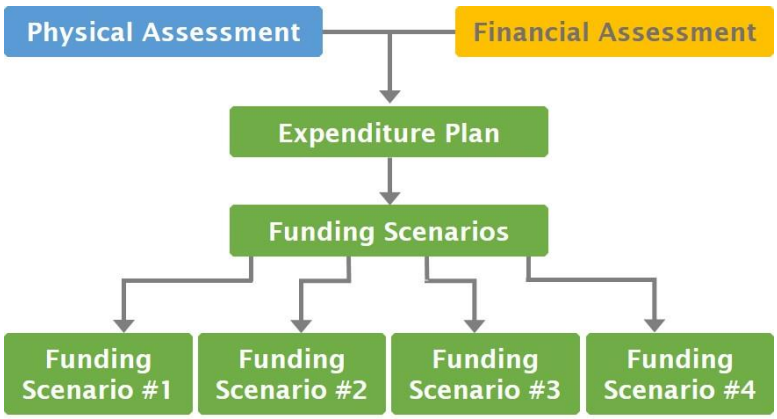

Figure 3.1

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 including a summary of key information.

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 Strata Corporation is 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 Strata Corporation owns 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,
- → 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 Strata Corporation; the original drawings; and any previous investigation reports commissioned by the Strata Corporation. It is expected that the Strata Corporation will need more detailed reviews as Assets approach the end of their service lives. Allowances for additional reviews or investigations are included as appropriate. Recommendations taken from any additional reviews should be incorporated into future Depreciation Report updates.

As part of the physical assessment, RDH compiled a history of completed projects by reviewing the documents provided by the strata and interviewing Strata Corporation representatives. The history is summarized in Table 3.1 below. The history establishes the chronological age of the Assets.

TABLE 3.1 MAINTENANCE AND RENEWALS HISTORY

Building Enclosure

- → 2016 - Renewal of deck membrane at suite 3113
- → 2016 – Localized upgrades to P2 overhead garage gate
- → 2015 – Localized repairs and renewal of waterproofing membrane in residential garbage room
- → 2015 – Localized crack injections to parkade wall
- → 2015 – Localized replacement of insulated glazing units (IGUs – the glazing within window frames)
- → 2014 – Cleaning of exterior wall cladding
- → 2008 - 2-Year Warranty Review (Trow Associates Inc.)

Mechanical

- → 2015 – Replacement of motor and installation of blower pulleys
- → 2015 – Completion of drain maintenance
- → 2015 – Installation of leak and malfunction system for DDC monitoring system
- → 2015 – Overhaul of booster pumps
- → 2014, 2015 – Replacement of pressure reducing valves and isolation valve for DHW riser
- → 2014 – Installation of backflow preventers
- → 2014 – Localized repairs to parkade fans
- → 2014 – Localized repairs to domestic hot water boilers

Electrical

- → 2016 – Retrofit of interior lighting with LED
- → 2016 – Installation of additional security cameras for bike storage lockers
- → 2016 – Cleaning of electrical equipment
- → 2015 – Infrared thermography scanning of electrical equipment
- → 2015 – Replacement fuel piping for emergency generator

Elevator

- → 2016 – Replacement of ropes for elevator cab #3

Interior Finishes

- → 2016 – Repainting of interior common areas
- → 2016 – Replacement of carpet on level 4

Sitework

- → 2014 – Removal of grass and replaced with concrete pavers at level 4 deck

On June 27, 2016 a representative of RDH Building Science Inc. visited the site to visually review the Assets. While the Depreciation Report Update 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	→ There is evidence of localized deterioration in high traffic areas (drive aisles), of the traffic bearing membrane in the parkade. The Strata Corporation should plan on completing localized repairs to the traffic bearing membrane in the near future. → There is evidence of deterioration with the urethane membrane at concrete "eyebrows" (canopies or projections of the concrete slab at each floor level). The Strata Corporation should replace the top coat of the urethane membranes in the near future.

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 (2% 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 complex 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 Strata Corporation. Table 3.3 below summarizes the key financial parameters reviewed as part of the financial assessment.

TABLE 3.3 KEY FINANCIAL PARAMETERS		
PARAMETER	INITIAL STUDY (2012)	UPDATE STUDY (2016)
Fiscal year end	December 31	
Building reproduction cost	$113,886,000	$125,000,000
Operating budget (excluding CRF contribution)	$1,256,829	$1,316,744
Annual CRF contribution	$122,682	$150,000
Accumulated CRF Balance (approximate)	$776,000	957,100*

**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 August 31, 2016.*

Depreciation Reports include 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 Depreciation Report Update 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 Depreciation Report Update 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 Association of Professional Engineers and Geoscientists of British Columbia (APEGBC), 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.

The cost estimates in the Depreciation Report Update are a starting point for the capital planning process, and can help Strata Corporations make preliminary decisions about how and when to implement projects. These cost estimates will be refined as the Strata Corporation makes decisions such as what is included or excluded in a project, and if Assets will be improved or changed.

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 in the appendices of the report.

4 Expenditures

Maintenance refers to activities that preserve the Assets, to ensure the Assets will last their predicted service lives and perform as expected. *Renewal* refers to the replacement or refurbishment of an Asset at the end of its useful service life.

Major maintenance refers to maintenance that occurs at intervals greater than one year, for example, every 18 months, two years, five years, etc. (less frequently than once a year). 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 Depreciation Report Update funding models. Costs associated with minor maintenance are included in the Strata Corporation's operating budget.

4.1 Major Maintenance and Renewals Expenditures

The Hudson is now approximately ten years old, and has completed several major maintenance items in an effort to prolong the service life of various Assets, such as cleaning the various components of the exterior cladding (please refer to Table 3.1 Maintenance and Renewals History for a detailed list of projects). However, as the complex continues to age, renewal expenditures can still be anticipated, some of which may occur in the next 10 years. Table 4.1 below summarizes all major maintenance and renewal costs by system, including costs forecast for the next 30 years.

The majority of the expenditures over the next 10 years are allocated in the building enclosure and mechanical systems. Some of the items that the Strata Corporation can expect to complete with regards to the building enclosure involve major maintenance items such as renewing the exterior sealant, recoating the exterior concrete, balcony and eyebrow urethane membrane top coats and completing localized repairs/renewal to the parking slab traffic membrane. Completing these major maintenance activities are not only for aesthetics, but also offer protection to the underlying and adjacent assemblies. Various mechanical equipment may also require replacement in the next 10 years such as domestic hot water tanks, booster pumps, gas detection sensors, etc. These are typically replaced on an as required basis. Please see section 5 for a more detailed discussion on renewals.

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	$1,100,000	$1,200,000	$6,600,000	$8,600,000
Electrical	$170,000	$180,000	$950,000	$1,400,000
Mechanical	$410,000	$440,000	$4,600,000	$6,500,000
Elevator	$0	$0	$910,000	$1,200,000
Fire Safety	$45,000	$48,000	$280,000	$370,000
Interior Finishes	$270,000	$300,000	$940,000	$1,300,000
Amenities	$48,000	$53,000	$130,000	$170,000
Sitework	$10,000	$11,000	$22,000	$30,000
Building Total	**$2,053,000**	**$2,232,000**	**$14,432,000**	**$19,570,000**

Approximately 15% of the Strata Corporation's capital expenditures will likely occur in the next 10 years. The distribution of estimated capital expenditures over the next 10 years is shown in Figure 4.1 below.

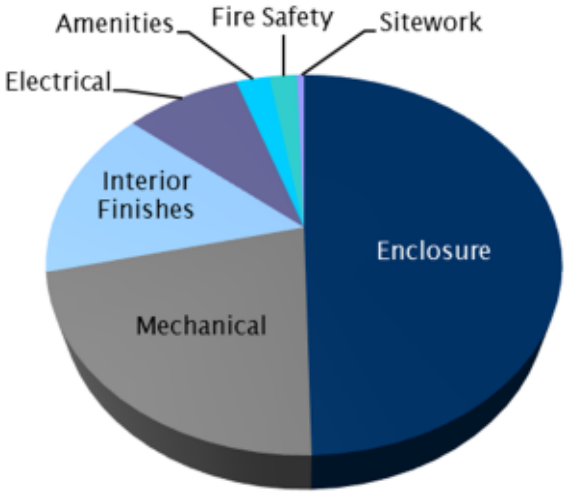

Figure 4.1 Distribution of estimated capital expenditures over 10 years by system.

Section 5 discusses the timing and size of renewals 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 Strata Corporation 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 of 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 red bars represent the estimated value of capital costs.

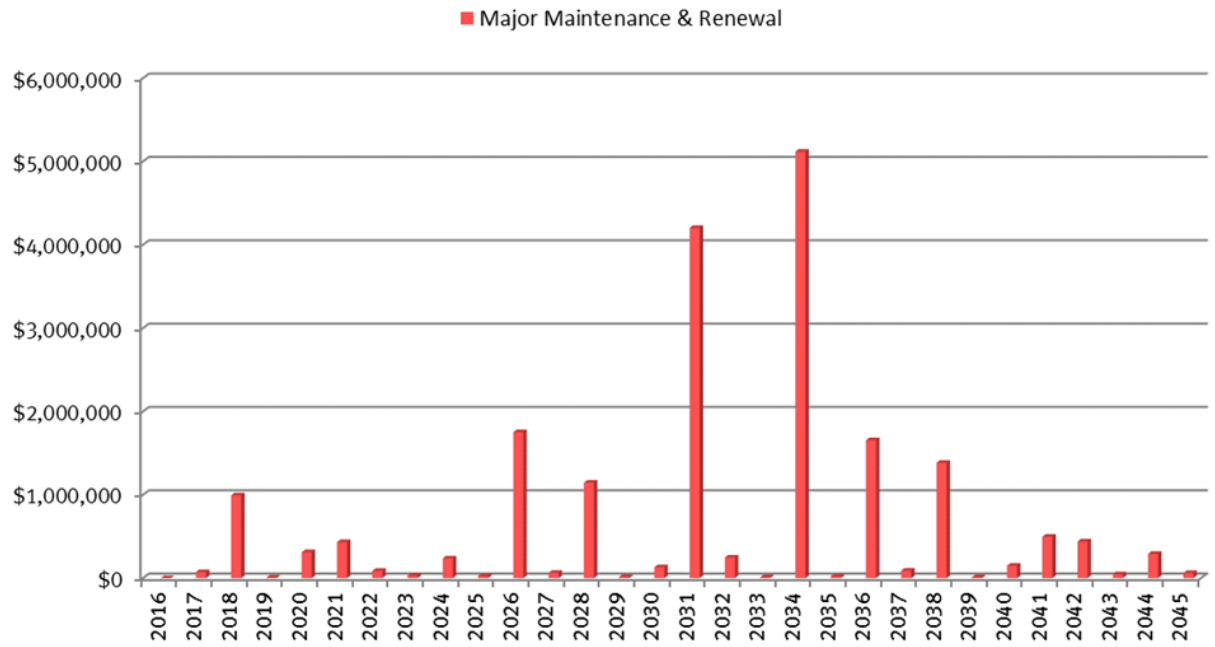

Figure 5.1 Strategic Forecast (30 Years), showing the approximate timing and value of some key capital expenditures.

Each bar on the graph represents a collection of different major maintenance and renewals activities, each with different values. Some possible key major maintenance and renewal activities forecast in the strategic plan for The Hudson are described below. The list is broken into five year intervals. The list is not

comprehensive; it is limited to major maintenance and renewals activities likely to cost more than $5,000; more detailed information is available to the Strata Corporation in the appendices.

2026 to 2030:

- → Enclosure: Renewal of the roofs, podium and deck membranes, as required.
- → Fire safety: Replacement of fire alarm panel, detection and LED exit signs, as required due to technical obsolescence.
- → Electrical: Replacement of exterior light fixtures and emergency generator, as required.
- → Commission a Piping Condition Assessment: This assessment will confirm the estimated remaining service life of the domestic water distribution piping.

2031 to 2035:

- → Elevator modernization: This project is based on the suggestions of our elevator sub-consultant (Gunn Consultants Inc.). In general, renewal projects associated with the elevator tend to be completed on a preventative basis, to reduce the risk of break downs, and unreliable operation.
- → Domestic water distribution repiping: Renewal of the domestic piping dependent on the findings of the Piping Condition Assessment.
- → Enclosure: Reapplication of the traffic bearing membrane, as required.
- → Mechanical: Replacement of the make-up air units, as required.

2036 to 2040:

- → Enclosure: Replacement of exterior guardrails, as required.
- → Electrical: Replacement of unit substation and emergency generator, as required.

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 Strata Corporation can anticipate changes to the strategic plan with each update of the Depreciation Report.

5.2 Tactical Planning Horizon

The graph below shows the projected major maintenance and renewal costs for the next ten years (Figure 5.2). Commonly, building managers refer to a five year tactical plan; however, a ten year plan allows the Strata Corporation 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 soft costs associated with project implementation, such as site access, design, contract administration, are not included.

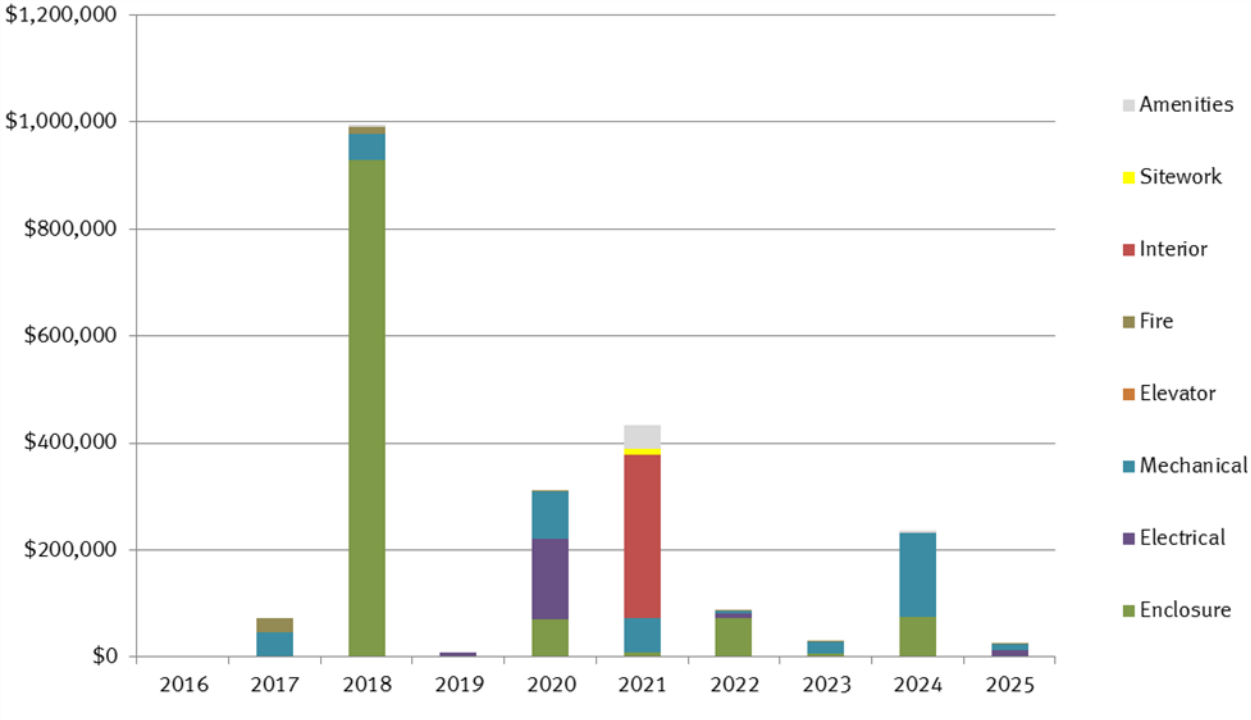

Figure 5.2 Tactical Forecast (10 years), showing the approximate timing and value of some key capital expenditures.

The tactical plan above represents one of many possible approaches to planning major maintenance and renewals activities. The Strata Corporation 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 Strata Corporation and may be reflected in updates to the Depreciation Report.

The list provides an overview of the significant expenditures forecast in the next 10 years. It is not comprehensive; it is limited to major maintenance and renewals activities likely to cost more than $5,000; more detailed information is available to the Strata Corporation in the appendices.

2017 to 2019:

→ Renewal of exterior coatings: This enclosure work includes renewing the paint on the exterior concrete walls and soffits, along with replacement of the exterior sealant. The purpose of recoating the walls and renewing the sealant are not only for aesthetics, but also to protect the underlying and adjacent assemblies. Depending on the quality of the materials selected, this work typically occurs on 10 year cycles.

- → Balcony urethane membranes: the urethane membrane consists of a base coat for waterproofing, and a topcoat for UV protection. This specific activity is referring to the renewal of the top coat. This work could be bundled with renewal of coatings & sealant.
- → Enclosure major maintenance: Replace failed insulated glazing units (IGU's) as required (the expenditure model assumes approximately 2% of the glazing area, every two years; reapplication of traffic demarcation striping and localized renewal of traffic bearing membrane in high traffic areas of the parkade (e.g. drive aisles).
- → Mechanical renewals and major maintenance: Allowances have been included to replace the domestic hot water tanks, gas detection sensors, and booster and recirculation pumps. In general, domestic hot water heating tanks and recirculation pumps have a service life of approximately 10 years, and are most often replaced an as-required basis.
- → Fire safety system: Cyclical renewal of the fire extinguishers at hydrostatic test cycle, and targeted replacement of fire detection equipment and alarms, as required.

2020 to 2025:

- → Electrical renewals and major maintenance: Modernization of proximity access control system components (fob system) and security system. These systems are commonly renewed after 15 to 20 years, depending on reliability, technological obsolescence of parts, and the security requirements of the Strata Corporation.
- → Mechanical renewals and major maintenance: Cyclical replacement of direct digital controls, heat tracing, sump pumps, and replacing components of the fluid cooler, as required.
- → Interior finishes: Renewal of the carpet, wallpaper and paint at common area walls, as desired for aesthetics.
- → Amenities: Replacement of fitness equipment and domestic appliances, as required.
- → Building Enclosure Condition Assessment (BECA); The Strata Corporation could consider commissioning a BECA to confirm the estimated remaining service lives of the building enclosure Assets (e.g. roof, deck and podium membranes) and identify maintenance needs not easily visible from the ground. The information from this report will be incorporated into future Depreciation Report Updates, which may affect when and how renewal projects are forecasted and implemented.

5.3 Project Implementation

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

- → Assessment – Determines what work must be done, what should be done and what could be done in general terms. The evaluation will help the Strata Corporation 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.

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 Depreciation 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 Strata Corporation 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 Strata Corporation to leverage economies of scale and lower the overall costs, improve the quality of the work, and incorporate upgrades.

The scope of the Depreciation 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 Strata Corporation 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 dictates that if the CRF closing balance is less than 25% of the operating fund, then the Strata Corporation must contribute either the difference between the balance and 25% of the operating fund, or up to 10% of the operating fund (*Strata Property Act Regulation*, BC Reg 43/2000, Ch. 6.1). Table 6.1 below shows the calculation to confirm the Strata Corporation meets the minimum requirements set out in the Strata Property Act Regulation.

TABLE 6.1 MINIMUM FUNDING REQUIREMENT CALCULATION

PARAMETER	VALUE
2016 operating budget (excluding CRF contribution)	$ 1,316,744
→ 25% of the operating budget	$ 329,186
→ 10% of the operating budget	$ 131,674
August 31, 2016 CRF closing balance	$ 957,100
2016 CRF Contribution	$ 150,000
Will the CRF closing balance exceed 25% of the operating budget at the end of the fiscal year?	Yes
Does the CRF contribution exceed 10% of the operating budget?	Yes

Although the Strata Corporation exceeds the statutory minimum contribution to the CRF, it is important to note that the statutory guideline is not a good measure of the financial preparedness of the corporation. If the Owners wish to avoid special levies, or to reduce the number and size of the levies, then increases to the CRF contributions will need to be made over the upcoming years.

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 Strata Corporation to evaluate how changes to the contingency reserve fund impact the number and size of special levies. The actual size and timing of special levies will be affected by how the Strata Corporation chooses to implement the renewal projects.

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

- → ***Previous (2012)***. The CRF allocation that was approved by the Owners at the time of the previous Depreciation Report.
- → ***Current (2016)***. The CRF allocation that was approved by the Owners at the last Annual General Meeting. The current allocation is also known as the status quo.
- → ***Alternative #1***. An increase from the status quo. Alternative #1 is just one of many possible scenarios for a new funding level in the next fiscal year.
- → ***Progressive***. This is the annual allocation that would have been set aside since the first year of operations to ensure that the reserve balance would have been sufficient to avoid any special assessments over a 30-year period. The progressive reserve allocation is an idealistic target which typically represents an upper bound for the amount allocated to the CRF.

TABLE 6.2 COMPARISON OF DIFFERENT FUNDING SCENARIOS

	PREVIOUS (2012)	CURRENT (2016)	ALTERNATIVE #1	PROGRESSIVE RESERVE
Annual CRF allocation	$122,682	$150,000	$330,000	$685,000
Minimum closing balance	$15,000	$15,000	$15,000	$15,000
Percent of progressive reserve	18 %	22 %	48 %	100 %
CRF contribution per average strata lot				
→ Per month	$24	$30	$65	$135
→ Per year	$288	$360	$780	$1,620
Approximate number of special levies (over 30 years)	11	10	4	0
Approximate value of special levies (over 30 years)	$15.0M	$14.2M	$9.2M	$0M
Assumed Inflation Rate	2 %	2 %	2 %	2 %
Assumed Interest Rate	2 %	2 %	2 %	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 ten years of cash flow data are also provided. The appendices to the report include 30 years of cash flow data for each funding scenario.

6.3 Previous (2012) Funding Scenario

The previous funding scenario is based on the CRF contribution approved by the Owners at the time of the previous Depreciation Report, and is provided for comparison purposes. The scenario is based on a fixed annual CRF contribution (no increases).

TABLE 6.3 PREVIOUS (2012) FUNDING MODEL: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CONTINGENCY COSTS	CLOSING BALANCE
2016	$957,100	$122,682	$0	$19,142	$0	$5,000	$1,093,924
2017	$1,093,924	$122,682	$0	$21,878	$72,700	$5,000	$1,160,785
2018	$1,160,785	$122,682	$0	$23,216	$994,680	$5,000	$307,002
2019	$307,002	$122,682	$0	$6,140	$7,400	$5,000	$423,424
2020	$423,424	$122,682	$0	$8,468	$311,640	$5,000	$237,935
2021	$237,935	$122,682	$87,425	$4,759	$432,800	$5,000	$15,000
2022	$15,000	$122,682	$0	$300	$87,800	$5,000	$45,182
2023	$45,182	$122,682	$0	$904	$31,650	$5,000	$132,118
2024	$132,118	$122,682	$0	$2,642	$237,200	$5,000	$15,242
2025	$15,242	$122,682	$0	$305	$24,600	$5,000	$108,629

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, if the strata corporation were to reduce their contribution to the same level as 2012.

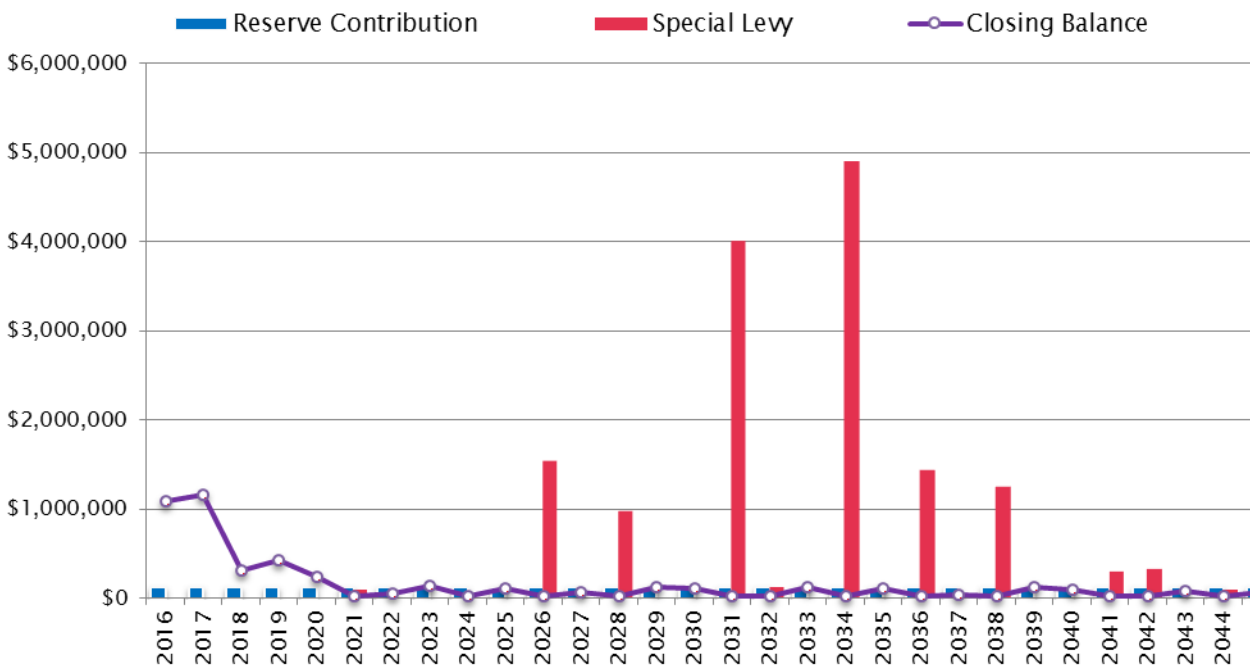

Figure 6.1 CRF balance, contribution and special levies based on the previous funding.

6.4 Current (2016) Funding Scenario

The current funding scenario is based on the CRF contribution approved by the Owners at the last annual general meeting (2016). The scenario is based on a fixed annual CRF contribution (no increases).

TABLE 6.4 CURRENT (2016) FUNDING MODEL: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CONTINGENCY COSTS	CLOSING BALANCE
2016	$957,100	$150,000	$0	$19,142	$0	$5,000	$1,121,242
2017	$1,121,242	$150,000	$0	$22,425	$72,700	$5,000	$1,215,967
2018	$1,215,967	$150,000	$0	$24,319	$994,680	$5,000	$390,606
2019	$390,606	$150,000	$0	$7,812	$7,400	$5,000	$536,018
2020	$536,018	$150,000	$0	$10,720	$311,640	$5,000	$380,099
2021	$380,099	$150,000	$0	$7,602	$432,800	$5,000	$99,901
2022	$99,901	$150,000	$0	$1,998	$87,800	$5,000	$159,099
2023	$159,099	$150,000	$0	$3,182	$31,650	$5,000	$275,631
2024	$275,631	$150,000	$0	$5,513	$237,200	$5,000	$188,943
2025	$188,943	$150,000	$0	$3,779	$24,600	$5,000	$313,122

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.

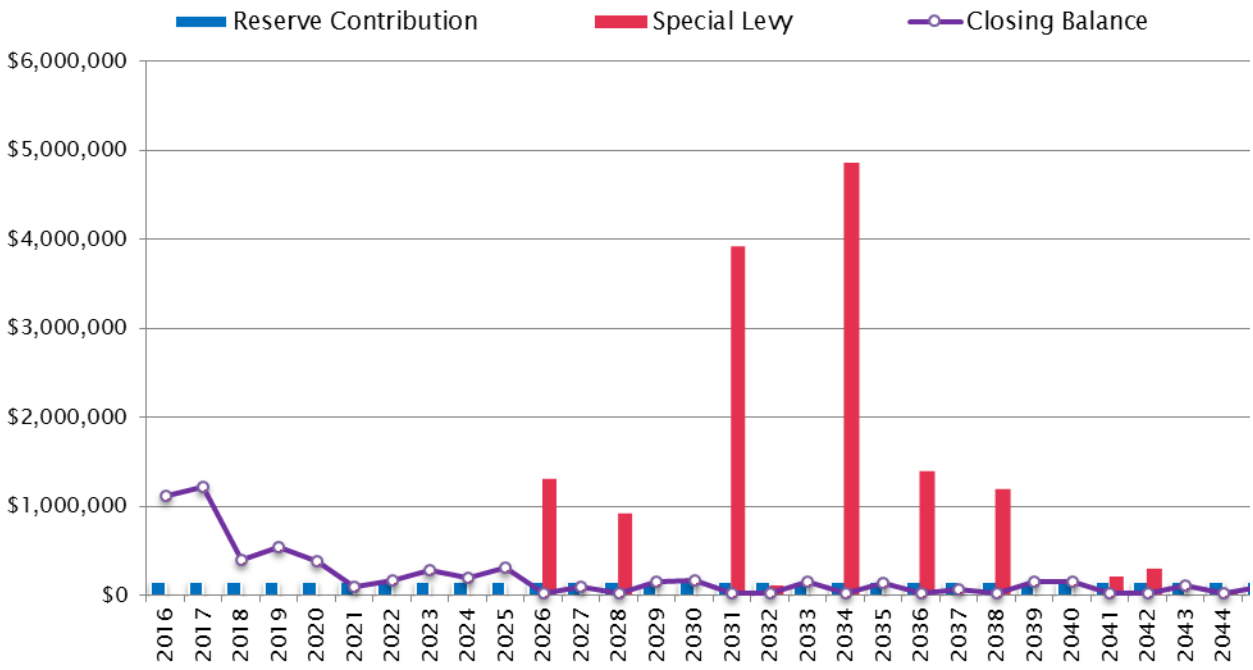

Figure 6.2 CRF balance, contribution and special levies based on the current funding.

6.5 Alternative Funding Scenario # 1

Alternative funding scenario #1 is based on a fixed annual CRF contribution.

TABLE 6.5 ALTERNATIVE FUNDING MODEL #1: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CONTINGENCY COSTS	CLOSING BALANCE
2016	$957,100	$330,000	$0	$19,142	$0	$5,000	$1,301,242
2017	$1,301,242	$330,000	$0	$26,025	$72,700	$5,000	$1,579,567
2018	$1,579,567	$330,000	$0	$31,591	$994,680	$5,000	$941,478
2019	$941,478	$330,000	$0	$18,830	$7,400	$5,000	$1,277,908
2020	$1,277,908	$330,000	$0	$25,558	$311,640	$5,000	$1,316,826
2021	$1,316,826	$330,000	$0	$26,337	$432,800	$5,000	$1,235,363
2022	$1,235,363	$330,000	$0	$24,707	$87,800	$5,000	$1,497,270
2023	$1,497,270	$330,000	$0	$29,945	$31,650	$5,000	$1,820,565
2024	$1,820,565	$330,000	$0	$36,411	$237,200	$5,000	$1,944,776
2025	$1,944,776	$330,000	$0	$38,896	$24,600	$5,000	$2,284,072

Alternative funding scenario #1 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.

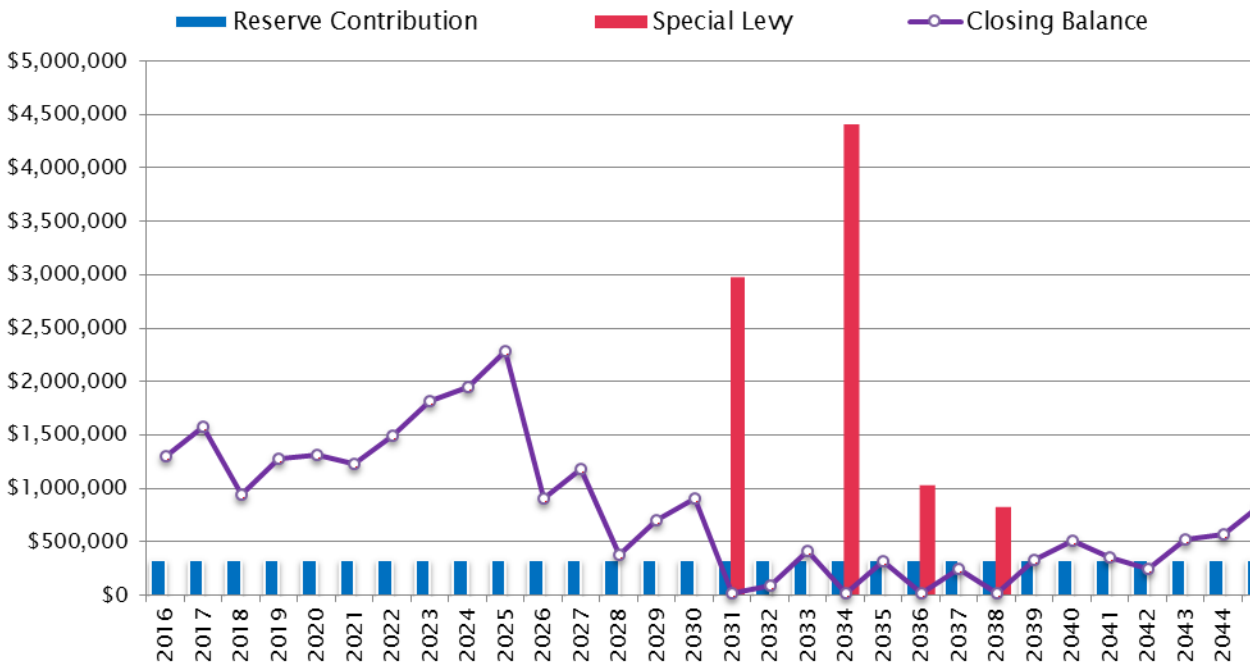

Figure 6.3 CRF balance, contribution and special levies based on Alternative #1.

6.6 Progressive Funding Scenario

The progressive funding scenario is based on a fixed annual CRF contribution.

TABLE 6.6 PROGRESSIVE FUNDING MODEL: CASH FLOW TABLE

FISCAL YEAR	OPENING BALANCE	RESERVE CONTRIBUTION	SPECIAL LEVY	RESERVE INCOME	RENEWAL COSTS	CONTINGENCY COSTS	CLOSING BALANCE
2016	$957,100	$685,000	$0	$19,142	$0	$5,000	$1,656,242
2017	$1,656,242	$685,000	$0	$33,125	$72,700	$5,000	$2,296,667
2018	$2,296,667	$685,000	$0	$45,933	$994,680	$5,000	$2,027,920
2019	$2,027,920	$685,000	$0	$40,558	$7,400	$5,000	$2,741,079
2020	$2,741,079	$685,000	$0	$54,822	$311,640	$5,000	$3,164,260
2021	$3,164,260	$685,000	$0	$63,285	$432,800	$5,000	$3,474,745
2022	$3,474,745	$685,000	$0	$69,495	$87,800	$5,000	$4,136,440
2023	$4,136,440	$685,000	$0	$82,729	$31,650	$5,000	$4,867,519
2024	$4,867,519	$685,000	$0	$97,350	$237,200	$5,000	$5,407,670
2025	$5,407,670	$685,000	$0	$108,153	$24,600	$5,000	$6,171,223

The Progressive Reserve would likely offset any special levies. 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.

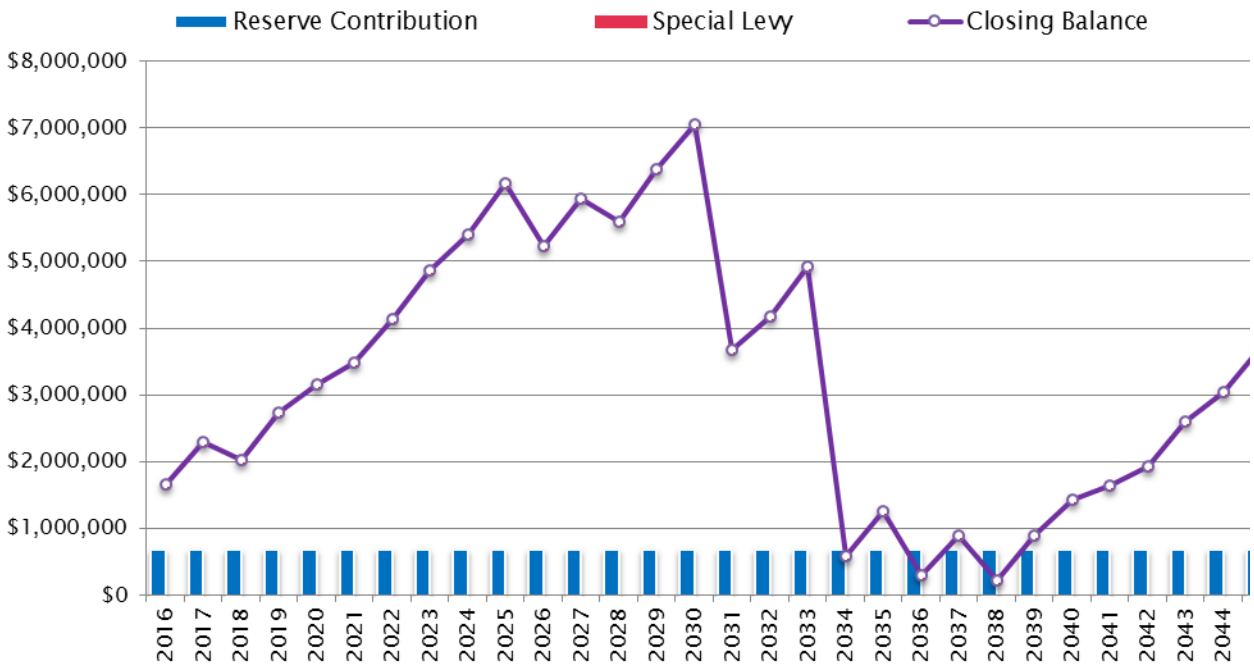

Figure 6.4 CRF balance, contribution and special levies based on a Progressive Reserve calculation.

7 Next Steps

The Depreciation Report Update identifies the predictable major maintenance and renewals expenditures The Hudson is likely to encounter over the next 30 years. Estimated timelines have been provided to assist the Strata Corporation with the planning process; however the Depreciation Report Update should be considered a first step when planning for renewals. Funding scenarios have been developed to provide the Strata Corporation with an objective basis for determining appropriate CRF contributions.

The Hudson is a 10 year old complex, and several significant assets such as the exterior concrete coatings and exterior sealant will likely need to be renewed in the next 10 years.

Since the initial Depreciation Report was issued in the 2012 fiscal year, the Strata Corporation has increased their CRF contribution. As a relatively young Strata Corporation, The Hudson has an opportunity to build up a healthy contingency reserve fund over the coming years. By saving early for the anticipated large expenditures, the strata will benefit from accrued interest and financial preparedness, while minimizing the amount of special levies.

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

Recommendations

- **Air Space Parcel Reconciliation.** Review documentation, including easement agreements and other relevant information for cost sharing, to determine which assets are shared, which are the responsibility of the strata, and which are the responsibility of other owners. Update the Depreciation Report with this information in 3 years' time.
- **Maintenance Plan**. Develop a maintenance plan or document the existing maintenance plan. The maintenance plan provides the Strata Corporation and building management with information on how and when to implement maintenance throughout the year; who is responsible for different maintenance activities (e.g. employees, contractors or Owners); what resources are available for maintenance; and a schedule that is appropriate for the strata corporation.
- **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,

Roma Santos
Technologist
rsantos@rdh.com
604 873 1181
RDH Building Science Inc.

Reviewed by:

Laureen Stokes | Dipl.T.
Project Manager
lstokes@rdh.com
604 873 1181
RDH Building Science Inc.

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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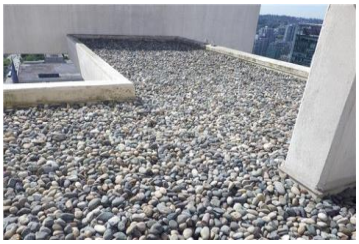
The Hudson - Asset Inventory

ENCLOSURE

ROOFS & DECKS

ENCL 01 - PROTECTED LIQUID-APPLIED ROOF MEMBRANE WITH BALLAST



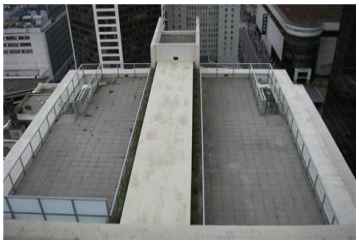
Location
Level 35 tower roof, level 36 mechanical roof and level 6 roof at cooling tower.

Description
Liquid-applied, fully reinforced asphalt modified urethane membrane overlaid with combination of insulation and stone ballast.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

ENCL 02 - PROTECTED URETHANE DECKS



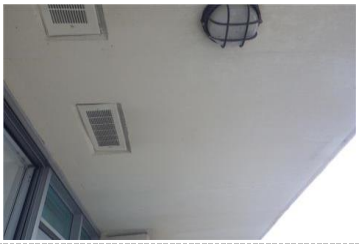
Location
Deck areas at level 4, 8, 30, 31 and 34.

Description
Liquid-applied, fully reinforced asphalt modified urethane membrane overlaid with combination of insulation, pavers and landscaping overburden. Renewal of deck membrane at suite 3113 completed in 2016.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

ENCL 03 - COATING ON CONCRETE SOFFITS



Location
Underside of balconies and roof eaves.

Description
Concrete soffit with protective coating.

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	8
Next Renewal Year:	2018

ENCL 04 - PROTECTED WATERPROOFING ROOF DECK MEMBRANE WITH LANDSCAPING

Location
Roof decks at levels 4 and 8.

Description
Protected waterproofing roof deck overburdened with hard landscaping or soil, plantings and irrigation sprinkler piping.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

The Hudson - Asset Inventory

SKYLIGHT

ENCL 05 - T-BAR SKYLIGHTS

Location

4th floor roof deck.

Description

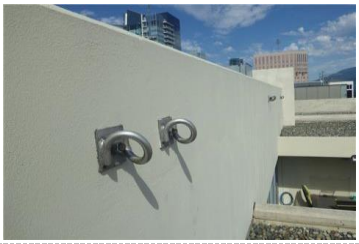
Exterior aluminum T-bar, single glazed skylight assemblies.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FALL PROTECTION

ENCL 06 - FALL PROTECTION EQUIPMENT



Location

Mounted to various locations at various roof and deck levels.

Description

Safety anchoring system for work on the exterior walls, roofs and decks.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

ENCL 07 - GLAZED ALUMINUM GUARDRAIL

Location

Perimeters of decks, balconies, roof decks and walk ways.

Description

Glass and metal frame guardrails.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

ENCL 08 - HERITAGE FAUX METAL BALCONIES

Location

Retained heritage facade on the northwest corner of the building.

Description

Painted metal balconies with metal guardrails. Balconies are not accessible.

Planning Information

Service Life:	50
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2056

ENCL 09 - GLAZED ALUMINUM FRAME DIVIDER

Location

Various decks.

Description

Aluminum frame and glass infill panels functioning as a 6' high privacy barrier between decks.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

WALLS

ENCL 10 - METAL PANEL CLADDING

Location

Portions of the exterior walls.

Description

Metal panels on exterior insulated 'Z' girt system and cast-in-place concrete walls or steel stud assembly.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

ENCL 11 - HERITAGE SANDSTONE WALLS

Location

Retained heritage facade at the northwest corner of the building.

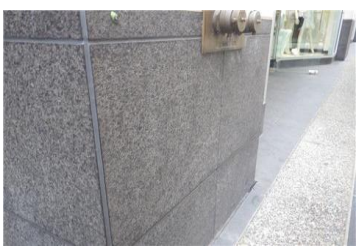
Description

The stone wall assembly consists of a single wythe of stone with mortar and sealant joints.

Planning Information

Service Life:	75
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2081

ENCL 12 - HERITAGE GRANITE STONE VENEER



Location

Ground level at the retained heritage facade on the northwest corner of the building.

Description

The assembly consists granite stone veneer with mortar and sealant joints over a drained cavity and support structure.

Planning Information

Service Life:	75
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2081

The Hudson - Asset Inventory

ENCL 13 - COATING ON CONCRETE WALLS

Location

Exterior walls of the tower and lower commercial area.

Description

Protective coating on poured-in place architectural concrete wall.

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	8
Next Renewal Year:	2018

ENCL 14 - HERITAGE MASONRY VENEER WALLS

Location

Retained heritage facade on the southwest corner of the building.

Description

A single wythe of masonry with mortar joints.

Planning Information

Service Life:	75
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2081

WINDOWS

ENCL 15 - HERITAGE WOOD WINDOWS

Location

Retained heritage facade at the south west corner of the building.

Description

Painted wood frame, single glazed windows.

Planning Information

Service Life:	50
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2056

ENCL 16 - HERITAGE METAL FRAME WINDOWS

Location

Retained heritage facade on the northwest corner of the building.

Description

Metal framed, non-thermally broken, with single glazed units.

Planning Information

Service Life:	50
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2056

The Hudson - Asset Inventory

ENCL 17 - ALUMINUM STOREFRONT

Location

Ground floor along the alley, lobby entrances and ground floor commercial entrances.

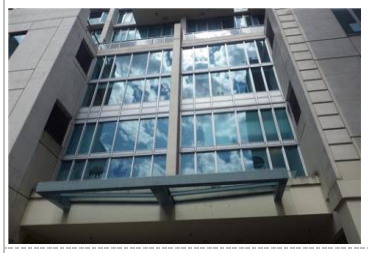
Description

Aluminum framed, storefront system with insulated glazing units.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

ENCL 18 - WINDOW WALL & PUNCHED WINDOWS



Location

Tower and lower non-heritage commercial area above ground floor.

Description

Aluminum framed, thermally broken, rainscreen assembly with double glazed insulated glazing units.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

DOORS

ENCL 19 - ALUMINUM FRAMED SLIDING GLASS DOOR

Location

Tower balconies and roof decks.

Description

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

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

ENCL 20 - ALUMINUM FRAME GLAZED SWING DOOR

Location

Access to decks at penthouse level and levels 4 and 8.

Description

Aluminum frame swing door with insulated glazing units.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

The Hudson - Asset Inventory

ENCL 21 - METAL CLAD SWING DOORS

Location
Access to tower roofs at levels 4 to 6, 35 and ground floor.

Description
Painted metal swing doors in pressed steel frames.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

ENCL 22 - ALUMINUM FRAME LOBBY DOOR

Location
Ground floor lobby and commercial entrances.

Description
Outswing aluminum-framed doors with fixed IGU's and low-profile thresholds.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

BALCONIES

ENCL 23 - EXPOSED URETHANE BALCONY MEMBRANE - CONCRETE SUBSTRATE

Location
Balconies and eyebrows throughout the building.

Description
Concrete slabs with liquid-applied urethane coating. The membrane consists of a base coat for waterproofing, and a topcoat for UV protection. Renewal of the top coat has been noted as an Asset component, scheduled for the possible completion in 2018.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

ENCL 24 - EXPOSED URETHANE EYEBROW MEMBRANES - CONCRETE SUBSTRATE

Location

Tower roof, penthouse, level 4 and 8 eyebrows. Level 6 and 5 walk ways.

Description

Concrete slabs with liquid-applied urethane coating. The membrane consists of a base coat for waterproofing, and a topcoat for UV protection. Renewal of the top coat has been noted as an Asset component, scheduled for the possible completion in 2018.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

CANOPIES

ENCL 25 - METAL FRAME AND GLASS CANOPY

Location

Above the entry doors to the residential and commercial sections along Granville and Dunsmuir street.

Description

Painted structural with glass panels.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

PARKING GARAGE

ENCL 26 - PARKING SLAB WITH TRAFFIC-BEARING MEMBRANE & TRAFFIC MARKINGS

Location

Parkade levels P1 to P6 and parking garage ramp.

Description

Urethane traffic deck coating includes base coat, intermediate coat and top coat with mechanical service penetrations and traffic markings. Localized repairs to traffic bearing membrane and renewal of membrane in garbage room completed in 2015.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

The Hudson - Asset Inventory

ENCL 27 - OPEN-GRID OVERHEAD PARKADE GATE

Location

Parkade entrances.

Description

Pre-finished metal grid overhead gate for underground parkade. Localized repairs to P2 gate completed in 2016.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

GENERAL & INSPECTIONS

ENCL 28 - EXTERIOR SEALANT

Location

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

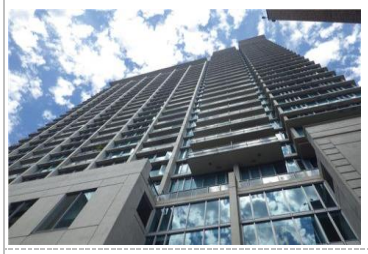
Description

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

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	8
Next Renewal Year:	2018

ENCL 29 - GENERAL & INSPECTIONS



Location

Throughout the complex.

Description

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

Planning Information

Service Life:	75
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2081

ELECTRICAL

POWER SUPPLY

ELEC 01 - UNIT SUBSTATION

Location

P1 level electrical room.

Description

Dry type primary transformer, 4000 KvA, 12.5 KV to 600 V. Cleaning and IR scanning of electrical equipment was completed in 2016.

Planning Information

Service Life:	35
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2041

ELEC 02 - EMERGENCY GENERATOR

Location

2th floor at south end of Steve Nash Fitness Centre.

Description

Katolight, model D450FNV4, 450 KW, 562.5 KVA, 3 phse, 347/600 volt, 1800 rpm, 6 cylinder diesel synchronous AC generator with two single wall, 1136 litre steel fuel tanks for standby AC power to certain critical fixtures and appliances, such as fire firefighters elevator, fire pump, emergency interior light fixtures. Replacement of fuel piping completed in 2015.

Planning Information

Service Life:	35
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2041

ELEC 03 - DISTRIBUTION TRANSFORMERS

Location

34th floor mechanical room; 5th floor mechanical room and parkade level electrical room.

Description

Federal Pioneer, Square D, and BEMAG 150 KVA ventilated, 3 phase, dry-type, with NEMA enclosure, coil and vibration isolators that provide power to receptacles and low voltage loads.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

DISTRIBUTION

ELEC 04 - ELECTRICAL DISTRIBUTION

Location

Throughout the building.

Description

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

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

The Hudson - Asset Inventory

LIGHT FIXTURES

ELEC 05 - EXTERIOR LIGHT FIXTURES

Location

Mounted to walls at various locations.

Description

A mixture of wall-mounted, soffit recessed and metal bollard fixtures with compact fluorescent lights, metal halide, PAR halogen fixtures and fluorescent accent lights.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

ELEC 06 - INTERIOR LIGHT FIXUTURES

Location

All rooms throughout the building.

Description

A variety of fixture types and wattage, including T8 fluorescents, compact fluorescents, pot lights, surface, pendant and wall sconces, MR16 halogen spot lights for accent lighting in lobbies. The Strata Corporation is currently retrofitting the interior lighting with LED bulbs and will be completed in 2016.

Planning Information

Service Life:	20
Installed Year:	2016
Chronological Age:	0
Effective Age:	0
Next Renewal Year:	2036

SECURITY

ELEC 07 - SECURITY SURVEILLANCE

Location

Strategically located throughout the building.

Description

Cameras, multiplexer, monitors and storage media to deter and track activity on and within building premises. Installation of additional security cameras in the parkade for the bike storage areas completed in 2016.

Planning Information

Service Life:	14
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2020

The Hudson - Asset Inventory

ELEC 08 - PROXIMITY ACCESS CONTROL

Location

Mounted beside doors in various strategic locations throughout.

Description

CA-8000 keyscan and door control panel, CB-485 network communication boards, EC-2000 elevator control panel, , backup batteries; proxpoint mini readers; RTE board, electric strikes, conduit, cable and connectors.

Planning Information

Service Life:	12
Installed Year:	2006
Chronological Age:	10
Effective Age:	8
Next Renewal Year:	2020

ELEC 09 - ENTERPHONE SYSTEM

Location

Parkade entrance, parkade vestibule access.

Description

Enterphone 2000, surface mounted telephone entry panels with associated key pads, display panels, proximity access readers and CCTV surveillance equipment.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

MECHANICAL

CONTROLS AND END DEVICES

MECH 01 - WATER TREATMENT EQUIPMENT

Location

5th floor mechanical room.

Description

Pot feeders, chemicals, pumps and other associated equipment for closed loop heating system.

Planning Information

Service Life:	8
Installed Year:	2015
Chronological Age:	1
Effective Age:	1
Next Renewal Year:	2023

The Hudson - Asset Inventory

MECH 02 - CONTROLS - DIRECT DIGITAL

Location

5th floor and penthouse mechanical rooms.

Description

Network control module, microsmart panels, field sensors and other instrumentation for monitoring and contlow zone HVAC equipment, including domestic (boilers) and heating/cooling systems (heat pumps and cooling tower). Installation of leak and malfunction system completed in 2015.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

MECH 03 - HVAC INSTRUMENTATION

Location

Mounted to walls and equipment throughout the building.

Description

Broan/Norton line voltage thermostats, Ther-in-52A 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.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

MECH 04 - HEAT TRACING - FREEZE PROTECTION

Location

Parkade level, controller adjacent to ramp to P1 parkade level.

Description

Digitrace 910 series 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.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

The Hudson - Asset Inventory

MECH 05 - VALVES - CROSS CONNECTION & BACKFLOW PREVENTION

Location

Mechanical rooms and distributed throughout the building. PRVs on 20th/21st floors.

Description

Various types and sizes of backflow prevention valves, including vacuum breakers, double check, reduced pressure valves on systems. Replacement of various valves and backflow preventers completed in 2014 to 2015.

Planning Information

Service Life:	20
Installed Year:	2015
Chronological Age:	1
Effective Age:	10
Next Renewal Year:	2026

MECH 06 - PARKADE GAS DETECTION

Location

Mounted to concrete columns on parking garage.

Description

QEL 200 series integral solid state electronic sensing devices for detection of dangerous gases, such as carbon monoxide (CO), propane and gasoline, produced by vehicles and to activate the exhaust fans accordingly.

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	9
Next Renewal Year:	2017

PLUMBING & DRAINAGE

MECH 07 - PUMP - DOMESTIC WATER BOOSTER

Location

P1 mechanical room.

Description

Bell & Gossett packaged triplex system with three vertical multistage 25 HP lead pump, 30 HP lag pumps, stainless steel construction, to supply constant boosted pressure to fixtures and equipment on all levels. Replacement of impeller and seal on booster pump completed in 2015.

Planning Information

Service Life:	14
Installed Year:	2006
Chronological Age:	10
Effective Age:	13
Next Renewal Year:	2017

The Hudson - Asset Inventory

MECH 08 - BOILER - DHW - HEATING - GAS FIRED

Location

34th floor mechanical room beside residential hallway; 5th floor mechanical room beside roof deck.

Description

RBI, natural gas fired, 1,680,000, BTU input, atmospheric, circulation pumps connected to DHW storage tanks for high zone and low zone domestic water. Localized repairs to the boilers were completed in 2014.

Planning Information

Service Life:	14
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2020

MECH 09 - TANK - DHW - STORAGE AND DHW HEATING

Location

34th floor mechanical room beside residential hallway (for upper zone) and 5th floor mechanical room beside roof deck (for lower zone).

Description

Rheem Rudd, 115 US gallon tanks, connected to domestic boiler system.

Planning Information

Service Life:	8
Installed Year:	2006
Chronological Age:	10
Effective Age:	6
Next Renewal Year:	2018

MECH 10 - FIXTURES - TOILETS

Location

Mens' and ladies washrooms at 6th floor; P1 parkade.

Description

American Standard, 6 LPF, floor mounted toilets.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	7
Next Renewal Year:	2034

MECH 11 - DRAINAGE - SANITARY

Location

Connected to waste fixtures throughout the building.

Description

Cast iron, DWV piping, p-traps, and fittings with mechanical joints. Drain maintenance completed in 2015.

Planning Information

Service Life:	50
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2056

The Hudson - Asset Inventory

MECH 12 - DRAINAGE - STORM - INTERNAL

Location

Throughout the complex.

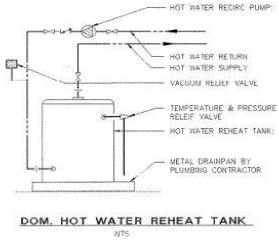
Description

Trench drains, catch basins and associated piping systems for rainwater runoff.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

MECH 13 - TANK - DHW - REHEAT



Location

6th floor facility management office.

Description

AO Smith, 100 gallon, 12 kw input, electric domestic hot water reheat tanks. Armstrong recirculation pumps.

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	8
Next Renewal Year:	2018

MECH 14 - DOMESTIC RECIRCULATION PUMPS

Location

34th floor mechanical room beside residential hallway; 5th floor mechanical room beside roof deck.

Description

Grundfoss and Bell & Gosset fractional horsepower hot water recirculation pumps.

Planning Information

Service Life:	10
Installed Year:	2006
Chronological Age:	10
Effective Age:	9
Next Renewal Year:	2017

MECH 15 - FIXTURES - TAPS & SINKS

Location

6th floor washrooms; P1 washrooms.

Description

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

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

The Hudson - Asset Inventory

MECH 16 - PIPING - DOMESTIC WATER DISTRIBUTION

Location

Connected to supply fixtures throughout.

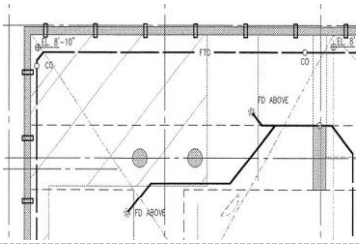
Description

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

Planning Information

Service Life:	28
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2034

MECH 17 - DRAINAGE - PERIMETER AND FOUNDATION



Location

Perimeter of the parkade.

Description

PVC piping forming part of a sub-surface perimeter drainage system around perimeter(s) of buildings and underground structures.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

MECH 18 - PUMPS - SANITARY LIFT AND CONTROL PANEL

Location

Parkade level P7.

Description

Northwest Tech-con, Duplex, sanitary (lift station sump pumps and control panels for sanitary lift/drainage.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

MECH 19 - PUMPS - STORM LIFT AND CONTROL PANEL

Location

Parkade level P7.

Description

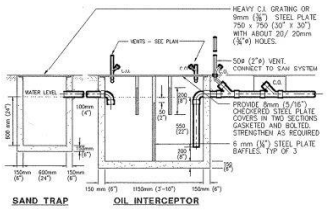
Northwest Tech-con, Duplex, storm sump pumps and control panels for storm water runoff and sub-surface drainage.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

The Hudson - Asset Inventory

MECH 20 - INTERCEPTOR - OIL



Location
Parkade.

Description
Multi-chamber flow-through interceptor , concrete, with hatches to grade.

Planning Information

Service Life:	50
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2056

MECH 21 - TANK - EXPANSION -DHW - DIAPHRAGM

Location
Mechanical rooms throughout.

Description
Floor mounted diaphragm expansion tank for domestic water system.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

HEATING & COOLING

MECH 22 - GAS FIREPLACE

Location
6th floor lounge.

Description
Dimplex natural gas fireplaces with fireplace enclosure, flue, gas piping, gas valve, glass panel and other components.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

MECH 23 - HEAT EXCHANGER

Location
5th floor mechanical room.

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

Planning Information

Service Life:	20
Installed Year:	2008
Chronological Age:	8
Effective Age:	8
Next Renewal Year:	2028

The Hudson - Asset Inventory

MECH 24 - HEAT PUMP - WATER-TO-AIR

Location

Various locations.

Description

ClimateMaster water-to-air heat pumps, comprising waterloop condensor/evaporator, direct expansion air-side coil, solenoid valves and blower section

Planning Information

Service Life:	15
Installed Year:	2008
Chronological Age:	8
Effective Age:	8
Next Renewal Year:	2023

MECH 25 - PUMP - HYDRONIC LOOP - PIPEMOUNT

Location

5th floor mechanical room at south side of building.

Description

Baldor and WEG, centrifugal vertical basemount in-line pumps for heating water/ condenser water hydronic loop.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

MECH 26 - FLUID COOLER

Location

6th mechanical enclosure at south side of building.

Description

BAC - Baltimore AirCoil evaporative fluid cooling device. Baldor 1.5 HP pump. Maintains heat pump water loop temperature.

Planning Information

Service Life:	18
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2024

MECH 27 - SPLIT SYSTEM A/C - COMMERCIAL [PLACEHOLDER]

Location

Mounted to walls in parkade.

Description

Trane condensing units and ceiling suspended fan coil units on a ducted split system for air conditioning to commercial units.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

The Hudson - Asset Inventory

MECH 28 - SPLIT SYSTEM A/C

Location

Adjacent to electrical and Telus service rooms.

Description

Trane condensing units, ranging from 2-5 ton, and ceiling suspended fan coil units on a ducted split system for air conditioning to various service rooms.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

MECH 29 - ELECTRIC BASEBOARDS

Location

Stairwells, service rooms and other common area locations.

Description

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

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

MECH 30 - UNIT HEATER - ELECTRIC

Location

6th floor mechanical room.

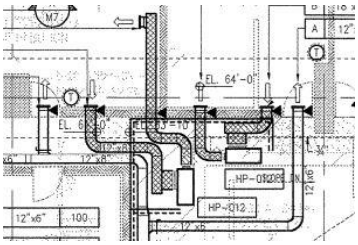
Description

Electric unit heater, ceiling mounted with stainless steel elements, fan and directional louver.

Planning Information

Service Life:	17
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2023

MECH 31 - WATER LOOP HEAT PUMP



Location

Throughout the parkade serving the commercial units.

Description

Climate Master, ceiling mounted, water-loop to air heat pumps, comprising waterloop condensor/evaporator, direct expansion air-side coil, solenoid valves and blower section

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

The Hudson - Asset Inventory

VENTILATION AND AIR-CONDITIONING

MECH 32 - EXHAUST FAN PARKADE - INLINE

Location

Parkade levels P1 through P7.

Description

Twin City, wall mounted, belt driven, 3 HP exhaust fans. Localized repairs to the parkade exhaust fans were completed in 2014.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

MECH 33 - GENERAL EXHAUST FANS

Location

Elevator machine rooms, garbage room, washrooms and other miscellaneous locations.

Description

Broan direct drive ceiling fans, Cook/Gemini ceiling and cabinet fans, Cook centrifugal inline blower fans, Cook propellor wall fans.

Planning Information

Service Life:	12
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2018

MECH 34 - OUTDOOR AIR HANDLER - MAKEUP AIR - GAS

Location

35th floor roof of tower (for high zone); 5th floor (for low zone).

Description

Engineered Air, gas fired, 1,800,000 BTU input, 4100 CFM, belt-driven centrifugal fan with two stage gas burner to supply tempered fresh air and make-up air to the interior of the buildings. Replacement of motor and installation of blower pulleys completed in 2015.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

The Hudson - Asset Inventory

MECH 35 - MAKE UP AIR UNIT - INDOOR - HYDRONIC

Location
Various locations throughout.

Description
Engineered Air, air handling unit, 3200 to 8000 CFM, belt-driven, centrifugal fan air handler with hot water heating coil and circ pump, three way valve, to supply tempered make-up air to the interior spaces

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

OTHER

MECH 36 - TRASH COMPACTOR

Location
Ground level parkade.

Description
Horizontal hydraulic ram compactor.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

MECH 37 - OVERHEAD GATE MOTORS

Location
Entrance to garage; P3 level.

Description
AO Smith 0.5 HP AC motor and commercial-grade overhead sectional door controlled by an electric operator.

Planning Information

Service Life:	7
Installed Year:	2006
Chronological Age:	10
Effective Age:	6
Next Renewal Year:	2017

ELEVATOR

TRACTION

ELEV 01 - GEARED TRACTION ELEVATORS

Location
34/35th floor split machine rooms and 20th/21st floor split machine room.

Description
Gearless overhead traction elevators with MCE i-Control, Torqmax drives, Leroy Somer machines, 2500/2700 lbs capacity, 500 fpm rated speed.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

The Hudson - Asset Inventory

CAR INTERIORS

ELEV 02 - ELEVATOR CABS & HOISTWAY

Location

Description

Single speed side opening doors, stainless steel vandal resistant pushbuttons, LED dot matrix type position indicators, infrared door protection, ECI #1000 door operators, tiled flooring, standby power, firefighters emergency operation. Replacement of elevator (elevator #3) ropes completed in 2016.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

FIRE SAFETY

CONTROLS

FIRE 01 - FIRE ALARM PANELS

Location

Mounted to lobby wall.

Description

EST Edwards Envoy addressable, multi-zone, solid state microprocessor and supervised unit with graphic annunciator and LCD display. Zoned audio amplifiers, fire audio and fire telephone.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

DETECTION

FIRE 02 - FIRE DETECTION & ALARM

Location

Mounted to ceilings and walls in various strategic locations throughout.

Description

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

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	19
Next Renewal Year:	2017

The Hudson - Asset Inventory

SUPPRESSION

FIRE 03 - DRY SPRINKLER COMPRESSOR

Location

Mechanical room on parkade P1 level.

Description

ProAir II direct drive, single-stage, base-mounted, air cooled, oil free, 1.7 HP motor, 25 gallon to maintain the pressure of air in the fire sprinkler lines.

Planning Information

Service Life:	14
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2020

FIRE 04 - PRESSURIZATION/SMOKE CONTROL

Location

Various locations throughout the building.

Description

TubeAxial, propeller, cabinet smoke control and stair pressurization fans with motorized intake dampers on fan inlets and interconnected motorized smoke dampers on each floor. Controlled by fire alarm central system.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

FIRE 05 - FIRE & JOCKEY PUMPS

Location

P1 level mechanical room.

Description

Cutler Hammer motor control centre connected to Plad centrifugal 125HP fire pump and 3/4 HP Gould jockey pump, which work in tandem to supply water flow and pressure to the sprinkler system and standpipe system.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FIRE 06 - PORTABLE FIRE EXTINGUISHERS

Location

Mounted to walls in various strategic locations throughout.

Description

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

Planning Information

Service Life:	12
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2018

FIRE 07 - SPRINKLER & STANDPIPE - WET

Location

Distributed throughout the heated spaces.

Description

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

Planning Information

Service Life:	100
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2106

FIRE 08 - SPRINKLER VALVE ASSEMBLY - DRY

Location

P1 level mechanical room.

Description

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

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

FIRE 09 - SPRINKLER SYSTEM - DRY

Location

Throughout the parking garage; all unheated spaces of the building.

Description

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

Planning Information

Service Life:	100
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2106

FIRE 10 - FIRE HOSE CABINET

Location

Various locations in the parkade.

Description

Fire hose cabinet, wall mounted with swinging glass door.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

The Hudson - Asset Inventory

EGRESS

FIRE 11 - EMERGENCY EGRESS EQUIPMENT

Location

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

Description

Ready-Lite LFD6-36 sealed unit battery packs; Ready-Lite EXN series economy plastic exit signs.

Planning Information

Service Life:	20
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2026

INTERIOR FINISHES

FLOORS

FINISH 01 - FLOOR TILE

Location

Lobby; kitchenette, elevator; men and ladies washrooms; commercial area.

Description

Floor tile on thin set mortar with grout.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FINISH 02 - CARPET FLOORING

Location

Hallways, meeting rooms, fitness room, lounge and other common areas.

Description

Synthetic, low level loop, textile floor covering laid on cushion over concrete substrate with seam binding and door thresholds. Replacement of carpet on level 4 completed in 2016.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

The Hudson - Asset Inventory

FINISH 03 - PAINTED CONCRETE FLOORING

Location

Mechanical, elevator and electrical rooms and stairwells.

Description

Exposed concrete floors, painted in some locations to provide a cleaner finish. This flooring asset does not include the foundation, which is included with the structural system.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

WALLS

FINISH 04 - GLASS PANELS

Location

Lobby.

Description

Mirrors fastened to interior walls.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FINISH 05 - WALL TILE

Location

Common area washrooms on the 6th floor

Description

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

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FINISH 06 - WOOD PANELING

Location

Lobby area.

Description

Wood veneer.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FINISH 07 - INTERIOR PAINTING

Location

Lobbies, hallways, stairwells and other miscellaneous locations.

Description

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

Planning Information

Service Life:	10
Installed Year:	2016
Chronological Age:	0
Effective Age:	0
Next Renewal Year:	2026

FINISH 08 - GLASS BLOCK WALLS

Location

Hallway on the 4th floor.

Description

Glass block windows with concealed structural framing.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

FINISH 09 - WALLPAPERED WALLS

Location

Lounge and meeting rooms on 5th and 6th floors.

Description

Decorative vinyl papers adhesively fastened to interior walls.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

ARCHITECTURAL WOODWORK

FINISH 10 - CARPENTRY & MILLWORK

Location

Kitchenette in the lounge on 6th floor.

Description

Shop fabricated custom casework, built-in countertops with laminate surface, wood veneer cabinets, mouldings, and door casings.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

The Hudson - Asset Inventory

FURNISHINGS

FINISH 11 - INTERIOR SWING DOORS

Location

Stairwells, hallways, service rooms, electrical closets and parkade vestibules.

Description

Variety of solid wood core and hollow metal swing doors hung in framed openings.

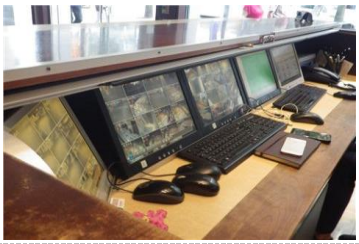
Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

AMENITIES

FURNISHINGS

AMEN 01 - CONCIERGE EQUIPMENT



Location

Main entrance in lobby.

Description

Computer, monitors, printers, keyboards, and associated electronic devices required for general operations and management of the facility.

Planning Information

Service Life:	6
Installed Year:	2012
Chronological Age:	4
Effective Age:	4
Next Renewal Year:	2018

AMEN 02 - METAL SCREEN STORAGE LOCKERS

Location

Bike lockers and storage lockers on parkade levels.

Description

Metal screen storage lockers with prefabricated finish.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

AMEN 03 - STAFF COMPUTER EQUIPMENT

Location

6th floor Manager's Office.

Description

Desktop computer, Samsung flat screen monitor, printer, keyboard, and associated electronic devices required for general operations and management of the facility.

Planning Information

Service Life:	6
Installed Year:	2012
Chronological Age:	4
Effective Age:	4
Next Renewal Year:	2018

The Hudson - Asset Inventory

AMEN 04 - PUBLIC SIGNAGE

Location

Mounted to equipment, doors and other locations throughout.

Description

Variety of permanently displayed information placards in the public areas of the building.

Planning Information

Service Life:	25
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2031

AMEN 05 - CENTRAL MAILBOXES

Location

Lobb at south east corner.

Description

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

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

AMEN 06 - FURNITURE & ACCESSORIES

Location

Lounge; games room (#709); meeting rooms; lobby.

Description

Wood and fabric chairs, glass and metal tables, area rugs, paintings, potted plants, ornaments, ping pong table, and other miscellaneous accessories. Exterior furnishings are included separately.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

SUITE

AMEN 07 - POOL TABLE

Location

Amenity room on 7th floor.

Description

Pool table, protective cover, pool cues and other miscellaneous accessories.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

AMEN 08 - AUDIO VISUAL EQUIPMENT

Location
6th floor lounge; 7th floor games room.

Description
LG flatscreen television, Philips TV.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

AMEN 09 - DOMESTIC APPLIANCES

Location
6th floor lounge.

Description
GE refrigerator, GE electric stove, microwave oven, dishwasher.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

AMEN 10 - FITNESS EQUIPMENT

Location
6th floor fitness room.

Description
Bike upright 5005, bike recumbent 5002, climber 7005, elliptical cross trainer 8007, treadmill ST4600, selectorized strength machine, pumphouse weight stacks multi-gym.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

SITEWORK

HARD LANDSCAPING

SITE 01 - CONCRETE PAVING

Location
Exterior walkway, roof decks and parkade ramp.

Description
Concrete slabs with heavy sandblast finish and medium rock salt finish. Compacted sub-grade and base course.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

SITE 02 - CONCRETE UNIT PAVING

Location

Roof deck at level 4 and 8.

Description

Concrete pavers overburdened on compacted subgrade and base course.

Planning Information

Service Life:	40
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2046

SITE 03 - BICYCLE RACKS

Location

Bike storage rooms on parkade levels.

Description

Floor mounted steel framed bikeracks.

Planning Information

Service Life:	30
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2036

SOFT LANDSCAPING

SITE 04 - IRRIGATION SPRINKLERS

Location

Landscaped area at Level 4 and 8. Controller in 34th floor mechanical room.

Description

Rainbird ESP-8tm zone controller and network of PVC pipes, valves, and irrigation heads buried amongst the exterior 'soft' landscaping.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

SITE 05 - SOFT LANDSCAPING

Location

Landscaped areas at level 4 and 8.

Description

Various forms of plant material, including lawns, ground cover, shrubs, plants and trees. Also considered are growing medium such as top soil.

Planning Information

Service Life:	15
Installed Year:	2006
Chronological Age:	10
Effective Age:	10
Next Renewal Year:	2021

Appendix C

Asset Service Life Summary

RDH BUILDING SCIENCE

RDH Building Science Inc.
224 W 8th Avenue
Vancouver, BC V5Y 1N5

Making Buildings Better™

The Hudson - Asset Service Life Summary

ASSET ID	ASSET NAME	CHRONOLOGICAL AGE	ESTIMATED REMAINING SERVICE LIFE
ENCLOSURE			
Encl 01	Protected Liquid-Applied Roof Membrane with Ballast	10	10
Encl 02	Protected Urethane Decks	10	10
Encl 03	Coating on Concrete Soffits	10	2
Encl 04	Protected Waterproofing Roof Deck Membrane with Landscaping	10	10
Encl 05	T-Bar Skylights	10	20
Encl 06	Fall Protection Equipment	10	30
Encl 07	Glazed Aluminum Guardrail	10	20
Encl 08	Heritage Faux Metal Balconies	10	40
Encl 09	Glazed Aluminum Frame Divider	10	20
Encl 10	Metal Panel Cladding	10	30
Encl 11	Heritage Sandstone Walls	10	65
Encl 12	Heritage Granite Stone Veneer	10	65
Encl 13	Coating on Concrete Walls	10	2
Encl 14	Heritage Masonry Veneer Walls	10	65
Encl 15	Heritage Wood Windows	10	40
Encl 16	Heritage Metal Frame Windows	10	40
Encl 17	Aluminum Storefront	10	30
Encl 18	Window Wall & Punched Windows	10	30
Encl 19	Aluminum Framed Sliding Glass Door	10	30
Encl 20	Aluminum Frame Glazed Swing Door	10	30
Encl 21	Metal Clad Swing Doors	10	15
Encl 22	Aluminum Frame Lobby Door	10	10
Encl 23	Exposed Urethane Balcony Membrane - Concrete Substrate	10	15
Encl 24	Exposed Urethane Eyebrow Membranes - Concrete Substrate	10	15
Encl 25	Metal Frame and Glass Canopy	10	30
Encl 26	Parking Slab with Traffic-bearing Membrane & Traffic Markings	10	15
Encl 27	Open-grid Overhead Parkade Gate	10	15
Encl 28	Exterior Sealant	10	2
Encl 29	General & Inspections	10	65

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The Hudson - Asset Service Life Summary

ASSET ID	ASSET NAME	CHRONOLOGICAL AGE	ESTIMATED REMAINING SERVICE LIFE
ELECTRICAL			
Elec 01	Unit Substation	10	25
Elec 02	Emergency Generator	10	25
Elec 03	Distribution Transformers	10	30
Elec 04	Electrical Distribution	10	30
Elec 05	Exterior Light Fixtures	10	10
Elec 06	Interior Light Fixutures	0	20
Elec 07	Security Surveillance	10	4
Elec 08	Proximity Access Control	10	4
Elec 09	Enterphone System	10	15
MECHANICAL			
Mech 01	Water Treatment Equipment	1	7
Mech 02	Controls - Direct Digital	10	5
Mech 03	HVAC Instrumentation	10	10
Mech 04	Heat Tracing - Freeze Protection	10	5
Mech 05	Valves - Cross Connection & Backflow Prevention	1	10
Mech 06	Parkade Gas Detection	10	1
Mech 07	Pump - Domestic Water Booster	10	1
Mech 08	Boiler - DHW - Heating - Gas Fired	10	4
Mech 09	Tank - DHW - Storage and DHW Heating	10	2
Mech 10	Fixtures - Toilets	10	18
Mech 11	Drainage - Sanitary	10	40
Mech 12	Drainage - Storm - Internal	10	30
Mech 13	Tank - DHW - Reheat	10	2
Mech 14	Domestic Recirculation Pumps	10	1
Mech 15	Fixtures - Taps & Sinks	10	10
Mech 16	Piping - Domestic Water Distribution	10	18
Mech 17	Drainage - Perimeter and Foundation	10	30
Mech 18	Pumps - Sanitary Lift and Control Panel	10	5
Mech 19	Pumps - Storm Lift and Control Panel	10	5
Mech 20	Interceptor - Oil	10	40
Mech 21	Tank - Expansion -DHW - Diaphragm	10	10
Mech 22	Gas Fireplace	10	20

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The Hudson - Asset Service Life Summary

ASSET ID	ASSET NAME	CHRONOLOGICAL AGE	ESTIMATED REMAINING SERVICE LIFE
Mech 23	Heat Exchanger	8	12
Mech 24	Heat Pump - Water-to-Air	8	7
Mech 25	Pump - Hydronic Loop - Pipemount	10	5
Mech 26	Fluid Cooler	10	8
Mech 27	Split System A/C - Commercial [PLACEHOLDER]	10	5
Mech 28	Split System A/C	10	5
Mech 29	Electric Baseboards	10	30
Mech 30	Unit Heater - Electric	10	7
Mech 31	Water Loop Heat Pump	10	10
Mech 32	Exhaust Fan Parkade - Inline	10	10
Mech 33	General Exhaust Fans	10	2
Mech 34	Outdoor Air Handler - Makeup Air - Gas	10	15
Mech 35	Make Up Air Unit - Indoor - Hydronic	10	15
Mech 36	Trash Compactor	10	10
Mech 37	Overhead Gate Motors	10	1
ELEVATOR			
Elev 01	Geared Traction Elevators	10	15
Elev 02	Elevator Cabs & Hoistway	10	15
FIRE SAFETY			
Fire 01	Fire Alarm Panels	10	10
Fire 02	Fire Detection & Alarm	10	1
Fire 03	Dry Sprinkler Compressor	10	4
Fire 04	Pressurization/Smoke Control	10	15
Fire 05	Fire & Jockey Pumps	10	20
Fire 06	Portable Fire Extinguishers	10	2
Fire 07	Sprinkler & Standpipe - Wet	10	90
Fire 08	Sprinkler Valve Assembly - Dry	10	30
Fire 09	Sprinkler System - Dry	10	90
Fire 10	Fire Hose Cabinet	10	10
Fire 11	Emergency Egress Equipment	10	10
INTERIOR FINISHES			
Finish 01	Floor Tile	10	20
Finish 02	Carpet Flooring	10	5

RDH BUILDING SCIENCE
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Vancouver, BC V5Y 1N5
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The Hudson - Asset Service Life Summary

ASSET ID	ASSET NAME	CHRONOLOGICAL AGE	ESTIMATED REMAINING SERVICE LIFE
Finish 03	Painted Concrete Flooring	10	5
Finish 04	Glass Panels	10	20
Finish 05	Wall Tile	10	20
Finish 06	Wood Paneling	10	20
Finish 07	Interior Painting	0	10
Finish 08	Glass Block Walls	10	20
Finish 09	Wallpapered Walls	10	5
Finish 10	Carpentry & Millwork	10	20
Finish 11	Interior Swing Doors	10	30
AMENITIES			
Amen 01	Concierge Equipment	4	2
Amen 02	Metal Screen Storage Lockers	10	15
Amen 03	Staff Computer Equipment	4	2
Amen 04	Public Signage	10	15
Amen 05	Central Mailboxes	10	20
Amen 06	Furniture & Accessories	10	5
Amen 07	Pool Table	10	20
Amen 08	Audio Visual Equipment	10	5
Amen 09	Domestic Appliances	10	5
Amen 10	Fitness Equipment	10	5
SITEWORK			
Site 01	Concrete Paving	10	30
Site 02	Concrete Unit Paving	10	30
Site 03	Bicycle Racks	10	20
Site 04	Irrigation Sprinklers	10	5
Site 05	Soft Landscaping	10	5

Appendix D

Strategic Plan

The Hudson
Major Maintenance and Renewals Schedule

Accuracy of Budget Cost Estimates:

1. Budget costs in this report are provided in both current year dollars(without inflation or escalation factors) and future year dollars(with inflation or escalation factors).
2. All budget costs are preliminary estimates intended for planning purposes and not for accounting use.
3. Actual costs will vary depending on several factors. The budget estimates assume economies of scale will be achieved by bundling work items together into larger projects. Small projects done individually may exceed the budget estimates.
4. Each project should include appropriate cost line-items when developing an overall project budget.
5. Labour and material costs are subject to the vagaries of the marketplace. At the time of tender, costs may vary depending on the time of the year and/or contractor availability.
6. The budget estimates must be updated over time and confirmed by competitive tender before any contracts are awarded.
7. Detailed repair specifications are required to be prepared in order to confirm scopes of work and costs.
8. Soft costs, such as consulting services and contingency allowances are not included in the budget estimates. Depending on the sizes, scope and timing of individual projects, the magnitude of the soft costs will vary.
9. Cost savings may be realized depending on the use of in-house labor or 3rd party-contractors.
10. The estimates do not include allowances for site specific access requirements and environmental concerns, which should be addressed on a project-by-project basis.
11. Consideration may sometimes need to be given to costs arising from the impact of projects on occupancy use and facility operations.

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
ENCLOSURE																																				
ROOFS & DECKS																																				
Encl 01	R01	Replace urethane inverted ballast roofs, as required.	20 Yrs	$94,500	2026	$120,000											•																			
Encl 02	R01	Replace roof deck membrane assemblies, as required.	20 Yrs	$546,000	2026	$670,000											•																			
Encl 03	R01	Reapplication of the protective coating as required, including preparation of the concrete substrate.	10 Yrs	$23,625	2018	$25,000			•										•										•							
Encl 04	R01	Replace podium membrane assembly, as required.	20 Yrs	$315,000	2026	$380,000											•																			
SKYLIGHT																																				
Encl 05	R02	Replace skylight, sealants and associated flashings.	30 Yrs	$12,600	2036	$19,000																					•									
FALL PROTECTION																																				
Encl 06	R01	Inspect and replace or install anchors as required prior to replacing the roofs.	20 Yrs	$5,000	2026	$6,100											•																			
Encl 06	R02	Replace roof anchors, as required.	40 Yrs	$20,000	2046	$36,000																														
Encl 07	R01	Review guardrails for structural adequacy including attachments.	10 Yrs	$5,000	2018	$5,200			•										•																	
Encl 07	R02	Replace exterior guardrails.	30 Yrs	$180,000	2036	$270,000																					•									
Encl 08	R01	Localized repairs to various balcony components, as required.	50 Yrs	$10,000	2056	$22,000																														
Encl 09	R01	Replace glazed aluminum frame dividers.	30 Yrs	$22,500	2036	$33,000																					•									
WALLS																																				
Encl 10	R02	Replace Metal Panel Cladding.	40 Yrs	$645,000	2046	$1,200,000																														
Encl 11	R01	Repoint mortar joints, as required.	20 Yrs	$10,000	2026	$12,000											•																			
Encl 11	R02	Replace sandstone cladding.	75 Yrs	$330,000	2081	$0																														
Encl 12	R01	Repoint mortar joints, as required.	20 Yrs	$5,000	2026	$6,100											•																			
Encl 12	R02	Replace stone veneer cladding.	75 Yrs	$32,500	2081	$0																														
Encl 13	R02	Reapplication of the protective coating as required, including preparation of the concrete substrate.	10 Yrs	$553,200	2018	$580,000			•										•										•							
Encl 14	R01	Repoint mortar joints between masonry cladding as required.	20 Yrs	$5,000	2026	$6,100											•																			

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
ENCLOSURE																																				
Encl 14	R02	Replace sections of masonry assembly, as required.	75 Yrs	$48,750	2081	$0																														
WINDOWS																																				
Encl 15	R02	Replace or renew wood windows.	50 Yrs	$28,600	2056	$63,000																														
Encl 16	R04	Replace heritage metal window assemblies.	50 Yrs	$165,000	2056	$360,000																														
Encl 17	R03	Replace storefront windows.	40 Yrs	$182,000	2046	$330,000																														
Encl 18	R01	Replace failed sealed insulating glass units, as required.	2 Yrs	$64,400	2018	$67,000			•		•		•		•		•		•		•		•		•		•		•		•		•		•	
Encl 18	R04	Replace window wall assembly.	40 Yrs	$6,900,000	2046	$12,000,000																														
DOORS																																				
Encl 19	R02	Replace sliding glass door assemblies.	40 Yrs	$252,000	2046	$460,000																														
Encl 20	R04	Replace aluminum swing doors.	40 Yrs	$115,900	2046	$210,000																														
Encl 21	R01	Replace exterior metal swing doors.	25 Yrs	$25,000	2031	$34,000																•														
Encl 22	R01	Replace lobby door assembly.	20 Yrs	$48,000	2026	$59,000											•																			
BALCONIES																																				
Encl 23	R01	Prepare and re-apply membrane top coat.	10 Yrs	$30,300	2018	$32,000			•										•										•							
Encl 23	R02	Replace exposed urethane balcony membrane and associated components.	25 Yrs	$151,500	2031	$200,000																•														
Encl 24	R01	Prepare and re-apply membrane top coat.	10 Yrs	$40,440	2018	$42,000			•										•										•							
Encl 24	R02	Replace exposed urethane eyebrow membrane and associated components.	25 Yrs	$202,200	2031	$270,000																•														
CANOPIES																																				
Encl 25	R03	Replace metal and glass canopy assemblies.	40 Yrs	$337,500	2046	$610,000																														
PARKING GARAGE																																				
Encl 26	R01	Re-apply traffic demarcation striping and directional signage, as required. Frequency will depend on traffic volume.	5 yrs	$5,000	2018	$5,200			•					•					•					•					•					•		
Encl 26	R03	Re-apply membrane top coat in high traffic areas (e.g. drive aisles).	10 Yrs	$70,800	2018	$74,000			•										•										•							
Encl 26	R04	Repair damaged and delaminated membrane prior to re-application of top coat.	10 Yrs	$14,160	2018	$15,000			•										•										•							
Encl 26	R06	Prepare concrete surface and re-apply traffic-bearing membrane.	25 Yrs	$1,593,000	2031	$2,100,000																•														
Encl 27	R02	Replacement of sectional overhead door and associated hardware.	25 Yrs	$15,000	2031	$20,000																•														
GENERAL & INSPECTIONS																																				
Encl 28	R01	Replace sealant at perimeter of windows, joints, vents and other penetrations throughout the building.	10 Yrs	$80,000	2018	$83,000			•										•										•							
Encl 29	J03	Perform full condition assessment of all enclosure systems.	1 x	$8,000	2021	$8,800						•																								
Encl 29	R01	Update Depreciation Report.	3 Yrs	$0	2019	$0				•			•			•			•			•			•			•			•			•		
Encl 29	R02	Replace miscellaneous service penetrations, such as dryer vents.	75 Yrs	$0	2081	$0																														

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
ELECTRICAL																																				
POWER SUPPLY																																				
Elec 01	R01	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.	3 Yrs	$4,000	2019	$4,200				•			•			•			•			•			•			•			•			•			
Elec 01	R02	Clean and maintain all unit substation equipment (reference subsequent maintenance tasks). Vacuum to remove accumulated dust. Check oil levels of oil filled equipment.	3 Yrs	$3,000	2019	$3,200				•			•			•			•			•			•			•			•			•			
Elec 01	R03	Replace unit substation equipment.	35 Yrs	$150,000	2041	$250,000																										•				
Elec 02	R02	Replace generator hoses.	10 Yrs	$1,500	2025	$1,800										•										•										•
Elec 02	R03	Rebuild emergency generator.	20 Yrs	$15,000	2026	$18,000											•																			
Elec 02	R04	Replace emergency generator.	35 Yrs	$130,000	2041	$210,000																										•				
Elec 03	R01	Cyclical replacement of distribution transformers, as required.	40 Yrs	$40,000	2046	$72,000																														
DISTRIBUTION																																				
Elec 04	R01	Cyclical replacement of components of the electrical distribution equipment, as required.	40 Yrs	$40,000	2046	$72,000																														
LIGHT FIXTURES																																				
Elec 05	R02	Cyclical replacement of exterior lighting, excluding field wiring.	20 Yrs	$11,000	2026	$13,000											•																			
Elec 06	R01	Cyclical replacement of ballasts and other components, as required.	20 Yrs	$150,000	2036	$220,000																					•									
SECURITY																																				
Elec 07	R01	Service the multiplex unit, update software as required.	5 yrs	$1,500	2025	$1,800										•					•					•					•					•
Elec 07	R02	Modernize components of the security surveillance system, excluding field wiring, as required by technological obsolescence.	14 Yrs	$38,400	2020	$42,000					•														•											
Elec 08	R01	Modernize components of the door access control system, excluding field wiring, as may be required by technological obsolescence.	12 Yrs	$105,750	2020	$110,000					•												•												•	
Elec 09	R01	Replace enterphone control panels, excluding field wiring.	25 Yrs	$24,000	2031	$32,000																•														

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
MECHANICAL																																				
CONTROLS AND END DEVICES																																				
Mech 01	R01	Cyclical replacement of components of water treatment equipment.	8 Yrs	$2,000	2023	$2,200								•								•								•						
Mech 02	R04	Replace DDC panel and install enterprise server, excluding field wiring and field devices.	15 Yrs	$20,000	2021	$22,000						•															•									
Mech 03	R01	Cyclical replacement of miscellaneous HVAC instrumentation, as required.	5 yrs	$700	2026	$850											•					•					•					•				
Mech 04	R01	Replace components of electric heat tracing cable, including control module and pipe insulation.	15 Yrs	$15,000	2021	$17,000						•															•									

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
MECHANICAL																																				
Mech 05	R02	Cyclical replacement of cross connection & back flow prevention valves, as required.	20 Yrs	$10,000	2026	$12,000											•																			
Mech 06	R01	Cyclical replacement of gas detection sensors.	10 Yrs	$13,050	2017	$13,000		•										•										•								
PLUMBING & DRAINAGE																																				
Mech 07	R01	Replace motor bearings, pump bearings and housing, as required.	7 Yrs	$2,000	2024	$2,300									•							•							•							•
Mech 07	R02	Replace domestic booster pumps and motor control panel.	14 Yrs	$15,000	2017	$15,000		•														•														•
Mech 08	R02	Replace boilers for domestic hot water system.	14 Yrs	$60,000	2020	$65,000					•														•											
Mech 09	R02	Cyclical replacement of domestic hot water storage tanks.	8 Yrs	$45,000	2018	$47,000			•								•								•								•			
Mech 10	R01	Cyclical replacement of toilets, as required.	25 Yrs	$4,000	2034	$5,700																			•											
Mech 11	R01	Insert video cameras into main lines to conduct pipe inspection.	10 Yrs	$3,000	2020	$3,200					•										•									•						
Mech 11	R02	Auger lateral drain lines.	5 yrs	$4,000	2020	$4,300					•					•					•					•					•					•
Mech 11	R03	Repair components of sanitary drainage distribution system, as required.	50 Yrs	$30,000	2056	$66,000																														
Mech 12	R01	Auger lateral drain lines.	10 Yrs	$4,000	2020	$4,300					•										•									•						
Mech 12	R02	Insert video cameras into main lines to conduct pipe inspection.	5 yrs	$3,000	2020	$3,200					•					•					•					•					•					•
Mech 12	R03	Repair components of storm water drainage distribution system, as required.	40 Yrs	$40,000	2046	$72,000																														
Mech 13	R01	Cyclical replacement of electric hot water reheat tank.	10 Yrs	$1,000	2018	$1,000			•									•										•								
Mech 14	R01	Cyclical replacement of recirculating pumps, as required.	10 Yrs	$9,000	2017	$9,200		•										•										•								
Mech 15	R01	Replace hand basins and janitor's mop sinks.	20 Yrs	$4,000	2026	$4,900											•																			
Mech 16	R01	Commission a piping condition assessment.	1 x	$10,000	2029	$13,000														•																
Mech 16	R02	Replace components of domestic plumbing distribution system, including domestic valves.	28 Yrs	$3,384,000	2034	$4,800,000																			•											
Mech 17	R01	Auger lateral drain lines.	10 Yrs	$4,000	2020	$4,300					•										•									•						
Mech 17	R02	Insert video cameras into main lines to conduct pipe inspection.	5 yrs	$3,000	2020	$3,200					•					•					•					•					•					•
Mech 17	R03	Repair and/replace components of perimeter drainage system, as required.	40 Yrs	$14,600	2046	$26,000																														
Mech 18	R01	Overhaul sanitary sump pumps.	5 yrs	$2,000	2017	$2,000		•				•						•				•						•					•			
Mech 18	R02	Cyclical replacement of sump pumps.	15 Yrs	$8,000	2021	$8,800					•															•										
Mech 19	R01	Overhaul storm sump pumps.	5 yrs	$2,000	2017	$2,000		•				•						•				•						•					•			
Mech 19	R02	Cyclical replacement of sump pump storm lift and control panels.	15 Yrs	$8,000	2021	$8,800					•															•										
Mech 20	R01	Cyclic replacement of oil interceptor, as required.	50 Yrs	$8,000	2056	$18,000																														
Mech 21	R01	Cyclical replacement of hot water expansion tanks, as required.	20 Yrs	$6,000	2026	$7,300											•																			
HEATING & COOLING																																				
Mech 22	R01	Replace components of fireplace, such as gas valve and switch.	30 Yrs	$500	2036	$740																					•									
Mech 23	R01	Replace shell and tube heat exchanger.	20 Yrs	$8,000	2028	$10,000												•																		

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
MECHANICAL																																				
Mech 24	R02	Cyclical replacement of heat pumps in common areas.	20 Yrs	$12,500	2023	$14,000								•																				•		
Mech 25	R01	Replace circulating pumps for hydronic loop - heating and condenser water.	15 Yrs	$4,000	2021	$4,400						•															•									
Mech 26	R01	Replace aging or failing components of cooling tower.	18 Yrs	$132,000	2024	$150,000									•																		•			
Mech 27	R01	Cyclical replacement of components of split system AC for commercial section. [PLACEHOLDER]	8 Yrs	$0	2021	$0																														
Mech 28	R01	Cyclical replacement of components of condensing units and fan coil units on split system AC.	15 Yrs	$3,000	2021	$3,300						•															•									
Mech 29	R01	Cyclical replacement of electric baseboard heaters, as required.	40 Yrs	$4,500	2046	$8,200																														
Mech 30	R01	Replace electric unit heater, as required.	17 Yrs	$500	2023	$570								•																	•				
Mech 31	R02	Cyclical replacement of heat pumps.	20 Yrs	$0	2026	$0											•																			
VENTILATION AND AIR-CONDITIONING																																				
Mech 32	R01	Cyclical replacement of motors, fan blades and bearings on supply and exhaust fans, as required.	3 Yrs	$1,000	2023	$1,100								•			•			•			•			•			•			•			•	
Mech 32	R02	Rebuild of supply and exhaust fans, as required.	20 Yrs	$19,500	2026	$24,000											•																			
Mech 33	R01	Cyclical replacement of failed or damaged general purpose exhaust fans.	8 Yrs	$2,250	2018	$2,300			•								•								•								•			
Mech 34	R01	Cyclical replacement of pulleys and motors and vibration isolation, as required.	8 Yrs	$2,000	2023	$2,300								•								•								•						
Mech 34	R02	Rebuild or replace make-up air units.	25 Yrs	$80,000	2031	$110,000																•														
Mech 35	R02	Cyclical replacement of pulleys and motors and vibration isolation, as required.	8 Yrs	$2,000	2023	$2,300								•								•								•						
Mech 35	R03	Rebuild or replace make-up air units.	25 Yrs	$80,000	2031	$110,000																•														
OTHER																																				
Mech 36	R03	Replace trash compactor.	20 Yrs	$15,000	2026	$18,000											•																			
Mech 37	R01	Replace overhead door motors and operators, as required.	7 Yrs	$4,500	2017	$4,500		•							•							•							•							•

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
ELEVATOR																																				
TRACTION																																				
Elev 01	R03	Replace elevator controls and drive.	25 Yrs	$738,000	2031	$990,000																•														
CAR INTERIORS																																				
Elev 02	R03	Replace elevator operating and signal fixtures, including cab phones.	25 Yrs	$168,000	2031	$230,000																•														

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045

The Hudson
Major Maintenance and Renewals Schedule

FIRE SAFETY

CONTROLS																																					
Fire 01	R01	Replace battery packs.	5 yrs	$500	2020	$540					•					•					•					•					•					•	
Fire 01	R02	Replace fire alarm annunciator panels and control panel, excluding field wiring and field devices.	20 Yrs	$40,000	2026	$49,000											•																			
DETECTION																																					
Fire 02	R01	Cyclical replacement of speakers, heat detectors, smoke detectors and related modules, excluding field wiring.	10 Yrs	$24,320	2017	$25,000		•										•										•								
SUPPRESSION																																					
Fire 03	R01	Replace fire sprinkler compressor.	14 Yrs	$1,500	2020	$1,600					•													•												
Fire 04	R01	Replace smoke exhaust fans.	25 Yrs	$15,000	2031	$20,000															•															
Fire 05	R01	Replace jockey pump.	12 Yrs	$2,000	2018	$2,100			•												•										•					
Fire 05	R03	Replace fire pump and motor control centre.	30 Yrs	$27,000	2036	$40,000																				•										
Fire 06	R01	Cyclical replacement of fire extinguishers.	12 Yrs	$6,400	2018	$6,700			•												•										•					
Fire 07	J01	Sprinkler Heads - Test extra high temperature on sprinkler heads.	5 yrs	$500	2018	$520			•				•					•				•					•						•			
Fire 07	J02	Sprinkler Piping - Conduct flow test on piping, both exposed and underground.	5 yrs	$500	2018	$520			•				•					•				•					•						•			
Fire 07	R01	Phased replacement of sprinkler zone control valves, as required.	20 Yrs	$2,500	2026	$3,000											•																			
Fire 07	R02	Renew compromised portions of piping, gaskets, connections, valves, devices and trim to maintain required function, as required.	5 yrs	$8,118	2026	$9,900											•				•					•						•				
Fire 07	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.	10 Yrs	$121,770	2056	$270,000																															
Fire 07	R04	Replace entire system including risers, branch piping, valves, heads, swaybracing, and all related trim, back to Sprinkler Room.	100 Yrs	$405,900	2106	$0																															
Fire 08	R01	Phased replacement of sprinkler zone control valves, as required.	20 Yrs	$2,500	2026	$3,000											•																			
Fire 08	R03	Rebuild dry sprinkler valves.	20 Yrs	$4,000	2026	$4,900											•																			
Fire 08	R04	Replace sprinkler valves, as required.	40 Yrs	$21,000	2046	$38,000																															
Fire 09	J01	Sprinkler Piping - Conduct flow test on piping, both exposed and underground.	5 yrs	$500	2018	$520			•				•					•				•					•						•			
Fire 09	J02	Sprinkler Heads - Test extra high temperature on sprinkler heads.	5 yrs	$500	2018	$520			•				•					•				•					•						•			
Fire 09	R01	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.	10 Yrs	$60,630	2056	$130,000																															
Fire 09	R02	Replace damaged sprinkler heads, hangers and leaking gaskets, cages, sway-braces, drains etc as required.	5 yrs	$1,011	2018	$1,100			•				•					•				•					•						•			
Fire 09	R03	Replace entire system including risers, branch piping, valves, heads, swaybracing, and all related trim, back to Sprinkler Room.	100 Yrs	$202,100	2106	$0																															
Fire 10	R01	Replace fire hoses.	40 Yrs	$6,000	2026	$7,300											•																			
EGRESS																																					
Fire 11	R01	Cyclical replacement of batteries and lamps in DC battery packs.	5 yrs	$2,000	2017	$2,000		•					•					•					•					•					•				

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
FIRE SAFETY																																				
Fire 11	R02	Cyclical replacement of LED exit signs.	20 Yrs	$15,000	2026	$18,000											•																			

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
INTERIOR FINISHES																																				
FLOORS																																				
Finish 01	R03	Replace floor tiles.	30 Yrs	$110,000	2036	$160,000																					•									
Finish 02	R02	Replace carpet flooring, as required.	15 Yrs	$242,400	2021	$270,000						•															•									
Finish 03	R03	Repaint concrete flooring, as required.	15 Yrs	$8,000	2021	$8,800						•															•									
WALLS																																				
Finish 04	R01	Replace glass panel walls, as required.	30 Yrs	$13,000	2036	$19,000																					•									
Finish 05	R03	Replace ceramic wall tiles.	30 Yrs	$5,400	2036	$8,000																					•									
Finish 06	R01	Replace wood veneer panels.	30 Yrs	$1,800	2036	$2,700																					•									
Finish 07	R01	Repaint interior walls in high traffic areas, as required.	5 yrs	$8,250	2021	$9,900						•					•					•					•					•				
Finish 07	R02	Repaint interior walls, as required.	10 Yrs	$112,000	2026	$140,000											•										•									
Finish 08	R03	Replace glass block windows.	30 Yrs	$5,100	2036	$7,600																					•									
Finish 09	R01	Replace wallpaper, as required.	15 Yrs	$14,400	2021	$16,000						•															•									
ARCHITECTURAL WOODWORK																																				
Finish 10	R01	Replace damaged components of carpentry and millwork, as required.	30 Yrs	$2,860	2036	$4,200																					•									
FURNISHINGS																																				
Finish 11	R01	Cyclical replacement of interior swing doors in high traffic locations, as required.	20 Yrs	$9,280	2026	$11,000											•																			
Finish 11	R02	Cyclical replacement of interior swing doors in low traffic/exposure locations, as required.	40 Yrs	$55,680	2046	$100,000																														

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
AMENITIES																																				
FURNISHINGS																																				
Amen 01	R01	Replace components of electronic equipment.	6 Yrs	$2,000	2018	$2,000			•						•						•						•						•			
Amen 02	R01	Replace metal storage lockers, as required.	25 Yrs	$6,000	2031	$8,100																•														
Amen 03	R01	Replace components of electronic equipment.	6 Yrs	$2,000	2018	$2,000			•						•						•						•						•			
Amen 04	R01	Replace damaged and outdated signage, as required.	25 Yrs	$6,000	2031	$8,100																•														
Amen 05	R01	Replace central mailbank array.	30 Yrs	$12,000	2036	$18,000																					•									
Amen 06	R01	Replace furnishings in common areas, as required.	15 Yrs	$20,000	2021	$22,000						•															•									

The Hudson
Major Maintenance and Renewals Schedule

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
AMENITIES																																				
SUITE																																				
Amen 07	R01	Replace pool table, as required.	30 Yrs	$2,500	2036	$3,700																					•									
Amen 08	R01	Cyclical replacement and upgrade of components of audiovisual equipment, excluding field wiring, as required.	15 Yrs	$6,000	2021	$6,600						•															•									
Amen 09	R01	Replace domestic appliances.	15 Yrs	$6,000	2021	$6,600						•															•									
Amen 10	R01	Cyclical replacement of components of fitness equipment, as required.	15 Yrs	$8,000	2021	$8,800						•															•									

Asset Ref ID	Maint. Ref ID	Maintenance Description	Frequency	Current Cost	Next Event	Future Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
SITEWORK																																				
HARD LANDSCAPING																																				
Site 01	R01	Replace sections of concrete paving, as required.	40 Yrs	$1,800	2046	$3,300																														
Site 02	R01	Replace concrete paving, as required.	40 Yrs	$12,000	2046	$22,000																														
Site 03	R01	Replace bicycle racks, as required.	30 Yrs	$2,400	2036	$3,600																					•									
SOFT LANDSCAPING																																				
Site 04	R01	Replace components of irrigation sprinkler system, as required.	15 Yrs	$6,000	2021	$6,600						•															•									
Site 05	R01	Renovate sections of the soft landscaping, as required.	20 Yrs	$4,000	2021	$4,400						•																				•				

Appendix E

Funding Scenario Cash Flow Tables

RDH BUILDING SCIENCE

RDH Building Science Inc.
224 W 8th Avenue
Vancouver, BC V5Y 1N5

Making Buildings Better™

Funding Model - 1. Previous (2012) Funding Scenario - Fixed Annual Funding of $122,682

Funding Model Name	1. Previous (2012) Funding Scenario - Fixed Annual Funding of $122,682		Initial Catch-Up Cost	$0
Building	The Hudson		Operating Budget	$1,316,744
Start Year	2016		Starting Reserve Balance	$957,100
Interest/Investment Rate	2.0 %		Contribution Threshold	$500,000
Estimated Contingency Allowance	$5,000		Contribution Below Threshold	$122,682
Tax Rate	0.0 %		Contribution Above Threshold	$122,682
Planning Horizon (Years)	30		Reserve Contribution Increase	0.00 %
Number of Units	423		Monthly Avg. Unit Contribution	$24

Year	Opening Balance	Reserve Contribution	Additional Funding	Reserve Income	Keep-Up	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2016	$957,100	$122,682	$0	$19,142	$0	$5,000	$0	$1,093,924	23.87 %
2017	$1,093,924	$122,682	$0	$21,878	$72,700	$5,000	$0	$1,160,785	22.51 %
2018	$1,160,785	$122,682	$0	$23,216	$994,680	$5,000	$0	$307,002	6.37 %
2019	$307,002	$122,682	$0	$6,140	$7,400	$5,000	$0	$423,424	7.72 %
2020	$423,424	$122,682	$0	$8,468	$311,640	$5,000	$0	$237,935	4.05 %
2021	$237,935	$122,682	$87,425	$4,759	$432,800	$5,000	$0	$15,000	0.24 %
2022	$15,000	$122,682	$0	$300	$87,800	$5,000	$0	$45,182	0.66 %
2023	$45,182	$122,682	$0	$904	$31,650	$5,000	$0	$132,118	1.75 %
2024	$132,118	$122,682	$0	$2,642	$237,200	$5,000	$0	$15,242	0.18 %
2025	$15,242	$122,682	$0	$305	$24,600	$5,000	$0	$108,629	1.22 %
2026	$108,629	$122,682	$1,538,867	$2,173	$1,752,350	$5,000	$0	$15,000	0.18 %
2027	$15,000	$122,682	$0	$300	$64,500	$5,000	$0	$68,482	0.79 %
2028	$68,482	$122,682	$973,086	$1,370	$1,145,620	$5,000	$0	$15,000	0.18 %
2029	$15,000	$122,682	$0	$300	$14,300	$5,000	$0	$118,682	1.31 %
2030	$118,682	$122,682	$0	$2,374	$131,760	$5,000	$0	$106,978	1.10 %
2031	$106,978	$122,682	$3,990,641	$2,140	$4,202,440	$5,000	$0	$15,000	0.24 %
2032	$15,000	$122,682	$129,518	$300	$247,500	$5,000	$0	$15,000	0.22 %
2033	$15,000	$122,682	$0	$300	$11,200	$5,000	$0	$121,782	1.68 %
2034	$121,782	$122,682	$4,891,101	$2,436	$5,118,000	$5,000	$0	$15,000	0.57 %
2035	$15,000	$122,682	$0	$300	$21,230	$5,000	$0	$111,752	3.75 %
2036	$111,752	$122,682	$1,438,971	$2,235	$1,655,640	$5,000	$0	$15,000	0.88 %
2037	$15,000	$122,682	$0	$300	$90,600	$5,000	$0	$42,382	2.24 %
2038	$42,382	$122,682	$1,238,568	$848	$1,384,480	$5,000	$0	$15,000	1.93 %
2039	$15,000	$122,682	$0	$300	$9,600	$5,000	$0	$123,382	13.55 %
2040	$123,382	$122,682	$0	$2,468	$148,800	$5,000	$0	$94,732	10.46 %
2041	$94,732	$122,682	$297,992	$1,895	$497,300	$5,000	$0	$15,000	2.72 %
2042	$15,000	$122,682	$321,618	$300	$439,600	$5,000	$0	$15,000	6.60 %
2043	$15,000	$122,682	$0	$300	$46,500	$5,000	$0	$86,482	31.91 %
2044	$86,482	$122,682	$100,806	$1,730	$291,700	$5,000	$0	$15,000	27.77 %
2045	$15,000	$122,682	$0	$300	$62,590	$5,000	$0	$70,392	100.00 %

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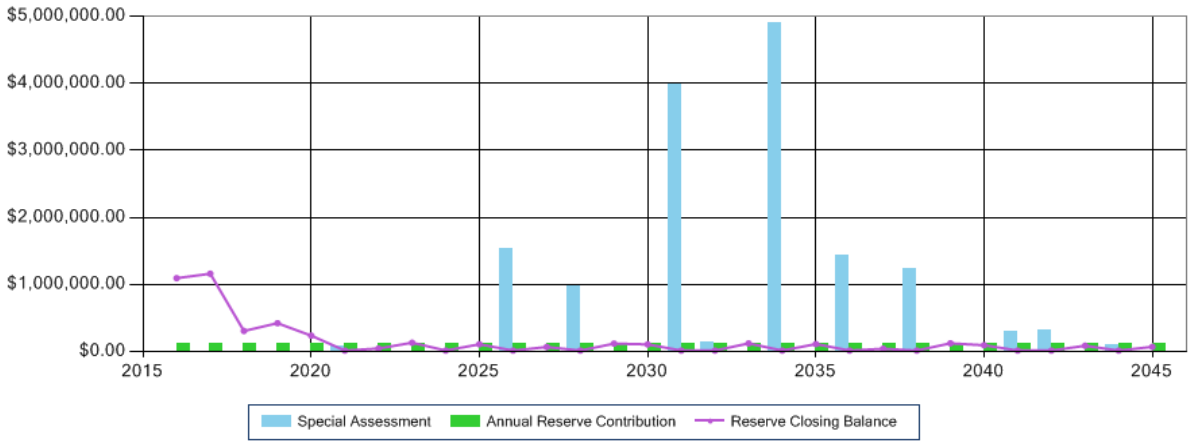
Funding Model - 1. Previous (2012) Funding Scenario - Fixed Annual Funding of $122,682

GRAPHIC REPRESENTATION



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Funding Model - 2. Current (2016) Funding Scenario - Fixed Annual Funding of $150,000

Funding Model Name	2. Current (2016) Funding Scenario - Fixed Annual Funding of $150,000		Initial Catch-Up Cost	
Building	The Hudson		Operating Budget	$1,316,744
Start Year	2016		Starting Reserve Balance	$957,100
Interest/Investment Rate	2.0 %		Contribution Threshold	$500,000
Estimated Contingency Allowance	$5,000		Contribution Below Threshold	$150,000
Tax Rate	0.0 %		Contribution Above Threshold	$150,000
Planning Horizon (Years)	30		Reserve Contribution Increase	0.00 %
Number of Units	423		Monthly Avg. Unit Contribution	$30

Year	Opening Balance	Reserve Contribution	Additional Funding	Reserve Income	Keep-Up	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2016	$957,100	$150,000	$0	$19,142	$0	$5,000	$0	$1,121,242	24.47 %
2017	$1,121,242	$150,000	$0	$22,425	$72,700	$5,000	$0	$1,215,967	23.58 %
2018	$1,215,967	$150,000	$0	$24,319	$994,680	$5,000	$0	$390,606	8.11 %
2019	$390,606	$150,000	$0	$7,812	$7,400	$5,000	$0	$536,018	9.77 %
2020	$536,018	$150,000	$0	$10,720	$311,640	$5,000	$0	$380,099	6.48 %
2021	$380,099	$150,000	$0	$7,602	$432,800	$5,000	$0	$99,901	1.62 %
2022	$99,901	$150,000	$0	$1,998	$87,800	$5,000	$0	$159,099	2.34 %
2023	$159,099	$150,000	$0	$3,182	$31,650	$5,000	$0	$275,631	3.66 %
2024	$275,631	$150,000	$0	$5,513	$237,200	$5,000	$0	$188,943	2.34 %
2025	$188,943	$150,000	$0	$3,779	$24,600	$5,000	$0	$313,122	3.53 %
2026	$313,122	$150,000	$1,302,965	$6,262	$1,752,350	$5,000	$0	$15,000	0.18 %
2027	$15,000	$150,000	$0	$300	$64,500	$5,000	$0	$95,800	1.11 %
2028	$95,800	$150,000	$917,904	$1,916	$1,145,620	$5,000	$0	$15,000	0.18 %
2029	$15,000	$150,000	$0	$300	$14,300	$5,000	$0	$146,000	1.61 %
2030	$146,000	$150,000	$0	$2,920	$131,760	$5,000	$0	$162,160	1.67 %
2031	$162,160	$150,000	$3,907,037	$3,243	$4,202,440	$5,000	$0	$15,000	0.24 %
2032	$15,000	$150,000	$102,200	$300	$247,500	$5,000	$0	$15,000	0.22 %
2033	$15,000	$150,000	$0	$300	$11,200	$5,000	$0	$149,100	2.06 %
2034	$149,100	$150,000	$4,835,918	$2,982	$5,118,000	$5,000	$0	$15,000	0.57 %
2035	$15,000	$150,000	$0	$300	$21,230	$5,000	$0	$139,070	4.66 %
2036	$139,070	$150,000	$1,383,789	$2,781	$1,655,640	$5,000	$0	$15,000	0.88 %
2037	$15,000	$150,000	$0	$300	$90,600	$5,000	$0	$69,700	3.68 %
2038	$69,700	$150,000	$1,183,386	$1,394	$1,384,480	$5,000	$0	$15,000	1.93 %
2039	$15,000	$150,000	$0	$300	$9,600	$5,000	$0	$150,700	16.56 %
2040	$150,700	$150,000	$0	$3,014	$148,800	$5,000	$0	$149,914	16.56 %
2041	$149,914	$150,000	$214,388	$2,998	$497,300	$5,000	$0	$15,000	2.72 %
2042	$15,000	$150,000	$294,300	$300	$439,600	$5,000	$0	$15,000	6.60 %
2043	$15,000	$150,000	$0	$300	$46,500	$5,000	$0	$113,800	41.99 %
2044	$113,800	$150,000	$45,624	$2,276	$291,700	$5,000	$0	$15,000	27.77 %
2045	$15,000	$150,000	$0	$300	$62,590	$5,000	$0	$97,710	100.00 %

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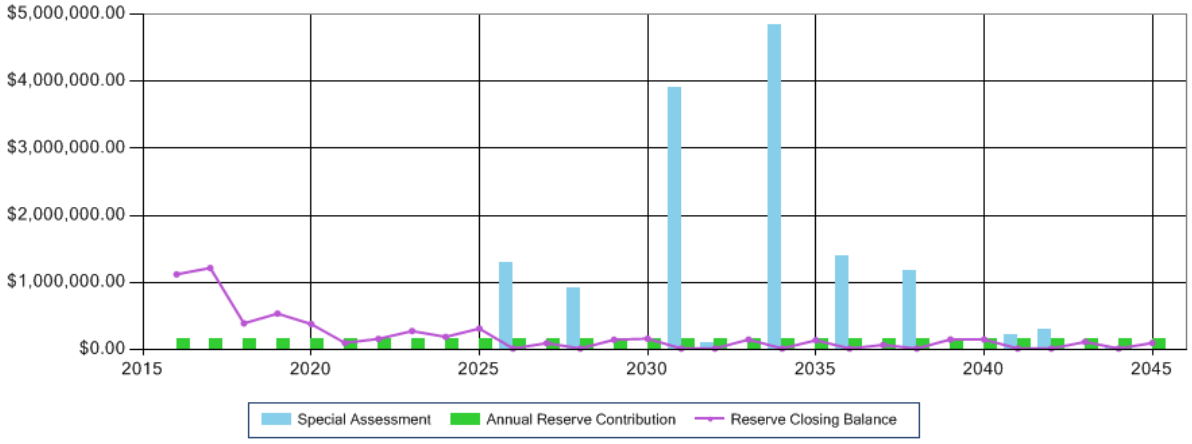
Funding Model - 2. Current (2016) Funding Scenario - Fixed Annual Funding of $150,000

GRAPHIC REPRESENTATION



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Funding Model - 3. Alternative #1 Funding Scenario - Fixed Annual Funding of $330,000

Funding Model Name	3. Alternative #1 Funding Scenario - Fixed Annual Funding of $330,000		Initial Catch-Up Cost	
Building	The Hudson		Operating Budget	$1,316,744
Start Year	2016		Starting Reserve Balance	$957,100
Interest/Investment Rate	2.0 %		Contribution Threshold	$500,000
Estimated Contingency Allowance	$5,000		Contribution Below Threshold	$330,000
Tax Rate	0.0 %		Contribution Above Threshold	$330,000
Planning Horizon (Years)	30		Reserve Contribution Increase	0.00 %
Number of Units	423		Monthly Avg. Unit Contribution	$65

Year	Opening Balance	Reserve Contribution	Additional Funding	Reserve Income	Keep-Up	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2016	$957,100	$330,000	$0	$19,142	$0	$5,000	$0	$1,301,242	28.39 %
2017	$1,301,242	$330,000	$0	$26,025	$72,700	$5,000	$0	$1,579,567	30.64 %
2018	$1,579,567	$330,000	$0	$31,591	$994,680	$5,000	$0	$941,478	19.54 %
2019	$941,478	$330,000	$0	$18,830	$7,400	$5,000	$0	$1,277,908	23.30 %
2020	$1,277,908	$330,000	$0	$25,558	$311,640	$5,000	$0	$1,316,826	22.46 %
2021	$1,316,826	$330,000	$0	$26,337	$432,800	$5,000	$0	$1,235,363	20.11 %
2022	$1,235,363	$330,000	$0	$24,707	$87,800	$5,000	$0	$1,497,270	22.04 %
2023	$1,497,270	$330,000	$0	$29,945	$31,650	$5,000	$0	$1,820,565	24.19 %
2024	$1,820,565	$330,000	$0	$36,411	$237,200	$5,000	$0	$1,944,776	24.10 %
2025	$1,944,776	$330,000	$0	$38,896	$24,600	$5,000	$0	$2,284,072	25.78 %
2026	$2,284,072	$330,000	$0	$45,681	$1,752,350	$5,000	$0	$902,403	11.38 %
2027	$902,403	$330,000	$0	$18,048	$64,500	$5,000	$0	$1,180,951	13.69 %
2028	$1,180,951	$330,000	$0	$23,619	$1,145,620	$5,000	$0	$383,950	4.65 %
2029	$383,950	$330,000	$0	$7,679	$14,300	$5,000	$0	$702,329	7.78 %
2030	$702,329	$330,000	$0	$14,047	$131,760	$5,000	$0	$909,616	9.37 %
2031	$909,616	$330,000	$2,964,632	$18,192	$4,202,440	$5,000	$0	$15,000	0.24 %
2032	$15,000	$330,000	$0	$300	$247,500	$5,000	$0	$92,800	1.40 %
2033	$92,800	$330,000	$0	$1,856	$11,200	$5,000	$0	$408,456	5.66 %
2034	$408,456	$330,000	$4,391,375	$8,169	$5,118,000	$5,000	$0	$15,000	0.57 %
2035	$15,000	$330,000	$0	$300	$21,230	$5,000	$0	$319,070	10.71 %
2036	$319,070	$330,000	$1,020,189	$6,381	$1,655,640	$5,000	$0	$15,000	0.88 %
2037	$15,000	$330,000	$0	$300	$90,600	$5,000	$0	$249,700	13.21 %
2038	$249,700	$330,000	$819,786	$4,994	$1,384,480	$5,000	$0	$15,000	1.93 %
2039	$15,000	$330,000	$0	$300	$9,600	$5,000	$0	$330,700	36.34 %
2040	$330,700	$330,000	$0	$6,614	$148,800	$5,000	$0	$513,514	56.74 %
2041	$513,514	$330,000	$0	$10,270	$497,300	$5,000	$0	$351,484	63.90 %
2042	$351,484	$330,000	$0	$7,030	$439,600	$5,000	$0	$243,914	107.45 %
2043	$243,914	$330,000	$0	$4,878	$46,500	$5,000	$0	$527,292	194.57 %
2044	$527,292	$330,000	$0	$10,546	$291,700	$5,000	$0	$571,138	1,057.66 %
2045	$571,138	$330,000	$0	$11,423	$62,590	$5,000	$0	$844,971	100.00 %

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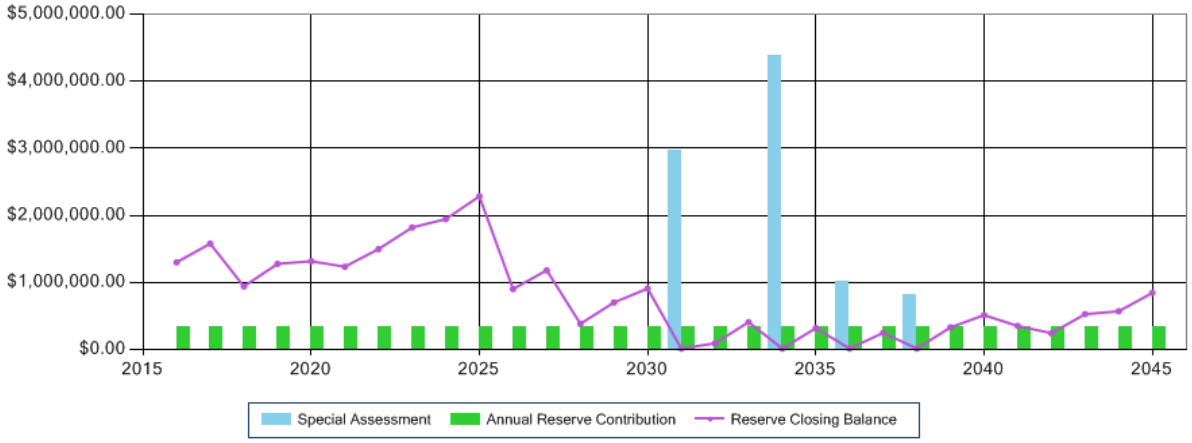
Funding Model - 3. Alternative #1 Funding Scenario - Fixed Annual Funding of $330,000

GRAPHIC REPRESENTATION



RDH BUILDING SCIENCE

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Funding Model - 4. Progressive Funding Scenario - Fixed Annual Funding of $685,000

Funding Model Name	4. Progressive Funding Scenario - Fixed Annual Funding of $685,000		Initial Catch-Up Cost	$0
Building	The Hudson		Operating Budget	$1,316,744
Start Year	2016		Starting Reserve Balance	$957,100
Interest/Investment Rate	2.0 %		Contribution Threshold	$500,000
Estimated Contingency Allowance	$5,000		Contribution Below Threshold	$685,000
Tax Rate	0.0 %		Contribution Above Threshold	$685,000
Planning Horizon (Years)	30		Reserve Contribution Increase	0.00 %
Number of Units	423		Monthly Avg. Unit Contribution	$135

Year	Opening Balance	Reserve Contribution	Additional Funding	Reserve Income	Keep-Up	Contingency Costs	Tax Liability	Closing Balance	Percent Funded
2016	$957,100	$685,000	$0	$19,142	$0	$5,000	$0	$1,656,242	36.14 %
2017	$1,656,242	$685,000	$0	$33,125	$72,700	$5,000	$0	$2,296,667	44.55 %
2018	$2,296,667	$685,000	$0	$45,933	$994,680	$5,000	$0	$2,027,920	42.10 %
2019	$2,027,920	$685,000	$0	$40,558	$7,400	$5,000	$0	$2,741,079	49.99 %
2020	$2,741,079	$685,000	$0	$54,822	$311,640	$5,000	$0	$3,164,260	53.98 %
2021	$3,164,260	$685,000	$0	$63,285	$432,800	$5,000	$0	$3,474,745	56.57 %
2022	$3,474,745	$685,000	$0	$69,495	$87,800	$5,000	$0	$4,136,440	60.90 %
2023	$4,136,440	$685,000	$0	$82,729	$31,650	$5,000	$0	$4,867,519	64.69 %
2024	$4,867,519	$685,000	$0	$97,350	$237,200	$5,000	$0	$5,407,670	67.02 %
2025	$5,407,670	$685,000	$0	$108,153	$24,600	$5,000	$0	$6,171,223	69.66 %
2026	$6,171,223	$685,000	$0	$123,424	$1,752,350	$5,000	$0	$5,222,298	65.89 %
2027	$5,222,298	$685,000	$0	$104,446	$64,500	$5,000	$0	$5,942,244	68.91 %
2028	$5,942,244	$685,000	$0	$118,845	$1,145,620	$5,000	$0	$5,595,469	67.90 %
2029	$5,595,469	$685,000	$0	$111,909	$14,300	$5,000	$0	$6,373,078	70.66 %
2030	$6,373,078	$685,000	$0	$127,462	$131,760	$5,000	$0	$7,048,780	72.63 %
2031	$7,048,780	$685,000	$0	$140,976	$4,202,440	$5,000	$0	$3,667,315	58.95 %
2032	$3,667,315	$685,000	$0	$73,346	$247,500	$5,000	$0	$4,173,162	63.32 %
2033	$4,173,162	$685,000	$0	$83,463	$11,200	$5,000	$0	$4,925,425	68.28 %
2034	$4,925,425	$685,000	$0	$98,508	$5,118,000	$5,000	$0	$585,933	22.40 %
2035	$585,933	$685,000	$0	$11,719	$21,230	$5,000	$0	$1,256,422	42.17 %
2036	$1,256,422	$685,000	$0	$25,128	$1,655,640	$5,000	$0	$305,910	18.11 %
2037	$305,910	$685,000	$0	$6,118	$90,600	$5,000	$0	$901,428	47.71 %
2038	$901,428	$685,000	$0	$18,029	$1,384,480	$5,000	$0	$214,977	27.77 %
2039	$214,977	$685,000	$0	$4,300	$9,600	$5,000	$0	$889,676	97.76 %
2040	$889,676	$685,000	$0	$17,794	$148,800	$5,000	$0	$1,438,670	158.96 %
2041	$1,438,670	$685,000	$0	$28,773	$497,300	$5,000	$0	$1,650,144	300.02 %
2042	$1,650,144	$685,000	$0	$33,003	$439,600	$5,000	$0	$1,923,546	847.37 %
2043	$1,923,546	$685,000	$0	$38,471	$46,500	$5,000	$0	$2,595,517	957.75 %
2044	$2,595,517	$685,000	$0	$51,910	$291,700	$5,000	$0	$3,035,728	5,621.71 %
2045	$3,035,728	$685,000	$0	$60,715	$62,590	$5,000	$0	$3,713,852	100.00 %

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Funding Model - 4. Progressive Funding Scenario - Fixed Annual Funding of $685,000

GRAPHIC REPRESENTATION

Appendix F

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 regarded recommended maintenance procedures and intervals.
- The maintenance checklists and maintenance intervals should be reviewed annually and adjusted, as required, to reflect the service environment, feedback from contractors, etc.

Specialist and Non-Specialist Reviews

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

Forecasting the Useful Service Life of Assets

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

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

Funding Models

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

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

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

Appendix G

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.

Building Asset Management Software

All of this information is accessible through our propriety online BAM Software—we do the groundwork and provide the critical information so that you can leverage the Software to track and report on maintenance, repair, and renewal activities. Alternatively, we can follow up and manage the activities on your behalf.

The Software tool also empowers you to create your own funding scenarios so you can evaluate different funding levels and find a solution that works specifically for your building. Where a Depreciation Report identifies what items you need to spend money on and when you need to spend it, this tool helps you optimize the way you spend your money. Ultimately, we can help you track what work is completed versus what is outstanding so that you are better able to produce reports and make informed decisions.

RDH

About Us

RDH Qualifications

Serge Desmarais | B.Arch. Architect AIBC, CP

Principal, Senior Building Science Specialist

- → Registered architect, AIBC, Certified Professional, UBC
- → 30+ years' experience in building design and construction capital renewal projects
- → Technical lead for MaP Group

Peter Fitch | C.Tech.

Senior Project Manager, Mechanical Specialist

- → UBC/UBCM Certified Professional program (audit only)
- → Member of Applied Science Technologists & Technicians of British Columbia
- → 40+ years' experience in the mechanical design field
- → Technical review of asset inventories for MEFS and site assets

Laureen Stokes | Dipl.T.

Associate, Project Manager

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → Regional group leader for MaP Vancouver
- → 4+ years' experience in building science consulting
- → 4+ years' experience in MaP consulting

Jason Dunn | B.Arch.Sc., CCCA

Associate, Project Manager

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

Brandon Carreira | Dipl.T.

Maintenance and Planning Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → 4+ years' experience in maintenance and planning consulting
- → Prepared 50+ Depreciation Reports and has been involved with 75+ MaP projects

Roma Santos | Dipl.T.

Maintenance and Planning Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → 2+ years' experience in maintenance and planning consulting and has prepared 50+ Depreciation Reports

RDH

RDH Qualifications

Jesse Listoen | Dipl.T.

Maintenance and Planning Technologist

- → Dipl.T., Architectural & Building Engineering Technology (Building Science Option)
- → 2+ years' experience in maintenance and planning consulting and has prepared 50+ Depreciation Reports

Roya Kiani Amin | B.Sc.

Maintenance and Planning Technologist

- → B.Sc., Civil Engineering
- → AScT, Certified Applied Science Technologist
- → 5+ years' experience in architectural drafting
- → 4+ years' experience as senior quantity estimator providing quantity estimating for Depreciation Reports + QTO quality assurance and quality control
- → 1+ years' experience in MaP consulting and preparation of Depreciation Reports

Administrators and Client Support

Vanessa Jumawan

Maintenance and Planning Coordinator

- → 5+ years' experience in administration within engineering/architecture
- → Preparation of Depreciation Report estimates and proposals

Anna Qiu

Maintenance and Planning Project Assistant

- → Certificate, Business Administration
- → 10+ years' experience in administration within engineering/architecture firms
- → BAMS user account setup and maintenance

Software Support and Programmer

Matthew Branch | P.Eng.

Software Engineer

- → B.Sc., Civil Engineering
- → Registered professional engineer, APEGBC
- → 13+ years' experience in engineering data analysis

Appendix H

Insurance Certificate

Ref. No. 320007422038

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

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.
224 West 8th Avenue
Vancouver, BC V5Y 1N5

Coverage

Commercial General Liability — **Insurer** Zurich Insurance Company Ltd

Policy # 8611292

Effective 02-May-2016 **Expiry** 02-May-2017

Limits of Liability
Bodily Injury & Property Damage, Each Occurrence $1,000,000
Products and Completed Operations, Aggregate $1,000,000
Non-Owned Automobile Liability $1,000,000
Policy may be subject to a general aggregate and other aggregates where applicable

Professional Liability — **Insurer** Lloyd's Underwriters

Policy # QC1602155

Effective 02-May-2016 **Expiry** 02-May-2017

Limits of Liability
Subject to aggregate where applicable

Terms and / or Additional Coverage

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

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

Ref. No. 320007422038

CERTIFICATE OF INSURANCE

Commercial General Liability

Products and Completed Operations
Broad Form Property Damage
Cross Liability
Contractual Liability
Owners and Contractors Protective
Contractual Liability included

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

Aon Reed Stenhouse Inc.

Dated : 03-May-2016
Issued By : McLean,Chris J.
Tel : 1-604-688-4442

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