1015-48

COPY

CONTINGENCY RESERVE FUND STUDY
FOR
LONDON PLACE
1177 HORNBY STREET,
VANCOUVER, BC

THE OWNERS OF STRATA LMS 1757
c/o Colliers International
15th Floor, Granville Square
200 Granville Street
Vancouver, B.C., V6C 2R6

HALSALL ASSOCIATES LIMITED
Attn: Kevin Grasty, P. Eng.
(604) 924-5575

205vA014A/a

April 26, 2006

1 GENERAL DESCRIPTION OF CORPORATION

The facilities at your Strata include a 14 storey highrise tower with 142 residential suites, 6 retail units and 1 commercial unit. There is a 3 storey underground parking garage. Recreational facilities include an exercise room, games room, steam room, change rooms and a roof top terrace with a hot tub. The complex was originally built about 25 years ago, and was converted to residential in 1994. The fiscal year end of the Strata is February 28, 2006.

1.1 Shared Facilities

We understand there are no shared facilities or reciprocal agreements with any adjacent properties.

1.2 Common Asset Components

The registered strata plan provided by Council (Strata Plan of Lot E Block 90, District Lot 514, Plan 13782, dated November 25, 1994) includes site floor layouts and schedules which define the boundaries of suites, units and common assets of the property. According to the Strata Plan the boundary of the Strata lot is the centre line of the wall, floor or ceiling that separates the lot from another Strata lot or the common property.

Legal interpretations of the repair and maintenance obligations of the Strata Corporation as noted in the Statues (Condominium Act, Strata Property Act) have generally stated that any component which plays an integral part in the performance, of say, the exterior wall, is generally the responsibility of the Strata Corporation (as opposed to an individual owner) to maintain, repair and replace.

The Strata may wish to have this, and the following sections of this report numbered 1.3 and 1.4, reviewed by their solicitor for the appropriateness of our determinations, and our understanding of the unit boundaries and the responsibility thereof. These assumptions define the expenses included in the study.

Our interpretation of the Strata Plan and Bylaws provided for review and how we understand the Strata to be operating is that the following building components are the common assets which must be addressed as part of this Contingency Reserve Fund Study:

- Building structure (including parking garage, balconies and terraces)
- Roofs
- Exterior walls and windows
- Common areas such as exercise room, common room, etc.
- Site finishes consisting of concrete and asphalt paving, curbs and fencing
- Common mechanical and electrical facilities

1.5 Scope

The Contingency Reserve Fund Study is intended to include expenses for the repair or replacement of common assets. We include items which typically require replacement because their service life is shorter than the service life of the building (such as caulking, roofing, equipment, etc.). We also include items which would not have been anticipated to be required when the building was new, but which have become necessary due to building specific deterioration (concrete repair related to poor durability, window modifications due to loss of internal seals, etc.). There may be expenses which arise which we have not anticipated, related to concealed conditions or unexpected deterioration.

As long as these relate to the repair or replacement of the common assets, they can often be paid out of the Reserve Fund provided the study is updated to account for the impact of these expenditures.

If you are in doubt about whether or not an expenditure can be paid for out of the Reserve Fund, we recommend you check with your legal counsel or chartered accountant.

2 CONTINGENCY RESERVE FUND PLAN

We have presented two cash flow scenarios for your consideration. These are included, along with the expenditure data, in Appendix B.

Scenario 1, the inflation-matched funding plan, is ideal, and is our primary recommendation. If current financial constraints make this impossible, then Scenario 2 shows an alternate funding plan with lower initial increases. We recommend that you select a contribution level as close to the Scenario 1 recommendations as you can afford. Selecting values near the Scenario 2 levels will require ongoing increases at a rate greater than inflation, which is not ideal for a Strata.

Respectfully submitted,
HALSALL ASSOCIATES LIMITED

Kevin Grasty, P.Eng.
Project Manager

Ted Denniston, CET, AScT
Project Principal

APPENDIX A
RESERVE FUND ITEMS

APPENDIX A - RESERVE FUND ITEMS

Contingency Reserve Fund Plan

London Place

1177 Hornby Street

Vancouver, BC

Prepared For:

Strata Plan LMS 1757
Attn: Karen Rahal, Property Manager

Prepared By:

Halsall Associates Ltd.
Attn: Kevin Grasty, P.Eng.

Project Number: 205vA014A/a

April 26, 2006

Balconies

Description:

Balconies on floors 10, 11 and 12 are described as follows:
- Structure: Conventionally reinforced concrete slabs are the extensions of the floor slabs. The balcony slabs span between columns at the exterior building walls.
- Protection System: A liquid applied waterproofing membrane protects the top surface concrete. The membrane has been upturned at adjacent parapet and building walls.
- Guardrail Assembly: A prefinished aluminum guardrail with glass infill panels is mounted on top of cast-in-place perimeter parapet walls. The exterior and top of the parapet walls are clad with brick facing. Parapets appear to have been cast on top the slab edge. Connection of the parapet to the slab could not be determined by visual review, but appear to have concrete encased anchor plates, which were embed in the parapet wall at the time of construction and then secured to the top of the balcony slab.
- Balcony Dividers: Painted concrete shearwalls separate adjacent balconies.
- Drainage: Scupper drains through base of balcony guards.

Penthouse Balconies:
Prior to conversion of the building from commercial to residential occupancy, the penthouse balcony area was a running track around the perimeter of the building. The penthouse balcony is described as follows:
- Structure: Conventionally reinforced concrete slab similar to other balconies.
- Protection System: An asphalt based built-up roof membrane protects the top surface of the concrete. The membrane is covered with a concrete topping and wood decking (wood deck about 24" wide around outer perimeter).
-Guardrail Assembly: The guard consists of a cast-in-place perimeter parapet, with top and exterior of the parapet clad with brick facing. The parapet wall appears to be cast on top the slab edge, and secured with concrete encased anchor plates similar to other balconies. Columns which extend up from the parapet are connected to the canopy above (see "Roof" section for discussion on the canopy).
- Balcony Dividers: Aluminum framed dividers with glass infill panels separate adjacent penthouse balconies.
- Drainage: Internal area drains below wood decking.

Condition:

2005 (Halsall): No structural deterioration of the balconies was noted, with the exception of a parapet anchor plate at Suite 1205. Concrete covering an anchor plate has spalled (broken away) as a result corrosion (rusting) of the underlying anchor. If corrosion continues, this is likely to affect the structural integrity of the parapet.

Deterioration of the balconies on floors 10, 11 and 12 include:
- Ponding water on the surface of balconies at all suite reviewed (1105, 1201 and 1205).
- Membrane cracked and debonded at some areas, but not all, at all suites reviewed.
- Living room wall of suite 1105 is leaking, likely as a result of failures in the adjacent balcony waterproofing membrane.
- Balcony ceiling above suite 1105 is leaking through cracks in the slab from balcony above, likely through failure of the waterproofing membrane.
- Finish on aluminum guard assemblies is chalked and faded.
- Brick stained below scupper drains on outside of balcony guard wall, likely because the drain does not project past the face of the brick.

As the guards are aluminum, deterioration of the finish is not expected to affect the structure of the guards.

Deterioration of the penthouse balconies identified during our roof evaluation in 2004 included:
- localized blistering of membrane below wood decking, where checked; however the membrane remains flexible.
- drains at high point of balconies at some locations

Suspended Access Systems

Description:

According to a 2004 Inspection Report (Pro-Bel Enterprises Ltd., dated November 8, 2004), there are 25 adhesive slab mounted anchors, and 4 through bolted wall anchors. A 70m fall restraint cable, fed through the adhesive anchors, runs the length of the top balcony roof perimeter, connecting the adhesive anchors.

Condition:

2005 (Halsall): The anchor systems were inspected in 2004 (2004 Inspection Report by Pro-Bel Enterprises Ltd., dated November 8, 2004) and the following recommendations were made in oder for the anchors to be certified:
- rusted cable fitting must be replaced
- adhesive anchors need to be tested

We assume the recommendations by Pro-Bel have been completed. Assuming the existing anchors can be certified for use, and provided the surfaces remain protected from corrosion, general replacement is not anticipated within the term of this report. Adhesive anchors should continue to be tested every 5 years, and all anchors inspected annually, the cost of which is assume to be an operating expense.

A roof anchor plan, stamped by an Engineer, is posted on the wall adjacent the terrace access door, prepared by Pro-Bel, dated December 12, 1997. The size of this plan is too small, making it difficult to read. For the safety of people using the anchors, another plan should be posted.

The inspection report by Pro-Bel indicates that the safety anchor system has been designed for boatswain chair for window cleaning only, and the fall restraint cable system has been designed for localized fall restraint only. Additional anchors would be required if a suspended stage is to be used on this building. A budget to install additional anchors has been included as exterior wall repairs requiring suspended access will be required in the future.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Design and Install Additional Suspended Access Anchors	$8,902	$9,080	2007	N/A	One time	3

Garage Slab-on-grade

Description:

The lowest level of the garage (P3), and the garage entrance ramp are constructed of concrete slab-on-grade. Crack control joints are sawcut into the concrete at column lines.

There is a 6" area drain, adjacent the sump pumps. No other drains in the slab-on-grade were noted.

Condition:

2005 (Halsall):
P3 Level: No significant problems with deterioration were evident. There are cracks in the slab but no significant settlement or heave. The cracks are likely a result of the construction joints being installed to late in the construction process. The cracks do not appear to be structural in nature and therefore no repairs are expected to be required. Garage levels are generally sloped down to the slab-on-grade. There are water ponding stains at some slab-on-grade areas, but no significant standing water.

Garage Entrance Ramp: We noted about 10m of cracks and 1 pothole in the concrete. Minor repairs are assumed to be managed as part of routine maintenance.

Slabs-on-grade typically last the life of the building without major renewal. The slab should be monitored over time, and a repair allowance included in future reserve fund updates if cracking, surface scaling, or settlement problems become an issue.

Garage Suspended Parking Slab(s)

Description:

Parking garage levels P1 and P2 are suspended slabs.

Structure: Conventionally reinforced concrete slabs, supported by foundation walls and columns. No expansion joints provided.

Traffic Deck Surface Protection: Thin elastomeric traffic deck waterproofing system at upper P1 level only. No evidence of protection to other slab areas.

Drainage: 4" drains discharge into steel drainage pipes mounted on the ceiling of the level below.

Repair History:

Date Unknown: Concrete repairs completed (about 8m²) at top surface of P2 level, cost unknown.

Date Unknown: Some cracks repaired by routing and sealing, and metal collection pans installed beneath several areas, likely in an attempt to mitigate leakage.

Condition:

2005 (Halsall): There is evidence of leakage at the underside of slabs at cracks and at construction joints in the ramps between levels. There are cracks at the top and bottom of the ramps. These cracks and the leakage at construction joints in the ramps are likely caused as a result of no expansion joints between each parking level to allow for building movement. The extent of cracking does not appear to be structurally significant; however, these cracks allow

Garage Below Grade Roof Deck

Description:

The parking garage roof slab extends beyond the building footprint at the plaza, front entrance, rear service / commercial parking area and the garbage collection area. There is spray-applied insulation on the underside of the roof slab below the building.

Structure: Conventionally reinforced, cast-in-place concrete slab, supported by garage walls and columns.

Garage roof slab waterproofing membrane: Material(s) not confirmed, concealed by overburden.

Overburden: The plaza area and front entrance walkways are a combination of brick and concrete with exposed aggregate finish. Various landscaped concrete planters are also situated around the plaza area. The rear service area is covered with asphalt paving. The area behind the garbage collection area (over the garage entrance ramp), is covered with stone ballast.

Condition:

2005 (Halsall): No significant problems evident. The underside of the slab was found to be intact where sounded (tapping the concrete with a hammer).

Evidence of leakage problems included:
- about 16m of leakage through the slab above parking spaces 20 and 21 (metal drip pans in place)
- about 5m of leakage through the slab above parking spaces 30 and 31 (previously repaired)
- Active leakage adjacent west stairwell near the ramp between the upper and lower P1 level.

About 60% of the roof slab soffit is concealed by spray insulation (buildings above). Condition could not be observed in these areas.

We recommend a detailed condition evaluation of the roof slab including excavating test pits to check the type and condition of the waterproofing membrane. This will enable us to refine furture repair budgets and timing. The condition evaluation budget has been included in the "Parking Garage" item. Pending completion of the investigation, budgets has been included for repairs and eventual replacement of the garage roof slab wateproofing membrane.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Repair Garage Roof Deck Waterproofing	$23,647	$25,596	2010	40 yrs	recurring	3
Replace Garage Roof Deck Waterproofing	$248,240	$327,547	2020	40 yrs	recurring	3

slabs. The soldier course of brick at the slab edge has been installed with its lower edge below the bottom of the floor slab. This design allows water to shed from the wall.

The building sealants are generally hard and cracked.

We recommend budgeting for sealant replacement. We also recommend budgeting for repointing and local brick repair. We assume these projects will be coordinated to minimize access costs.

No concrete repairs at the protected overhanging slab edges is anticipated; however, the condition of this concrete should be monitored regularly and an allowance for concrete repair included in future reserve fund updates if deterioration becomes evident.

The stucco wall areas within the 10th, 11th and 12th floor balconies is locally cracked where the walls change direction and at the corners of the windows. No crack control joints have been incorporated into the walls. The perimeter sealants to windows and doors have generally failed. The base of the walls are moss stained, where checked. The moss occurs because the walls are sheltered from sunlight by the parapet walls.

It is imperative the face sealed stucco walls are maintained water tight as there is no ability for water which enters the wall (through cracks or failed sealants) to drain back out. As leakage has occurred into the living room of Suite 1105, it would be prudent to undertake a condition evaluation of the stucco walls, including exploratory openings to confirm the concealed conditions. Pending completion of this investigation, we have recommended sealing the exterior stucco to mitigate water ingress. A budget for eventual replacement of the stucco has also been included. The timing of repair and replacement and the associated costs should be considered preliminary until such time that the stucco investigation is completed.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Wall Condition Evaluation	$5,350	$5,457	2007	10 yrs	recurring	3
Replace Caulking	$73,723	$76,701	2008	15 yrs	recurring	3
Repair Walls	$39,443	$41,036	2008	15 yrs	recurring	3
Repair Stucco - Pending Wall Evaluation	$76,505	$79,596	2008	N/A	One time	3
Future Stucco Replacement - Pending Wall Evaluation	$387,875	$543,119	2023	40 yrs	recurring	3

Sloped Glazing/Skylights

Description:

There are acrylic dome, pyramid-shaped skylights in the canopy adjacent to the commercial units. There is also sloped glazing at the rear of the commercial units, with wired glass lites.

There are flat panel type skylights with prefinished aluminum frames and sealed glazing units at the east penthouse suite.

Repair History:

2005: Elevator room skylights replaced with ventilation equipment, cost unknown.

Condition:

2005 (Halsall): We noted 10 out of the 18 acrylic domes are cracked. There are also some cracked wired glass lites. No leakage from the commercial area skylights was reported or evident. As the dome skylights are located over an outdoor plaza area, localized leakage is not expected to cause significant problems.

Localized replacement of cracked glazing and re-sealing the commercial area skylights is assumed to be managed as needed at a cost below the report threshold. A budget is included for eventual replacement.

We understand that the penthouse unit skylights were added during a renovation by the Owner and therefore are not the responsibility of the Strata. The Owner has also closed several openings in the penthouse canopy with sheet metal. This is also assumed to be the responsibility of the Owner. No budget for renewal or replacement has been inlcuded.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Commercial Skylight(s)	$31,565	$50,770	2030	40 yrs	recurring	3

Flat Roofing

Description:

A roof condition survey was completed by Halsall in November 2004. The roof construction from top to bottom of the various roof levels is :

Upper and Lower Commercial Roofs:
-clear stone ballast, 50mm deep
-expanded polystyrene insulation, 75mm
-original built-up roof (4 ply of organic felts and asphalt), thickness about 15mm (confirmed for upper roof, likely for lower roof)
-concrete topping
-corrugated steel deck

Upper Penthouse and Elevator Machine Room Roofs:
-modified bitumen sheet membrane
-25mm fiberboard
-expanded polystyrene insulation
-original built-up roof (4 ply of organic felts and asphalt), thickness about 15mm
-concrete topping
-corrugated steel deck

Hot Tub Terrace Roof:
-patio pavers
-tyvek sheet
-expanded polystyrene insulation, 75mm
-2 ply modified bitumen membrane
-concrete slab

Penthouse Canopy:
A cast-in-place concrete canopy surrounds the top of the building, covering the penthouse balconies. The canopy is an extension of the upper penthouse floor, and is supported by reinforced concrete columns. The canopy is waterproofed with a thin elastomeric membrane.

Repair History:

Date Unknown: The east penthouse unit has enclosed their balcony and installed a combination of flat panel skylights and metal panels over the openings in canopy structure. We understand that these modifications are the responsibility of the unit Owner.

2005: Hot Tub Terrace roof was replaced, including below the hot tub, cost about $70,000.

Condition:

2005 (Halsall): Based on observations during our roof condition evaluation in November 2004 and confirmed where possible by visual review as part of on reserve fund study review, the following conditions were noted:

Upper and Lower Commercial Roofs:
-no reports of leakage but moisture was detected below the membrane where previously test cut (in 2004)
-poor bonding of membrane where previously test cut (in 2004)
-standing water was observed on upper roof and along the west perimeter of the lower roof

Penthouse Level Roofs:
-no reports of leakage
-no evidence of significant ponding water
-modified bitumen overlay surface is in good condition

FIRE SAFETY

Detection/Alarm

Description:

The fire alarm control panel is mounted in the main electrical room and there is an annunciator panel in the foyer. Both panels are manufactured by Edwards. The main panel is an Edwards Custom 6500, while the annunciator panel in the foyer is an Edwards 6920. The panel is not remotely monitored.

Detection and alarm systems in the corridors include 2 pull stations, 2 smoke detectors and 2 bells per floor.

Detection and alarm systems in the suites include two smoke detectors: one that is connected to the fire alarm control panel and one that provides an alarm for the residents. Each suite has a speaker as well. The smoke detectors within the suites are battery operated and not connected to the main fire alarm control panel.

Detection and alarm systems in service rooms include smoke and heat detectors.

Repair History:

2005: According to the resident manager there has been extensive repair work completed on fire alarm and detection system over the past year, due to a considerable number of nuisance trips caused by failed detection devices.

Condition:

2005 (Besant Engineering): The fire alarm system is maintained by Vancouver Fire & Security. Since completion of repairs by Vancouver Fire earlier in 2005, there have been no problems with the operation of this system.

Since this is electronic equipment, a visual review does not reveal very much about its working condition. The fire alarm control panels are no longer manufactured; however, replacement parts are still available. It is expected that in the future it will become increasingly difficult to find replacement parts.

We have budgeted for the replacement of the panel, and replacement of the detection devices along with some wiring to deal with obsolescence.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Fire Alarm Control Panel	$19,688	$21,737	2011	20 yrs	recurring	3
Replace Detectors and Some Wiring	$58,818	$64,940	2011	20 yrs	recurring	3

Emergency Power

Description:

Emergency power is provided by a natural gas fired, 150 kVA stand-by generator located in a service room off the main electrical room, in the south-east corner of the garage (lower P1 level).

The generator carries the load for stairwell and exit lights, the intercom and fire alarm controls panels, the garage door openers, the smoke control system, corridor lights, an elevator, as well as the battery charger and block heater for the generator.

The 3 phase, automatic transfer switch for the generator is mounted in the main electrical room.

The generator is cooled with City water. There is also an exhaust fan that provided additional cooling and draws combustion air into the generator room from a louver that draws air from the parking garage.

The batteries for the generator, also located in the generator room, are less than five years old.

Repair History:

2000-2005: Generator batteries replaced (actual dates unknown).

Condition:

2005 (Besant Engineering): The generator has logged 229 hours of operation. No history of repairs was available at the time of our review. We understand that the generator is run on a monthly basis. The service contractor, Simpson Power Ltd., keeps a log book in the generator room, with the last service completed in October 2005.

The generator room needed cleaning. The exhaust system appeared to be in sound working condition. The batteries were free of bulges and corrosion on the terminals. The generator frame was also free of corrosion.

Typically standby generators and transfer switches last the life of the building because they typically run for less than 20 hours per year (a generator will run for over 5,000 hours before it requires a major overhaul). As this generator is located indoors, it is protected from weathering and therefore expected to have an extended service life provided it is regularly maintained. No allowance for repair above the report threshold have been included.

The CSA has published guidelines for the generator maintenance. These guidelines recommend monthly service inspections and operation. As a minimum, the generator and transfer switch should continue to be tested monthly and the log book should be kept up to date.

Corridors

Description:

Typical corridors have carpet floors, painted walls with wallpaper around elevator lobby areas and suite doors. There are painted stipple ceilings, with a suspended T-bar ceiling on the penthouse level.

Suite soors are painted wood with brass fixtures. There is wood trim at floors, ceilings, and around doors.

Repair History:

1994: Corridors were refurbished in conjunction with the conversion of the building from commercial to residential.

Condition:

2005 (Halsall): Conditions appear consistent with age.

Minor problem conditions include:
-Penthouse level: carpet worn and dirty and walls blemished
-Overall: some scuffs on walls and doors, and dust staining around ceiling vents

Budget for renewals. Localized repairs are assumed to be funded by the operating budget.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Corridor Carpets	$90,950	$102,424	2012	12 yrs	recurring	3
Replace Corridor Wall Finishes	$44,940	$50,610	2012	12 yrs	recurring	3
Replace Corridor Ceiling Finishes	$10,700	$12,050	2012	12 yrs	recurring	3
Replace Suite Door Hardware	$45,582	$65,102	2024	24 yrs	recurring	3

Washrooms

Description:

There are mens and womens washrooms on the upper penthouse, each with a changeroom area. Finishes include ceramic tile at floors and walls to a height of 1.6m. The remaining wall areas are painted. There are suspended panel ceilings w ith T-bars. Furnishing include a wooden bench, stainless steel wall-mounted waste basket, towel dispenser and soap dispenser in each washroom. Fixtures include counter top with top mounted sink, 2 shower stalls and 2 toilet stalls in each washroom.

A washroom is also located on the mezzanine level. This washroom was inaccessible at the time of our review.

Condition:

2005 (Halsall): Sink in mens washroom damaged and rusting where dented. Overall, condition of finishes and fixtures appear consistent with age.

Budgets include an allowance for renewal of finishes, furnishings and equipment, assuming this is done an an ongoing basis, rather than all at once. Periodic repairs and maintenance between cycles of renewal are assumed to be undertaken as needed at a cost below the threshold of this report.

We understand this washroom on the mezzanine level is maintained by the commercial unit on this level, therefore no allowance for refurbishment has been included.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Refinish Washrooms - Allowance	$8,560	$10,435	2016	10 yrs	recurring	3

Elevator Cab Finishes

Description:

The building is serviced by 4 elevators. Cab finishes include ceramic tile flooring, laminate walls with mounted mirrors and stainless steel finishes, and egg crate ceilings.

Condition:

2005 (Halsall): Conditions appear consistent with age.

An allowance for renewal is included; however, budgets can vary widely depending on desired design. The allowance assumes moderate finishes to match existing conditions.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Refurbish Elevator Cabs	$64,200	$78,259	2016	25 yrs	recurring	3

SITE

Site Features

Description:

Various hard and soft landscaping features cover the site. As the garage extends to the property boundary, almost all finishes are located on the garage roof slab. Finishes generally include the following:

- Plaza Area and Front Entrance: Walkways are a combination of brick and concrete with exposed aggregate finish. Various landscaped concrete planters are situated around the plaza area. There are also cast-in-place concrete benches outside the commercial units adjacent Hornby Street and Davie Street. A decorative metal picket fence encloses the central courtyard area. There are also picket style guard rails enclosing the front patio of the commerical unit on Davie Street. The entrance has a canvas covered canopy with brass finished metal frame. A brass finished handrail also lines the entrance stairs outside the front door. There is also an aluminum flag pole in the courtyard.

- Rear Service Area: The parking and loading area located at the rear of the building is asphalt paved. The garbage collection area consists of a concrete pad, surrounded by a chain link fence on top of a brick wall. The area behind the garbage collection area (over the garage entrance ramp) is covered with stone fill.

Condition:

2005 (Halsall): Conditions appear consistent with age. Concrete areas and walkways are generally level, without and noticeable tripping hazzards. There is minor staining on the brick of some planters, likely from water leaching through the planter walls.

General replacement of the landscaping features and paving above the garage roof slab have been included in the garage rewaterproofing project (see "Garage Below Grade Roof Deck" item). We understand that landscaping renewal is managed as needed out of the operating budget, therefore no allowance for renewal has been included. We assume that repainting of the metal fencing and localize repairs to the walkway area and concrete planters will also be addressed as operating expenses.

The canvas covered canopy at the main entrance is in good condition. An allowance to replace the canopy and locally refinish the frame has been included.

There are small cracks in the asphalt at the rear loading dock. The asphalt slopes towards the catchbasin style drain located in front of the entrance to the adjacent storage room. This catchbasin should be cleaned regularly to mitigate the potential of a flood. An allowance to periodically replace the paving has been included as it will likely be required before the garage roof slab is rewaterproofed.

The on-site building manager advised that the Strata plans to replace the section of chain link fence at the around the garbage enclosure with a brick wall to a height of 12'. The cost of this modification is expected to be below the threshold of this report, therefore no budget has been included.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Asphalt Paving - Rear Service Area	$5,767	$6,892	2015	20 yrs	recurring	3
Replace Canvas Canopy	$5,350	$6,025	2012	10 yrs	recurring	3

Central Heating Plant

Description:

Heating is provided by two gas-fired boilers, atmospheric boilers located in mechanical penthouse. The air conditioning system was decommissioned at the time of the retrofit for the residential occupancy.

Boilers: Two Raypack cast iron, gas-fired, atmospheric boilers, with a pilot light ignition system, are located in a penthouse mechanical room. The boilers are each rated at 2,520,000 BTUH input with a rated efficiency of 80%.

The boilers supply hot water to the fan coil units and radiant baseboards throughout the building. Control of the zone valves is both pneumatic and electronic depending on which floor of the building the valve is on: on floors 10 through penthouse all of the valve actuators are pneumatic, and on the lower floors the valve actuators are electronic.

Pumps: There are two circulation pumps each rated at 5 hp, 1725 rpm and 575 volts that operate in a lead/lag arrangement.

Repair History:

Date Unknown: Recently dampers were added to the chimneys of the boilers to reduce stack losses caused by exfiltration, cost unknown.

Date Unknown: Circulation pumps replaced, cost unknown.

Condition:

2005 (Besant Engineering): No operational problem were noted or evident. The venting, breaching, chemical pot feeder, expansion tanks and associated piping appear to be original. The venting and breaching is properly supported, sealed and shows no signs of corrosion. There is some surface corrosion on the piping, but it does not appear to be significant at this time.

The boiler make-up water is protected by a back-flow valve that is inspected annually.

The boilers are over 30 years old but are reported to be running very well at present. We understand that the heating system requires very little maintenance. Budgets include eventual replacement of the boilers.

Circulation pumps usually remain in service for about 20,000 hours, but the service life is highly dependent on water quality and the quality of maintenance. Costs to replace the pumps is expected to be below the threshold of this report.

A service agreement with South Coast Mechanical, dated March 2005, indicates that all HVAC equipment is covered under a full service and maintenance agreement, excluding the in-suite fan coil units, with inspection completed 4 times per year. We assume this type of agreement will continue, the cost of which is below the threshold of this report.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Heating Boiler(s)	$66,768	$73,717	2011	35 yrs	recurring	3

Control System

Description:

The control system consists of Honeywell electrically controlled 3 way valves on the supply to the air handling unit and supply to the hot water distribution system. There were also Honeywell temperature sensors and controllers located on the air handling unit and the boilers.

Condition:

2005 (Besant Engineering): No operation problems were reported or evident.

The three way control valve system has a service life of 20 years. Budgets include replacement.

The thermostatic controllers should remain in service for the life of the building. If replacement is required, it is expected to be below the threshold of this report.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Three Way Control Valve	$5,537	$5,993	2010	10 yrs	recurring	3

Chimney(s)

Description:

There is a single galvanized chimney used by the boilers and hot water heater for discharging the products of combustion. The visible portion extends through the upper most roof.

Condition:

2005 (Besant Engineering): The chimney showed no signs of corrosion or deterioration.

General replacement of the chimney is not anticipated within the terms of this report. Replacement if necessary, can be undertaken within the boiler replacement budget.

Fuel Supply

Description:

Natural gas is brought underground to the property below the rear service / parking area. There is a gas meter housed in an enclosure on the south side of the property. From the base meter the fuel line comes underground into the building. Where visible within the building, the gas line was property marked and supported.

Condition:

2005 (Besant Engineering): The gas service should last the life of the building, therefore no budgets for repair or replacement have been included.

Exhaust Fan(s)

Description:

There are exhaust fans (with built in light fixtures) mounted in the bathrooms of the suites. The fans and lights had separate manual controls. Kitchen fans are recirculation type within the suites, with the exception of the suites with balconies which have the fans exhausting through the exterior walls.

The garage is equipped with a carbon monoxide (CO) controlled exhaust system. Exhaust fans controlled by the CO system are located on each level of the garage. The control system is located in the main electrical room on the lower P1 garage level. Sensors for the system are mounted to the backside of columns throughout the garage.

Repair History:

Date Unknown: Central exhaust system for the bathroom and kitchen fans re-built, cost unknown.

Date Unknown: Sensors and a number of circuit boards in the CO detection system replaced, cost unknown.

Condition:

2005 (Besant Engineering): We did not measure the air flow, but the in-suite fans did not appear to be moving much air. The fans were also quite noisy. These fans could be upgraded to improve the air flow and reduce the noise level. The cost of this would be about $400 per fan. As this would be a discretionary expense, no budget has been included. Individual fan replacement is expected to be managed as needed at a cost below the threshold of this report.

The exterior grilles and exhaust ductwork should be cleaned regularly to ensure performance of the exhaust fans is not degraded because of obstructions in the exhaust ductwork. We assume periodic cleaning of the ducts will be managed out of the operating budget.

The garage exhaust fans were operational at the time of our review and no problems have been reported. These fans will require ongoing maintenance if they are to remain in service. Maintenance activities include replacing motors, painting of housings, lubrication of fans, and replacing damaged or weathered sections of ductwork. The individual maintenance activities are assumed to be managed as-needed at a cost below the threshold of this report.

The resident manager reports ongoing problems with the garage CO detection system. We noted a trouble signal light was activated on the control panel in the electrical room. Maintenance and replacement of the CO detection system is assumed to be undertaken as needed at a cost below the threshold of this report.

PLUMBING

Hot Water Storage Tanks/ Heaters

Description:

Domestic hot water for floors 10, 11, 12, penthouse, and upper penthouse are supplied by the system in the upper penthouse mechanical room. This system includes a gas fired hot water heater and two hot water storage tanks. The gas fired heater is an AO Smith unit rated at 610,000 BTUH input and 502,640 BTUH output (82% efficiency). The water heater supplies two John Wood 128 US Gallon storage tanks. The supply water temperature is set a 130°F. There is a 1/25 hp recirculation pump on this domestic hot water system.

Domestic hot water is supplied throughout the ground to 9th floors by a hot water heating system located in the mezzanine level mechanical room. This system includes a gas fired boiler and three hot water storage tanks. The boiler is a Mighty Therm unit rated at 1.6 MBTUH, and the storage tanks are Rheem Ruud units, 115 US Gallons each.

Repair History:

2003: Mezzanine level boiler and storage tanks replaced, cost unknown.

Condition:

2005 (Besant Engineering): No operational problems were noted or reported.

Water heaters in the lower mainland have a service life of about 10 to 12 years, while boilers and storage tanks have a service life of about 20 to 25 years. The domestic hot water system in the upper penthouse is nearing the end of it's expected service life.

Budget for replacement of the hot water heater, storage tanks and boiler.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Replace Domestic Hot Water Heater and Storage Tanks - Upper Penthouse Mechanical Room	$8,614	$9,141	2009	12 yrs	recurring	3
Replace Domestic Hot Water Boiler and Storage Tanks - Mezzanine Level Mechanical Room	$22,149	$32,267	2025	25 yrs	recurring	3

Sump Pumps

Description:

There is a sanitary sump pump located on the upper P3 garage level (adjacent to parking stall 113), and two storm sump pumps located on the lower P3 garage level (adjacent to parking stall 148).

Sump pump controls are located in the sprinkler / fire pump room on the P1 level of the garage.

Repair History:

Date Unknown: One storm sump pump has been replaced, cost unknown.

2005: Repairs to the storm sump pump drainage line by Southcoast Mechanical were underway at the time of our review. We understand the outlet drain pipes are being surface mounted. Extent and cost of repairs is unknown.

Condition:

2005 (Besant Engineering): The sump pump system was under repair at the time of our review. The service contractor reported that aside from the repairs currently underway the system is operational.

Sump pumps have a median service life of 10 years with a variance of 5 years. The replacement cost of the individual pumps is below the threshold of this report. However, it is extremely important the pumps be removed, tested, cleaned and re-coated every year to prevent problems with this system as sump pump failures can cause extensive damage to buildings. The cost of annual maintenance is assumed to be an operating expense.

ELECTRICAL

Electric Supply and Distribution

Description:

The main electrical system for the building is fed underground from the rear service / parking area. It comes into the building through a splice box located in the parking garage then enters the main electrical room located on the lower P1 level. The supply voltage is 208 VAC.

Meters: There is a single meter located in the main electrical room. It is a 7 jaw, 3 phase, 4 wire meter rated at 240 VAC.

Main Disconnect: A "Square D" fused disconnect with an enclosure rating of 800 Amps at 240 VAC is located in the main electrical room. The central distribution panel board was manufactured by CEB and is rated at 400 Amps. All the panels in the main electrical room are labelled.

Distribution Panels: There are 200 Amp, 208 VAC distribution panels on each floor, manufactured by CEB. These panels are labelled.

Resident Room Panels: There were no panels in the suites. Distribution comes from the panels in the hallways.

Distribution Wiring: Copper, where checked.

Condition:

2006 (Besant Engineering): All of the panels we reviewed were dusty and require cleaning. The resident manager reported that there have been no compaints of inadequate power or power surgest.

The equipment should be cleaned and infrared scanned every three years. The cost of this service is below the threshold of this report.

It is possible that the electrical components will last the life of the building, but it is reasonable to assume that some modifications to the system will be required. If replacement of the main disconnect, central distribution panel board and panel were required, it is possible that this cost could exceed $300,000. In lieu of replacement of these systems a budget to modernize the main disconnect has been included. In addition, we have budgeted a phased program of replacing other components that allows for full replacement after about 100 years of service.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Modernize Main Disconnect Switch	$53,500	$95,008	2035	50 yrs	recurring	3
Replace Panels, Distribution, and Some Wiring - 5% per cycle	$19,260	$24,915	2019	4 yrs	recurring	3

CONVEYANCE

Elevators

Description:

There are four Dover/Turnbell elevators servicing the garage P3 level to penthouse floor. One elevator is configured for the use by penthouse residents, while the other three elevators service the lower floors. Each cab has a BC government identification tag (8252, 8253, 8254, and 8255), and a capacity tag listing 3000 lbs. or 15 persons.

Elevator systems include overhead traction motors, motor generator sets, and relay logic based control panels. The drive motors are rated at 20 KW 15. The elevators travel at speed of about 350 feet per minute. The doors have mechanical door edges. The cab exhaust fans are controlled by reverse acting thermostats.

Condition:

2005 (Besant Engineering): The service contractor, Otis Elevator (formerly Mainland Elevator) reports that the elevator equipment is in good working condition; however, it is about 25 years old and nearing the end of its service life. We understand there has been ongoing maintenance and periodic repairs to keep the elevators operational.

The controllers for the elevators are an older generation technology. The system uses mechanical relays for control. This technology is subject to frequent failures as it ages because of the mechanical nature of the equipment.

The median service life for this kind of elevator system is 25 years; however, in some buildings these systems can remain in operation longer. Budgets include elevator moder nization, including new motors, controls, door operators, cab fixtures and hallway fixtures, assuming all work is undertaken as one project.

Although it is possible to phase the replacement of the various components, it is less expensive to undertake all of the elevator modernization at once because of problems in trying to get older control systems to work in synchronization with newer systems. For budgeting purposes we have phased the replacement over 2 years.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Elevator System Modernization - Phase 1	$235,400	$254,805	2010	30 yrs	recurring	3
Elevator System Modernization - Phase 2	$235,400	$259,901	2011	30 yrs	recurring	3
Replace Elevator Buttons and Displays	$45,743	$49,514	2010	30 yrs	recurring	3
Replace Door Operators	$55,640	$60,227	2010	30 yrs	recurring	3

Contingencies

Description:

Expenditures not anticipated, or which are below the threshold of this report but which Council wishes to pay for from the reserve fund.

Condition:

2005 (Halsall): A contingency allowance has been included as identified on the questionnaire completed by Council.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Contingency - Allowance	$14,900	$16,451	2011	5 yrs	recurring	3

Consulting Services

Description:

Engineering fees related to the Contingency Reserve Fund Study, or consulting fees pertaining to evaluations, investigations, or design not associated and covered by other specific reserve fund items.

Condition:

2005 (Halsall): We recommend budgeting for periodic Contingency Reserve Fund Study updates.

Project Name	Present Cost	Inflated Cost	First Occurrence	Cycle	# Occurrences	Class
Reserve Fund Study with Site Visit - Allowance	$9,095	$9,652	2009	6 yrs	recurring	3
Reserve Fund Study without Site Visit - Allowance	$6,420	$7,230	2012	6 yrs	recurring	3

APPENDIX B
RESERVE FUND ANALYSIS

London Place, 1177 Hornby Street-, Vancouver-BC, Canada

Projected Expenditures

Item	Description	Class	Present Cost	First Occur.	Cycle	No. Occurr.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	**STRUCTURE**																				
1.1	Balcony Condition Survey	3	$5,350	2007	10		$5,457										$6,652				
1.2	Repair Balconies at Floors 10, 11, and 12	3	$111,280	2007	15		$113,506														
1.3	Replace Balcony Guards	3	$104,325	2022	45																
1.4	Repair Penthouse Balconies - Below Wood Decking	3	$37,450	2008				$38,963													
1.5	Future Penthouse Balcony Repair - Full Membrane Replacement	3	$148,797	2022	25																
1.6	Design and Install Additional Suspended Access Anchors	3	$8,902	2007			$9,080														
1.7	Parking Garage Condition Evaluation	3	$12,840	2007	15	3	$13,097														
1.8	Repair Below Grade Perimeter Wall Leakage	3	$6,955	2010	7					$7,528							$8,648				
1.9	Repair Garage Suspended Slab(s)	3	$160,433	2008				$166,914													
1.10	Install Penetrating Sealer on Suspended Slabs	3	$42,466	2008				$44,182													
1.11	Corrosion Monitoring of Suspended Slabs	3	$5,350	2010	2	3				$5,791		$6,025		$6,268							
1.12	Waterproofing and Repair Garage Suspended Slab(s)	3	$197,950	2014	25									$231,930							
1.13	Repair Garage Roof Deck Waterproofing	3	$23,647	2010	40					$25,596											
1.14	Replace Garage Roof Deck Waterproofing	3	$248,240	2020	40															$327,547	
2	**BUILDING ENVELOPE**																				
2.1	Wall Condition Evaluation	3	$5,350	2007	10		$5,457										$6,652				
2.2	Replace Caulking	3	$73,723	2008	15			$76,701													
2.3	Repair Walls	3	$39,443	2008	15			$41,036													
2.4	Repair Stucco - Pending Wall Evaluation	3	$76,505	2008				$79,596													
2.5	Future Stucco Replacement - Pending Wall Evaluation	3	$387,875	2023	40																
2.6	Replace Double Glazing	3	$10,593	2010	1					$11,466	$11,696	$11,929	$12,168	$12,411	$12,660	$12,913	$13,171	$13,434	$13,703	$13,977	$14,257
2.7	Replace Windows	3	$1,318,240	2030	50																
2.8	Replace Weatherstripping and Repair Window Hardware	3	$55,084	2015	15										$65,830						
2.9	Replace Commercial Skylight(s)	3	$31,565	2030	40																
2.10	Replace Overhead Door(s)	3	$16,050	2016	25											$19,565					
2.11	Replace Balcony Swing Doors	3	$11,770	2015	30										$14,066						
2.12	Replace Upper and Lower Commercial Roof	3	$92,956	2007	20		$94,815														
2.13	Replace Highrise and Elevator Penthouse Roofs	3	$130,072	2012	20							$146,482									
2.14	Replace Hot Tub Terrace Roof	3	$64,200	2030	25																
2.15	Replace Penthouse Canopy Waterproofing	3	$29,090	2007	15		$29,672														
3	**FIRE SAFETY**																				
3.1	Replace Fire Alarm Control Panel	3	$19,688	2011	20						$21,737										
3.2	Replace Detectors and Some Wiring	3	$58,818	2011	20						$64,940										
3.3	Replace Fire Pump(s)	3	$18,458	2015	25										$22,059						
3.4	Suppression Systems Repair Allowance	3	$25,841	2030	10																
4	**FINISHES, FURNITURE AND EQUIPMENT**																				
4.1	Refurbish Entrance Lobby - Allowance	3	$64,200	2025	40																
4.2	Replace Corridor Carpets	3	$90,950	2012	12							$102,424									
4.3	Replace Corridor Wall Finishes	3	$44,940	2012	12							$50,610									

London Place, 1177 Hornby Street-, Vancouver-BC, Canada

Projected Expenditures

Item	Description	Class	Present Cost	First Occur.	Cycle	No. Occurr.	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	FINISHES, FURNITURE AND EQUIPMENT																				
4.4	Replace Corridor Ceiling Finishes	3	$10,700	2012	12							$12,050									
4.5	Replace Suite Door Hardware	3	$45,582	2024	24																
4.6	Refurbish Common Room Adjacent Main Lobby - Allowance	3	$8,560	2011	5						$9,451					$10,435					$11,521
4.7	Refurbish Exercise Room - Allowance	3	$7,490	2011	5						$8,270					$9,130					$10,081
4.8	Replace Steam Room Enclosure - Allowance	3	$5,350	2016	20											$6,522					
4.9	Replace Hot Tub and Equipment - Allowance	3	$12,840	2016	20											$15,652					
4.10	Refinish Washrooms - Allowance	3	$8,560	2016	10											$10,435					
4.11	Refurbish Elevator Cabs	3	$64,200	2016	25											$78,259					
4.12	Refurbish Elevator Lobbies on Garage Levels - Allowance	3	$8,025	2010	18					$8,687											
4.13	Repaint Stairwells	3	$5,457	2015	15										$6,522						
5	**SITE**																				
5.1	Replace Asphalt Paving - Rear Service Area	3	$5,767	2015	20										$6,892						
5.2	Replace Canvas Canopy	3	$5,350	2012	10							$6,025									
6	**HVAC**																				
6.1	Replace Heating Boiler(s)	3	$66,768	2011	35						$73,717										
6.2	Overhaul Make-up Air Unit(s)	3	$6,522	2011	10						$7,201										$8,778
6.3	Clean Make-up Air Ducting and Diffusers	3	$5,168	2007	3		$5,271			$5,594			$5,936			$6,300			$6,685		
6.4	Replace Three Way Control Valve	3	$5,537	2010	10					$5,993										$7,306	
6.5	Replace HVAC Distribution Piping and Valves - 20% per cycle	3	$107,000	2044	5	5															
7	**PLUMBING**																				
7.1	Replace Domestic Hot Water Boiler and Storage Tanks - Mezzanine Level Mechanical Room	3	$22,149	2025	25																
7.2	Replace Domestic Hot Water Heater and Storage Tanks - Upper Penthouse Mechancial Room	3	$8,614	2009	12				$9,141												$11,593
7.3	Replace Domestic Water Plumbing System	3	$482,356	2014	20									$565,157							
7.4	Replace Drainage Piping/Drains - Allowance	3	$10,700	2025	10																
8	**ELECTRICAL**																				
8.1	Modernize Main Disconnect Switch	3	$53,500	2035	50																
8.2	Replace Panels, Distribution, and Some Wiring - 5% per cycle	3	$19,260	2019	4														$24,915		
9	**CONVEYANCE**																				
9.1	Elevator System Modernization - Phase 1	3	$235,400	2010	30					$254,805											
9.2	Elevator System Modernization - Phase 2	3	$235,400	2011	30						$259,901										
9.3	Replace Elevator Buttons and Displays	3	$45,743	2010	30					$49,514											
9.4	Replace Door Operators	3	$55,640	2010	30					$60,227											
10	**MISCELLANEOUS**																				
10.1	Replace Access Control System	3	$16,050	2014	20									$18,805							
10.2	Contingency - Allowance	3	$14,900	2011	5						$16,451					$18,163					$20,053
10.3	Reserve Fund Study with Site Visit - Allowance	3	$9,095	2009	6				$9,652						$10,869						$12,241
10.4	Reserve Fund Study without Site Visit - Allowance	3	$6,420	2012	6							$7,230						$8,142			
	Total Projected Expenditures						$276,355	$447,393	$18,793	$435,201	$473,362	$342,776	$18,104	$834,572	$138,898	$187,373	$35,123	$21,577	$45,303	$348,831	$88,523

London Place, 1177 Hornby Street-, Vancouver-BC, Canada

Projected Expenditures

Item	Description	Class	Present Cost	First Occur.	Cycle	No. Occurr.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
1	**STRUCTURE**																				
1.1	Balcony Condition Survey	3	$5,350	2007	10							$8,109									
1.2	Repair Balconies at Floors 10, 11, and 12	3	$111,280	2007	15		$152,764														
1.3	Replace Balcony Guards	3	$104,325	2022	45		$143,216														
1.4	Repair Penthouse Balconies - Below Wood Decking	3	$37,450	2008																	
1.5	Future Penthouse Balcony Repair - Full Membrane Replacement	3	$148,797	2022	25		$204,266														
1.6	Design and Install Additional Suspended Access Anchors	3	$8,902	2007																	
1.7	Parking Garage Condition Evaluation	3	$12,840	2007	15	3	$17,627														
1.8	Repair Below Grade Perimeter Wall Leakage	3	$6,955	2010	7				$9,933							$11,410					
1.9	Repair Garage Suspended Slab(s)	3	$160,433	2008																	
1.10	Install Penetrating Sealer on Suspended Slabs	3	$42,466	2008																	
1.11	Corrosion Monitoring of Suspended Slabs	3	$5,350	2010	2	3															
1.12	Waterproofing and Repair Garage Suspended Slab(s)	3	$197,950	2014	25																
1.13	Repair Garage Roof Deck Waterproofing	3	$23,647	2010	40																
1.14	Replace Garage Roof Deck Waterproofing	3	$248,240	2020	40																
2	**BUILDING ENVELOPE**																				
2.1	Wall Condition Evaluation	3	$5,350	2007	10							$8,109									
2.2	Replace Caulking	3	$73,723	2008	15			$103,230													
2.3	Repair Walls	3	$39,443	2008	15			$55,230													
2.4	Repair Stucco - Pending Wall Evaluation	3	$76,505	2008																	
2.5	Future Stucco Replacement - Pending Wall Evaluation	3	$387,875	2023	40			$543,119													
2.6	Replace Double Glazing	3	$10,593	2010	1		$14,542	$14,833	$15,129	$15,432	$15,741	$16,055	$16,377	$16,704	$17,038	$17,379	$17,727	$18,081	$18,443	$18,812	$19,188
2.7	Replace Windows	3	$1,318,240	2030	50										$2,120,306						
2.8	Replace Weatherstripping and Repair Window Hardware	3	$55,084	2015	15										$88,599						
2.9	Replace Commercial Skylight(s)	3	$31,565	2030	40										$50,770						
2.10	Replace Overhead Door(s)	3	$16,050	2016	25																
2.11	Replace Balcony Swing Doors	3	$11,770	2015	30																
2.12	Replace Upper and Lower Commercial Roof	3	$92,956	2007	20							$140,890									
2.13	Replace Highrise and Elevator Penthouse Roofs	3	$130,072	2012	20												$217,665				
2.14	Replace Hot Tub Terrace Roof	3	$64,200	2030	25										$103,262						
2.15	Replace Penthouse Canopy Waterproofing	3	$29,090	2007	15		$39,934														
3	**FIRE SAFETY**																				
3.1	Replace Fire Alarm Control Panel	3	$19,688	2011	20											$32,300					
3.2	Replace Detectors and Some Wiring	3	$58,818	2011	20											$96,497					
3.3	Replace Fire Pump(s)	3	$18,458	2015	25																
3.4	Suppression Systems Repair Allowance	3	$25,841	2030	10										$41,564						
4	**FINISHES, FURNITURE AND EQUIPMENT**																				
4.1	Refurbish Entrance Lobby - Allowance	3	$64,200	2025	40					$93,527											
4.2	Replace Corridor Carpets	3	$90,950	2012	12				$129,899												$164,743
4.3	Replace Corridor Wall Finishes	3	$44,940	2012	12				$64,185												$81,403

London Place, 1177 Hornby Street-, Vancouver-BC, Canada						Projected Expenditures														
Item	Description	Class	Present Cost	First Occur.	Cycle	No. Occurr.	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
4	**FINISHES, FURNITURE AND EQUIPMENT**																				
4.4	Replace Corridor Ceiling Finishes	3	$10,700	2012	12				$15,282												$19,382
4.5	Replace Suite Door Hardware	3	$45,582	2024	24				$65,102												
4.6	Refurbish Common Room Adjacent Main Lobby - Allowance	3	$8,560	2011	5						$12,720					$14,044					$15,505
4.7	Refurbish Exercise Room - Allowance	3	$7,490	2011	5						$11,130					$12,288					$13,567
4.8	Replace Steam Room Enclosure - Allowance	3	$5,350	2016	20																$9,691
4.9	Replace Hot Tub and Equipment - Allowance	3	$12,840	2016	20																$23,258
4.10	Refinish Washrooms - Allowance	3	$8,560	2016	10						$12,720										$15,505
4.11	Refurbish Elevator Cabs	3	$64,200	2016	25																
4.12	Refurbish Elevator Lobbies on Garage Levels - Allowance	3	$8,025	2010	18								$12,406								
4.13	Repaint Stairwells	3	$5,457	2015	15										$8,777						
5	**SITE**																				
5.1	Replace Asphalt Paving - Rear Service Area	3	$5,767	2015	20															$10,241	
5.2	Replace Canvas Canopy	3	$5,350	2012	10		$7,344										$8,953				
6	**HVAC**																				
6.1	Replace Heating Boiler(s)	3	$66,768	2011	35																
6.2	Overhaul Make-up Air Unit(s)	3	$6,522	2011	10											$10,700					
6.3	Clean Make-up Air Ducting and Diffusers	3	$5,168	2007	3		$7,095			$7,529			$7,990			$8,479			$8,998		
6.4	Replace Three Way Control Valve	3	$5,537	2010	10										$8,906						
6.5	Replace HVAC Distribution Piping and Valves - 20% per cycle	3	$107,000	2044	5	5															
7	**PLUMBING**																				
7.1	Replace Domestic Hot Water Boiler and Storage Tanks - Mezzanine Level Mechanical Room	3	$22,149	2025	25					$32,267											
7.2	Replace Domestic Hot Water Heater and Storage Tanks - Upper Penthouse Mechancial Room	3	$8,614	2009	12													$14,703			
7.3	Replace Domestic Water Plumbing System	3	$482,356	2014	20														$839,793		
7.4	Replace Drainage Piping/Drains - Allowance	3	$10,700	2025	10					$15,588										$19,002	
8	**ELECTRICAL**																				
8.1	Modernize Main Disconnect Switch	3	$53,500	2035	50															$95,008	
8.2	Replace Panels, Distribution, and Some Wiring - 5% per cycle	3	$19,260	2019	4			$26,969				$29,192				$31,598				$34,203	
9	**CONVEYANCE**																				
9.1	Elevator System Modernization - Phase 1	3	$235,400	2010	30																
9.2	Elevator System Modernization - Phase 2	3	$235,400	2011	30																
9.3	Replace Elevator Buttons and Displays	3	$45,743	2010	30																
9.4	Replace Door Operators	3	$55,640	2010	30																
10	**MISCELLANEOUS**																				
10.1	Replace Access Control System	3	$16,050	2014	20														$27,943		
10.2	Contingency - Allowance	3	$14,900	2011	5						$22,141					$24,445					$26,989
10.3	Reserve Fund Study with Site Visit - Allowance	3	$9,095	2009	6							$13,785						$15,524			
10.4	Reserve Fund Study without Site Visit - Allowance	3	$6,420	2012	6				$9,169						$10,326						$11,629
	Total Projected Expenditures						$586,788	$743,380	$308,701	$164,343	$74,450	$216,140	$36,773	$16,704	$2,449,549	$259,140	$244,344	$48,308	$895,177	$177,265	$400,860

Scenario 1 - Inflation-Matched Scenario

Assumptions:

Opening Balance of the Reserve Fund:	**$132,750**	Assumed Annual Inflation Rate:	**2%**
Current Annual Contribution:	**$40,853**	Assumed Annual Interest Rate:	**4%**
Current Operating Budget:	**$408,525**	First Critical Year:	**2014**
Minimum Reserve Fund Balance:	**$50,000**	Second Critical Year:	**2041**

Results:

Year	Opening Balance	Recommended Annual Contributions	Estimated Inflation Adjusted Expenditure	Estimated Interest Earned	Percentage Increase In Recommended Annual Contribution	Increase In Recommended Annual Contribution	Closing Balance
2007	$132,750	$314,630	$276,355	$6,075	670.2	$273,777	$177,100
2008	$177,100	$320,922	$447,393	$4,555	2	$6,293	$55,184
2009	$55,184	$327,341	$18,793	$8,378	2	$6,418	$372,110
2010	$372,110	$333,888	$435,201	$12,858	2	$6,547	$283,655
2011	$283,655	$340,565	$473,362	$8,690	2	$6,678	$159,548
2012	$159,548	$347,377	$342,776	$6,474	2	$6,811	$170,623
2013	$170,623	$354,324	$18,104	$13,549	2	$6,948	$520,392
2014	$520,392	$361,411	$834,572	$11,352	2	$7,086	$58,583
2015	$58,583	$262,961	$138,898	$4,825	-27.2	-$98,449	$187,471
2016	$187,471	$268,221	$187,373	$9,116	2	$5,259	$277,434
2017	$277,434	$273,585	$35,123	$15,867	2	$5,364	$531,763
2018	$531,763	$279,057	$21,577	$26,420	2	$5,472	$815,663
2019	$815,663	$284,638	$45,303	$37,413	2	$5,581	$1,092,411
2020	$1,092,411	$290,331	$348,831	$42,526	2	$5,693	$1,076,437
2021	$1,076,437	$296,137	$88,523	$47,210	2	$5,807	$1,331,261
2022	$1,331,261	$302,060	$586,788	$47,556	2	$5,923	$1,094,089
2023	$1,094,089	$308,101	$743,380	$35,058	2	$6,041	$693,868
2024	$693,868	$314,263	$308,701	$27,866	2	$6,162	$727,296
2025	$727,296	$320,548	$164,343	$32,216	2	$6,285	$915,717
2026	$915,717	$326,959	$74,450	$41,679	2	$6,411	$1,209,905
2027	$1,209,905	$333,499	$216,140	$50,743	2	$6,539	$1,378,007
2028	$1,378,007	$340,169	$36,773	$61,188	2	$6,670	$1,742,591
2029	$1,742,591	$346,972	$16,704	$76,309	2	$6,803	$2,149,168
2030	$2,149,168	$353,911	$2,449,549	$44,054	2	$6,939	$97,584
2031	$97,584	$360,990	$259,140	$5,940	2	$7,078	$205,374
2032	$205,374	$368,209	$244,344	$10,692	2	$7,220	$339,932
2033	$339,932	$375,574	$48,308	$20,143	2	$7,364	$687,340
2034	$687,340	$383,085	$895,177	$17,252	2	$7,511	$192,499
2035	$192,499	$390,747	$177,265	$11,970	2	$7,662	$417,951
2036	$417,951	$398,562	$400,860	$16,672	2	$7,815	$432,324

Description:

Scenario 1 – Inflation-Matched Scenario

This scenario shows a one-time increase with subsequent annual increases matching inflation.

Scenario 2 – Increase Phased-in Until the First Critical Year

Assumptions:

Opening Balance of the Reserve Fund:	**$132,750**	Assumed Annual Inflation Rate:	**2%**
Current Annual Contribution:	**$40,853**	Assumed Annual Interest Rate:	**4%**
Current Operating Budget:	**$408,525**	First Critical Year:	**2008**
Minimum Reserve Fund Balance:	**$50,000**	Second Critical Year:	**2014**

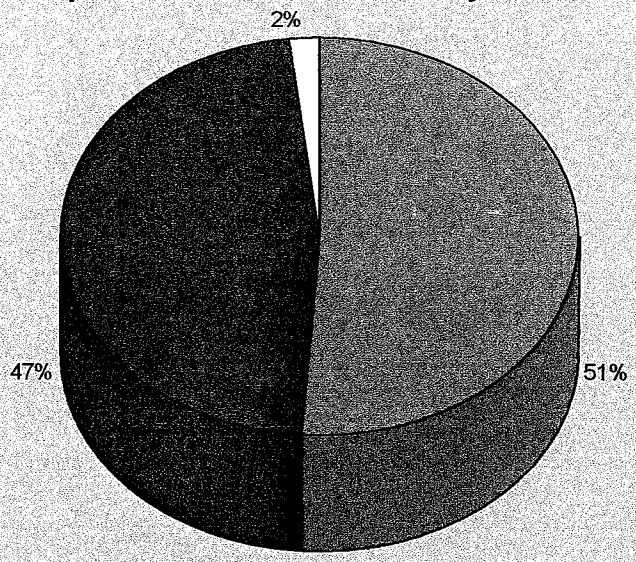
Results:

Year	Opening Balance	Recommended Annual Contributions	Estimated Inflation Adjusted Expenditure	Estimated Interest Earned	Percentage Increase In Recommended Annual Contribution	Increase in Recommended Annual Contribution	Closing Balance
2007	$132,750	$224,413	$276,355	$4,271	449.3	$183,560	$85,079
2008	$85,079	$411,645	$447,393	$2,688	83.4	$187,232	$52,020
2009	$52,020	$327,905	$18,793	$8,263	-20.3	-$83,740	$369,395
2010	$369,395	$334,463	$435,201	$12,761	2	$6,558	$281,418
2011	$281,418	$341,152	$473,362	$8,613	2	$6,689	$157,820
2012	$157,820	$347,975	$342,776	$6,417	2	$6,823	$169,436
2013	$169,436	$354,935	$18,104	$13,514	2	$6,960	$519,781
2014	$519,781	$362,034	$834,572	$11,340	2	$7,099	$58,583
2015	$58,583	$262,961	$138,898	$4,825	-27.4	-$99,072	$187,471
2016	$187,471	$268,221	$187,373	$9,116	2	$5,259	$277,435
2017	$277,435	$273,585	$35,123	$15,867	2	$5,364	$531,763
2018	$531,763	$279,057	$21,577	$26,420	2	$5,472	$815,663
2019	$815,663	$284,638	$45,303	$37,413	2	$5,581	$1,092,411
2020	$1,092,411	$290,331	$348,831	$42,526	2	$5,693	$1,076,437
2021	$1,076,437	$296,137	$88,523	$47,210	2	$5,807	$1,331,261
2022	$1,331,261	$302,060	$586,788	$47,556	2	$5,923	$1,094,089
2023	$1,094,089	$308,101	$743,380	$35,058	2	$6,041	$693,868
2024	$693,868	$314,263	$308,701	$27,866	2	$6,162	$727,296
2025	$727,296	$320,548	$164,343	$32,216	2	$6,285	$915,717
2026	$915,717	$326,959	$74,450	$41,679	2	$6,411	$1,209,905
2027	$1,209,905	$333,499	$216,140	$50,743	2	$6,539	$1,378,007
2028	$1,378,007	$340,169	$36,773	$61,188	2	$6,670	$1,742,591
2029	$1,742,591	$346,972	$16,704	$76,309	2	$6,803	$2,149,168
2030	$2,149,168	$353,911	$2,449,549	$44,054	2	$6,939	$97,584
2031	$97,584	$360,990	$259,140	$5,940	2	$7,078	$205,374
2032	$205,374	$368,209	$244,344	$10,692	2	$7,220	$339,932
2033	$339,932	$375,574	$48,308	$20,143	2	$7,364	$687,340
2034	$687,340	$383,085	$895,177	$17,252	2	$7,511	$192,500
2035	$192,500	$390,747	$177,265	$11,970	2	$7,662	$417,951
2036	$417,951	$398,562	$400,860	$16,672	2	$7,815	$432,325

Description:

Scenario 2 – Increase Phased-in Until the First Critical Year: The total required contribution increase is uniformly phased in until the first critical year by applying a lump sum annual increase, escalated by inflation. Phasing in a required increase results in higher future contributions than those calculated in an inflation-matched scenario. This plan of increasing reserve fund contributions greater than the rate of inflation will be evident on Status Certificates and may be perceived negatively.

2007 Total Expenditures for 1177 Hornby Street: $276,355



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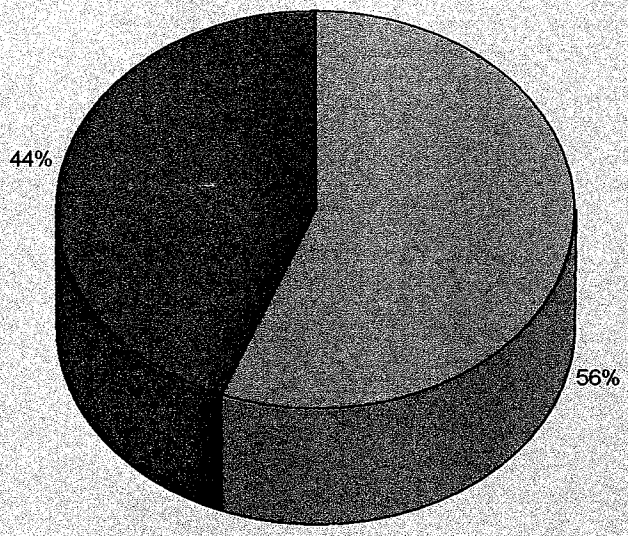
STRUCTURE BUILDING ENVELOPE HVAC

Projects for 2007 listed by System

STRUCTURE	
Parking Garage Condition Evaluation	$13,097
Design and Install Additional Suspended Access Anchors	$9,080
Balcony Condition Survey	$5,457
Repair Balconies at Floors 10, 11, and 12	$113,506
BUILDING ENVELOPE	
Wall Condition Evaluation	$5,457
Replace Upper and Lower Commercial Roof	$94,815
Replace Penthouse Canopy Waterproofing	$29,672
HVAC	
Clean Make-up Air Ducting and Diffusers	$5,271

2008 Total Expenditures for 1177 Hornby Street: $447,392



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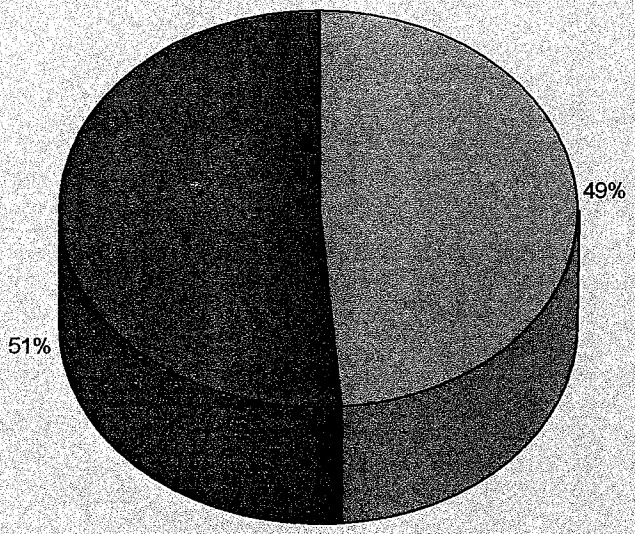
STRUCTURE BUILDING ENVELOPE

Projects for 2008 listed by System

STRUCTURE	
Repair Garage Suspended Slab(s)	$166,914
Install Penetrating Sealer on Suspended Slabs	$44,182
Repair Penthouse Balconies - Below Wood Decking	$38,963
BUILDING ENVELOPE	
Repair Walls	$41,036
Replace Caulking	$76,701
Repair Stucco - Pending Wall Evaluation	$79,596

2009 Total Expenditures for 1177 Hornby Street: $18,793



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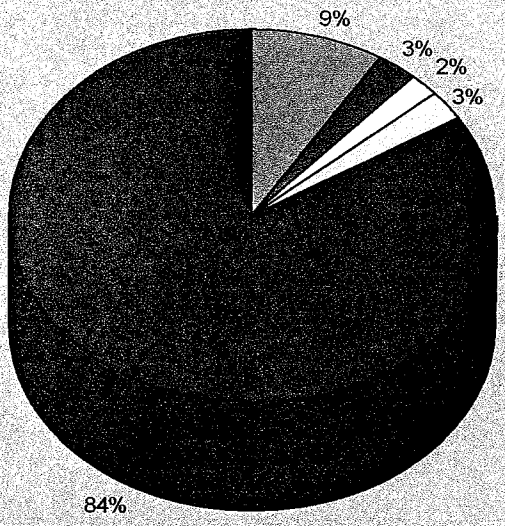
PLUMBING MISCELLANEOUS

Projects for 2009 listed by System

PLUMBING	
Replace Domestic Hot Water Heater and Storage Tanks - Upper Penthouse Mechancial Room	$9,141
MISCELLANEOUS	
Reserve Fund Study with Site Visit - Allowance	$9,652

2010 Total Expenditures for 1177 Hornby Street: $435,201



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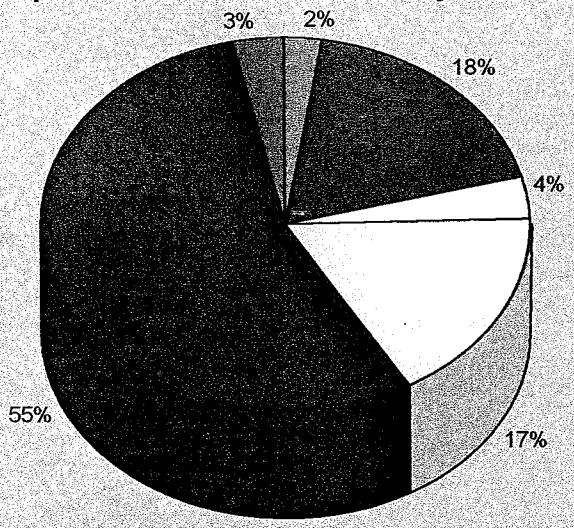
STRUCTURE
BUILDING ENVELOPE
FINISHES, FURNITURE AND EQUIPMENT
HVAC
CONVEYANCE

Projects for 2010 listed by System

STRUCTURE	
Repair Garage Roof Deck Waterproofing	$25,596
Repair Below Grade Perimeter Wall Leakage	$7,528
Corrosion Monitoring of Suspended Slabs	$5,791
BUILDING ENVELOPE	
Replace Double Glazing	$11,466
FINISHES, FURNITURE AND EQUIPMENT	
Refurbish Elevator Lobbies on Garage Levels - Allowance	$8,687
HVAC	
Clean Make-up Air Ducting and Diffusers	$5,594
Replace Three Way Control Valve	$5,993
CONVEYANCE	
Replace Elevator Buttons and Displays	$49,514
Elevator System Modernization - Phase 1	$254,805
Replace Door Operators	$60,227

2011 Total Expenditures for 1177 Hornby Street: $473,364



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BUILDING ENVELOPE
HVAC
FIRE SAFETY
CONVEYANCE
FINISHES, FURNITURE AND EQUIPMENT
MISCELLANEOUS

Projects for 2011 listed by System

BUILDING ENVELOPE	
Replace Double Glazing	$11,696
FIRE SAFETY	
Replace Detectors and Some Wiring	$64,940
Replace Fire Alarm Control Panel	$21,737
FINISHES, FURNITURE AND EQUIPMENT	
Refurbish Common Room Adjacent Main Lobby - Allowance	$9,451
Refurbish Exercise Room - Allowance	$8,270
HVAC	
Overhaul Make-up Air Unit(s)	$7,201
Replace Heating Boiler(s)	$73,717
CONVEYANCE	
Elevator System Modernization - Phase 2	$259,901
MISCELLANEOUS	
Contingency - Allowance	$16,451

APPENDIX C
REPAIR AND REPLACEMENT PROTOCOL

APPENDIX C

REPAIR AND REPLACEMENT PROTOCOL

1. Structure
2. Building Envelope - Cladding, Windows and Doors
3. Building Envelope - Roofing
4. Fire Safety
5. Interior Finishes
6. Site
7. Heating, Ventilation and Air Conditioning
8. Plumbing
9. Waste Disposal Systems
10. Electrical Systems
11. Elevators

APPENDIX C

REPAIR AND REPLACEMENT PROTOCOL

GENERAL COMMENTS

Concealed Conditions: The performance and durability of many building components is often dependent upon the condition of concealed elements. These cannot be evaluated by visual review. Dis-assembly and/or testing would be required. Expected future performance and the scope and timing of repairs and replacements are based on judgement influenced by visual appearance, experience with performance of similar components at other buildings, and the performance history at this building as discussed with property management and/or service contractors.

Changes to the plan may be required to incorporate findings from future testing and/or repair programs. We recommend further investigation or testing where identified to be necessary to develop an appropriate management strategy. Resulting changes to budgets will need to be incorporated into reserve fund updates.

Comprehensive Service Contracts: Comprehensive Service Contracts can promote proper maintenance and require the service contractor to replace specific components as is necessary to restore service to the specified level. In some instances, these replacements also lead to building component renewal, reducing the need to draw upon the Reserve Fund for repairs or replacements.

We identify components which are expected to be replaced outside of the Reserve Fund based on reviewing the Contract scope(s), and discussion with Property Management to check the history of previous replacements undertaken by the service contractor. We do not complete a legal review of the Service Contract to evaluate the conditions and limitations associated with replacement under the Contract(s).

Even where service contracts exist, our experience has been that there is still a need for budgeting for major programs of repair or replacement. Service Contracts only cover limited periods of time. Once major equipment has reached the end of its service life, has become obsolete or is otherwise impractical to maintain, it may not be possible to renew the Contract at the end of the term. Replacement from the Reserve Fund then becomes necessary.

Adequate Maintenance: Prior to the time of an identified program of renewal, local repairs, replacements and maintenance are necessary as part of the operating budget. These are assumed to be diligently completed to assure that the expected remaining service life is achieved. If performance is poorer than expected, increased levels of repair or an earlier time for renewal may need be accommodated by the reserve fund. This should be reflected in future reserve fund updates.

Parking Garage Traffic Deck Protection Systems: Traffic deck waterproofing systems include a flexible waterproofing membrane covered by a traffic surface to resist wear and tear. Construction joints and cracks usually require special treatment to allow the membrane to stretch across them with movements. With age, membranes can become less flexible and split, allowing leakage.

The wear course is subject to deterioration from vehicles. Areas may erode away or crack. Asphaltic systems are vulnerable to softening from petroleum spills or leaks.

Expansion joints require special treatment to maintain a watertight seal. Sealants, looped joints, or rubber glands can be used. The magnitude of movements that occur can lead to problems with seal failure. For garages that experience leakage problems, it is often advisable to upgrade to a more reliable joint seal to avoid costly structural deterioration that can occur.

Local repairs to defects can usually help to defer the need for a general program of replacement. Depending on the expected magnitude of this work, this may or may not require a reserve item. General renewal of these elements is required before increasing problems with leakage or water and salt ingress occurs and leads to structural deterioration problems.

Parking Garage Roof Deck Waterproofing: Parking garage roof decks are normally provided with a waterproofing membrane to prevent leakage and contamination from de-icing salts (chloride). Construction joints and cracks usually require special treatment to allow the membrane to stretch across with movement. The membrane tends to become rigid with age and may split. This happens at cracks, joints and penetrations where movements occur with changes in temperature, or changes in loadings. Expansion joints which may exist can be a particular problem as a result of the magnitude of movement. Repairs to local problems can often defer the need for general rehabilitation.

With ongoing deterioration and debonding, general problems with water and/or salt ingress through the membrane can develop. The risk for structural deterioration increases near drive lanes and parking areas where de-icing salts are likely to be present. A general program of excavation, concrete repair and re-waterproofing then becomes necessary.

Parking Garage Entrance Ramps: Parking garage entrance ramps sometimes have de-icing systems. Electric cables can eventually burn-out or break at cracks and joints. Hydronic systems can fail by developing leakage. In addition, if the ramp is structural, waterproofing may be present below the topping to protect the structure from deterioration. When either the deicing system or the waterproofing fail, the entire system must be rehabilitated.

2 BUILDING ENVELOPE - CLADDING, WINDOWS AND DOORS

General Requirements: The exterior walls include components which resist wind and rain, and thermal insulation to assist in maintaining interior comfort. Many elements are concealed. A visual review is only able to check for evidence of problems which may have developed. A more comprehensive evaluation usually requires test openings and/or performance testing.

Local leakage may occur from time to time. This may be adequately addressed by local repair under the operating budget. If we expect the magnitude of these repairs to be significant enough, we include a periodic repair allowance as part of the reserve.

Insulation is usually incorporated within the cladding assembly. Most common types of insulation do not deteriorate providing they are not exposed to frequent or excessive wetting as may occur with rain or air leakage. Upgrading thermal insulation may become desirable in the future in response to rising energy costs, but is not included in this plan unless a specific need were identified. If this were to be considered, this would usually be completed in conjunction with interior finish replacement or general cladding renewal.

An "air barrier" is required in modern cladding systems. This limits energy loss from air leakage, as well as helping to resist rain water penetration, moisture accumulation (condensation) and insect ingress (cluster flies). Many buildings, particularly those constructed prior to about the late 80's may have a poor air barrier. However, unless specific and general problems related to air leakage are detected, upgrading by air sealing defects is not included in the plan. Performance testing should be completed to identify typical problem areas and the potential benefits related to air sealing. If required, maintaining air seals that may include interior caulking at windows, seals between floors and walls and seals at outlets or other penetrations is assumed to be completed as part of the operating budget.

Vapour barriers are also required to be incorporated within cladding to resist moisture flow into the cladding. These are generally seen to be less critical to wall performance than the air barrier.

Water shedding details frequently play an important part in promoting durability. Details that allow rain water to run onto adjacent components should be identified to consider whether they need to be corrected to promote durability. Improvements and repairs required to promote water shedding are assumed to be managed as part of maintenance, or in conjunction with other repair programs.

Embedded steel elements which may exist can corrode. Even if galvanized, wetting can lead to this protection being consumed. Steel elements can include connectors securing the outer masonry to the back-up, support angles at floor slabs and/or over windows, and reinforcing embedded within the masonry. Expansion which occurs with corrosion may lead to the exterior spalling. Stainless steel retrofit anchors are available to replace corroding connectors with little disruption. Other steel elements tend to require masonry removal to allow replacement or applying protection. We include an allowance for the repair we expect to be necessary.

Precast and Cast-in-Place Concrete: Cast-in place concrete is subject to deterioration from carbonation as described for exposed structural elements (see Section 1). In addition, cast-in-place concrete cladding tends to be subject to problems with cracking from shrinkage and movements. These cracks need to be maintained sealed to resist water leakage.

Precast walls are also subject to deterioration from carbonation (see Section 1). However, there should be a lower risk for these problems as the factory fabrication allows improved quality control related to concrete quality and concrete cover over reinforcing steel. Unless problems are detected, only minor problems are anticipated. Cracks may require sealing. Structural anchors securing panels are generally concealed and can be subject to corrosion damage if exposed to frequent wetting. Unless problems are detected, the interior air barrier and exterior seals are assumed to be properly maintained so that this does not develop within the time frame of this study.

Stucco and Exterior Insulated Finish Systems (EIFS): Stucco and exterior finish cladding systems (EIFS) can develop problems with internal deterioration that could only be detected by further evaluation including test openings. Problems which develop could involve the mesh reinforcing, water resisting sheathing wraps, sheathing board, studs, and/or fasteners. However, unless general problems are detected or expected to occur, it is assumed that the cladding is properly designed and constructed, and will be maintained so that general replacement is avoided within the time frame of this study.

Local repairs are expected to be effective in deferring the need to replace the cladding. These would include repairing local defects with cracking or deterioration, and applying a new vapour permeable protective coating to improve the exterior weather seal and renew appearance.

If proper maintenance and repair is implemented to protect windows and doors, it is expected that replacement could be deferred to beyond the time frame of this study. Where we expect maintenance and repair to become too costly, and/or inadequate to meet owners expectations, we recommend replacement. In addition, owner considerations with respect to aesthetics, comfort and ease of operation may create a discretionary desire to upgrade and replace these elements. This decision should be made prior to investing in other related repair programs so that the related portions of the reserve fund can be put towards the replacement cost.

Aluminium Systems: It is difficult to predict whether or not modern aluminum framed, double-glazed windows and doors will require full replacement within the timeframe of the study. Pending actual industry experience, which will only come with time, it seems reasonable to assume that replacement will eventually be required. This may be necessary due to material degradation (corrosion of frames, deterioration of concealed elements) or to meet resident's increased expectations for serviceability, aesthetics and comfort. These expectations are likely to be raised by advances in window technology.

The finishes applied to aluminium are subject to deterioration depending upon the material and exposure to UV (sunlight). High performance fluoropolymer coatings are available to provide a longer service life. However, lower quality finishes are common at many residential buildings and chalk aggressively. Cleaning to eliminate the easily marked chalk can actually hasten coating removal. Field re-coating (repainting) is expected to become necessary. Industry improvements in materials and application techniques are expected to become available to service this growing demand.

Anodized aluminium finishes are expected not to require work within the life of this study. Problems with pitting from exposure to pollutants are becoming evident at some buildings, but this is assumed to be avoided by regular cleaning.

Sealed Insulating Glazing Units (IGU): Sealed window units fail when the perimeter seal allows moisture to penetrate the cavity between the panes of glass. This moisture obscures vision by condensing on and scumming the inside surfaces. Replacement becomes necessary for aesthetic reasons. Factors which affect IGU durability include the quantity of desiccant available in the spacer to absorb penetrating moisture, the vapour resistance provided by the perimeter seal, and the extent to which the IGU is exposed to moisture penetrating the glazing pocket. This moisture can arise from deteriorating external seals, or problems with interior condensation. It is expected that these conditions will be promptly corrected so that accelerated deterioration does not occur.

3 BUILDING ENVELOPE - ROOFING

Flat (Low Slope) Roofing Systems: Low slope roofing system performance varies. Variables that influence performance can include workmanship in the original application, wear and tear from maintenance activities, and maintenance quality.

The waterproofing element (membrane) tends to lose flexibility with age. Problems with splitting or debonding can occur with thermal movements. Once moisture ingress into the system begins, progressive deterioration may develop. For most systems, testing is necessary if current conditions were to be established to try and more accurately predict future performance.

If promptly identified and completed, local repairs are often effective in prolonging service life. However, before excessive degradation in performance occurs and leads to excessive or frequent problems with leakage, a program of renewal becomes necessary. The expected repairs and the timing for general renewal are based upon judgement related to available information, visual observations as to current performance, the expected ability to be effective in deferring replacement by local repair, and experience with similar roofing systems at other buildings.

Annual inspection and minor related repairs are assumed to be an operating expense.

Protected membrane systems can likely have their life extended to 30 or 35 years if the field of the roof is well installed, and the perimeter upturns are replaced after about 15 years of service. We generally assume that this is the normal practice, unless we have evidence that the field of the roof is not durable.

Sheet Metal: Sheet metal components may include sloped metal roofing systems, protective metal flashings, and drainage systems such as eaves troughs and down spouts.

These elements are subject to wear and tear from ice and maintenance activities. Where the resulting damage affects function or becomes aesthetically unacceptable, replacement becomes necessary. Replacement of many of these items becomes necessary in conjunction with roof renewal.

4 FIRE SAFETY

Egress: Unless specific problems are detected, fire safety components related to egress are assumed not to require general replacement or upgrading within the time frame of this study. This includes fire separations around exits, exit doors with associated hardware, stairwells with guards and handrails, exit signs, and emergency lighting. Ongoing maintenance from operating budgets is assumed to be completed to keep these components in acceptable condition. No audit or design check was completed to confirm that these meet current code requirements unless otherwise noted.

Separations: Unless specific problems are detected, fire safety components related to fire separations are assumed not to require general replacement or upgrading within the time frame of this study. This includes structure fire protection, wall and floor fire separations, suite doors with associated hardware, fire stopping and smoke sealing at penetrations (if provided), fire dampers at ducts or pipes.

Local repair and replacements as part of the operating budget are assumed to be completed to keep these components in acceptable condition. No audit or design check was completed to confirm that these meet current code requirements unless otherwise noted.

Detection: Detection systems include the fire alarm system, smoke and heat detectors, signalling devices, and associated wiring. In conjunction with annual testing completed as part of the operating budget, local repairs and replacements are required. These activities are expected to lead to renewal of some devices. However, advances in fire alarm and detection technology tend to result in systems becoming obsolete. Once compatible replacement parts are no longer manufactured, it becomes difficult to continue to maintain the system. In addition, advances in fire safety may lead to upgrading being necessary. A general program of renewal is expected to become necessary

The actual scope of the renewal will need to be identified. It is normally expected that many components could be salvaged, particularly those renewed as part of operations. Components which may be salvaged are expected to include wiring, and some devices.

Some manufacturers are requiring replacement of all end-devices and wiring when their system is installed. Whether or not this is a long-term trend is unknown. Until more information is available, we only budget for replacement on a case-specific basis.

Emergency Generator: Some components are expected to wear or deteriorate over time. Batteries are expected to be handled out of operating budgets. Major overhauls become necessary requiring tear down to renew seals, valves, bearings and other components. The actual scope of work will need to be identified based on monitoring and further evaluation. Due to limited use, a generator can have a long service life, and obsolescence usually drives replacement.

Emergency Batteries: Batteries provided for emergency power tend to lose effectiveness as they age, or associated parts may become unavailable. Local replacements tend to be completed on an as-needed basis as part of annual maintenance, so that reserve fund budgeting may not be necessary. The exception would be central battery systems or AC to DC inverters, in which case, we include a Reserve Fund item.

Ceramic Tile and Natural Stone Finishes: Hard finishes such as ceramic and stone are very durable. However, problems can develop with time including mortar joint staining and erosion, debonding, cracking, scratching and impact damage. Local repairs that become necessary may not match the original materials. We generally expect that a program of replacement will become necessary to maintain an acceptable appearance.

Furnishings: Furnishings can require renewal or replacement with fading and wear and tear.

Cabinetry, Millwork and Hardwood: The need for renewing cabinets and millwork is dependent upon the level of wear and tear that they area subjected to. Options for renewal usually include refacing or complete replacement. Natural wood floors and millwork can usually be re-finished. Whether or not an allowance is included in the Reserve Fund depends on the expected size of the project.

Unit Pavers: Unless general problems with deterioration are detected, unit pavers are not expected to deteriorate within the time frame of this study. This assumes that there is adequate sub-base drainage and concrete quality. Local areas of settlement or damage which occur can normally be addressed by local replacement and re-setting as part of operations or in conjunction with other repairs. If costs for this work are expected to become excessive, an allowance is included in the Reserve Fund.

In situations where unit pavers are a dominant part of the site finishes, such as unit drives and roadways, a different strategy may be adopted. In such cases, Owners often choose to replace unit pavers for aesthetic reasons as colors and patterns become "dated". Maintenance of larger areas also tends to result in a patchwork appearance as original pavers may no longer be available from the manufacturer. In these cases, Reserve allowances for full replacement can be considered.

Landscaping: Annual plantings and local replacement of dead items is expected to be managed as part of the operating budget. However, with age, trees and shrubs can become overgrown, root structures may become too large at areas, and planting beds may lose nutrients. If landscape maintenance is inadequate to address these problems, a general program of renewal may become necessary. Judgement is used to determine whether this needs to be included. The scope and budgets for these types of programs vary, only an expected order of magnitude budget can be established pending landscaping design.

Wrought Iron Fencing: Wrought iron fences are generally not expected to require replacement within the time frame of this study providing local repairs and painting are diligently carried out to address problems with rust.

Iron fences with a factory vinyl coating are generally not expected to require replacement within the term of this report.

Chain Link Fencing: Chain link fencing will require replacement when it corrodes, the linking becomes excessively worn, or it sustains physical damage. With vinyl coated fencing, the vinyl on the post/rails tends to shrink/crack and expose the underlying steel.

Masonry Landscape Walls: Brick or stone masonry landscape walls deteriorate as discussed in Section 3. These walls often deteriorate more aggressively than building walls as a result of increased exposure to rain water, ground water wicking, or cracking from shallow foundations that allow movement.

Expansion joints in the distribution piping rarely develop problems and are typically not expected to require replacement. In unusual circumstances, failure does occur and can represent a large unplanned expenditure. However, given that this occurs in less than 5% of buildings, we do not budget a reserve line item unless there have been previous problems.

Local repairs and replacements are initially managed as part of the operating budget. However, with increasing rates of failure, larger sections would also need to be replaced, requiring budgets from the Reserve Fund. The actual rates of failure and corresponding budgets will need to be determined. Unless a problem condition is identified that suggests general replacement may become necessary, judgement is applied to establish an allowance for progressive replacement once aged.

Heating, Cooling and Air Distribution Units: Heating, cooling and air distribution units such as fan-coils require local repair and component replacement as part of the operating budget to assure they provide adequate service. However, a program of renewal becomes necessary once the extent of deterioration becomes excessive, or if parts are no longer available to continue with repair. This may also be desirable to take advantage of more energy efficient equipment.

Starting in about 2002, a risk of mould growth on the insulation inside in-suite fan coil units or heat pumps has become known to the industry. Periodic investigation should be scheduled from operating budgets to test for the presence of mould. This mould cannot be detected through visual review only. Until the industry as a whole reveals the extent of this concern, we will only include a reserve expenditure in buildings where testing has revealed a concern. If you have never tested for mould, a test should be completed soon.

Pumps: Pumps generally require replacement due to erosion of the impeller, failure of the bearings, failure of seals, and to take advantage of more energy efficient modern equipment. Small pumps of fractional horse power, such as those for recirculation are expected to be replaced when required as part of operations.

Air Supply and Exhaust Fans: Air supply and exhaust fans require cleaning, re-balancing and local repairs as part of maintenance managed from the operating budget. This includes addressing motors, dampers, belts, coils, cabinets, filters, etc. However, with advanced age, general replacement is expected to become necessary to provide reliable service.

Small units not included in the reserve fund plan are expected to be repaired or replaced on an as-needed basis as part of the operating budget. This can include items such as service room exhaust fans and common area bathroom fans.

8 PLUMBING

Site Services: Site services include buried piping to supply water to the building (for fire and potable purposes), storm sewers to drain away rain and ground water, sanitary sewers to drain away waste. Periodic maintenance including pressure flushing and camera inspection is assumed to be managed as part of the operating budget.

Unless problems are detected, we do not expect there will be a need for widespread replacement within the time frame of this study. However, repairs may be needed to correct local problems that may develop, such as local collapse or breakage with ground settlement, leakage or major blockage or restrictions from deposits, or deterioration such as corrosion of steel piping. Identifying the actual locations, quantities, types and conditions related to these buried services would require further investigation. An allowance which is expected to be reasonable to accommodate limited problems is included in the Reserve Fund.

Sump Pumps: Sump pump repairs are expected to be managed from the operating budget on an as-needed basis. An allowance for replacement is only included if cost is expected to exceed the threshold.

Drainage Plumbing: Drainage lines are generally not expected to require replacement within the time frame of the study unless specific problems with deterioration are identified. Flushing of all risers and main lines should be carried out every one to two years as an operating expense to avoid major expenses which can result from not flushing.

Domestic Water Distribution System: The domestic water distribution system includes piping, valves and insulation. Problems which develop as the system ages include:

- Seizing or leakage of valves
- Damage to insulation
- Corrosion, pitting, erosion and/or embrittlement of piping. This can be affected by the quality of materials used, impurities in the water, stray currents, etc.
- Fatigue and failures related to thermal movements

Local repairs and replacements are initially managed as part of the operating budget. However, with increasing rates of failure or blockage, larger sections would also need to be replaced, requiring budgets from the Reserve Fund. The actual rates of failure and budgets necessary will need to be determined.

9 WASTE DISPOSAL SYSTEMS

Garbage Compactor and Bins: Garbage compactor systems and bins eventually require replacement when ongoing repair as part of maintenance is no longer practical.

10 ELECTRICAL SYSTEMS

Electrical Distribution: Insulation used on distribution wiring tends to become brittle with age and is expected to crack and split. Connections tend to deteriorate where subject to increased heating or stress from thermal movements. Power surges related to the utility service or lightening strikes can hasten deterioration. Maintenance including electrical thermography and local repairs is expected to be completed as part of the operating budget. This should be completed at least every three years, and more frequently for systems incorporating aluminium wiring. Once aged, portions of the system are expected to require replacement from the reserve fund. An allowance for a phased program of replacement is included. Further monitoring and evaluation will be necessary to establish the actual scope of work and rate of replacement which will be necessary.

Buried electrical supply lines, typical of townhouse complexes, are subject to aging of the wires leading to brittle cracking and splitting. Connections tend to deteriorate. Phased replacement should be budgeted in the Reserve Fund.

Transformers: Transformers tend to fail abruptly once aged. This can be related to deterioration of insulation. Oil filled transformers should be scanned as part of the routine electrical thermal scans. Some transformers are owned by the local utility (generally pole mounted units, or those located in vaults owned by the utility).

Outlets and Switches: Local devices including electrical outlets, switches, and mechanical switchgear are assumed to be replaced as required as part of the operating budget, or in conjunction with programs of interior finish renewal or equipment replacement.

If there is aluminium wiring, then connections to receptacles and switches should be checked regularly to see if contacts are deteriorating. This should be an operating expense.

11 ELEVATORS

Elevator Cab Finishes: Timing for refinishing elevator cabs can be dependant on wear and abuse, and owner aesthetic expectations. The scope and quality of refinishing can vary considerably. A budget that allows a program that is expected to be appropriated is included.

Elevator Repairs, Replacement and Modernization: Components of the elevator system can deteriorate and require replacement as a result of wear, age and the quality of preventative maintenance. This work tends to be completed as part of the operating budget and/or in conjunction with comprehensive maintenance contracts which may exist. This work may include motor rewinding or replacements, or replacement of control devices.

However, major programs of rehabilitation and modernization are generally expected to become necessary. This may be in response to increasing frequency of problems and/or difficulties completing repairs once the equipment becomes obsolete and replacement parts are difficult to obtain. Upgrading to more modern equipment also tends to become necessary to meet owner expectations or to comply to changes in the safety code. The scope of a general rehabilitation will need to be further identified. As part of a major overhaul, providing new control systems will be required.

APPENDIX D
RESERVE FUND CONCEPTS

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The following concepts and definitions are used in calculating the required contributions to the Reserve Fund:

Life Expectancies

Life expectancies are our estimates based on our observations of the performance of similar materials systems or components at other buildings, literature we have read, and/or recommendations made to us by manufacturers or suppliers.

We estimate two factors when considering the timing of future repairs or replacements

a) Time to first occurrence or "Time" is our estimate of when the work will be required. This estimate is based on the apparent condition of the item and may not simply be the time remaining in the standard estimated life cycle.

b) Life cycle or "cycle" is the frequency at which the repair or replacement is normally expected to be required. The time cycle following a repair or replacement may be different from the original service life as a result of changes in the materials or equipment employed, and changes in technology.

We endeavour to estimate the timing of repairs to reflect the necessity of maintaining the building standards and achieving this at the lowest cost. Some items that are not critical to the building operation (such as finishes, site work) may be deferred from our recommended time, however, this may result in a decrease in building standards. For some items, particularly those such as leakage, there may be an increase in the extent of repairs and costs if the required work is deferred.

For some building materials and systems, the actual service life is difficult to estimate as a result of a short history of application or use in other similar buildings. This can be particularly true of mechanical and electrical systems. While the estimated service lives for these components may be exceeded, it is recommended that the funds be available for the repairs or replacements at the times indicated.

Minimum Reserve Fund

The present value of the lowest allowable Reserve Fund balance. This level is reached at what we term the "critical years". These years are marked with an asterisk (*) in the expenditure table, and identified on the results page.

The minimum balance could be set at zero. However, we generally recommend a higher amount as a factor of safety against estimates that prove to be inaccurate, unexpected repair items becoming necessary in the future and changes legislated by Building Authorities.

Interest Rate and Interest Earned

The estimated annual interest earned on savings, assuming these monies are re-invested into the Reserve Fund. This rate should not necessarily be the current interest rate, but should reflect expected average trends.

It is not the assumed interest rate but the spread between interest and inflation that most affects Reserve Fund planning.

Our analysis assumes that interest earned on the reserve balance is available in the year earned. In some instances, with longer term investments, the interest does not actually come available until maturity. Managing Reserve Fund investments and expenditures is required to assure positive cash flow in critical years, when the balance is at its lowest.

Cost Inflation Rate

The estimated annual inflation rate used to increase the estimated costs of repairs and replacements. As interest earned on money has historically been greater than inflation, the spread between interest and inflation act to decrease the level of contribution to the Reserve Fund (assuming interest monies are re-invested into the Reserve Fund).

Minimum Reserve Fund Inflation Rate

The percentage rate at which the minimum Reserve Fund balance is increased. This ensures the minimum Reserve Fund balance at the critical years is not devalued as a result of inflation. This is usually the same as the inflation rate, unless there is a desire to accelerate the minimum balance at a rate greater than inflation.

APPENDIX E
SCOPE OF WORK

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Authorization

This study was commissioned by the Strata Council of Strata Plan LMS 1757 in accordance with our proposal dated September 7, 2004 and Agreement for Professional Services dated May 25, 2005.

Purpose

A well planned Contingency Reserve Fund Study requires that contributions to the Reserve Fund be calculated on the basis of expected repair, or replacement costs and life expectancies of the common assets.

In order to meet this requirement, we:

- Review and evaluate the condition of the major common asset components;
- Recommend improvements which are likely to minimize deterioration or increase the life expectancy of common assets;
- Identify common assets we expect to deteriorate and require repairs or replacement;
- Estimate the scope of repairs or replacement which are likely to be required;
- Predict the times when repairs or replacements will be necessary and the life expectancies following the repairs;
- Provide our opinion of the cost required to carry out the repairs or replacements; and
- Calculate a schedule of contributions to the Reserve Fund so that the estimated expenditures can be accommodated without a deficit.

Survey Method

Halsall Associates Limited reviewed the building structure, roofs, walls, windows and doors, portions of the interior and the site and completed a non-specialist review of the passive fire safety systems. Besant Engineering reviewed the active fire safety, mechanical, electrical and elevator systems. The site was visited by Halsall on November 11, November 20 and December 22, 2005.
The survey consisted of visual review of portions of the building including:

- exterior walls and windows from ground level; sample locations from roof level; and from interior areas where possible

- Plumbing Systems: Artisan Plumbing
- HVAC Systems: South Coast Mechanical
- Elevator Systems: Otis Elevator

Karen Rahal, the Property Manager from Colliers International, and Calvin Greger, the Resident Manager, answered questions about the history of performance of the various systems, described existing capital plans, etc.

A financial questionnaire was completed and the results were incorporated.

APPENDIX F
LIMITATIONS

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- This work is intended solely for the Client(s) named. The scope of work and related responsibilities are defined in the Conditions of Assignment. Any use which a third party makes of this work, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Decisions made or actions taken as a result of our work shall be the responsibility of the parties directly involved in the decisions or actions. Any third party user of this report specifically denies any right to any claims, whether in contract, tort and/or any other cause of action law, against the Consultant (including Sub-Consultants, their officers, agents and employees).

- The work reflects the Consultant's best judgement in light of the information reviewed by them at the time of preparation. Unless otherwise agreed in writing by Halsall, it shall not be used to express or imply warranty as to the fitness of the property for a particular purpose. This is not a certification of compliance with past or present regulations. No portion of this report may be used as a separate entity; it is written to be read in its entirety.

- This work does not wholly eliminate uncertainty regarding the potential for existing or future costs, hazards or losses in connection with a property. No physical or destructive testing and no design calculations have been performed unless specifically recorded. Conditions existing but not recorded were not apparent given the level of study undertaken. Only conditions actually seen during examination of representative samples can be said to have been appraised and comments on the balance of the conditions are assumptions based upon extrapolation. We can perform further investigation on items of concern if so required.

- Only the specific information identified has been reviewed. The Consultant is not obligated to identify mistakes or insufficiencies in the information obtained from the various sources or to verify the accuracy of the information.

- Halsall is not investigating or providing advice about pollutants, contaminants or hazardous materials.

- Budget figures are our opinion of a probable current dollar value of the work and are provided for approximate budget purposes only. Accurate figures can only be obtained by establishing a scope of work and receiving quotes from suitable contractors.

- Time frames given for undertaking work represent our opinion of when to budget for the work. Failure of the item, or the optimum repair/replacement process, may vary from our estimate.

- Any user of this report specifically denies any right to any claim which may arise out of infiltration of precipitation into a building envelope.