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VISUAL BUILDING ENVELOPE CONDITION ASSESSMENT

FOR

STRATA PLAN LMS 280 – CHATEAU COMOX
1272 COMOX STREET, VANCOUVER, B.C.

Presented to:

Strata Plan LMS 280
c/o Southview Property Management
110 – 7580 River Road
Richmond, B.C. V6X 1X6
(Email: kevingreen@telus.net)

Attention: Mr. Kevin Green

Prepared by:

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Our File No.: S18-551

September 30, 2018

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1 SCOPE OF WORK

1.1 Spratt Emanuel Engineering Ltd. conducted a visual-only building condition assessment of the above-referenced development on September 12, 2018, by John Drinkwater, P.Eng., and Patrick Grzelak, P.Eng., CPHD. This report should be read in conjunction with the attached colour photographs, which were taken at the time of review.

1.2 SEE prepared this report to the account of Strata Plan LMS 280 – Chateau Comox, care of Southview Property Management. The material in it reflects the best judgment of the writer in light of the information available at the time of preparation. Any use that a third party makes of this report, and any reliance on decisions made based upon this report, are the responsibility of such third parties. SEE accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based upon this report.

1.3 The primary focus of this Visual Building Envelope Condition Assessment is to visually assess the current state of the following: exterior wall surfaces, windows, flashings, sealants, roofing, decks, and details associated with cladding, windows, vents, penetrations through claddings, and intersections with windows.

1.4 The observations and recommendations contained in this report are based upon the information obtained during a visual review and reflect the general condition of the building at this time. The review does not include the excavation of landscaping or removal of any cladding or other exterior or interior finishes. It is not the intent of the writer to identify every defect which may be present in the exterior of the building, within the scope of this limited review.

1.5 It is assumed that the building was designed and built completely with proper Permits and approvals and in accordance with all applicable Codes at the time of construction, and that all subsequent work was done in a similar manner. No attempt has been made to analyze the design of the building or its components and no detailed zoning or Building Code review has been conducted.

2 GENERAL BUILDING DESCRIPTION

2.1 Chateau Comox is an 8-storey, non-combustible, cast-in-place concrete mid-rise building located at 1272 Comox Street, Vancouver, B.C.

2.2 The tower main roof consists of a ballasted inverted roof membrane assembly. Conventional low-slope roof assemblies protected by torch-applied SBS membrane are present in limited areas. The building exterior is primarily finished with an aluminum window wall system with stucco and mass concrete wall areas. The original face-sealed stucco walls, generally on the east, north and west elevations have been replaced with rainscreen stucco in phases (**Photos No. 1 to 3**).

2.3 For the purposes of this report, Comox Street is defined as the project north elevation and the laneway as the south elevation.

2.4 The North building elevation and parts of the Penthouse level on the South building elevation were remediated by SEE in 2008 to comply with Vancouver Building By-Law, 2007.

2.5 Remediations to the East elevation were completed by others, prior to the SEE remediation.

2.6 The following is a brief summary of the building:

Building Address	1272 Comox Street, Vancouver, B.C.
Owner	Strata Plan LMS 280
Building Type	Mid-Rise Strata-Titled Apartments
Principal Occupancy	Residential
Date of Construction	1992
Applicable Building Codes	Vancouver Building Bylaw, 1991
Type of Construction	Non-Combustible Cast-In-Place Concrete
Sprinklered	Yes
Lot Size	Approximately 100'x120'
Window Type	Double glazed, Aluminum framed
Number of Storeys	8
Number of Suites	21
Parking	2-level underground
Adjoining Properties	North: Comox Street East: Mid-Rise Residential South: Jepson-Young Lane West: Low-Rise Residential

Six Rope Access Descents were conducted in order to visually assess the tower from the exterior at all four elevations. Please refer to the following figure and table for the location of the Rope Access Descents:

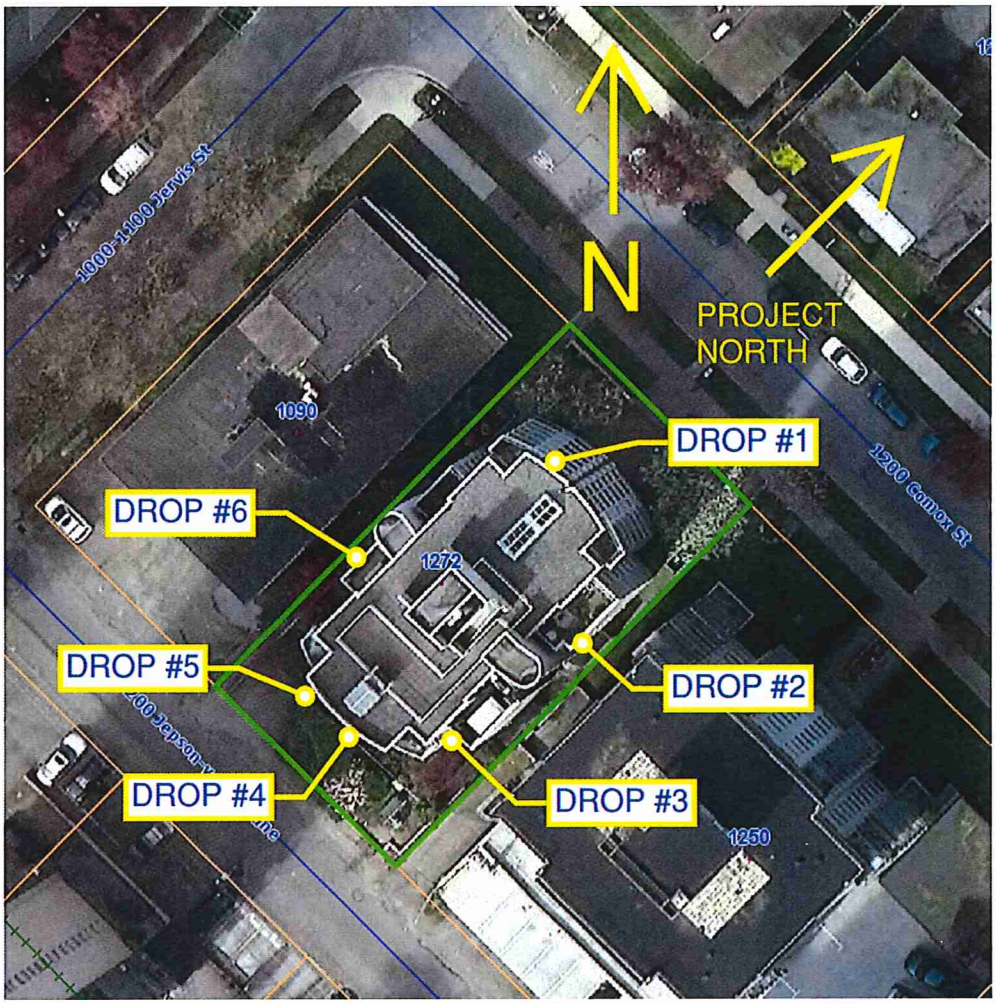


Figure 1: City of Vancouver VanMap Application: vanmapp.vancouver.ca

	Description	Report Section
Drop No. 1	North Elevation, Centre	3.1
Drop No. 2	East Elevation, North Half	3.2
Drop No. 3	East Elevation, South Half	3.3
Drop No. 4	South Elevation, Centre	3.4
Drop No. 5	South Elevation, West Half	3.5
Drop No. 6	West Elevation, South Half	3.6

3 OBSERVATIONS

For the tables that follow, each item is labeled with a Type, indicating:

O = Observation only, no action required
M = Maintenance item, upkeep required by Owners or manager
S.H. = Safety Hazard requiring immediate attention

3.1 Drop No. 1: North Elevation, Centre

John Drinkwater, P.Eng, Project Engineer. September 12, 2018

	Description	Photo	Type
3.1.1	Drop No. 1 is located near the centre of the north elevation, on the west side of the flag pole.	**4 and 5**	**O**
3.1.2	Sealants between rainscreen stucco and acrylic finished concrete are in fair condition. There are defects including delaminations and alligatoring indicative of age.	**6 and 7**	**O**
3.1.3	At the west corner the balcony, partially over living space, is finished with tile. At the building column there appears to be a PMMA upleg. The waterproof membrane is unknown.	**8**	**O**
3.1.4	Guardrails are side mounted and cap flashings slope to the interior as required.	**9**	**O**
3.1.5	Level 8: Some minor caulking failures were observed in the bottom window caulking bead. SEE recommends caulking maintenance	**10 to 12**	**M**
3.1.6	Level 7: The balcony is protected with a liquid-applied membrane which has been terminated on the top horizontal surface of the balcony parapet. Condition appears good.	**13 and 14**	**O**
3.1.7	Level 7: The horizontal caulking joint at the sill requires re-application	**15 and 16**	**M**
3.1.8	The flagpole attachment has been done with stainless steel hardware which appears to be in excellent condition. The double flashing arrangement is providing good protection of the connection point.	**17 and 18**	**O**
3.1.9	There is a horizontal ledge of caulking between the cast-in-place concrete upstand at the base of the windows and the adjacent rainscreen stucco. Caulking requires maintenance	**19 and 20**	**M**

	Description	Photo	Type
3.1.10	There is no sign of efflorescence or other indications of water ingress at the balcony soffits.	**21**	**O**
3.1.11	Level 5: The balcony is finished with a liquid-applied polyurethane traffic membrane. Cut lines indicate reinforcement has been utilized at the building walls as is best practice.	**22 and 23**	**O**
3.1.12	Balcony guardrail paint is heavily faded and chalked. SEE recommends repainting as part of the planned 2019 maintenance.	**24**	**M**
3.1.13	Level 4: There is a blister in the acrylic stucco finish at the sill of the window. SEE recommends that this small cosmetic defect would not be cost-justified to repair.	**25**	**O**

3.2 Drop No. 2: East Elevation, North Half

Patrick Grzelak, P.Eng, CPHD, Project Engineer. September 12, 2018.

	Description	Photo	Type
3.2.1	Drop No. 2 is located on the north half of the east elevation, north of the fire exit stairwell.	**26 and 27**	**O**
3.2.2	Level 8: One head flashing at the exhaust vent has lifted and should be corrected to slope positively.	**28**	**M**
3.2.3	Level 8: There is an unsealed horizontal crack above on the exterior wall of the east stairwell. The crack should be routed and sealed with polyurethane sealant.	**29**	**M**
3.2.4	Prefinished metal surfaces along this drop are in fair to poor condition, with peeled paint and surface rust. A global recoating of metal surfaces with exterior-grade enamel paint is recommended.	**30 and 31**	**M**
3.2.5	Exposed steel rebar ends at the emergency stairwell's mass concrete walls are causing rust staining. The rebar ends should be brushed clean, coated with zinc-rich primer and covered with troweled-on polyurethane sealant.	**32**	**M**
3.2.6	The vertical sealant joint to the south of the descent is in good condition. There are hairline cracks directly beside the sealant joint which should be addressed at the time of wall re-coating.	**33 and 34**	**M**
3.2.7	Level 2: Sealant is missing around an exhaust vent and should be installed with backer rod.	**35**	**M**

	Description	Photo	Type
3.2.8	Rusted J-trim and flashing at the base of the ground level requires grinding and coating with zinc-rich primer.	**36**	**M**
3.2.9	The rainscreen stucco walls appear to be in good condition. Through wall flashings at each level are positively sloped and well joined with 'S'-locks. The majority of exhaust vents are located directly under the through wall flashings for head protection.	**37**	**O**

3.3 Drop No. 3: West Elevation, North Half

Patrick Grzelak, P.Eng, CPHD, Project Engineer. September 12, 2018.

	Description	Photo	Type
3.3.1	Drop No. 3 is located on the south half of the east elevation, at the southeast corner balconies.	**38 and 39**	**O**
3.3.2	The rope re-direct located at the roof level has sealant applied to its perimeter which is debonded and alligatored. The sealant should be replaced with new polyurethane sealant.	**40**	**M**
3.3.3	The bank of balconies at the very southeast corner of the building include a cold liquid-applied polyurethane waterproofing membrane over the cantilevered concrete structure. Most balconies are covered with either tiles installed over thinset mortars or removable deck tiles. Where uncovered, the membrane appears to be in fair condition.	**41 and 42**	**O**
3.3.4	The rainwater leader located at the end of the balconies has peeled paint and rusted fasteners. The fasteners should be replaced with stainless steel and painted surfaces should be repainted.	**43**	**M**
3.3.5	The drainage screens in the balcony scupper drains have moss and dirt buildup which should be cleaned or the screens replaced.	**44 and 45**	**M**
3.3.6	At least one outdoor electrical outlet is unprotected from the elements. A weatherproof box should be installed where missing. GFI circuit breakers or outlets are required.	**46 and 47**	**M/S.H.**

	Description	Photo	Type
3.3.7	The stucco finish applied to the balcony concrete curbs and outboard faces have peeling paint. Where blisters are seen, spalled concrete may be expected and should be repaired by installing non-shrink cementitious patching mortar and reinstating the stucco finish.	**48 and 49**	**M**
3.3.8	The windows and balcony sliding doors appear to be in good condition. Two south-facing failed insulated glazing units (IGUs) were observed on the lower levels, Levels 3 and 4, and should be replaced.	**50**	**M**
3.3.9	Window perimeter sealants have reached the end of their service life as evidenced by significant alligatoring, debonding and general weathering. Building sealants should be replaced as part of a complete building sealant renewal program.	**51**	**M**

3.4 Drop No. 4: South Elevation, Centre

John Drinkwater, P.Eng, Project Engineer. September 12, 2018

	Description	Photo	Type
3.4.1	Drop No. 4 is located on the south elevation near the centre.	**52 and 53**	**O**
3.4.2	Level 8: At the top of the new rainscreen wall section no detail has been provided to terminate against the cast-in-place concrete parapet wall at the roof. Construction materials are openly visible including peel-and-stick membrane, Tyvek, and DensGlass sheathing. SEE recommends cleaning the substrate and installing a rod-and-caulk joint to prevent wind-driven rain from entering into the rainscreen wall assembly.	**54 and 55**	**M**
3.4.3	Level 8: At the base of the new rainscreen stucco the rainscreen cavity is protected with a perforated metal vent strip which is in good condition.	**56**	**O**
3.4.4	There is elastomeric coating applied at Level 8 which appears to be silicone. The coating appears to be in good condition. Plans for future painting must include provision for this wall area as standard paints and wall coating products can't be applied over silicone.	–	**O**

	Description	Photo	Type
3.4.5	Levels 7 and 8: The reinforcement of the liquid-applied polyurethane membrane at the window sill is poorly installed. We recommend lifting up the poorly bonded reinforcement and sealing down with new polyurethane caulking prior to recoating the walls.	**57**	**M**
3.4.6	Level 6: On the concrete curb beneath the window there is a blemish which appears likely due to a past scaffold tie-back attachment. SEE recommends scraping failed material, and applying new caulking prior to recoating.	**58**	**M**
3.4.7	Level 5: There is a blister in the acrylic stucco finish and nearby an area where the finish has been removed. SEE recommends scraping the failed acrylic finish, cleaning the substrate, then applying new acrylic finish with matching texture to the surrounding areas prior to repainting.	**59**	**M**
3.4.8	Level 4: There is a caulking failure between the face-sealed stucco wall and window frame.	**60 to 62**	**M**
3.4.9	Level 3: There is a caulking failure between the corner coupler sheet metal and window frame which overlooks the balcony.	**63**	**M**
3.4.10	Level 2: The acrylic finish beneath the window has failed resulting in a large blister. There appears to be efflorescence behind indicating potential water ingress into the concrete.	**64 to 66**	**M**
3.4.11	Level 2: There are multiple failures in the caulking between the corner coupler and window system on both sides.	**67 to 69**	**M**
3.4.12	Level 2: At the south-facing windows, caulking has been utilized to cover the rainscreen cavity at the east column of windows. An adhesion failure between the window frame and the wide caulking bead requires repair. The caulking is generally aged, with alligatoring and chalking of the surface.	**70 to 72**	**M**

3.5 Drop No. 5: South Elevation, West Half

John Drinkwater, P.Eng, Project Engineer. September 12, 2018

	Description	Photo	Type
3.5.1	Drop No. 5 is located on the west half of the south elevation.	**73 and 74**	**O**
3.5.2	The roof parapet is constructed from cast-in-place concrete with an acrylic stucco finish. At the 8th floor only the centre column was done with rainscreen stucco. Floors below appear to be the original face-sealed stucco.	**75 and 76**	**O**
3.5.3	Level 8: The top floor balcony is partially over living space. The waterproofing membrane appears to be liquid-applied polyurethane. Some balconies farther down have been finished with thinset and tile, others are exposed polyurethane membrane.	**77 and 78**	**O**
3.5.4	Caulking applied in gumlip flashings and at window perimeters is aged, with alligatoring and cracking apparent in the surface. SEE recommends replacement before outright failure occurs.	**79 and 80**	**M**
3.5.5	Level 8: The window sill was detailed with a reinforced liquid-applied membrane. Insufficient membrane basecoat was applied with the reinforcement fabric resulting in the lack of bond and unsaturated surface. Given the existing condition, SEE recommends re-adhering the bottom edge of this reinforcement with new polyurethane caulking.	**81**	**M**
3.5.6	Level 8: There is a caulking failure at the head of the fireplace vent termination. The fireplace vent is stainless steel and appears to be in good condition.	**82 and 83**	**M**
3.5.7	There is a negatively lapped flashing at the through-wall upstand. SEE recommends re-caulking this location to protect the head from water ingress. The black drips seen on the flashing is bitumen bleed-out which is due to a benign chemical reaction between plasticizers in the caulking and the bitumen base material used in peel-and-stick waterproofing membranes. The black bleed-out can be scraped off then the residue cleaned up with solvent at the time of re-painting.	**84 and 85**	**M**

	Description	Photo	Type
3.5.8	Level 7 and below: The wall has the original finishes and window detailing to original construction in 1991. The windows are a window wall design complete with deflection head. The windows sit on a concrete curb with no apparent sill waterproofing membrane.	**86 to 88**	**O**
3.5.9	Level 7: Below the fireplace vent there is cracking on the surface and rust staining indicating moisture migration through the stucco – possible water ingress. Rust staining is likely due to rusting of the stucco J-bead.	**89**	**M**
3.5.10	Fireplaces at Levels 7 and 6 are waterproofed at the perimeter with a wide troweled application of caulking. Fastener heads are showing through the surface of the caulking. Caulking replacement is recommended. Fireplace terminations are rusted and require grinding and recoating with zinc-rich primer and paint.	**90 to 91**	**M**
3.5.11	Balcony soffits appear to be in typically good condition, no evidence of water ingress through the slab has been observed.	**92**	**O**
3.5.12	Level 5: There is a broken interior pane of glass at the westernmost lower light on the south face.	**93**	**M**
3.5.13	Level 5: There is efflorescence staining and hairline cracks showing through the acrylic finish at the concrete curb beneath the windows. Effloresce extends beyond the windows into the centre section of the wall. Efflorescence indicates possible water ingress into the concrete curb.	**94 and 95**	**M**
3.5.14	Level 4: Rust staining at the base of the face-sealed stucco indicates possible water ingress.	**96**	**M**
3.5.15	The balconies are finished with tile and there does not appear to be a waterproofing membrane. Concrete curbs beneath the sliding doors appear to be painted.	**97**	**O**
3.5.16	At several locations on this drop the original acrylic stucco finish which had been applied to the cast-in-place concrete failed and was scraped off. SEE recommends at the time of painting that new acrylic stucco with a matching texture be applied to the concrete prior to new paint coating being done.	**98 and 99**	**M**

	Description	Photo	Type
3.5.17	Level 2: On the lower floor patio there are reviewable areas of the 1999 reclad work. The rainscreen cavity gap has been closed with a wide caulking joint. The caulking is aged with heavy alligatoring on the surface. Replacement is recommended.	**100 to 102**	**M**

3.6 Drop No. 6: West Elevation, South Half

Patrick Grzelak, P.Eng, CPHD, Project Engineer. September 12, 2018.

	Description	Photo	Type
3.6.1	Drop No. 6 is located on the south half of the west elevation.	**103 and 104**	**O**
3.6.2	The exterior rainscreen stucco walls are generally in good condition. Minor hairline cracks are typically seen near window corners. Hairline cracks less than 1/16" in width through rainscreen stucco do not affect the performance of the wall assembly.	**105 to 107**	**O**
3.6.3	Metal building components such as vent hoods and through-wall flashings have surface corrosion and uncoated metal. Repainting is recommended.	**108 and 109**	**M**
3.6.4	Exterior sealants at joints between dissimilar materials such as window perimeters and cladding joints have reached the end of their service life. Alligatoring and adhesive failure are typical.	**110 and 111**	**M**
3.6.5	To the north of the drop is the west emergency stairwell which consists of mass concrete walls coated with acrylic stucco and glass block window openings. The exterior surfaces appear to be in good condition with the exception of one exposed concrete crack on Level 5 with signs of water intrusion. The crack can be remedied by routing and caulking with a polyurethane sealant.	**112 to 115**	**M**
3.6.6	The in-slab exhaust vents located at the lower levels have spalled concrete at their perimeter. The vents also have minimal weather protection. Vent hoods with gum lip terminations are recommended once the spalls are removed and the concrete patched and re-coated.	**116**	**M**

	Description	Photo	Type
3.6.7	The Level 2 planter is lined with a cold liquid-applied bituminous waterproofing membrane. The planter is currently void of soil and plants. The bottom is lined with drain mat with filter fabric. Bituminous membranes are not intended to be exposed to UV for an extended period of time and should be fully covered. Additionally, pooled water indicates blocked drainage which should be cleared.	**117**	**M**
3.6.8	The stucco finish on the top surface of the Level 2 planters has delaminated and the concrete surfaces should be protected with a cold liquid-applied polyurethane waterproofing membrane.	**118**	**M**
3.6.9	The gated exit to the west stairwell appears to be in good condition. The side wall consists of glass blocks which are capped with mortar. The mortar cap is cracked and should be replaced and covered with a metal flashing.	**119**	**M**
3.6.10	Cracks through mass concrete as seen at Level 1 should be routed and sealed to mitigate the risk of water ingress.	**120 and 121**	**M**
3.6.11	Horizontal reveals in mass concrete do not have sealant and show signs of cracking. Horizontal reveals should be sealed as part of global building envelope maintenance work.	122	**M**

3.7 Roofs

	Description	Photo	Type
3.7.1	The main roof consists of a protected membrane assembly, with gravel ballast, filter fabric, insulation, and drain mat over the roof membrane. The patio and walkways have a similar construction, with the gravel ballast replaced by concrete pavers.	**123 and 124**	**O**
3.7.2	Small plants are growing on the roof. Additionally, the filter fabric under the gravel ballast is displaced in several locations. The plants should be removed and the filter fabric should be laid flat.	**125**	**M**
3.7.3	Sealants applied to the gum lip terminations of roof level flashings have failed and should be completely replaced.	**126 and 127**	**M**

	Description	Photo	Type
3.7.4	The penthouse roof deck consists of an inverted roof membrane assembly with concrete pavers as the finished walking surface. Parapet curbs are capped with prefinished metal flashings including standing seams at corners and 'S'-lock joints and include side-mounted guardrails with base plates tucked behind the cap flashing. The visible components appear to be in good condition. The hidden membrane could not be reviewed during the site visit; no leaks have been reported by building management.	**128 and 129**	**O**
3.7.5	The Level 8 roof deck on the east side, south of the exit stairs is covered with rubber tiles. Many of these tiles are curled; this does not negatively affect the performance of the roof system however it does cause a tripping hazard. Furthermore, beside one of the legs supporting the owner-installed canopy is an area of higher lift than the surrounding area. The tiles should be removed and the roof membrane should be reviewed for any signs of water pockets or blisters.	**130 and 131**	**M**
3.7.6	Sealants at the T-bar skylights are in poor condition and require replacement. The skylight frames and glazing are in good condition.	**132 to 134**	**M**
3.7.7	South Skylight: There is condensation between the panes of glass on the north triangular glazing unit indicating the IGU has failed. Replacement of the IGU is required.	**135**	**M**
3.7.8	The metal staircase leading to the mechanical penthouse level is heavily corroded and should be repainted with new exterior-grade enamel paint.	**136 and 137**	**M**
3.7.9	At the bottom of the metal staircase at the roof level, there is a small alcove. The concrete ceiling lacks a drip edge which has led to spalled concrete and exposed corroded steel reinforcement. Repairs should be made to the rebar and concrete and a drip edge can be made with a bead of polyurethane sealant outboard of the repair.	**138 and 139**	**M**

3.8 Parkade and Miscellaneous

	Description	Photo	Type
3.8.1	Parking Stall 5: Possible water ingress at the electric conduit ducts. The area should be monitored through the fall.	**140**	**O**
3.8.2	There is active water ingress in the lower parkade exit stairwell. SEE recommends repair by injection.	**141 and 142**	**M**
3.8.3	Parking Stall 1: Efflorescence around the drain pipe terminations indicates possible water ingress. SEE recommends monitoring.	**143**	**O**
3.8.4	The east stairwell was reviewed from the interior. Areas with evidence of water ingress were observed near cold joints at the outer landing floor slabs. Due to relatively dry weather up to the time of the site visit, it is unclear if areas of water staining are actively leaking or not. Exterior wall recoating with elastomeric products would help address any water ingress.	**144 to 146**	**M**
3.8.5	The west stairwell is in similar condition to the east stairwell. Past repairs performed from the negative side are observed at the upper level.	**147 to 150**	**M**
3.8.6	Main Roof: there are several louvered air vents which serve the mechanical and elevator rooms. Water ingress has been observed in the past; which was attributed to wind-driven rain blowing through the vents. SEE recommends new sheet metal hoods be installed with a gumlip termination at the top edge.	**151 to 153**	**M**
3.8.7	The Owners requested SEE review the rooftop patio for possible extension. This is beyond the scope of this report; the work generally required would include structural design of new guardrail baseplate mounts and possibly an application for a development/building permit with the City.	–	**O**

4 DISCUSSIONS AND RECOMMENDATIONS

4.1 The exterior sealants and paint coatings are in an aged condition. Failed and failing sealants were seen on all drops and elevations. Typical locations are window perimeter sealants, gumlip flashings and cladding transitions.

As part of the planned 2019 exterior recoating project, SEE recommends global sealant renewal. Exterior painting of the stucco and concrete walls is recommended to be done with an acrylic elastomeric coating. Previously rain-screened walls should be recoated with acrylic latex coatings. Prior to coating the walls, miscellaneous repairs including rout and caulk of cracked concrete and re-application of acrylic stucco finishes are required at targeted locations.

4.2 Exterior metal components have aged and worn coatings. Metal flashings and vents are beginning to rust. Guardrails and other components have heavily faded and have chalked finishes.

SEE recommends that recoating the exterior metal components be included in the scope of the 2019 exterior maintenance project to maintain the performance and aesthetics of the building envelope.

4.3 There is evidence of possible water ingress on the south elevation. The face-sealed stucco panels between bay windows at the centre of the elevation have rusted J-beads and expansion joints, which indicate possible water ingress, and provide an entry point for water into the wall. Cracks in the stucco and poor sealing at the fireplace vents and window perimeters are also potential points of water ingress.

SEE recommends that the Owners be prepared to re-clad these walls at some time in the future. In the interim, a robust face-sealed water resistive strategy is required to defer the cladding replacement and extend the service life of existing systems for as long as possible. We recommend utilizing a combination of Dow Corning Allguard silicone elastomeric coating and 123 Tape. SEE recommends regular reviews of the face-sealed wall areas every 2 years.

4.4 Active and possible water ingress was observed in the parkade foundation walls. The observed active water ingress should be repaired by injection. Areas of potential water ingress can be monitored through the wet months and repaired by injection if necessary.

4.5 Other miscellaneous maintenance and repair items are identified in this report for follow-up investigation or repair by the Owners. Potential leaks in the stairwells should be monitored, sheet metal covers can be fabricated for the rooftop mechanical vents, and broken or failed IGUs should be replaced.

5 CONCLUSION

SEE completed a Building Envelope Condition Assessment of Chateau Comox located at 272 Comox Street, Vancouver, B.C. to the account of Strata Plan LMS 280 – Chateau Comox, care of Southview Property Management. The review was completed by performing a walkthrough of the development as well as six rope access descents on the tower.

We have recommended global sealant renewal; exterior recoating to include stucco, concrete and metal surfaces; and other miscellaneous repairs for the planned 2019 exterior building envelope maintenance project.

6 RECOMMENDED REPAIR BUDGET

6.1. We provide the following repair budget estimate. Note that this magnitude of cost estimate is based on the recommended scope of work. It is provided as a budgeting aid to ensure sufficient funds to complete repair work upon receipt of repair tenders from pre-approved contractors.

6.2. **Goods and Services Tax (GST):** The GST is to be fully payable at 5% of all project costs.

6.3. **City of Vancouver Building Permit Fees:** We do not expect to require a Building Permit for this maintenance project.

6.4. **Renovation Contractor:** SEE advises that the repair Contractor should be one of the provincially registered and municipally licensed contractors with bonding capacity sufficient for a project of this magnitude. Bonding for two years is recommended.

6.5. **Building Envelope Engineer:** We recommend this project should be designed and reviewed with "Enhanced Field Reviews" under the authority of a Registered Professional Engineer recognized to be a practicing professional in this field of work.

6.6. **Repair Project Timing:** The availability of General Contractors is limited due to extreme activity in the construction industry. Financing conditions are at historically cheap levels.

6.7. **Construction Budget:** The following is an order of magnitude construction budget, rounded to the nearest $10,000. Exact pricing is subject to market conditions for labour and materials, as well as the final design configuration.

6.8. **The estimate is hypothetical, based on average costs for this type of project. We advise that our detailed design of this project may provide higher or lower costs.**

RECOMMENDED MAINTENANCE BUDGET
Strata Plan LMS 280 – Chateau Comox
1272 Comox Street, Vancouver, B.C.
Building Envelope Maintenance Program – 2019
(Order of magnitude rounded to nearest $10,000)

REPAIR BUDGET	COST
Building Envelope Maintenance Estimate	$180,000
Subtotal:	**$180,000**
Engineering Consultant: Building envelope engineering design, contract management, tender, and quality assurance services (estimated @ 15%)	$27,000
Subtotal:	**$207,000**
Plus GST @ 5%	$11,000
TOTAL:	**$218,000**
RECOMMENDED BUDGET:	**$220,000**

SEE is expert in this type of maintenance repair and can provide a fee proposal for specifications, tender, and construction services indicated in this report.

Should you have any questions regarding the content of this report, please do not hesitate to contact the undersigned.

Yours truly,
SPRATT EMANUEL ENGINEERING LTD.

Per:

John Drinkwater, P.Eng.
Project Engineer

Reviewed by:

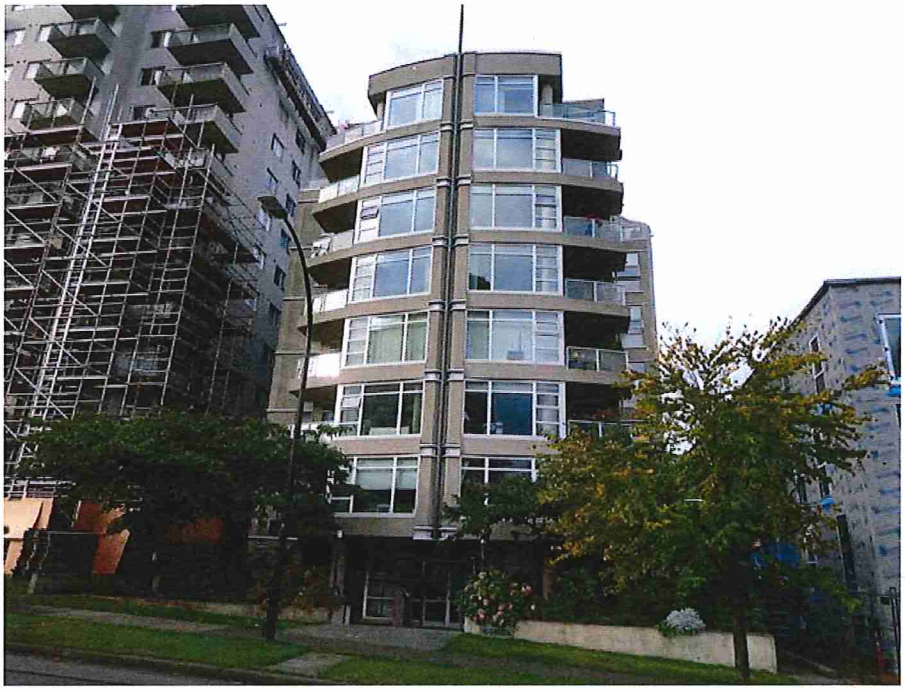
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M.W. EMANUEL
14154

Mark W. Emanuel, P.Eng.
Principal

JD/ch/encl.

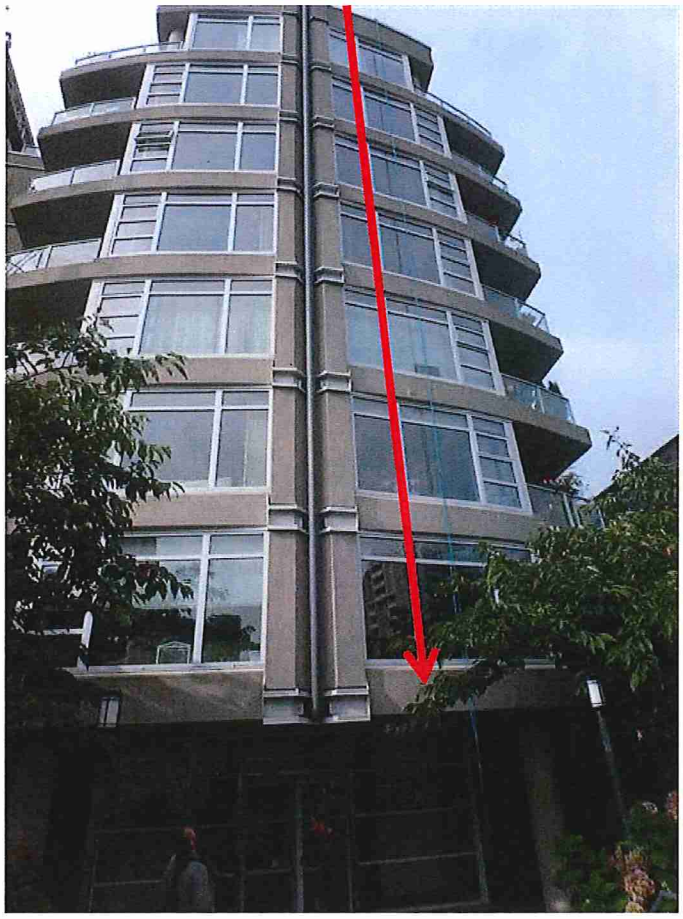
CC: Mr. Don Davidson, Strata President (dondavidson67@yahoo.ca)

STRATA PLAN LMS 280 - CHATEAU COMOX
1272 COMOX STREET, VANCOUVER, B.C.
PHOTOGRAPHS TAKEN BY JOHN DRINKWATER, P.ENG.
AND BY PATRICK GRZELAK, P.ENG., CPHD
ON SEPTEMBER 12, 2018



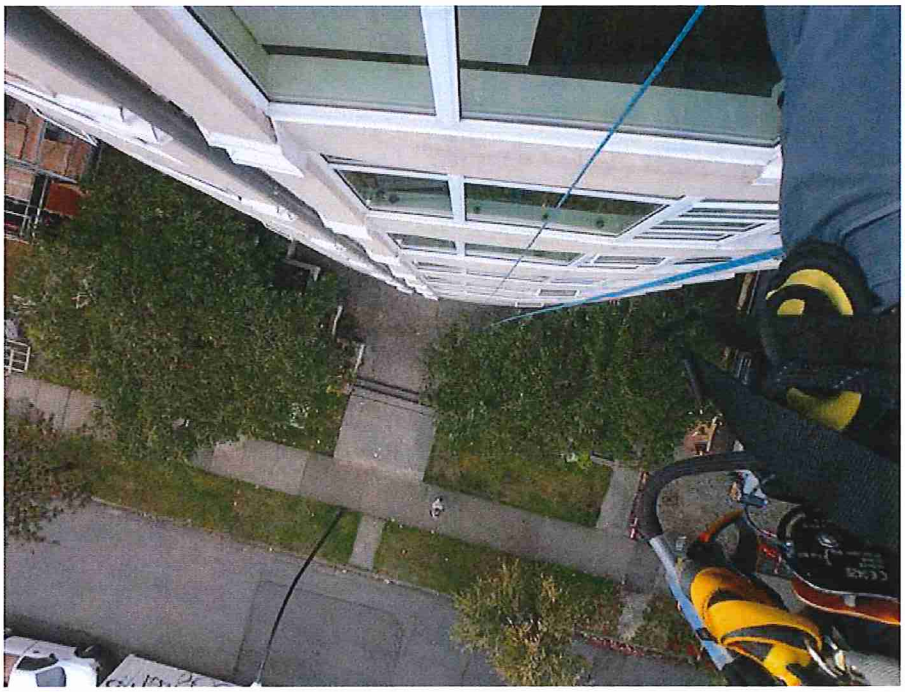
Photos No. 1 and 2

September 12, 2018

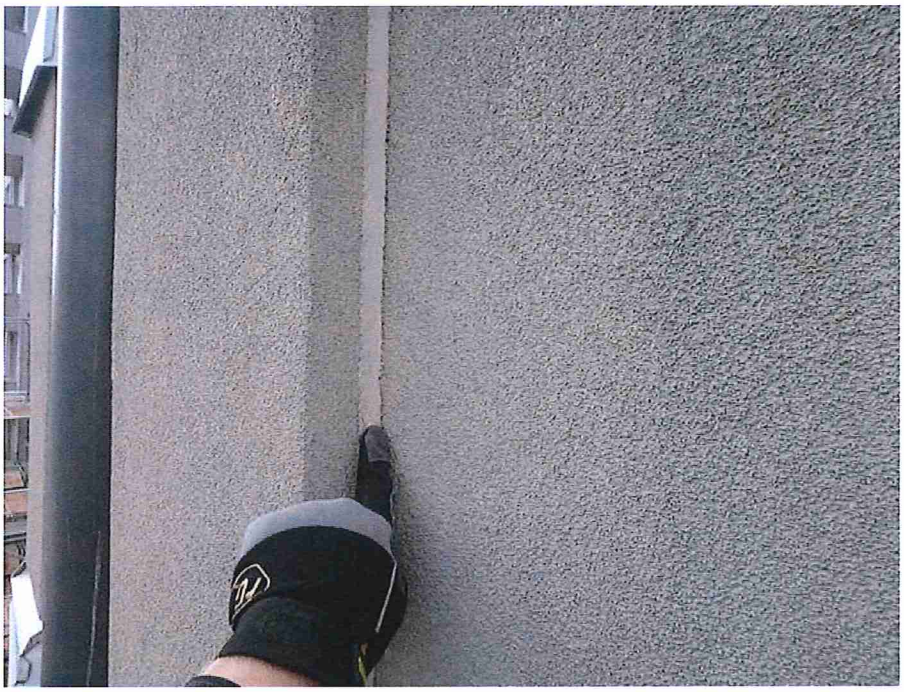


Photos No. 3 and 4

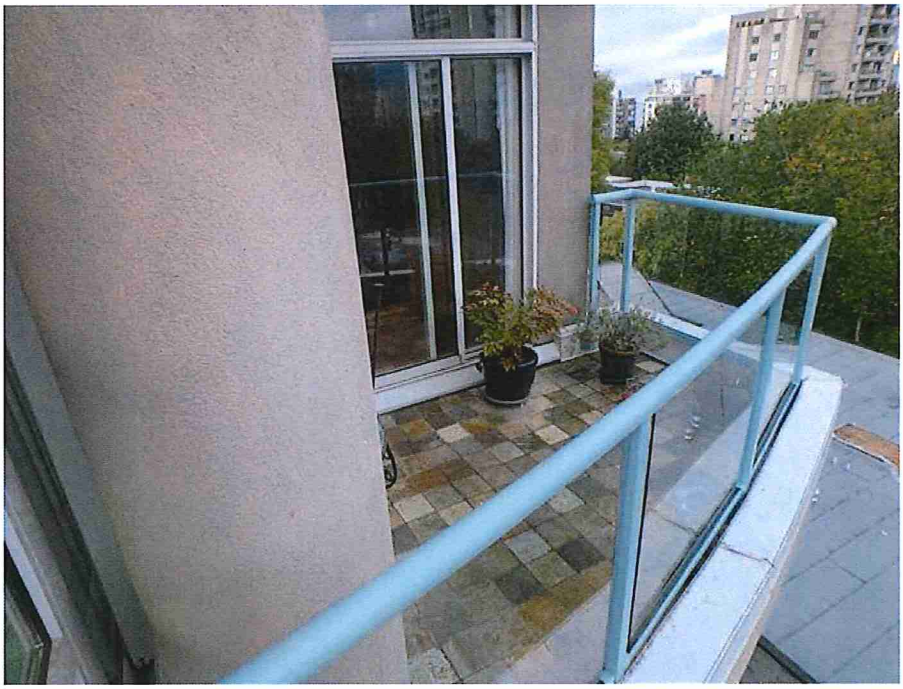
September 12, 2018



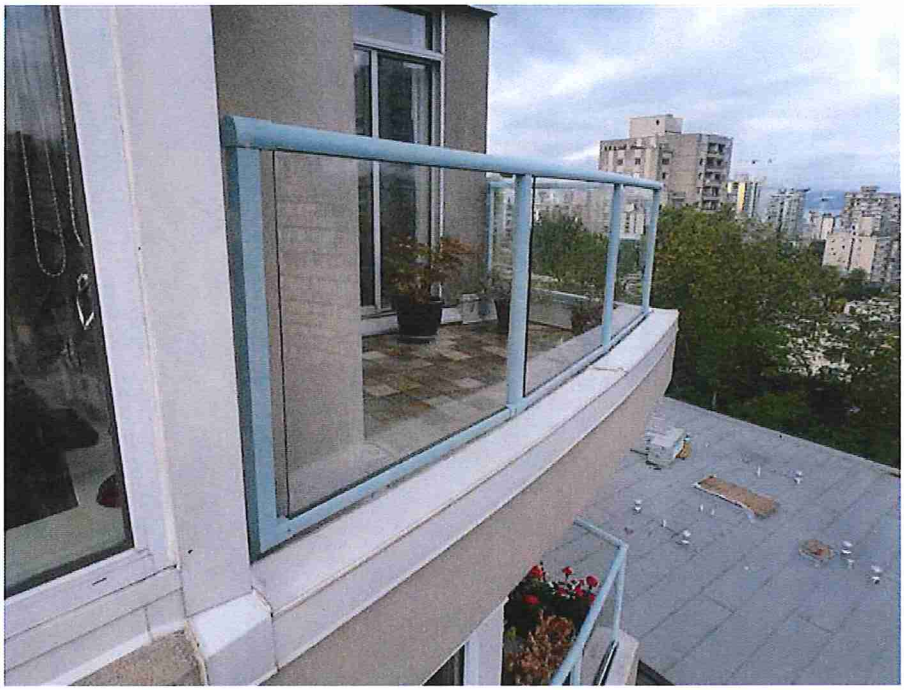
Photos No. 5 and 6



Photos No. 7 and 8



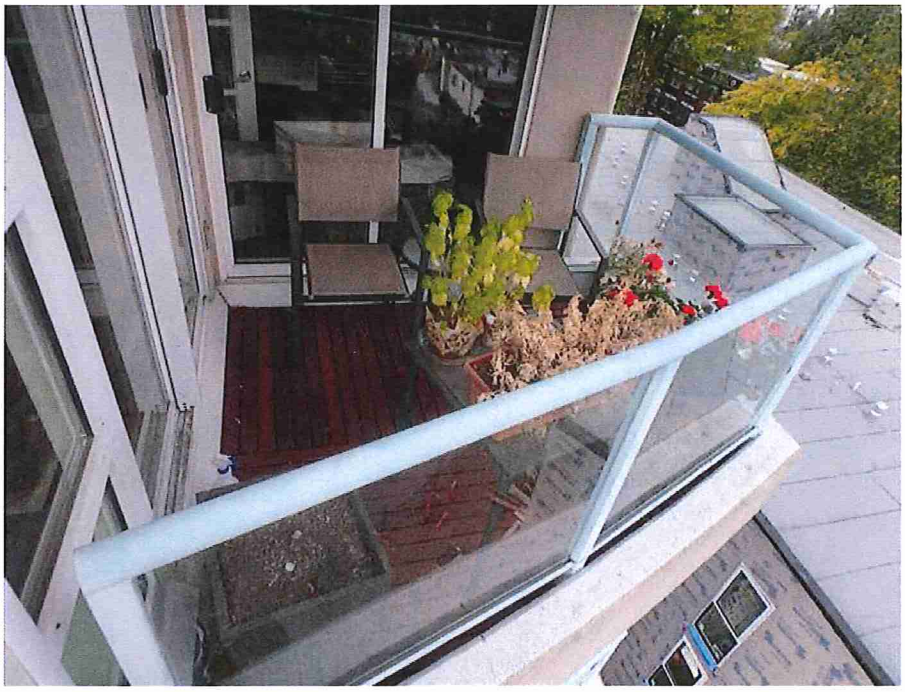
September 12, 2018



Photos No. 9 and 10

Photos No. 11 and 12

September 12, 2018



Photos No. 13 and 14

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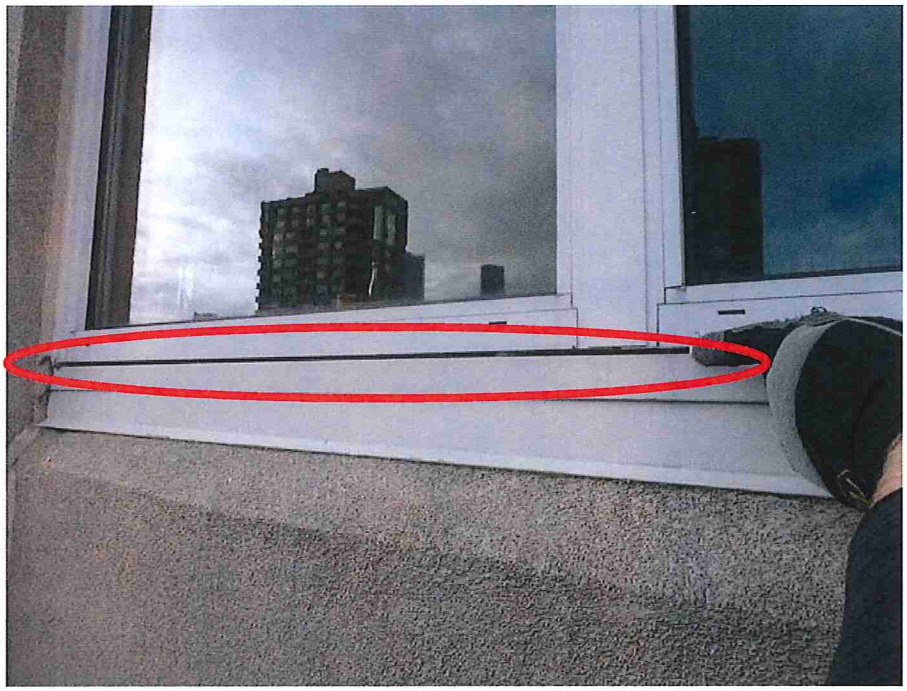


Photos No. 15 and 16

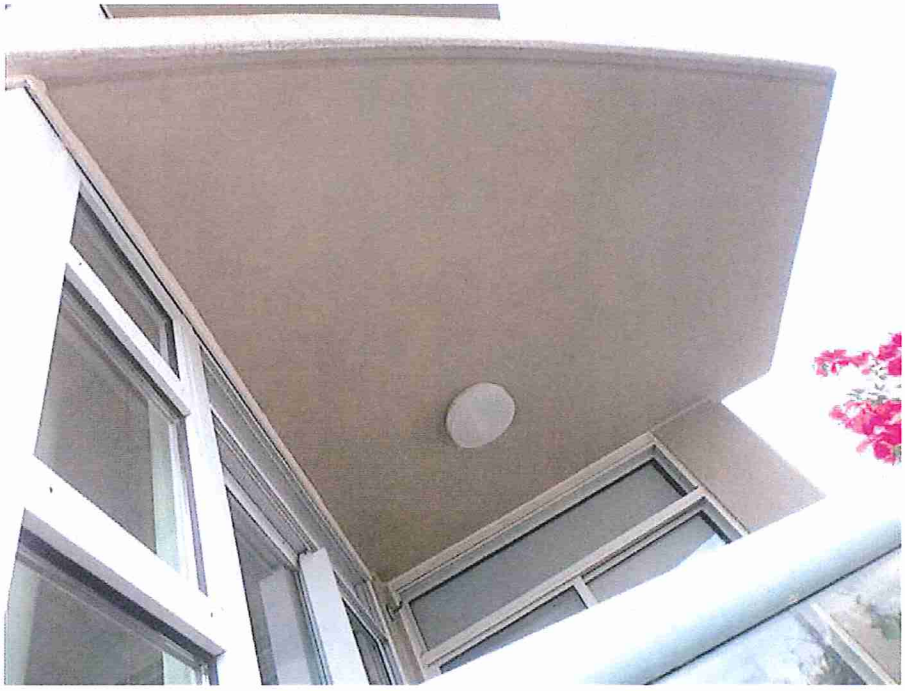
September 12, 2018

Photos No. 17 and 18

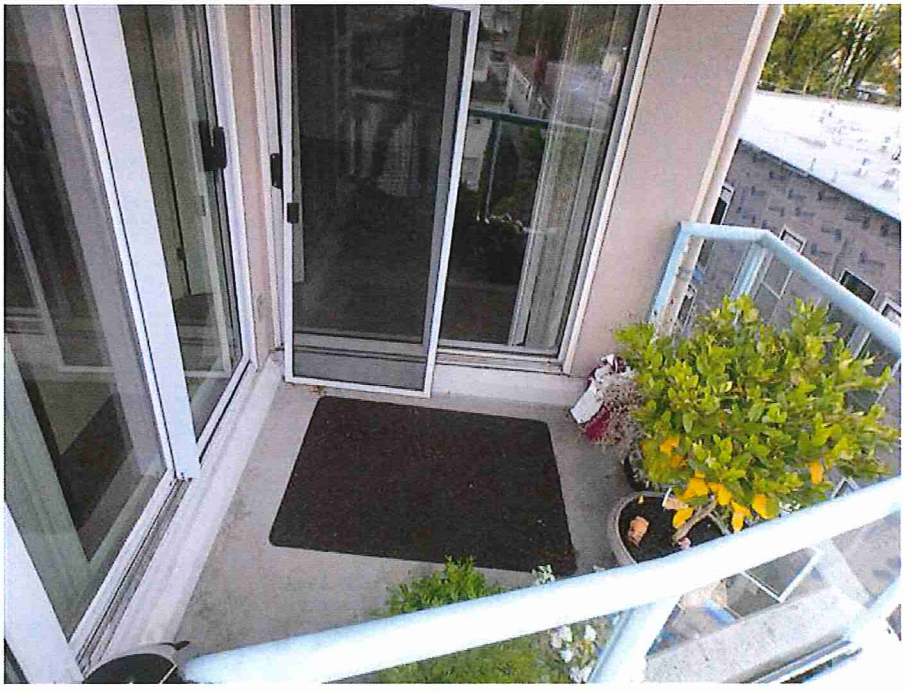
September 12, 2018

Photos No. 19 and 20

September 12, 2018

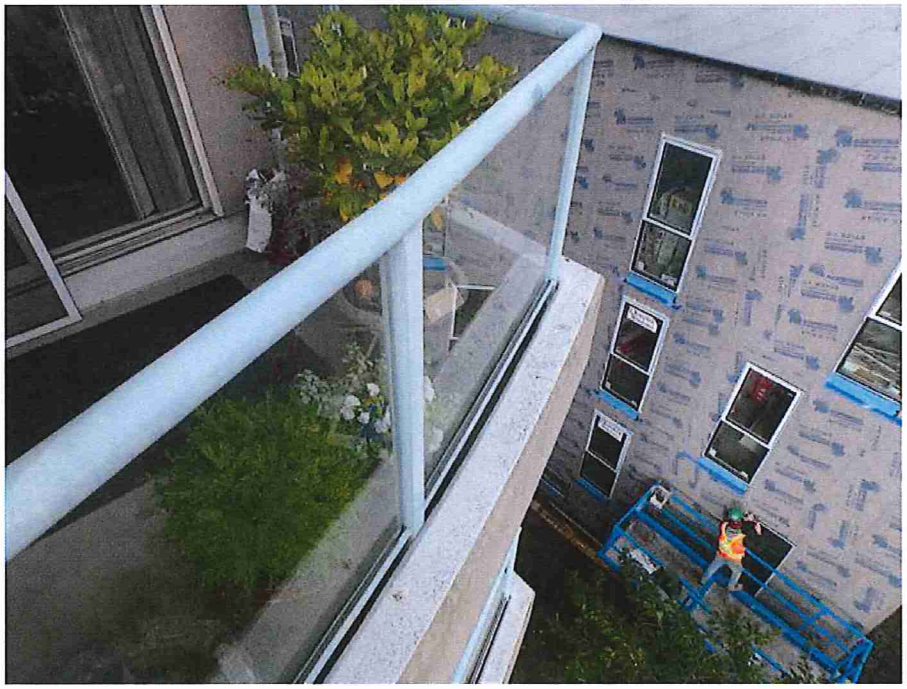


Photos No. 21 and 22



September 12, 2018

Photos No. 23 and 24



September 12, 2018

Photos No. 25 and 26

September 12, 2018

Photos No. 27 and 28

September 12, 2018

Photos No. 29 and 30

September 12, 2018

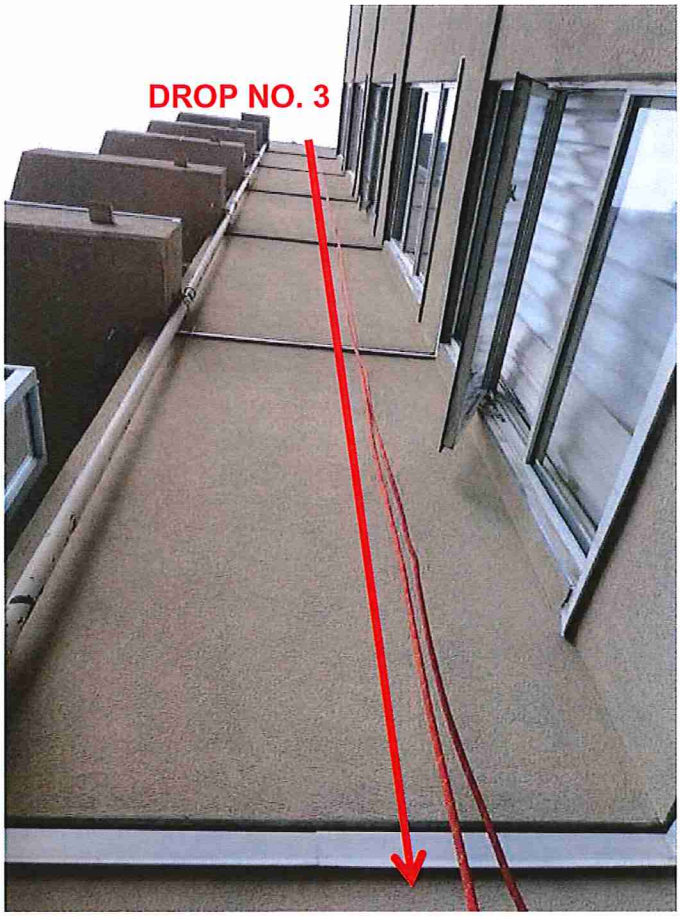
Photos No. 31 and 32

September 12, 2018

Photos No. 33 and 34

September 12, 2018

Photos No. 35 and 36

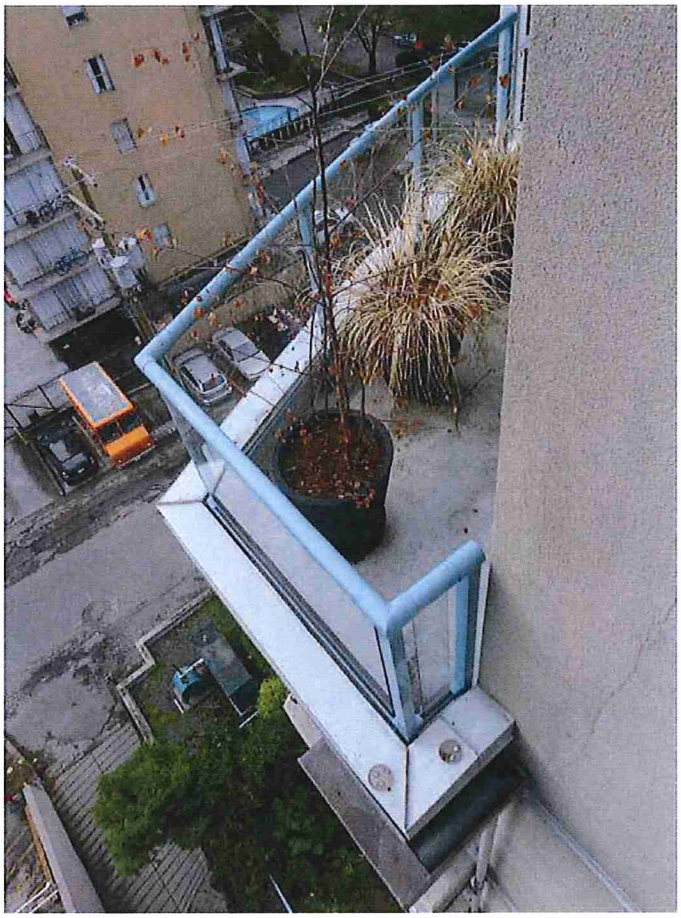


Photos No. 37 and 38

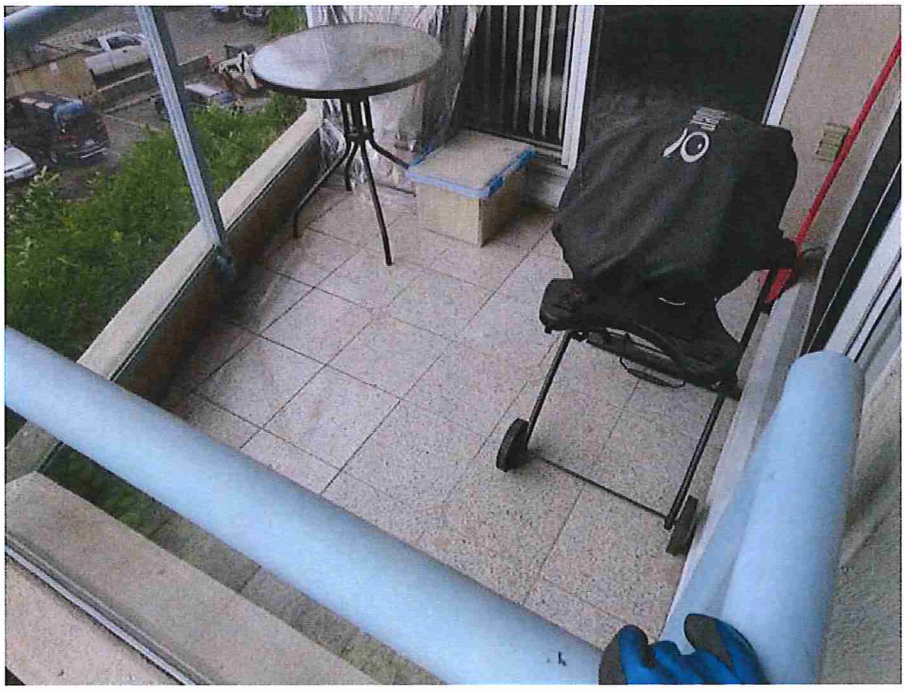
September 12, 2018

Photos No. 39 and 40

September 12, 2018



Photos No. 41 and 42



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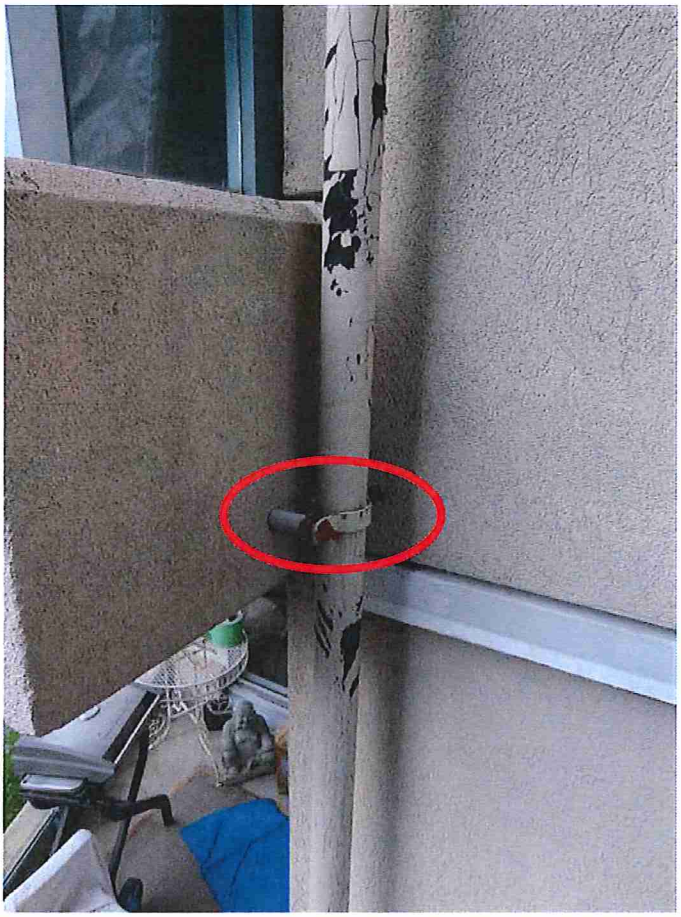
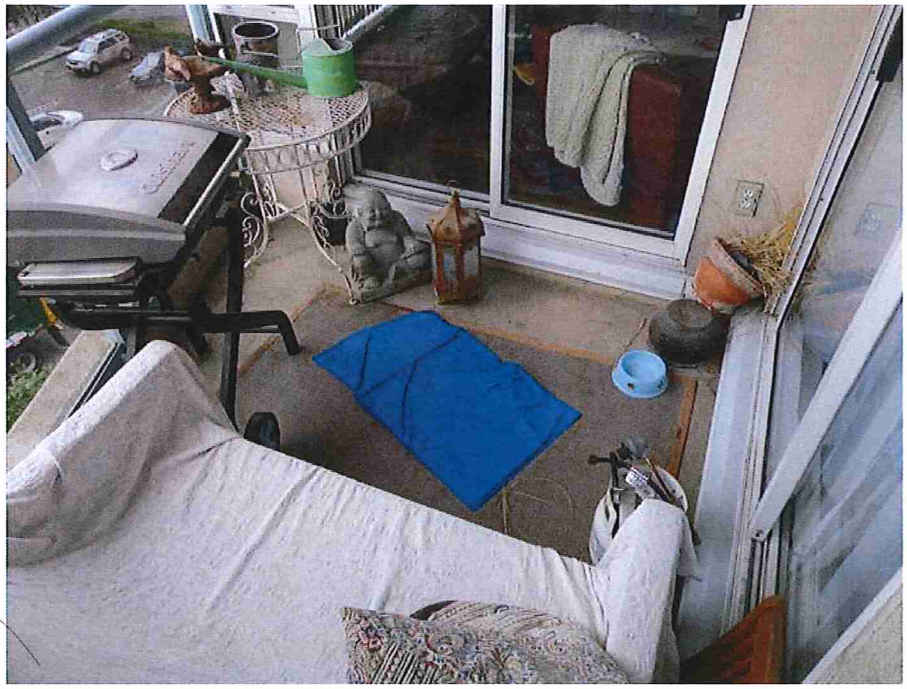


Photos No. 43 and 44

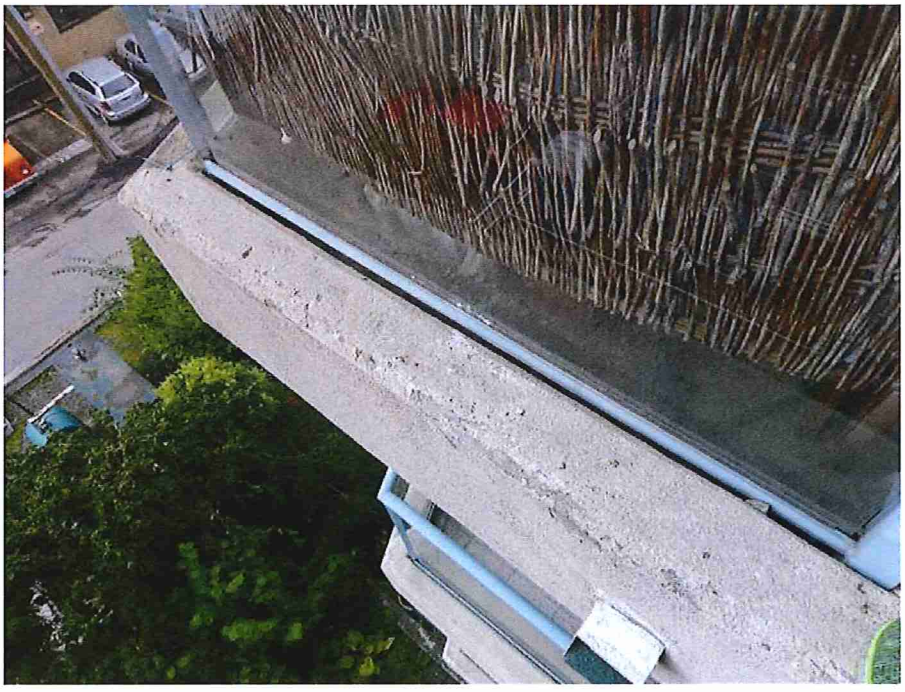
September 12, 2018

Photos No. 45 and 46



September 12, 2018

Photos No. 47 and 48

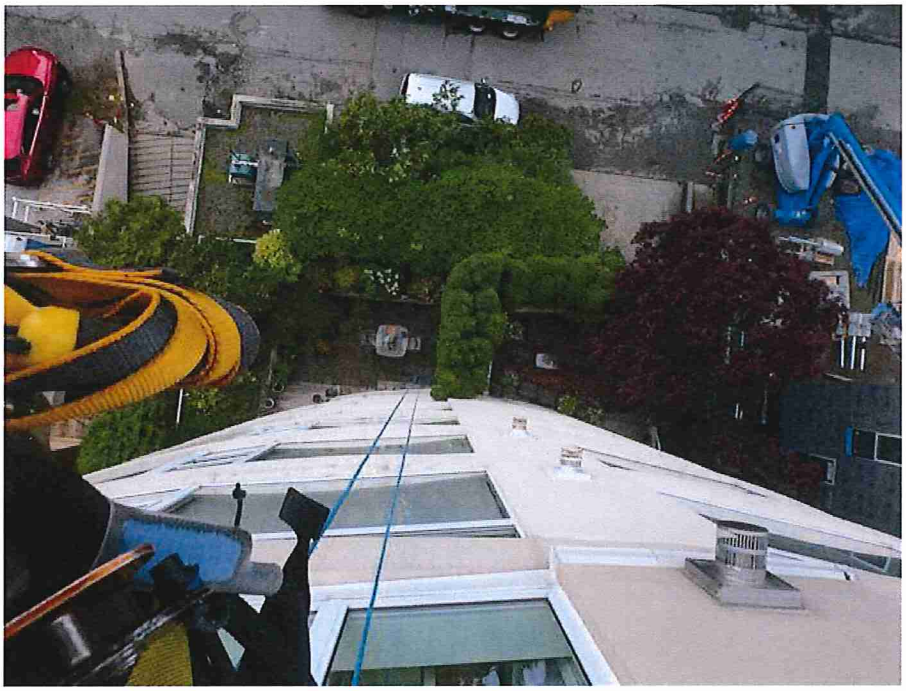


September 12, 2018

Photos No. 49 and 50

September 12, 2018

Photos No. 51 and 52



Photos No. 53 and 54

September 12, 2018

Photos No. 55 and 56

September 12, 2018

Photos No. 57 and 58

September 12, 2018

Photos No. 59 and 60

Photos No. 61 and 62

September 12, 2018

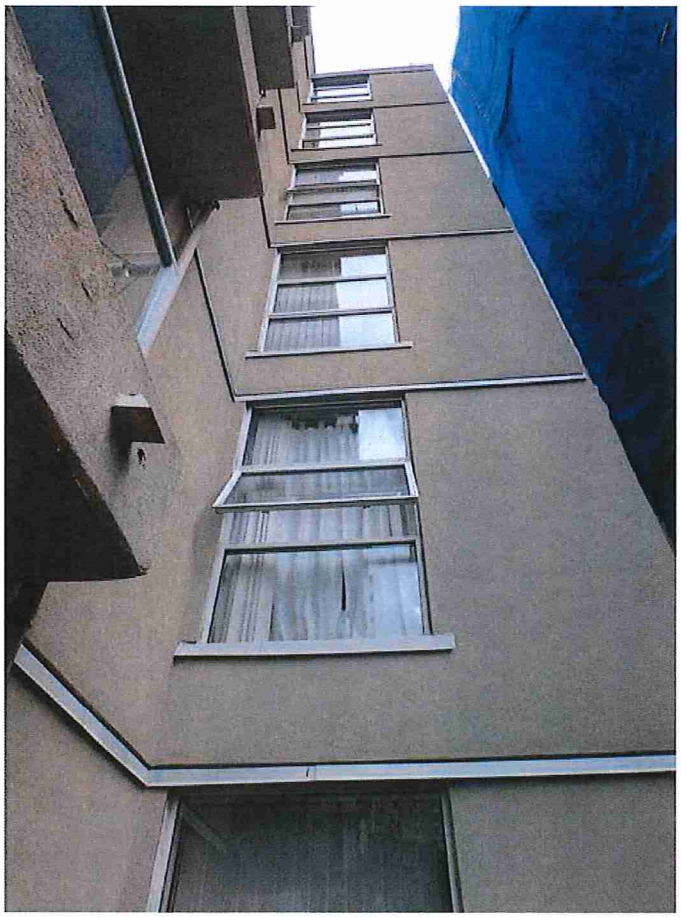
Photos No. 63 and 64

September 12, 2018

Photos No. 65 and 66

Photos No. 67 and 68

September 12, 2018



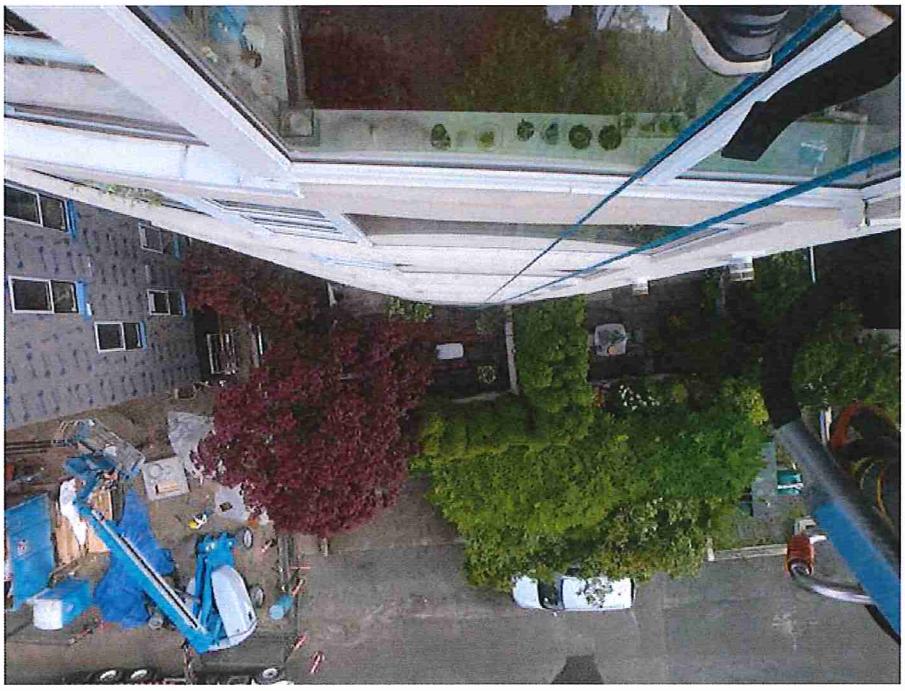
Photos No. 69 and 70

September 12, 2018

Photos No. 71 and 72

September 12, 2018

Photos No. 73 and 74



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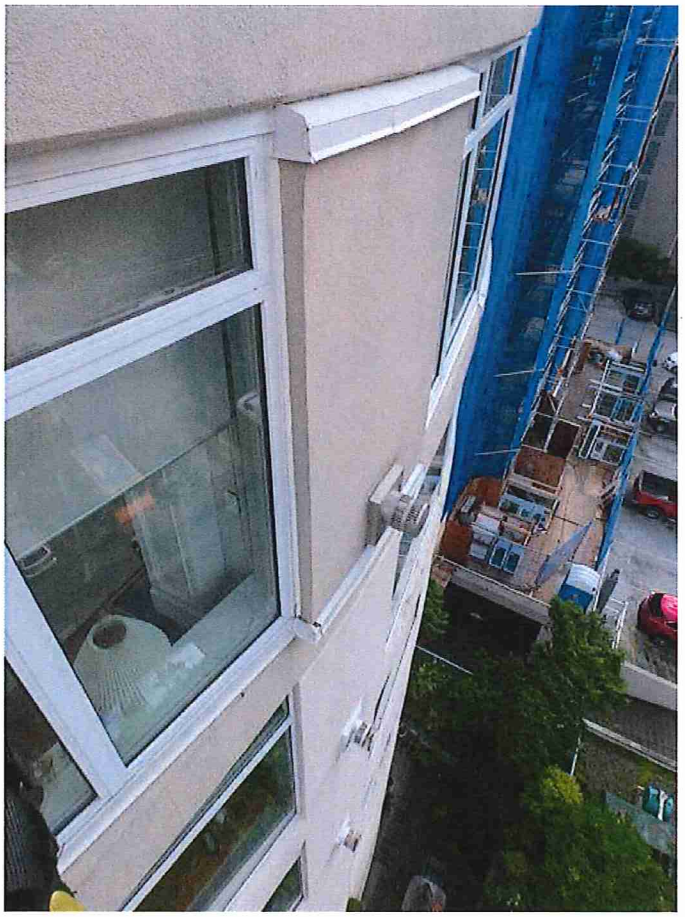
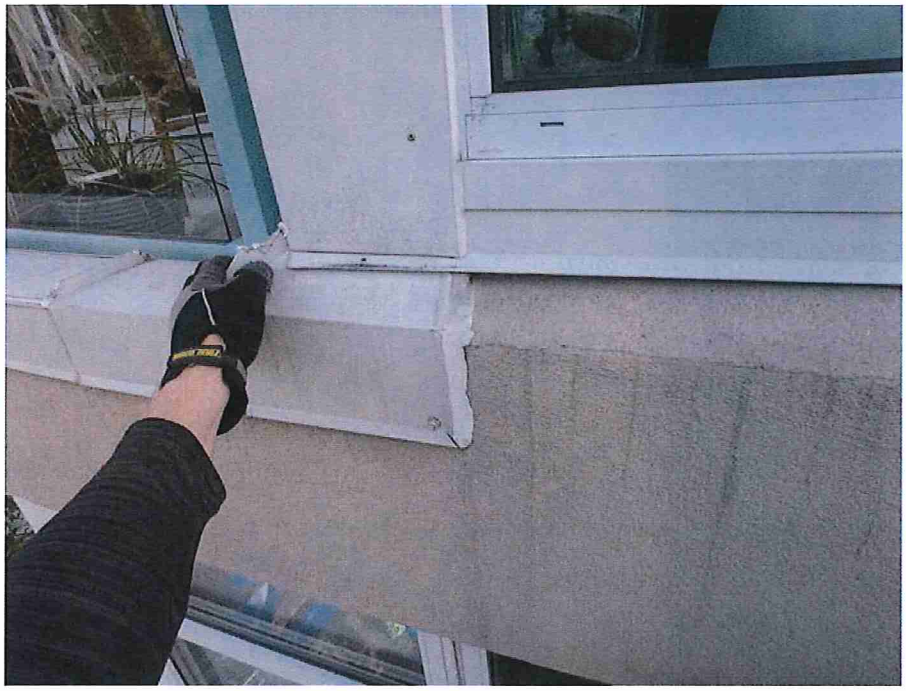


Photos No. 75 and 76

September 12, 2018

Photos No. 77 and 78



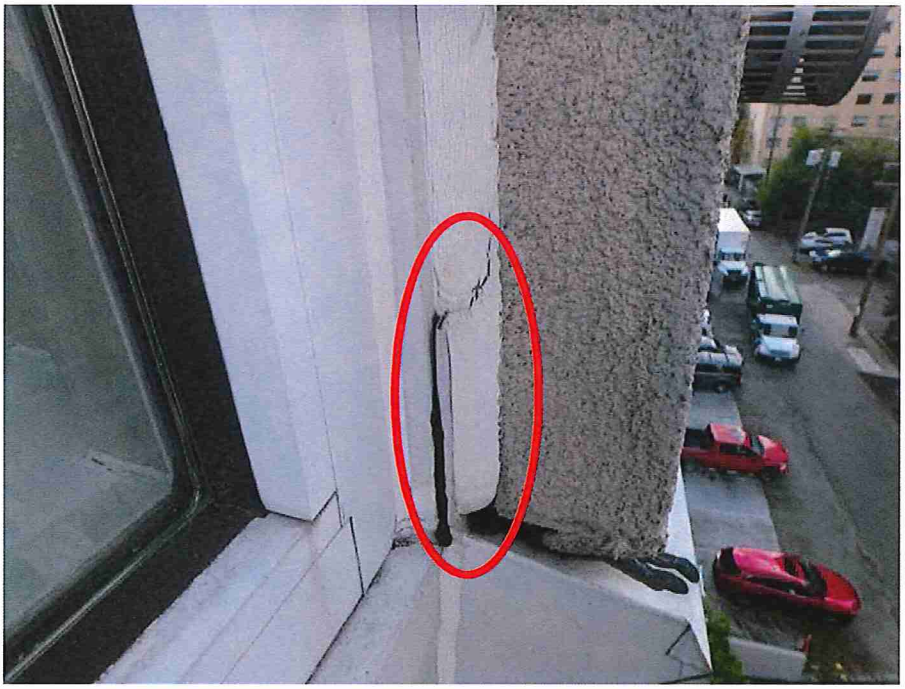
Photos No. 79 and 80

September 12, 2018

Photos No. 81 and 82

September 12, 2018

Photos No. 83 and 84



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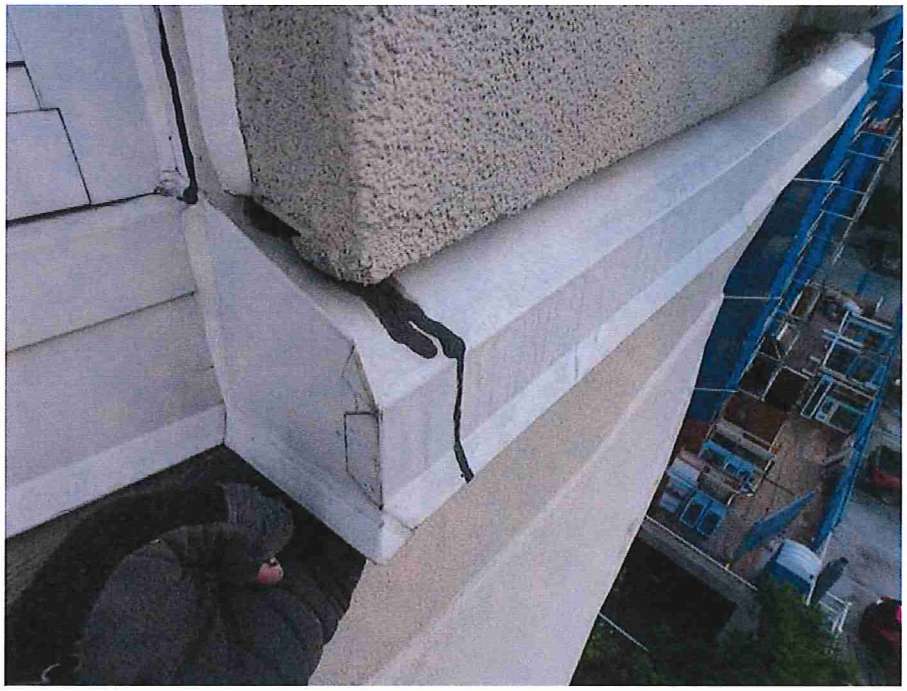


Photos No. 85 and 86

September 12, 2018

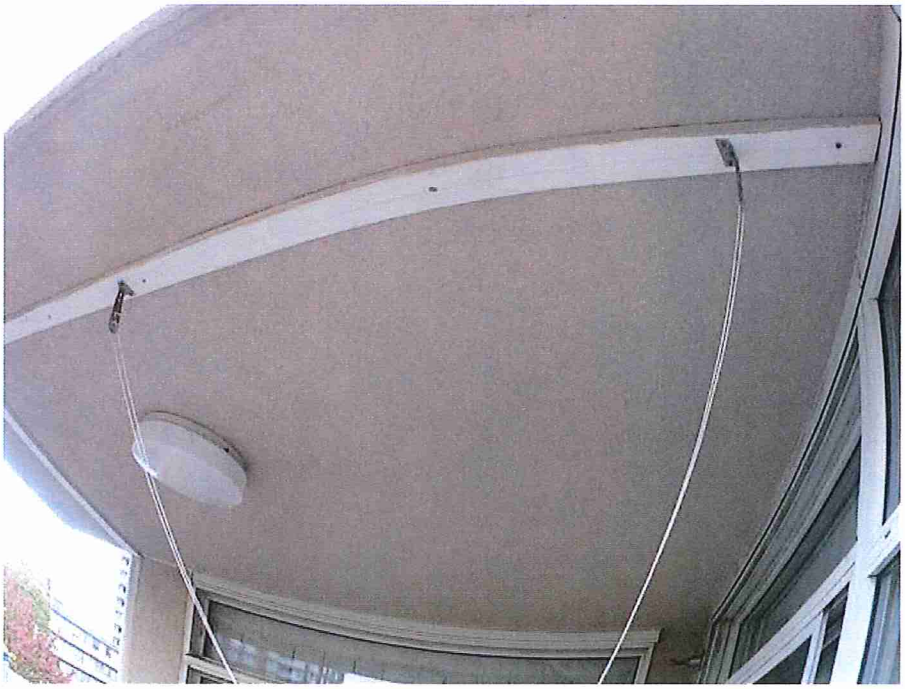
Photos No. 87 and 88

September 12, 2018

Photos No. 89 and 90

September 12, 2018

Photos No. 91 and 92



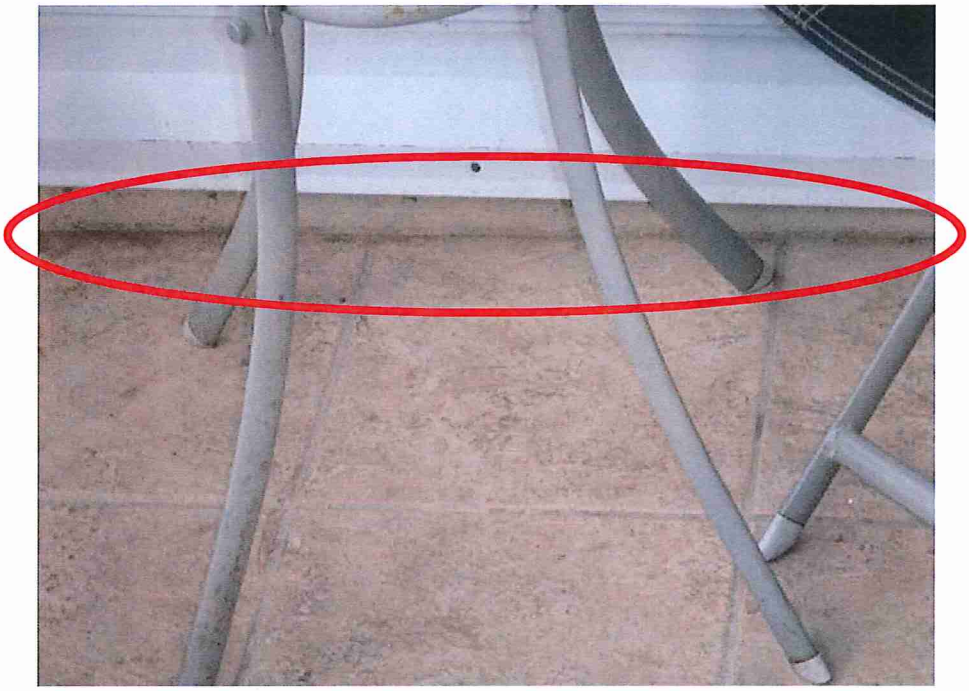
September 12, 2018

Photos No. 93 and 94

September 12, 2018

Photos No. 95 and 96

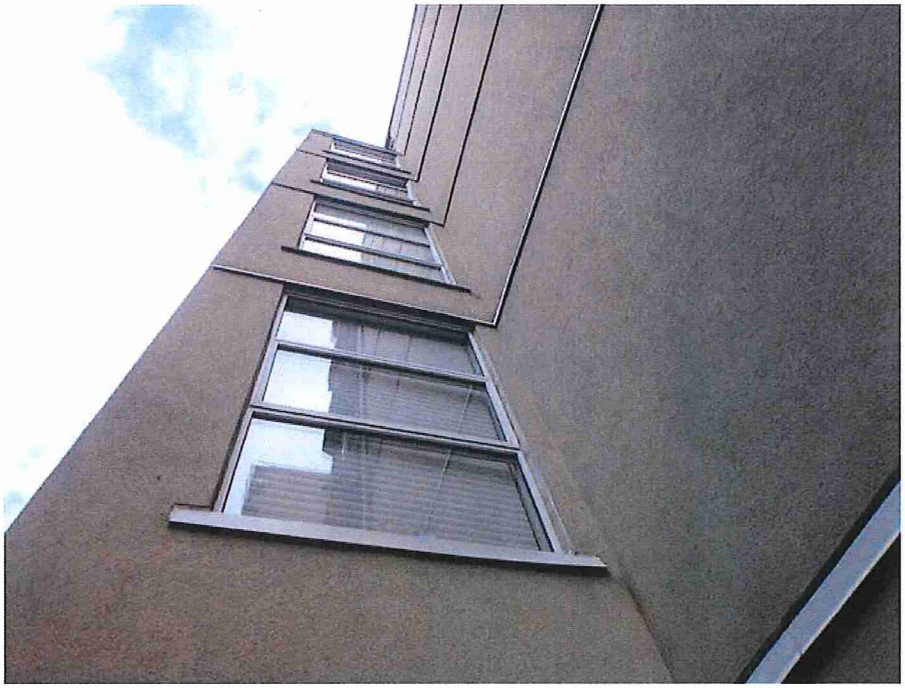
September 12, 2018



Photos No. 97 and 98

September 12, 2018

Photos No. 99 and 100



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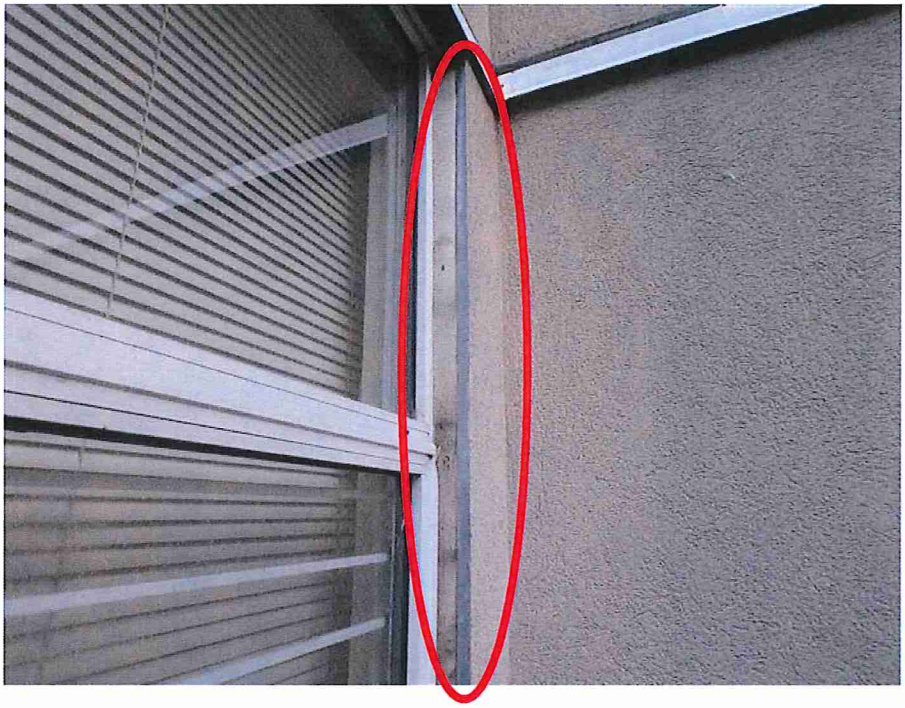
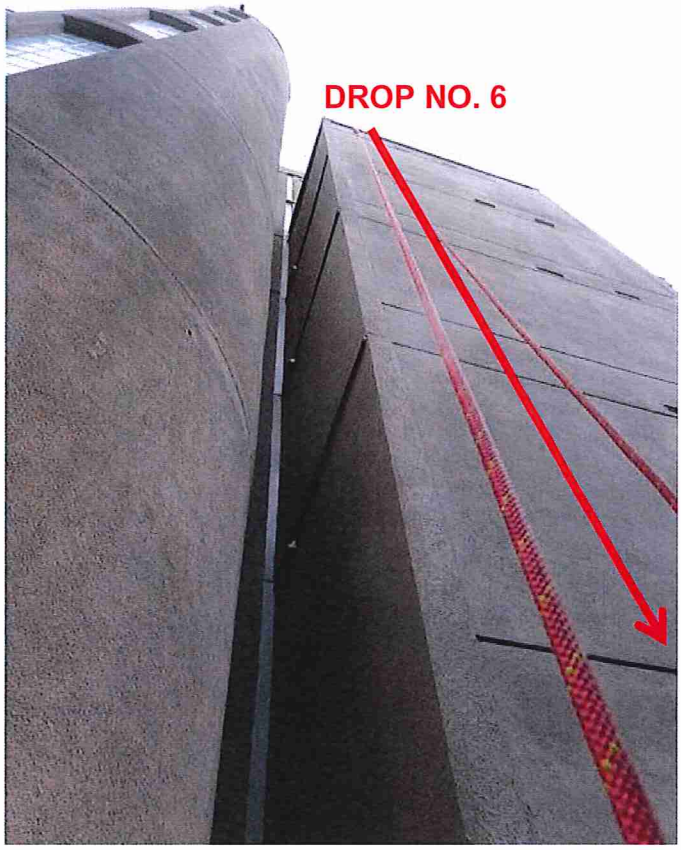


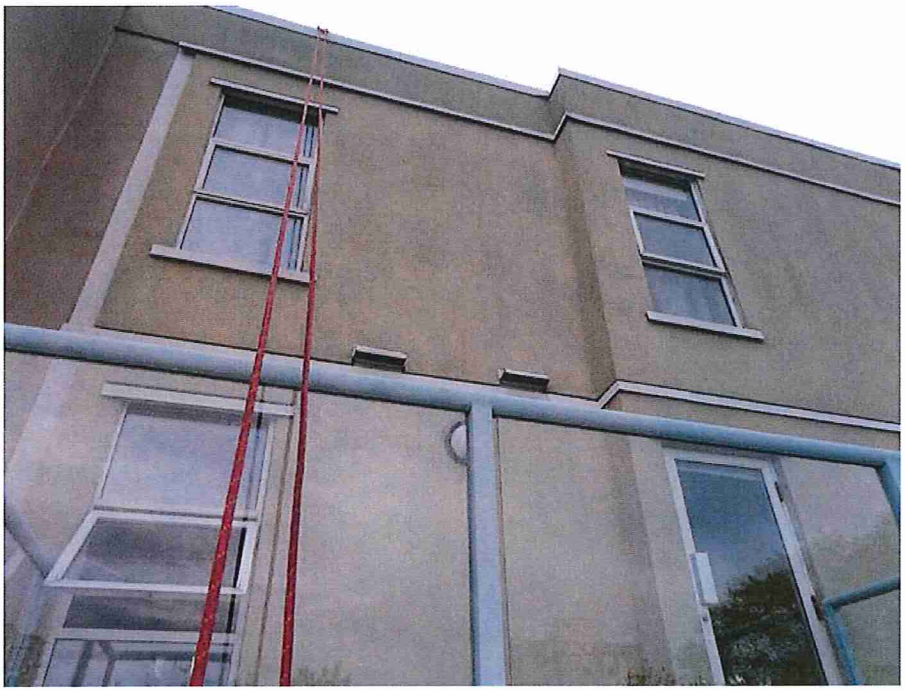
Photos No. 101 and 102

September 12, 2018



Photos No. 103 and 104

September 12, 2018



Photos No. 105 and 106

Photos No. 107 and 108

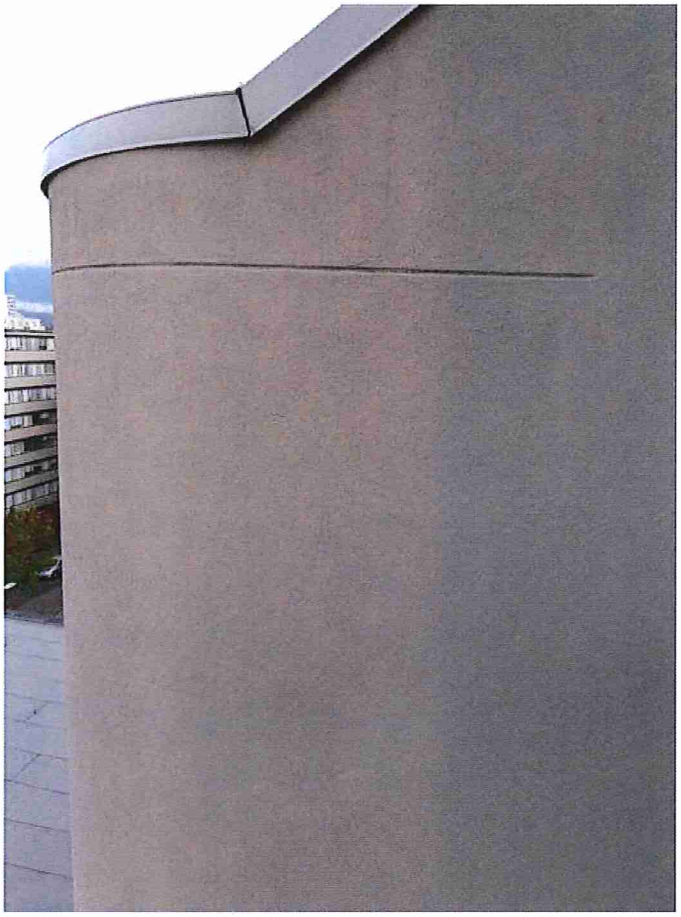
September 12, 2018

Photos No. 109 and 110

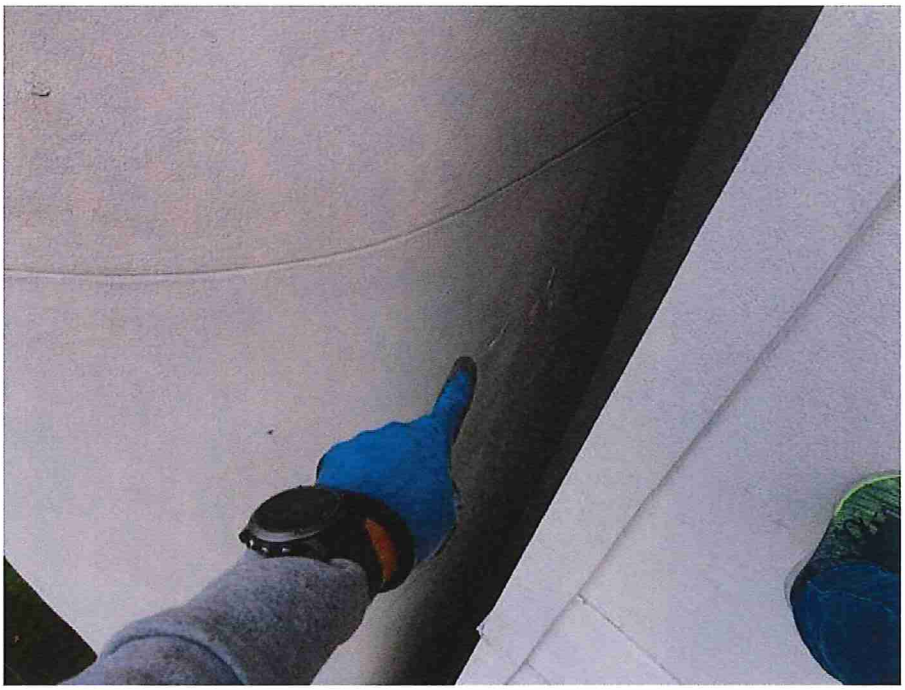
September 12, 2018

Photos No. 111 and 112

September 12, 2018



Photos No. 113 and 114



September 12, 2018

Photos No. 115 and 116

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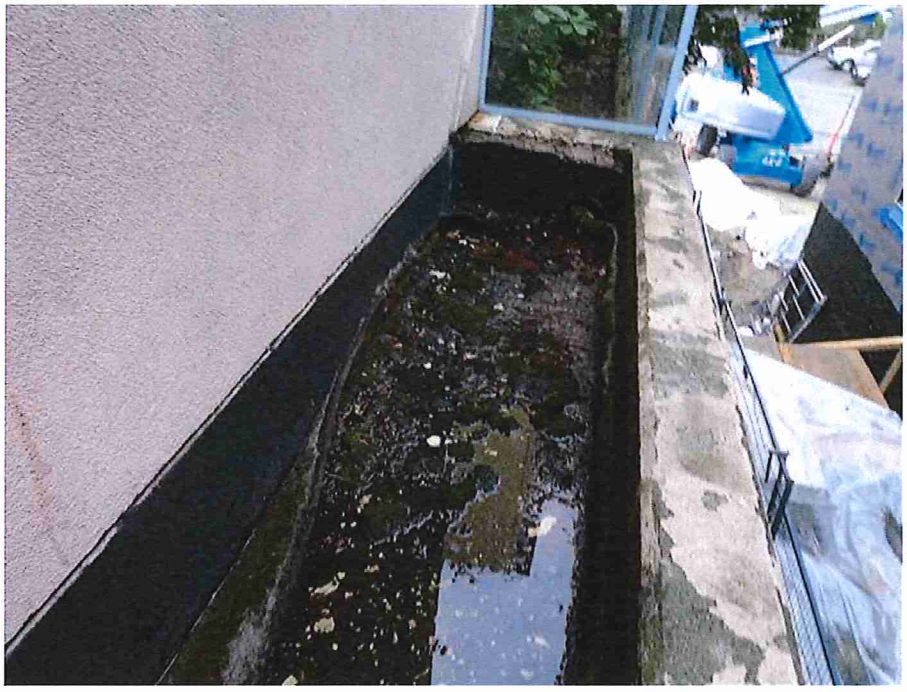
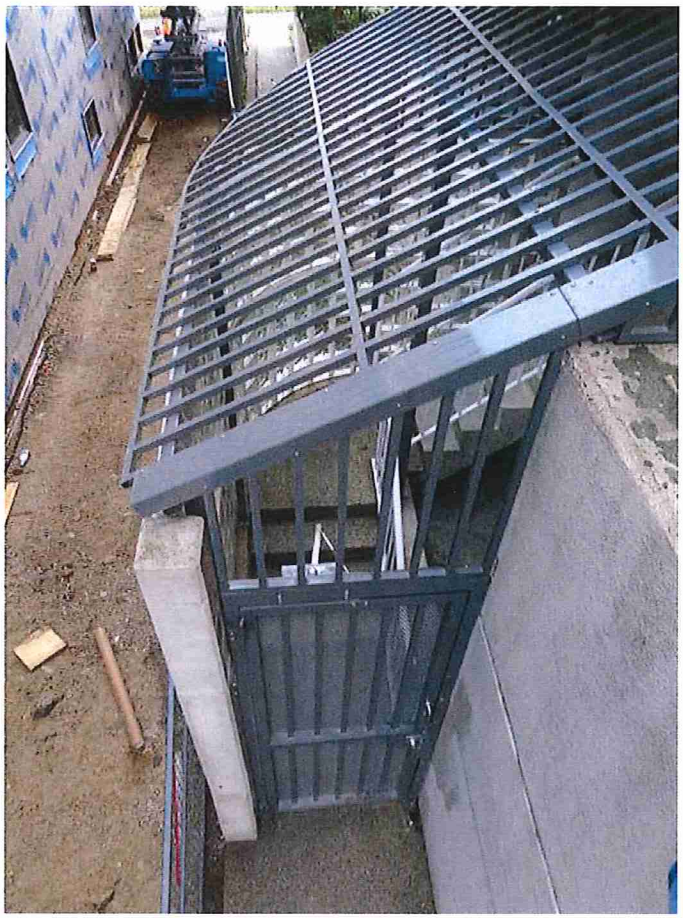
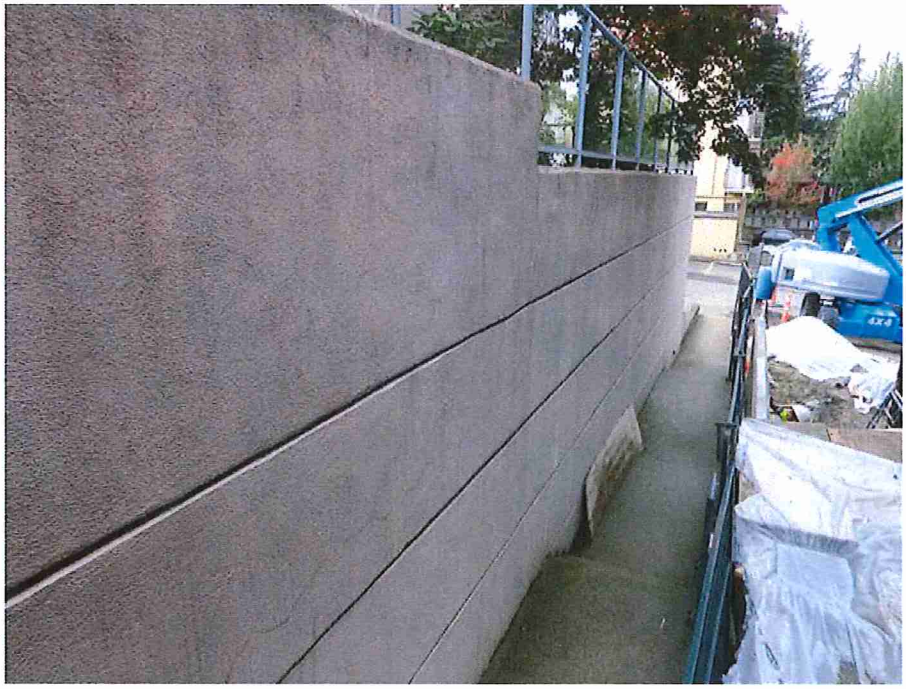


Photos No. 117 and 118

September 12, 2018



Photos No. 119 and 120



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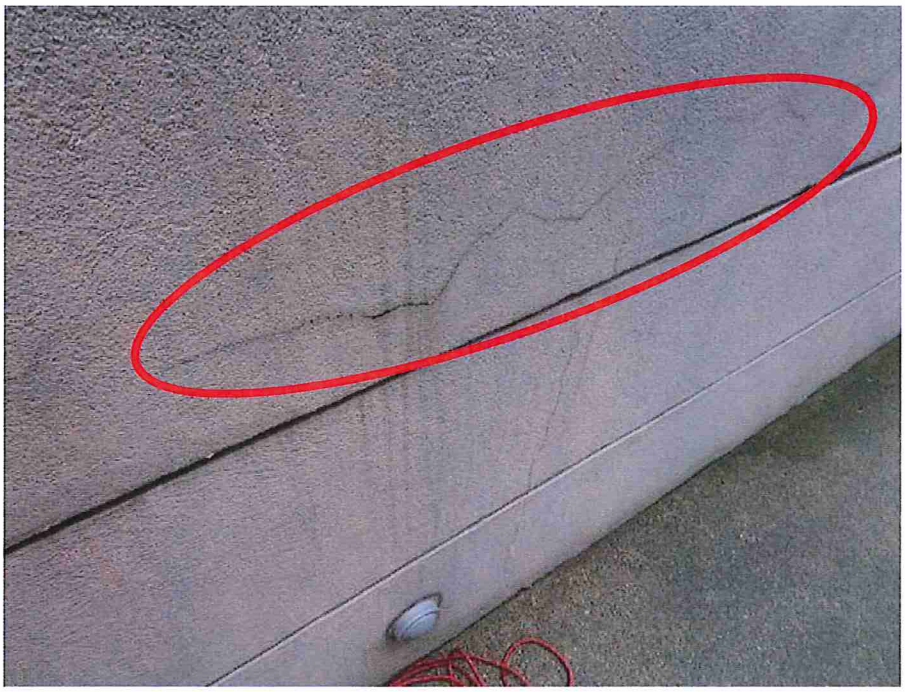

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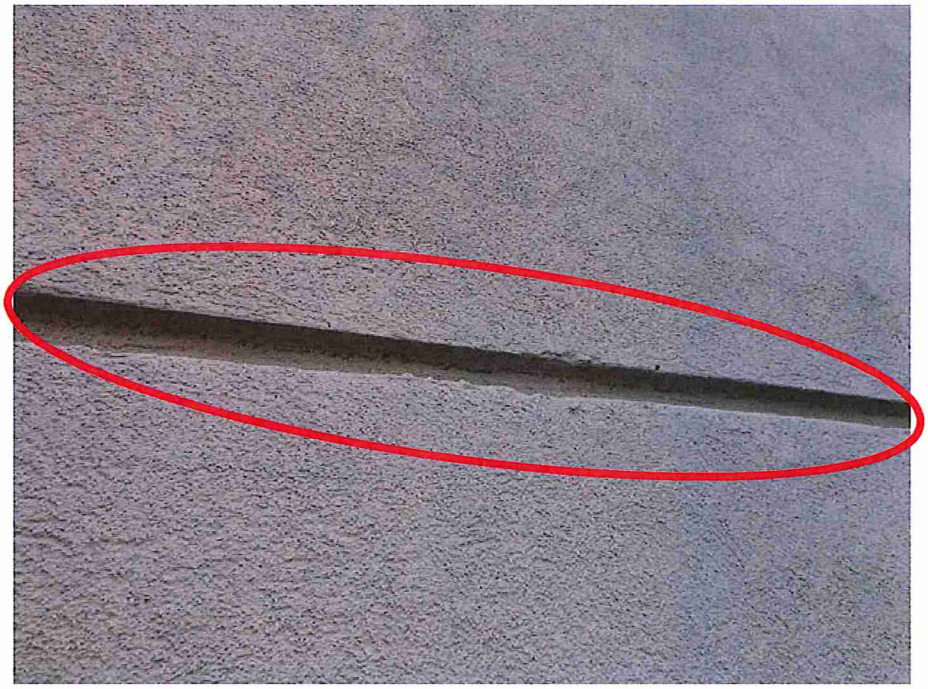

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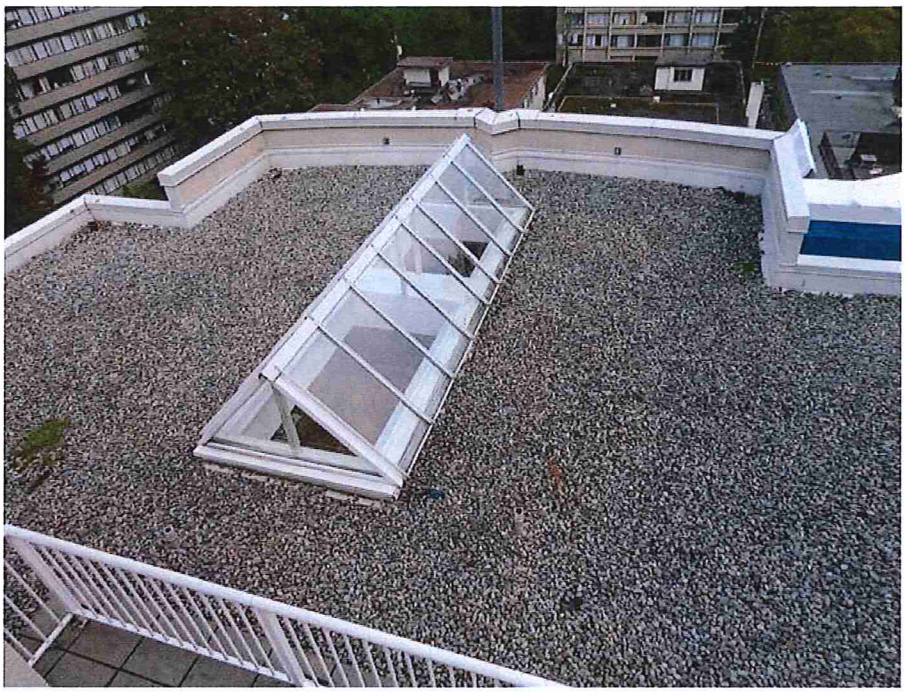
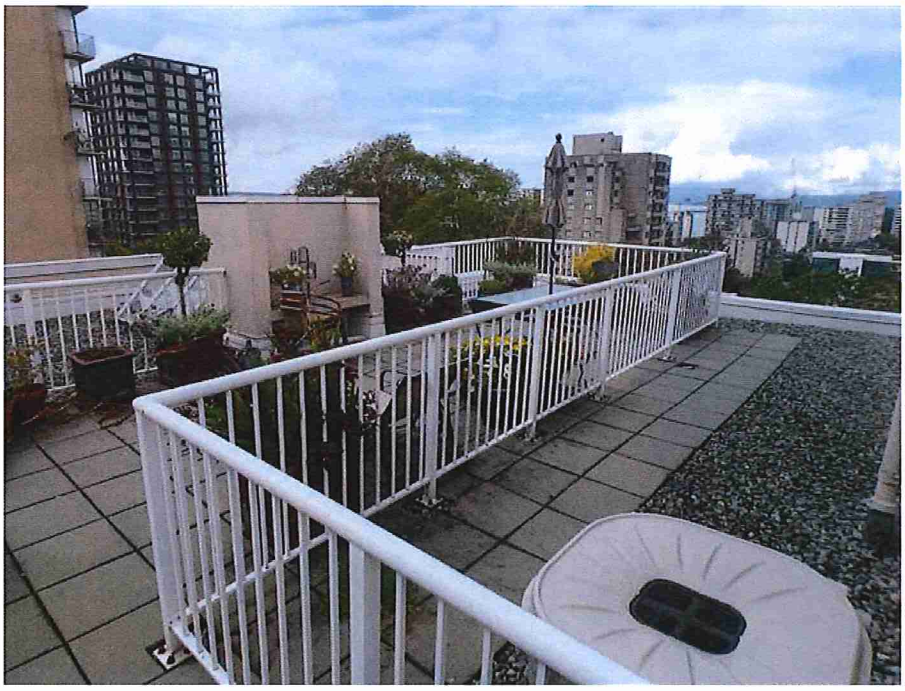


Photos No. 123 and 124

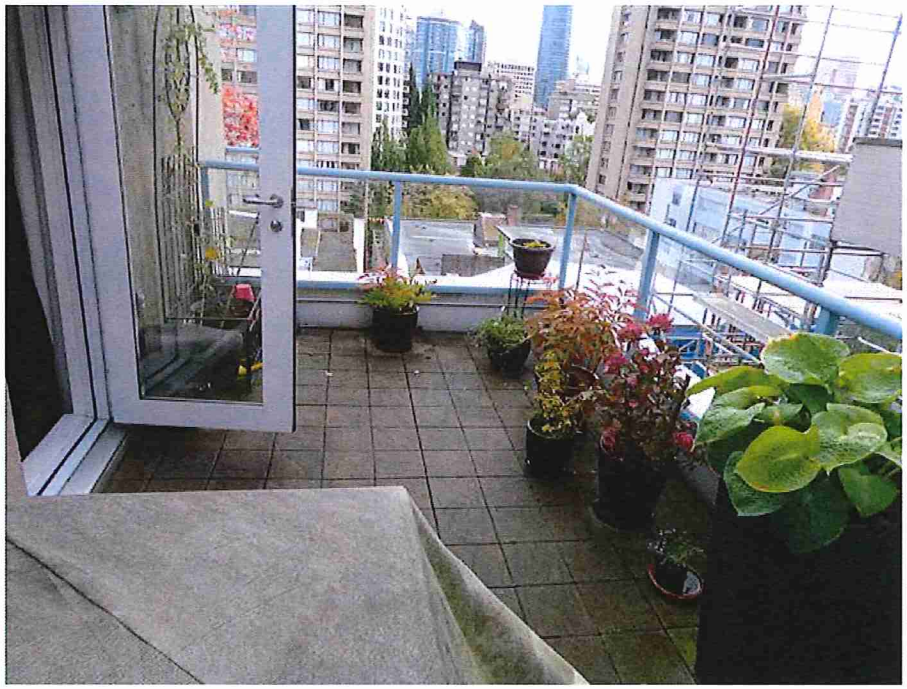


September 12, 2018

Photos No. 125 and 126

September 12, 2018

Photos No. 127 and 128



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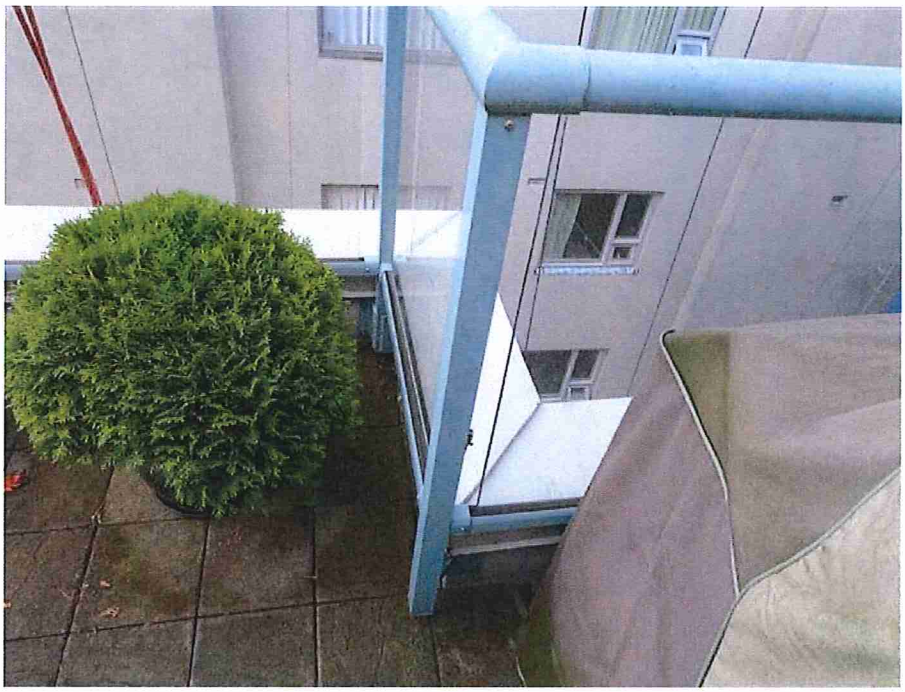
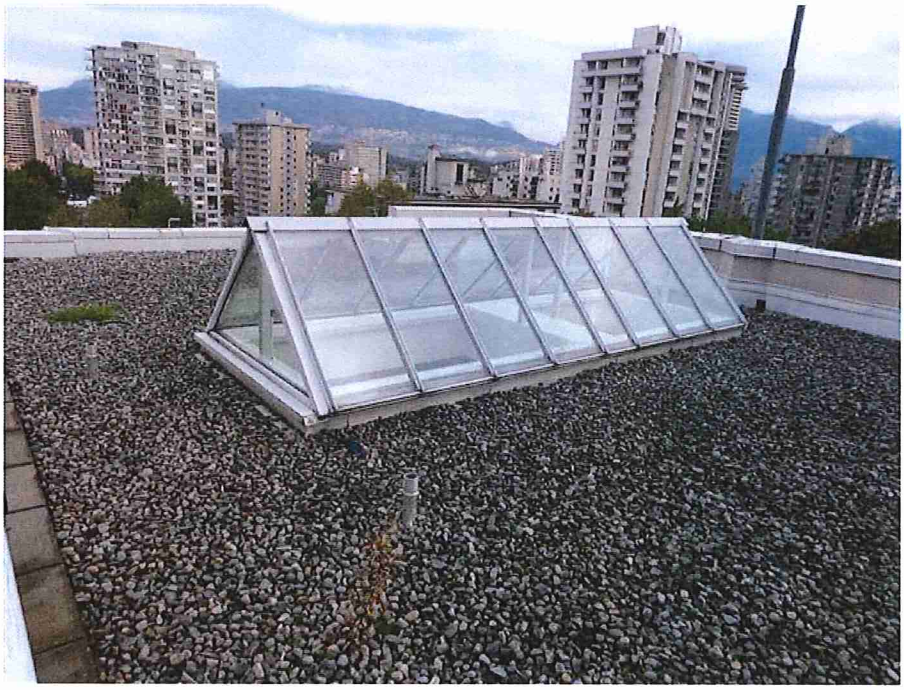


Photos No. 129 and 130

September 12, 2018

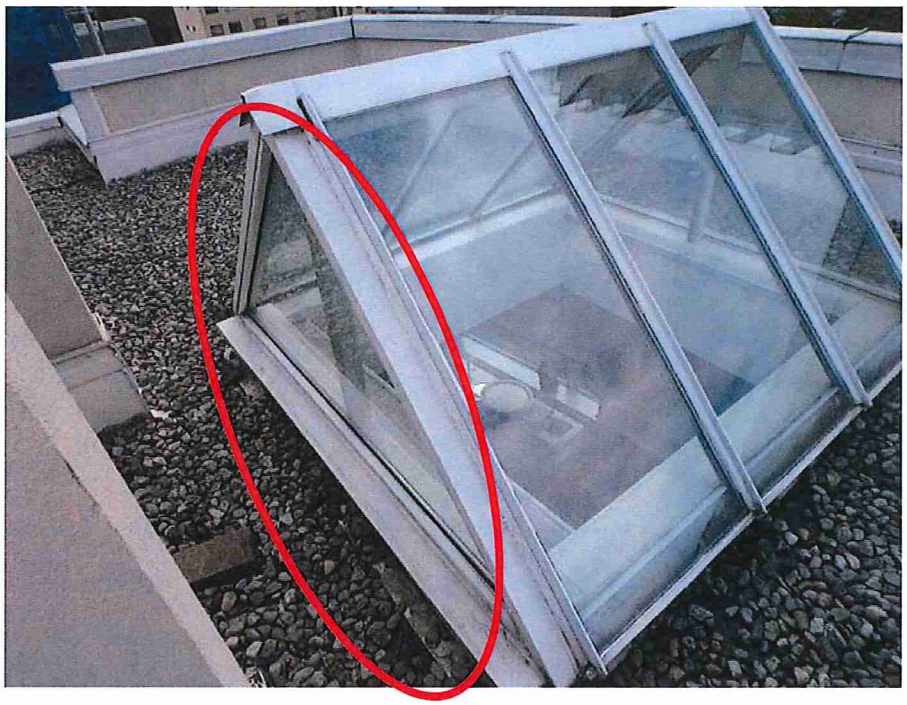
Photos No. 131 and 132



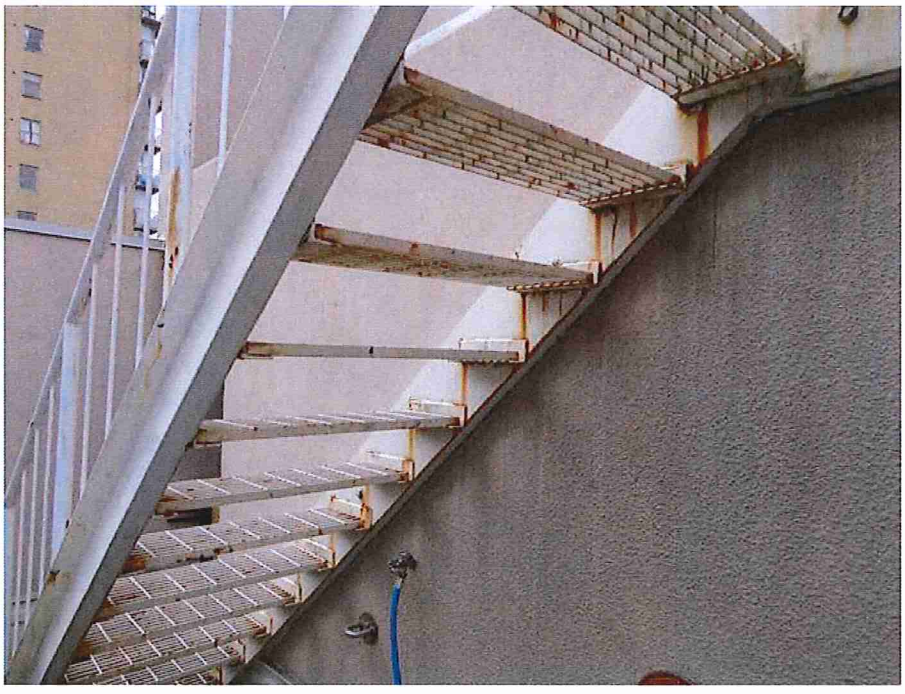
September 12, 2018

Photos No. 133 and 134

September 12, 2018



Photos No. 135 and 136



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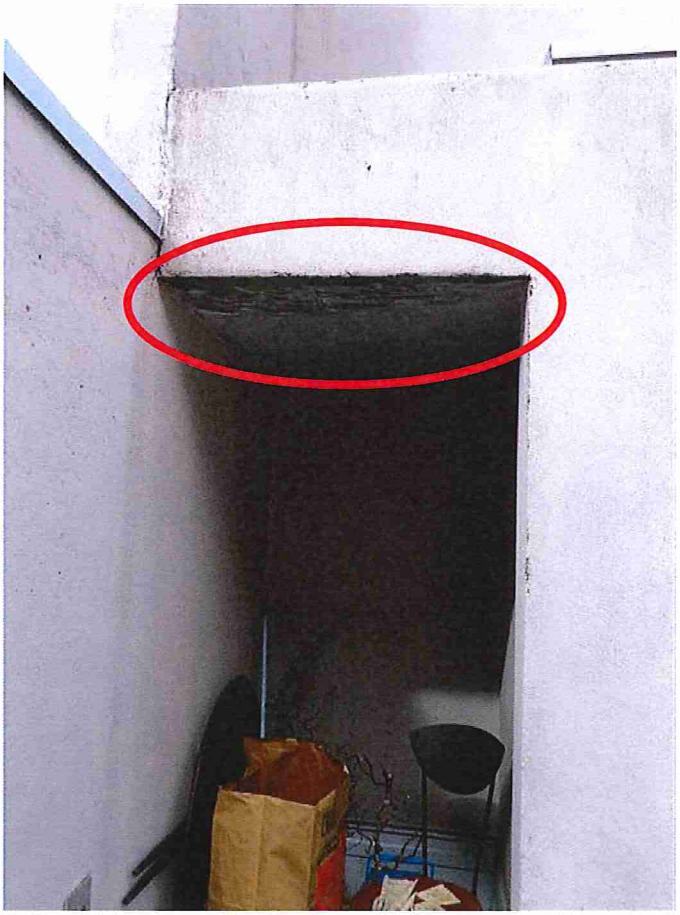
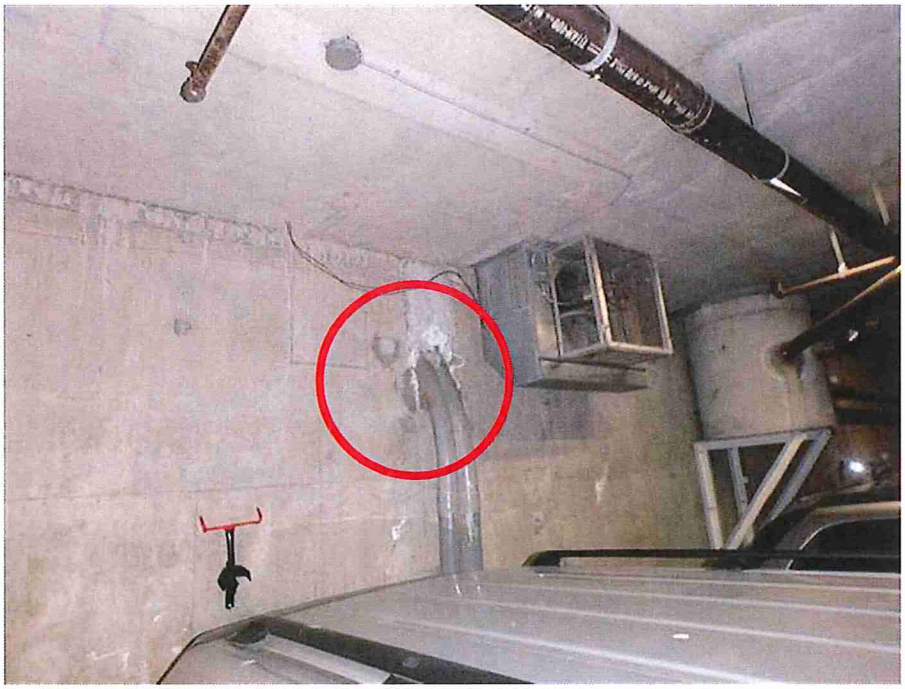


Photos No. 137 and 138

September 12, 2018

Photos No. 139 and 140



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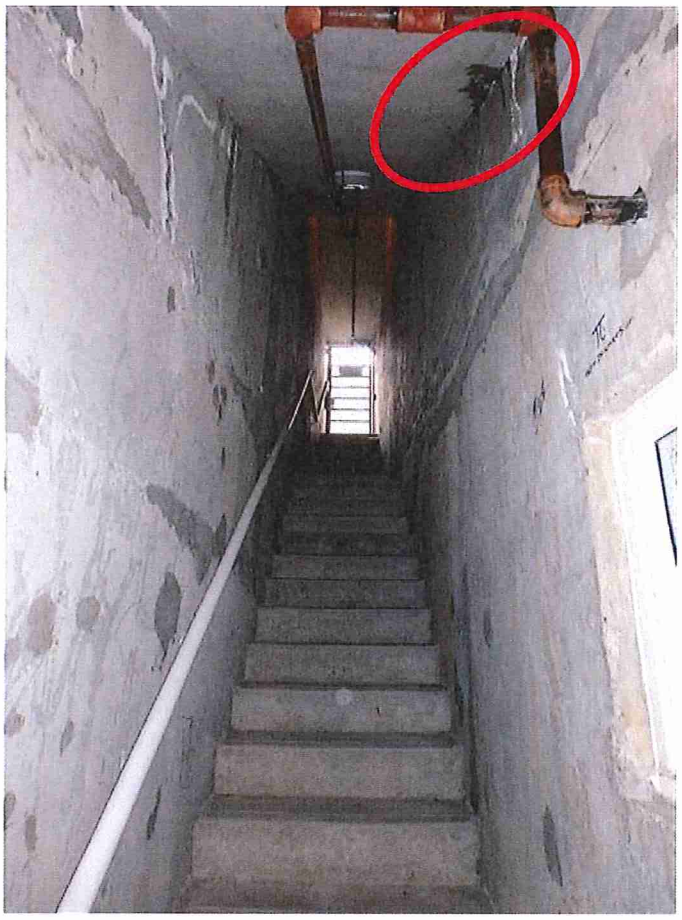
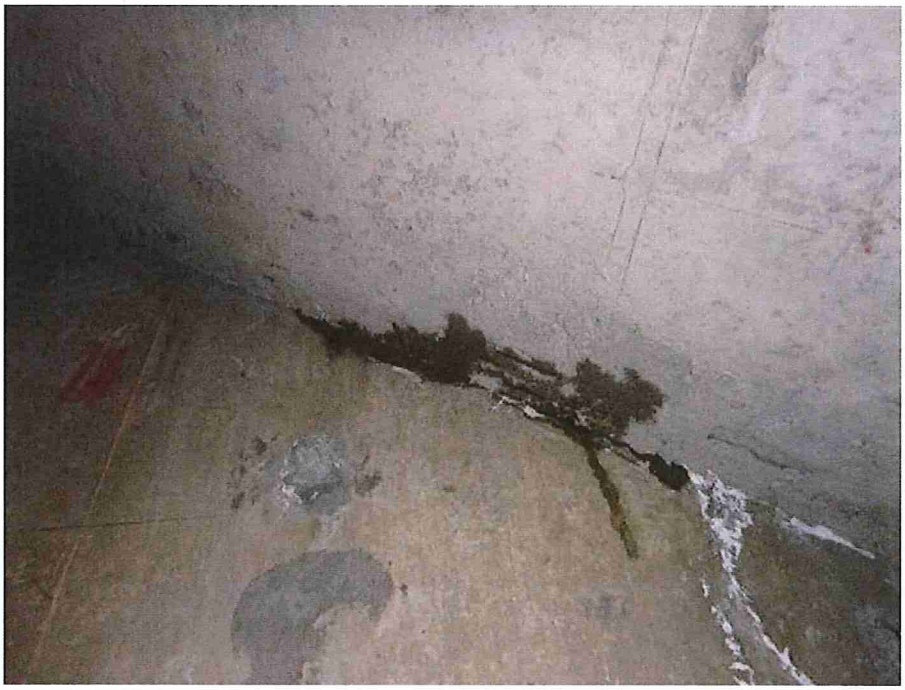


Photos No. 141 and 142



September 12, 2018

Photos No. 143 and 144

September 12, 2018

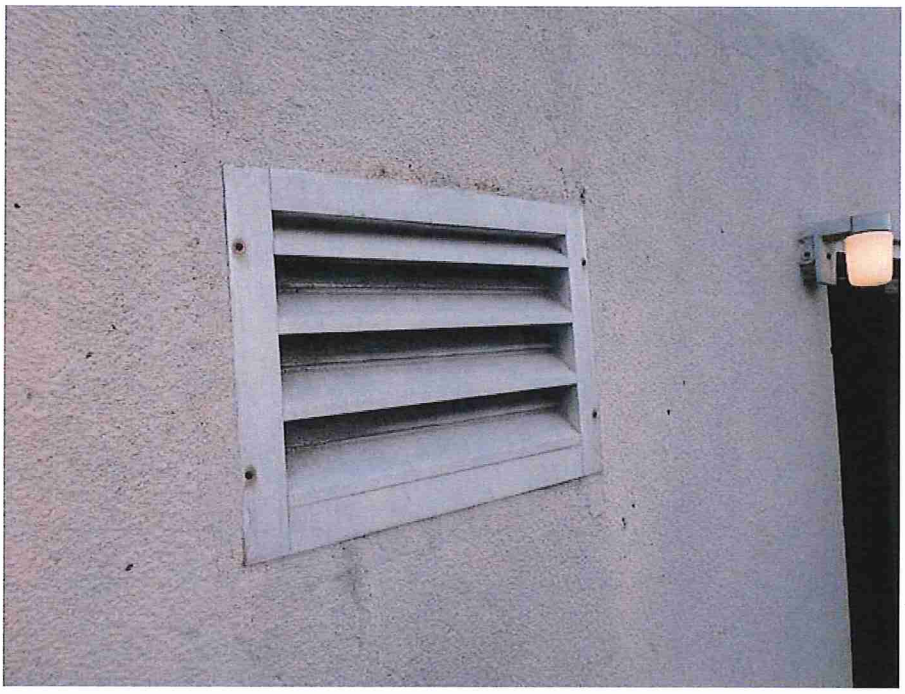
Photos No. 145 and 146

September 12, 2018

Photos No. 147 and 148

Photos No. 149 and 150

September 12, 2018



Photos No. 151 and 152

September 12, 2018

Photo No. 153