

COPY

RDH

Building Engineering Ltd.

224 WEST 8TH AVENUE
VANCOUVER BC V5Y 1N5

TEL 604 873 1181
FAX 604 873 0933

VAN@RDHBE.COM
WWW.RDHBE.COM

FROM Anna Wallace-Deering
VIA Mail

1956.00
301 Kingsway

20 December 2007

TO Jason Black Crosby Property Management Ltd.
600 - 777 Hornby Street
Vancouver BC V6Z 1S4

jblack@crosbypm.com

REGARDING 301 Kingsway (Uno) Warranty Review

Copies	Originals	Description	Date
	1	RDH Warranty Review of 301 Kingsway (Uno)	December 20, 2007

Sincerely,

Anna Wallace-Deering
awallace-deering@rdhbe.com

transmittal

THIS TRANSMITTAL MAY CONTAIN CONFIDENTIAL AND/OR PRIVILEGED INFORMATION. IF YOU ARE NOT THE INTENDED RECIPIENT OR HAVE RECEIVED THIS TRANSMITTAL IN ERROR, PLEASE NOTIFY THE SENDER IMMEDIATELY AND DESTROY THIS TRANSMITTAL. ANY UNAUTHORIZED COPYING, DISCLOSURE OR DISTRIBUTION OF THE INFORMATION CONTAINED HEREIN IS PROHIBITED.

C:\DOCUME~1\AWALLA~1\LOCALS~1\Temp\AWD TRANS 2007 12 20 301 Kingsway (Uno) Warranty Review-1.doc

TO Mr. Daniel Marfisi
Crosby Property Management Ltd.
600 - 777 Hornby Street
Vancouver, BC V6Z 1S4
EMAIL dmarfisi@crosbypm.com

1956.00
301 Kingsway - Uno
20 December 2007

REGARDING Warranty Review

Dear Mr. Marfisi,

Intracorp Projects Ltd. and the owners, Strata Plan BCS 1882 (Uno), jointly retained RDH Building Engineering Ltd. (RDH) to undertake a warranty review of the building enclosure. Specifically, our scope of work included:

- Visual review from ground, roof, decks, and balconies
- Visual review of parking structure

The purpose of this letter is to document our observations and comment on the visible issues that should be addressed in order to ensure the long-term performance of the building enclosure. It is not our intent to provide comment on which of the identified issues is covered by the building warranty. However, where possible, comment is provided as to whether issues should be addressed as part of a regular maintenance and renewals program implemented by the owners. This letter is intended for an audience that is familiar with the building, the design intent, and standard construction practices.

Our review was conducted on October 15, 2007. It was approximately 8°C and overcast at the time of the review. An additional site visit was conducted on October 29th, 2007.

This report has been undertaken for the owners, Strata Plan BCS 1882 and Intracorp Projects Ltd. It is not to be relied on by others.

SITE INTERVIEWS

Mr. John Penhall, member of the strata council, provided access to the building. Mr. Penhall noted the following concerns during the walk-through:

- The waterproof traffic coat within the parking garage was mechanically damaged within the past month.

→ On the subsequent visit, Mr. Craig Armour, a strata representative, advised that there was staining on the ceiling of Unit 402, but the unit could not be reviewed at that time.

REPORT ORGANIZATION

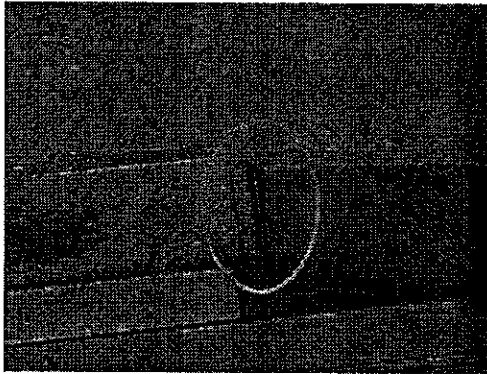
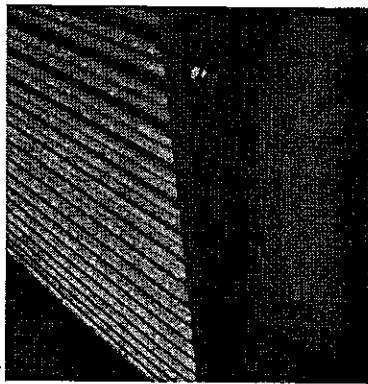
This report is organized in accordance with the following elements of the building enclosure:

1. Walls, Windows and Vents
2. Roofs, Decks and Balconies
3. Parking Garage and At-Grade Assemblies
4. Other Observations

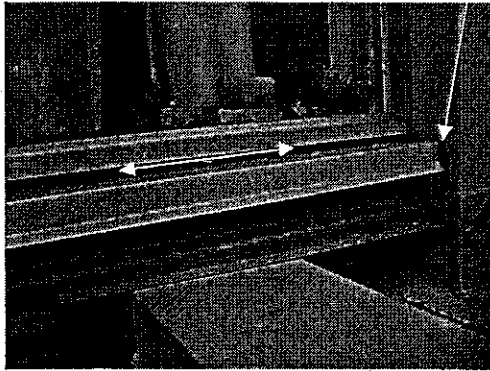
The observed conditions are documented in the following section. A photograph of each condition is provided along with the significance of the condition, and in some cases, the action(s) required to address the condition. Observations are grouped together in the following sections for each of the three buildings – high-rise, townhouses, and city-homes (mid-rise units attached to south of high-rise).

1. WALLS, WINDOWS, AND VENTS

Our observations and the required actions are documented in the following tables.

Photograph 1.1	Photograph 1.2
	
Observation (from main roof looking down): Sealant is missing from a window flashing end-dam on the high-rise tenth floor, west elevation.	Observation: Sealant is missing from the perimeter of the exterior doorframes at the high-rise mechanical penthouse.
Action Required: Install missing sealant at the flashing end-dam. Inspect other locations for missing sealant and end-dam installation.	Action Required: Install sealant around the doorframes.

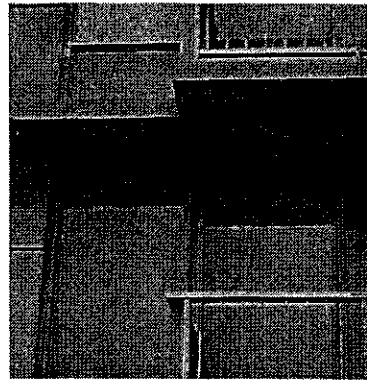
Photograph 1.3



Observation: The window sill flashing installation is incomplete at bedroom of Unit 607. Flashing end-dams and sealant are not installed, allowing for direct water penetration behind the cladding. The flashing also appears to be cut too short for the window opening.

Action Required: Complete window flashing and sealant installation.

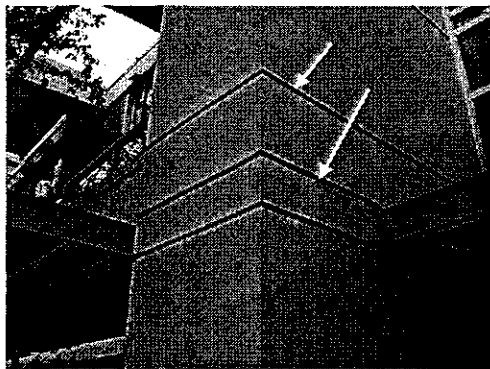
Photograph 1.4



Observation: Polyethylene window frame protection wrap has not been removed from unit on the sixth floor at south elevation of the high-rise.

Action Required: Remove polyethylene wrap from the window frame. Inspect all window frames for protection wrap and remove where necessary.

Photograph 1.5



Observation: Sealant is missing from the second level slab cold joint reveals at the southwest corner of the city-homes building.

Action Required: Install bond breaker tape and sealant at the cold joint reveals.

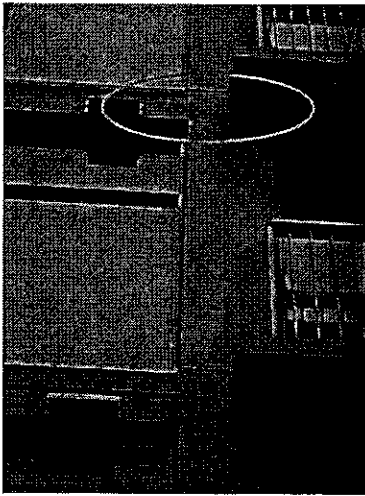
Photograph 1.6



Observation: Sealant is missing around the perimeter of a door at the southwest end of the commercial space on the ground floor. Foam backer-rod is already in place.

Action Required: Install sealant around doorframe.

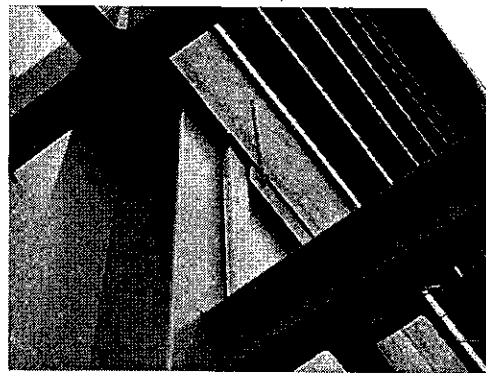
Photograph 1.7



Observation: Several concrete slab edge reveals between the window and balcony are missing at the west elevation of the high-rise.

Action Required: Install sealed concrete reveals as required.

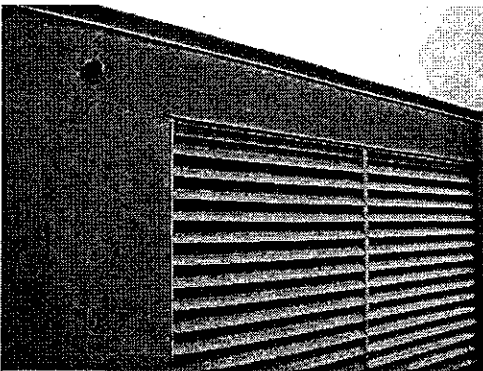
Photograph 1.8



Observation: The glazing pressure-plate cover is loose above the ground level canopy at the northwest corner of the high-rise.

Action Required: Snap-in pressure-plate cover.

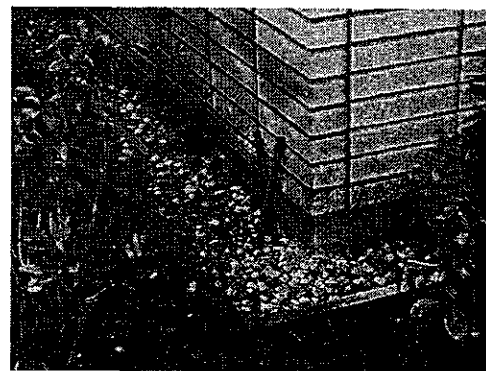
Photograph 1.9



Observation: Sealant is missing from perimeter of the mechanical louver at the south end of the city-homes building (fifth floor at stairwell).


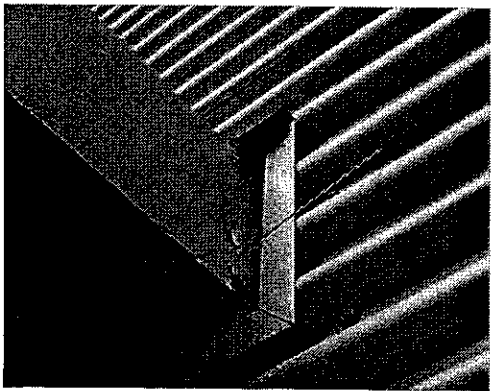
Action Required: Install backer-rod and sealant around perimeter of louver.

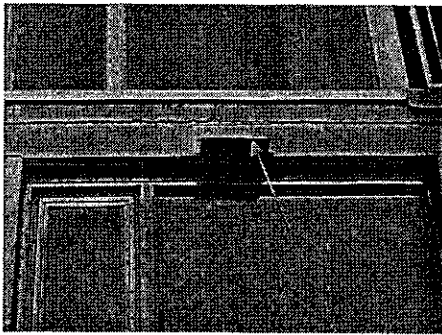
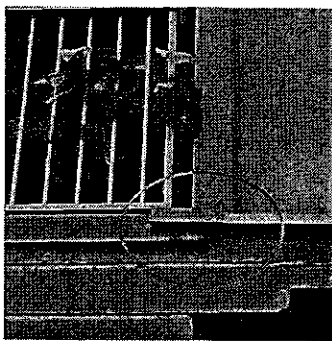
Photograph 1.10


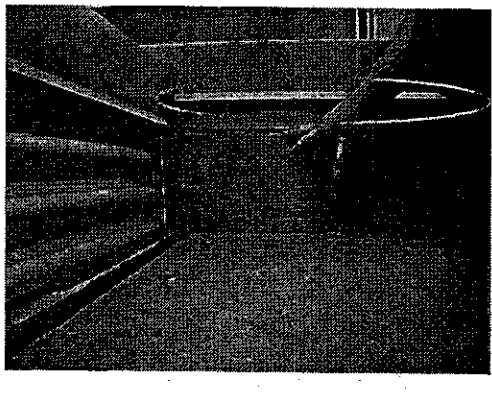


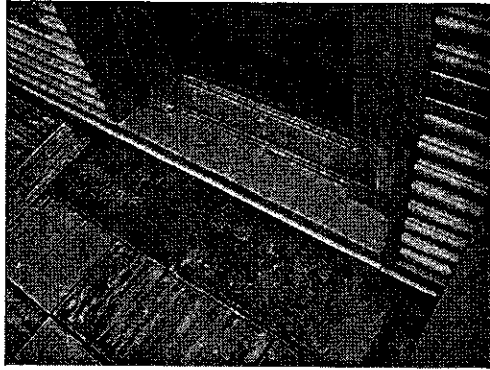
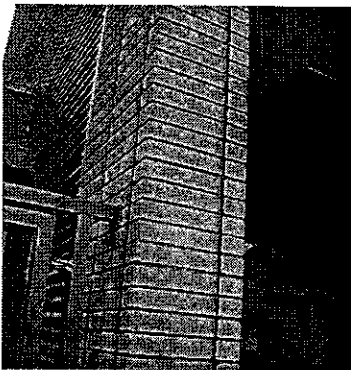
Observation: The landscaping irrigation sprinklers at several locations at-grade and within planters around the complex are incorrectly adjusted and are spraying directly onto the exterior walls.

Action Required: Adjust sprinkler heads away from the walls and grade landscaping soil away from walls.

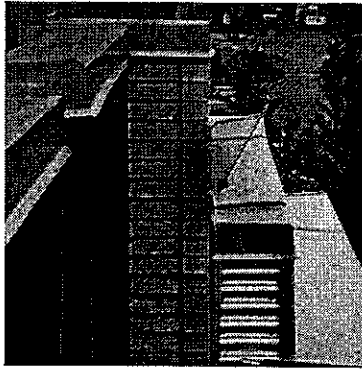
Photograph 1.11	Photograph 1.12
	
<p>Observation: A window sill flashing at the east side of the roof-deck at Townhouse 2713 is back-sloped towards the building. Ponding water on the window flashing was observed during the review.</p> <p>Action Required: Adjust flashing to provide positive slope away from building.</p>	<p>Observation: An exposed edge of self-adhered membrane is visible at the roof overhang at the southeast corner of Townhouse 2717 at the first level, near the courtyard entrance gate. Over time the exposed membrane will degrade, due to UV exposure, and should be cut-back.</p> <p>Action Required: Cut back self-adhered membrane and confirm membrane is adequately secured. Re-apply sealant and refinish concrete surface.</p>

Photograph 1.13	Photograph 1.14
	
<p>Observation: Several dryer vent exhaust grilles throughout the building complex are clogged with lint.</p> <p>Action Required: Inspect and regularly clean dryer vent grilles as part of the ongoing maintenance program. In addition to having a reduced dryer performance, clogged dryer vents can potentially lead to moisture related problems and damage of adjacent interior finishes.</p>	<p>Observation: The flashing lap between the window sill and balcony is uneven at Unit 304 of the city-home building.</p> <p>Action Required: Flashing components should be properly evenly connected.</p>

<p>Photograph 1.15</p> 	<p>Photograph 1.16</p> 
<p>Observation: The window frame at the east elevation above city-home Unit 2721 is damaged.</p>	<p>Observation: A concrete reveal (waterproofing reglet) is unsealed above the fifth floor stairwell entrance canopy at the south elevation of the city-home building.</p>
<p>Action Required: Repair damaged window frame.</p>	<p>Action Required: Provide sealant at concrete reveal.</p>

<p>Photograph 1.15</p> 	<p>Photograph 1.16</p> 
<p>Observation: Foil face membrane is exposed at the door thresholds at roof-deck level (fifth floor) of city-home units.</p>	<p>Observation: Efflorescence staining observed at two locations on the brick cladding at the southeast corner of the town-house building (adjacent to Townhouse 2717) at grade level.</p>
<p>Action Required: Install extruded aluminum thresholds, secured through the sides to avoid penetrating the waterproofing membrane. Seal any pilot holes with sealant compatible with SBS membrane (Flex Sealant by AC Industries Ltd.)</p>	<p>Action Required: Inspect waterproofing detail at the canopy-to-wall interface. Clean efflorescence staining from affected surfaces. Monitor location for re-occurrence of efflorescence staining.</p>

Photograph 1.17



Observation: Sealant is missing from a brick-to-cap flashing joint at the northwest corner of the townhouse building.

Action Required: Provide sealant at brick-flashing interface.

2. ROOFS, DECKS AND BALCONIES

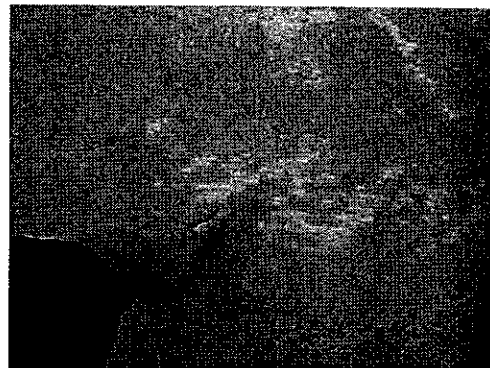
Photograph 2.1



Observation: The edge of the two-ply SBS roof membrane is exposed at the exterior side of the parapet cap flashing (main roof of high-rise building, at several locations).

Action Required: Trim back exposed edge of roof membrane where exposed to UV.

Photograph 2.2



Observation: Numerous defects and deficiencies are observed with the waterproofing membrane at the concrete overhangs and eyebrows. These include missing base coat and topcoat, missing or thinly applied topcoat, or small holes and application defects.

Action Required: Inspect waterproofing membrane at all locations and re-apply where top coat is missing, or membrane is too thin, and at defects.

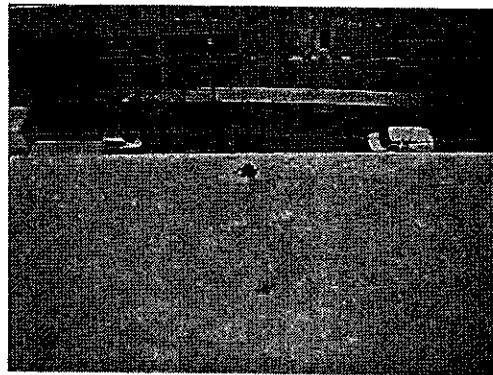
Photograph 2.3



Observation: The top-coat of the waterproofing membrane is missing at numerous floor-level eyebrows of the high-rise building

Action Required: Apply top coat of waterproofing membrane to missing areas, following product manufacturer's installation procedure. Installation should be reviewed by Sonneborn technical representative for recommendations for remedial work.

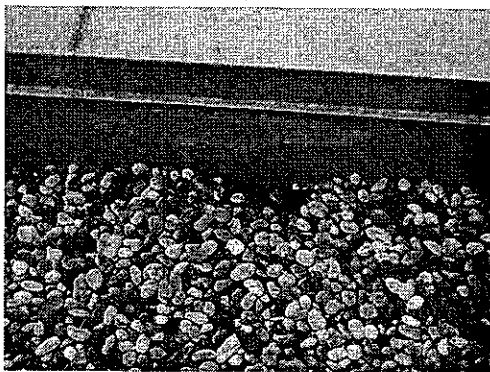
Photograph 2.4



Observation: Several localized voids are present in the concrete eyebrows/overhangs of the high-rise buildings along Kingsway.

Action Required: Fill localized voids for compatible product and re-coat surface with waterproofing membrane.

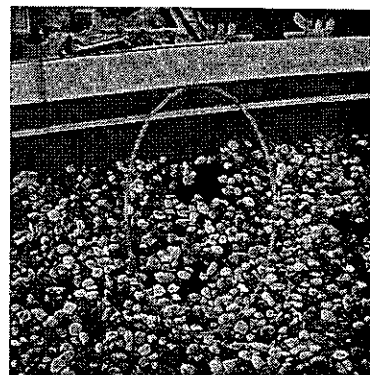
Photograph 2.5



Observation: Gaps in the filter fabric and insulation occur at the perimeter of the roof area in several locations at the main and upper mechanical roof of the high-rise building. This has allowed ballast to fall down to the roof membrane.

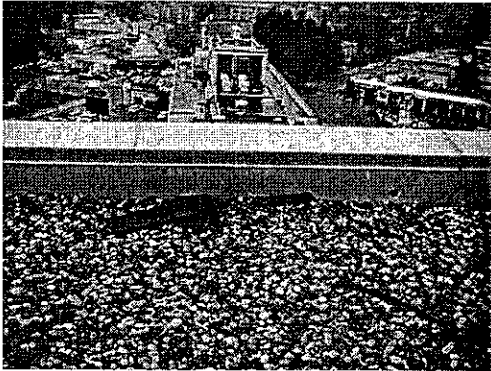
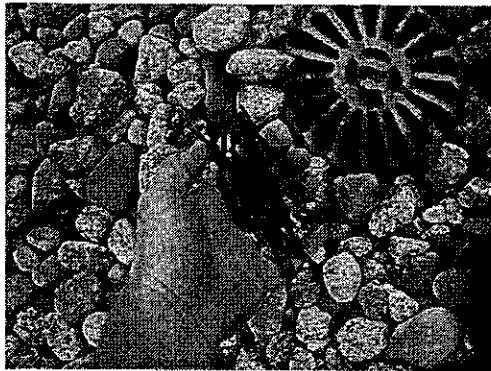
Action Required: Remove gravel ballast from contact with roof membrane and install additional insulation and filter fabric at the perimeter of the roof where required.


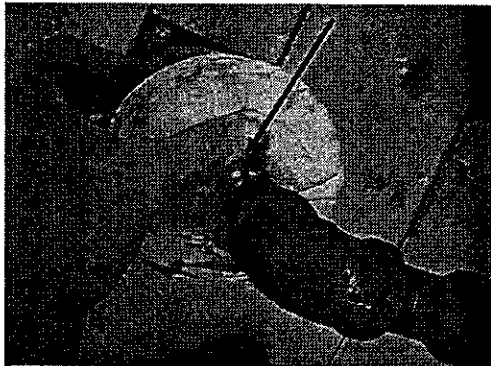
Photograph 2.6



Observation: The gravel ballast is uneven at isolated areas along the west side of the main roof of the high-rise building.

Action Required: Re-distribute and/or provide new ballast to achieve a minimum 2" thickness.

<p>Photograph 2.7</p> 	<p>Photograph 2.8</p> 
<p>Observation: Construction debris located on building roofs.</p>	<p>Observation: Construction debris including nails on the main building roof. Nails and other sharp objects may come into contact with the roof membrane and cause damage.</p>
<p>Action Required: Clean up construction debris.</p>	<p>Action Required: Inspect all roof surfaces and remove all debris to prevent possible damage to the membrane.</p>

<p>Photograph 2.9</p> 	<p>Photograph 2.10</p> 
<p>Observation: Exposed insulation beneath mechanical unit at the main roof.</p>	<p>Observation: The sealant around the mechanical unit gas supply pipe has failed (main roof, to the west of the mechanical unit).</p>
<p>Action Required: Provide new concrete pavers where missing.</p>	<p>Action Required: Remove and re-apply sealant. Consider installing a metal flashing cover around penetration to protect sealant from degradation and moisture.</p>

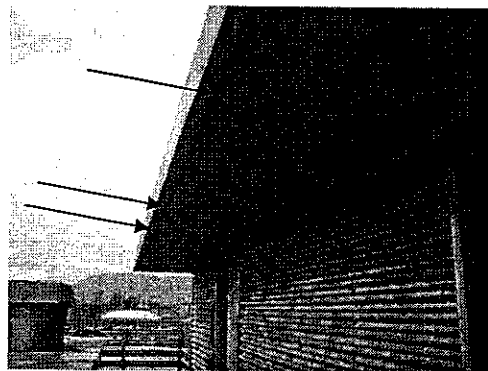
Photograph 2.11



Observation: Concrete pavers at penthouse Unit 1102 are not properly supported at one end and are loose when walked on.

Action Required: Shim concrete pavers along unsupported edge to prevent rocking.

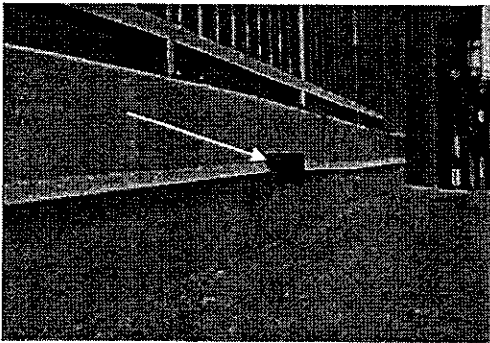
Photograph 2.12



Observation: Several cracks within the concrete overhang at the rooftop mechanical room are allowing water leakage through the waterproofing membrane. The cracks are reflected through the top of the overhang through to the soffit.

Action Required: Apply fabric-reinforced polyurethane traffic coat over all exposed cracks at this location.

Photograph 2.13



Observation: Sealant is missing around the perimeter of the scupper drain, north elevation of the high-rise at the balcony of Unit 318.

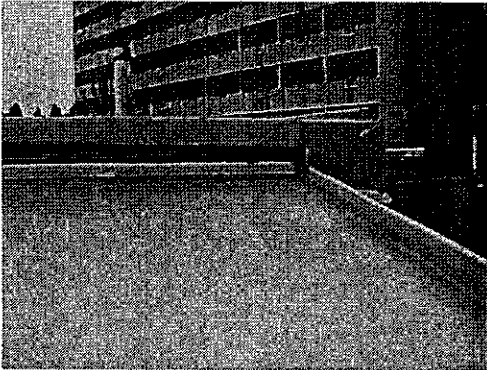
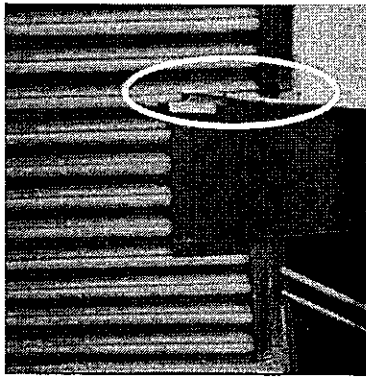
Action Required: Inspect all scupper drain locations and provide sealant where missing around perimeter of scupper drains.

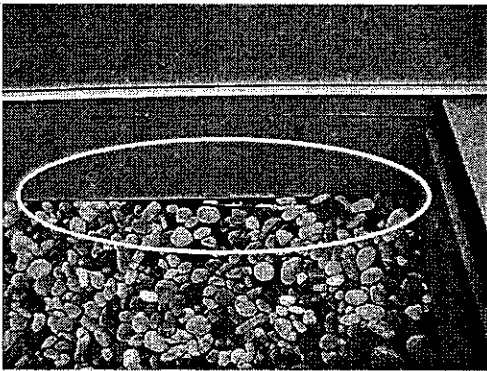
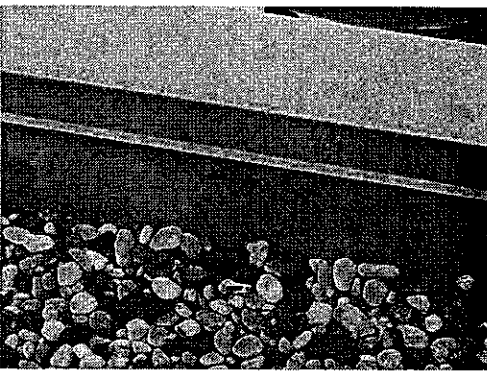
Photograph 2.14

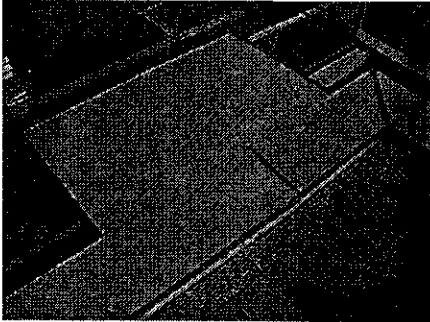



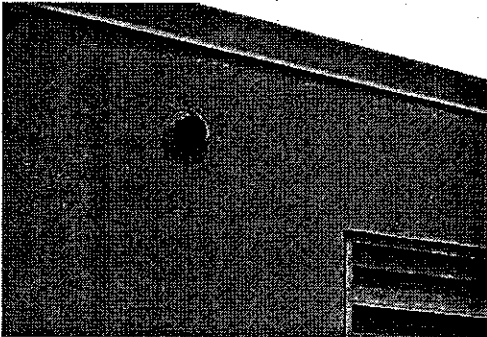
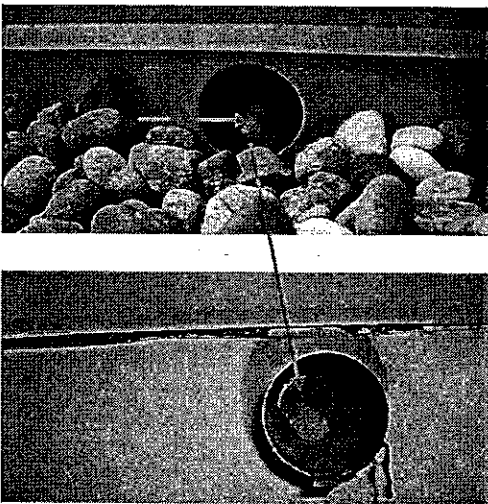
Observation: Concrete patching is missing around the drain penetration at one location on the fifth floor of the city-homes building at the west elevation

Action Required: Review all drain locations and patch concrete where missing around drain penetrations.

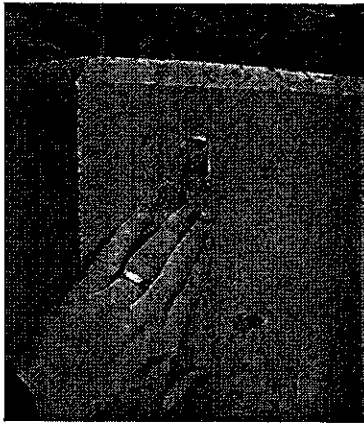
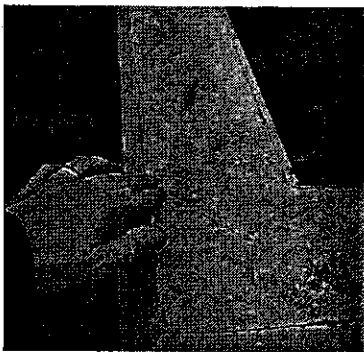
<p>Photograph 2.15</p> 	<p>Photograph 2.16</p> 
<p>Observation: The roof membrane does not adequately overlap the townhouse roof-terrace door canopies, leaving an exposed gap and potential for water penetration at this location. Townhouse 2717 is shown here; however, detail occurs at all townhouse unit canopies.</p> <p>Action Required: Install flashing drip over gap.</p>	<p>Observation: Sealant is missing at a wall to canopy joint interface at the east side of all of the townhouse roof-terrace entrance canopies.</p> <p>Action Required: Provide sealant at joint to prevent water penetration at all townhouse roof-terrace canopies.</p>

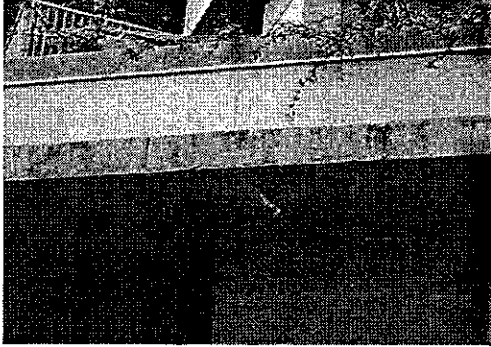
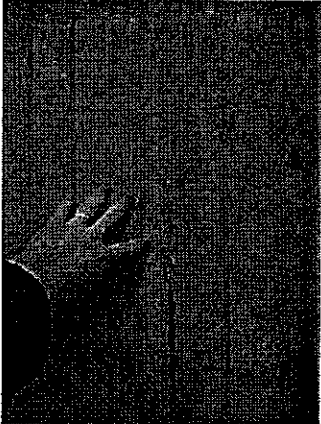
<p>Photograph 2.17</p> 	<p>Photograph 2.18</p> 
<p>Observation: Gap in the filter fabric and insulation at the northeast corner of the townhouse roof area. This has allowed ballast to fall down to the roof membrane.</p> <p>Action Required: Remove gravel ballast from contact with roof membrane and install insulation and filter fabric at the perimeter of the roof.</p>	<p>Observation: A small bracket is screwed into the parapet wall flashing at the northeast corner of Townhouse 390.</p> <p>Action Required: Remove unused bracket and seal membrane with compatible sealant. Seal flashing penetrations.</p>


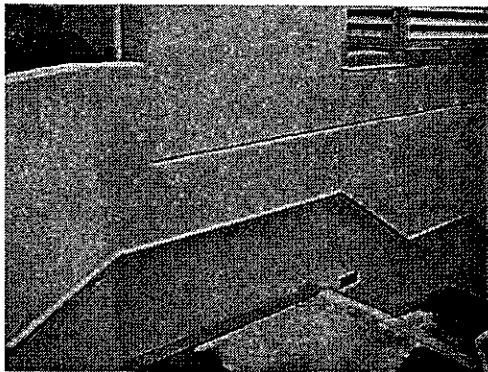
Photograph 2.19	Photograph 2.20
	
Observation: The parapet flashing and roof canopy at the roof terrace of city-home Unit 304 is damaged.	Observation: Red primer/paint on the concrete pavers at the roof terrace of city-home Unit 304.
Action Required: Replace damaged flashing and roof canopy.	Action Required: Remove paint where required or replace pavers. Confirm paint has not affected the membrane.


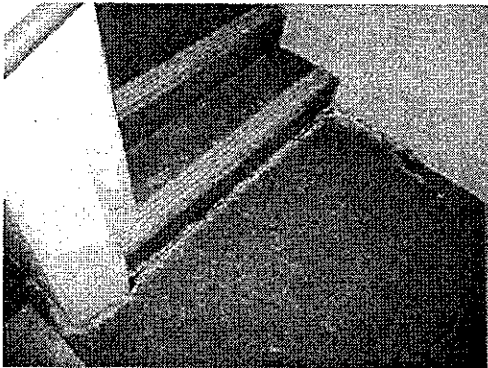
Photograph 2.21	Photograph 2.22
	
Observation: Rainwater leader is missing from the roof drain scupper at the Stair 24 roof at the south end of the city-homes building. Water is draining from scupper directly onto the wall below resulting in staining and excess wetting.	Observation: Gravel ballast is able to work its way into the overflow scuppers at the north side of the main high-rise roof.
Action Required: Install rain-water leader and splash-pad at this location to drain water directly onto roof-area below.	Action Required: Install screens/ballast guards at overflow scuppers to prevent gravel ballast from entering scupper pipes.

3. PARKING GARAGE AND AT-GRADE ASSEMBLIES

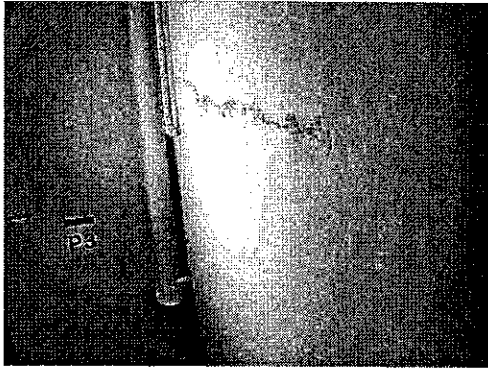
Photograph 3.1	Photograph 3.2
	
<p>Observation: The paint coating at the planter wall within the courtyard (outside of community room) has been damaged at several locations. The paint thickness was found to be thin in some areas.</p> <p>Action Required: Remove paint from affected areas and repaint.</p>	<p>Observation: The paint coating is damaged at the top of a few of planter walls.</p> <p>Action Required: Correct as required. Consider installing cap flashing on planter walls.</p>

Photograph 3.3	Photograph 3.4
	
<p>Observation: Efflorescence and moisture was observed at a soffit, above the parkade entrance.</p> <p>Action Required: Further review the membrane above the crack and source of moisture.</p>	<p>Observation: Cracks and cold-joints within the concrete planter walls.</p> <p>Action Required: Further review and seal the cracks.</p>

Photograph 3.5	Photograph 3.6
	
<p>Observation: Ponding water was observed during our visit at the parking garage stairwell in the courtyard.</p> <p>Action Required: Build up membrane to prevent ponding at this location.</p>	<p>Observation: Evidence of moisture at cold-joints within the concrete planter walls.</p> <p>Action Required: Seal cracks as required.</p>

Photograph 3.7	Photograph 3.8
	
<p>Observation: Sealant is missing between traffic coat and concrete wall.</p> <p>Action Required: Provide sealant at joint.</p>	<p>Observation: Evidence of water migration was visible at the bottom of the stairwell within Stairwell 3 at parking level P2 below grade.</p> <p>Action Required: Rout and seal crack.</p>

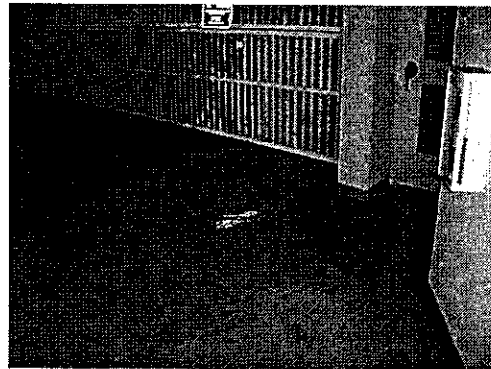
Photograph 3.9



Observation: Evidence of water migration (efflorescence) was visible at a cold-joint beneath the stair-case within Stairwell 3 at parking level P2 below grade.

Action Required: Rout and seal crack.

Photograph 3.10



Observation: Ponding water observed within the parking garage (level P1) at the corner of the resident parking area entrance gate.

Action Required: Re-slope affected area as required.

Photograph 3.11



Observation: The top coat of the waterproofing traffic membrane adjacent to the trench drain at the parking garage entrance has debonded at several locations.

Action Required: Remove and re-apply polyurethane traffic coat at debonded areas.

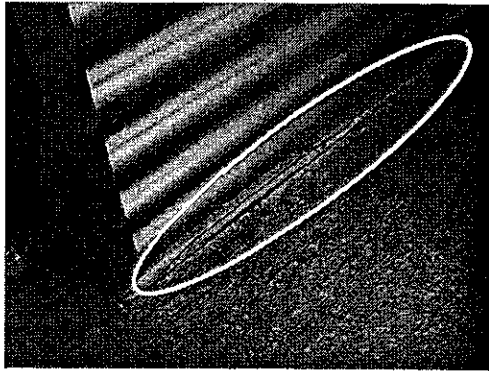
Photograph 3.12



Observation: The traffic coat waterproofing near the parking garage entrance is gouged at three isolated locations.

Action Required: Provide new waterproofing membrane at gouged and damaged locations as part of ongoing maintenance program.

Photograph 3.13



Observation: The base of wall flashing at the main entrance to Townhouse 390 is corroding.

Action Required: Replace corroded flashing with new metal flashing. Flashing should be isolated from the concrete.

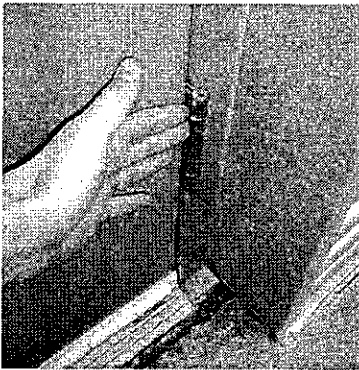
Photograph 3.14



Observation: A flashing is missing over the unprotected liquid applied waterproofing membrane at the main entrance to Townhouse 380.

Action Required: Install a cover flashing.

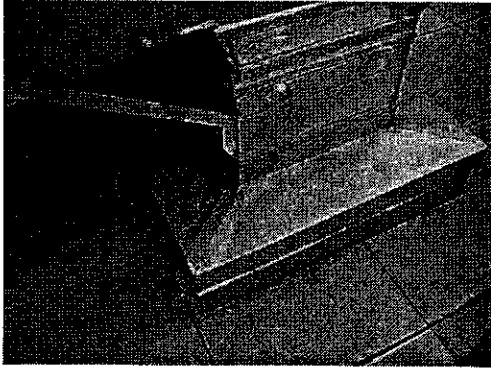

Photograph 3.15

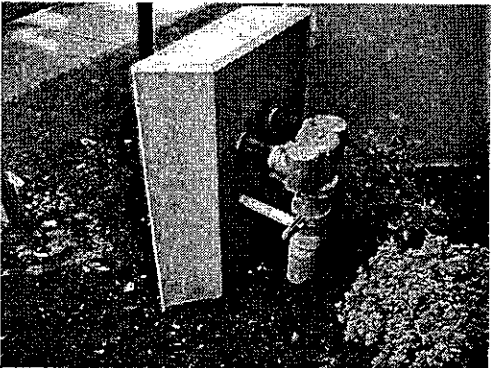


Observation: The bottom door hinge at the main entrance to Townhouse 390 is corroded.

Action Required: Replace affected hinges.

4. OTHER OBSERVATIONS

Photograph 4.1	Photograph 4.2
	
<p>Observation: The flashing around the mechanical unit roof penetration at the main roof of the high-rise building is corroded.</p> <p>Action Required: Re-paint flashing with corrosion-inhibiting paint.</p>	<p>Observation: Corrosion was observed on the gas pipelines at the rooftop mechanical unit.</p> <p>Action Required: Re-paint pipes with a corrosion inhibiting paint.</p>

Photograph 4.3

<p>Observation: The siamese fire connection pipes are unpainted.</p> <p>Action Required: Paint unpainted components.</p>

COMMENTARY

In general, the building enclosure is performing as anticipated. A number of construction deficiencies were identified; however, it is unlikely that any of the noted concerns will result in water ingress over the short-term.

The items listed as "Action Required" for each of the issues identified do not constitute repair specifications. Rather, these are general statements about the necessary work. Any

suggested work should be undertaken in accordance with the project requirements and good practices.

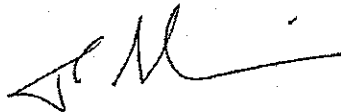
CLOSURE

RDH has undertaken a review of select areas of the building enclosure to identify general issues that should be repaired and/or addressed. The review was not comprehensive, and further reviews will be required as part of the maintenance and renewals program.

Please contact the undersigned if you wish to discuss this letter.

Yours truly,

RDH Building Engineering Ltd.



Paul Martin, B.A., B.Arch.
Project Coordinator
pmartin@rdhbe.com



Graham Finch, MASc
Building Science Engineer (EIT)
gfinch@rdhbe.com