GORDON SPRATT & ASSOCIATES LTD.
CONSULTING PROFESSIONAL ENGINEERS
2348 Yukon Street, Vancouver, British Columbia
V5Y 3T6
Phone (604) 872-1211
Fax (604) 872-1274

Our File No. S-240-99

July 16, 2001

Strata Council LMS 572
Birch Gardens
1318 West 6th Avenue
Vancouver, B.C. V6H 1A7
(Fax: 732-3406)

Attention: Strata Members

Dear Sirs/ Madams:

Re: Strata Plan LMS 572
Birch Gardens - 1318 West 6th Avenue, Vancouver, B.C.

This letter is to confirm that the buildings of the Birch Gardens complex have undergone major remediation. As a result of incorrect detailing of some of the building envelope components during original construction, the buildings suffered a considerable amount of wood decay from moisture infiltration.

During the remediation, the stucco cladding was removed in its entirety from all exposed exterior wall surfaces. All deteriorated and moisture affected sheathing and framing members were removed and replaced with new kiln-dried materials. The stucco was replaced with the current vinyl siding cladding.

The cladding was applied over a rainscreen/ cavity wall system, which is considered the state of the art system in today's construction industry. All critical intersections and penetrations were sealed with waterproof membranes to prevent future moisture ingress.

In closing, Gordon Spratt & Associates Ltd. would offer that all reasonable precautions have been taken to assure the exterior cladding of Birch Gardens, with proper maintenance performed, will continue to function properly for many years to come.

Yours truly,
GORDON SPRATT & ASSOCIATES LTD.
Per:

Gary L. Bawlinheimer
Project Consultant
GLB/gg

Reviewed by:

Gordon W. Spratt, M.Eng., P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA

Durand Enterprise Ltd.

4248 Graveley St., Burnaby, B.C. V5C 3T8
(O) 258-0002 Fax: 258-0042 (C) 889-0928

February 14, 2004

Birch Gardens LMS 572
1318 West 6th avenue,
Vancouver, B.C.
V6H 1A7

Certificate of Warranty

Having completed the reroof of 1318 West 6th avenue, Vancouver, B.C. this certifies that Durand Enterprise Ltd. is giving a 5 year warranty on labour and material for a period of five (5) years starting February 14, 2004.

Luc Durand

GORDON SPRATT & ASSOCIATES LTD.

CONSULTING PROFESSIONAL ENGINEERS
2348 Yukon Street, Vancouver, British Columbia
V5Y 3T6
Phone (604) 872-1211
Fax (604) 872-1274

Our File No. S-114-97

November 10, 1997

STRATA PLAN LMS 572
SUITE 302 - 1318 WEST 6TH AVENUE
VANCOUVER, B.C.
V6H 1A7

ATTENTION: MR. FRED SHAW

Dear Sir:

RE: STRATA PLAN LMS 572 -- BIRCH GARDENS
1318 WEST 6TH AVENUE, VANCOUVER, B.C.
- BUILDING ENVELOPE ASSESSMENT

As requested, we visited your complex on Thursday, October 30th, 1997 to assess the condition of the building envelopes.

Our report is attached. If, after review of this report, you have any questions or if we can be of assistance in preparing specifications for the repair work and obtaining tenders, please call me.

Yours truly,
GORDON SPRATT & ASSOCIATES LTD.
Per:

Gary L. Bawtinheimer
Project Consultant
GLB/ls
Encl.

REPORT

ON

BUILDING ENVELOPE ASSESSMENT

AT

STRATA PLAN LMS 572 -- BIRCH GARDENS
1318 WEST 6TH AVENUE, VANCOUVER, B.C.

1.0 INTRODUCTION

1.1 Gordon Spratt & Associates Ltd. was retained to visit the Birch Gardens complex to carry out a building envelope assessment, and to submit a report with our observations and recommendations.

1.2 The inspection was carried out on October 30, 1997, when we met with Mr. Fred Shaw, who provided us with access to the complex and buildings. He offered us a brief history of reported water leaks to the interior of the building, and escorted us to the affected areas. There were six areas of reported water leakage.

2.0 GENERAL DESCRIPTION

2.1 The complex consists of two, three-storey, wood-framed buildings, built on a suspended concrete slab over a parking garage.

2.2 The exterior wall cladding is mainly stucco.

2.3 The buildings were constructed in 1992.

2.4 The roofs are flat, with overhangs of approximately 2 feet on some elevations. A false beam detailing extends approximately 2 feet from the walls on the remaining elevations.

3.0 DISCUSSION

3.1 The general appearance of the exterior walls indicate that some typical details are experiencing water infiltration problems. We viewed the six areas of reported water leakage, and found that many of these areas had these typical exterior details. We felt that investigating these areas would give us a good understanding of the overall condition of the building envelopes.

3.2 The six areas of reported water leaks are as follows:

.1 Suite 106 west.
.2 East building entrance on the laneway side.
.3 Suite 303 east.
.4 Suite 204 east.
.5 Suite 201 east.
.6 Suite 101 east.

4.0 OBSERVATIONS

4.1 **Suite 106 West:**

.1 The leak within this suite was in the small bedroom on the south elevation.

.2 The plywood of the sub-floor was completely deteriorated in the southeast corner of the room.

.3 No visual sign of moisture was noted at the ceiling in this area.

.4 Caulking around the exhaust vent in the exterior wall in this location had debonded.

.5 Various moisture readings were taken behind the stucco of the exterior wall. None of these readings were high enough to indicate moisture was coming in from the stucco itself.

.6 We then removed a section of the interior gyproc directly above the rotted floor area. Moisture was noted entering the suite through the cold joint between the concrete slab below the exposed aggregate sidewalk and the concrete upstand of the exterior wall. This indicates a membrane breakdown at this intersection.

.7 The sheathing and framing members of the exterior wall in this location are completely deteriorated (Photos No. 1 and 2).

4.0 **OBSERVATIONS** - Continued

4.2 **Bay Window Above Entrance to East Building, Laneway Elevation:**

.1 Stucco at the lower corners of the bay windows are soiled badly.

.2 The vertical joint at the jambs have not been caulked. The stucco stop that forms this joint terminates at the top of the sill flashing. With this joint not caulked, water is being channelled behind the stucco at this jamb-to-flashing intersection.

.3 Moisture readings were taken just below the sill flashings at this intersection. A high reading of 35% was received, which indicates the exterior sheathing, at a minimum, is deteriorated.

.4 For a comparison reading, we probed the wall just below the 2nd Floor bay window to the west of the first area. A reading of 33% was received. We then removed the stucco in this location, and found that the exterior sheathing was completely deteriorated (Photo No. 3).

.5 Photo No. 3 also shows how the vertical plaster stop terminates at the sill flashings.

4.3 **Suite 303 East -- Skylight Over South Entrance to East Building:**

.1 No through-wall flashing has been installed where the skylight abuts the building.

.2 A caulk joint has been applied between the last mullion of the skylight and the stucco, and this caulking has failed. This is allowing water into the channel between the mullion and the stucco. This channel is directing the water behind the stucco.

.3 The small skylight on the east elevation of the West Building is showing the same condition.

4.4 **Suite 204 East:**

.1 The ceiling is water stained in the small west-facing bedroom of Suite 204.

.2 This area has many of the typical exterior details previously mentioned.

4.0 **OBSERVATIONS** - Continued

4.4 **Suite 204 East** - Continued

.3 The through-wall flashing at the head of the bedroom window of Suite 204 are negatively sloped. This is channelling water that collects on the flashing behind the stucco. Note: This flashing condition was noted throughout both buildings.

.4 The balcony for the 3rd Floor suite is above Suite 204 to the south. These balconies have typical problems that are allowing water into the exterior walls, such as:

a) Cap flashings: These cap flashings do not return through wall, with an upturned leg where they abut the building. The only protection from water entering at this location is a caulk joint which has now failed.

b) Scuppers: Through a failed caulk joint beside the scupper we were able to view the interior cavity of the balcony upstand wall. The sheathing and framing members were badly deteriorated, as the seal around the scuppers had failed.

c) The previously mentioned bay window is located to the north of this area.

.5 We feel that all of these details could be causing water problems in this suite, however the balcony on the 3rd Floor is likely the source.

.6 A moisture reading was taken at the righthand corner of the bedroom window, with a reading of 26.5%. A second reading was taken just below the cap flashing of the 3rd Floor balcony, with a reading of 30%. Both of these readings are high, and the sheathing, at least, is deteriorating.

4.5 **Suite 201 East:**

.1 Moisture was noted on the gyproc window returns in the living room of Suite 201.

.2 This area has a row of balconies to the south of the living room window, all of which display the typical problems as noted at Suite 204.

.3 The scuppers on these balconies consist of clear plastic tubing. There is no seal to the scuppers as no caulking or membrane will bond to this plastic tubing.

4.0 **OBSERVATIONS** - Continued

4.4 **Suite 201 East** - Continued

.4 The framing of the 3rd Floor deck was viewed by removing the soffit material, and framing deterioration was noted (Photo No. 4).

.5 When the soffit material was removed, a large amount of water poured out from the perimeter channel.

.6 Moisture readings taken in this area ranged from 28% to 33%.

.7 The cap flashings on the 2nd Floor balcony were showing typical deficiencies as previously noted.

.8 The through-wall flashing at the head of the window was also negatively sloped.

4.6 **Northwest Corner of West Building:**

.1 As a comparison test, we investigated the area around the living room window of the ground floor suite at the northwest corner of the building and the 2nd Floor balcony. Moisture readings of 30% to 37% were received in this area.

.2 The scuppers on this balcony were loose, and we were easily able to remove them from the parapet wall.

.3 Viewing the interior of the parapet wall, severe deterioration of the framing members was noted.

.4 The through-wall flashings over the 1st Floor living room window were also negatively sloped.

.5 The stucco at the head of the living room window was badly cracked and falling off. We feel this is due to building shrinkage (Photo No. 5).

4.7 **Suite 101 East:**

.1 Moisture is showing in the ensuite ceiling of Suite 101.

4.0 **OBSERVATIONS** - Continued

4.7 **Suite 101 East** - Continued

.2 There is a small roof deck directly above this ensuite, and the cap flashing for this roof is showing all the typical problems noted at previous locations. This particular flashing is dished quite badly, and water is ponding on top.

.3 The caulking where the flashing abuts the building has failed. This condition is the probable cause of the leak into the interior (Photo No. 6).

.4 Photo No. 7 shows another cap flashing on the false beam detail to the east of Suite 101.

5.0 **SUMMARY**

5.1 The buildings are experiencing moisture damage to the exterior wall sheathing and framing members. There are four typical details that are causing the damage:

.1 Cap flashings on parapet walls and false beam details.
.2 Negatively sloped window flashings.
.3 Balcony scuppers.
.4 Incorrectly detailed bay windows and entry skylights.

5.2 The damage caused will vary from detail to detail. The damage viewed at the balcony upstand walls appears severe, however evidence shows that damage at the windows may be confined to the sheathing only.

5.3 Each area will need to be assessed on an individual basis.

6.0 **REPAIR RECOMMENDATIONS**

6.1 **Balcony Cap Flashings:**

.1 Remove stucco where flashings abut the building.

.2 Remove and replace flashings with new that return through wall properly.

6.0 **REPAIR RECOMMENDATIONS** -Continued

6.1 **Balcony Cap Flashings** -Continued

.3 Apply a peel-and-stick membrane, full length, to the top of the parapet wall. Terminate this membrane in a saddle fashion where it abuts the building.

.4 Inspect and replace sheathing and framing as required.

.5 Caulk vertical joints between stucco and flashing.

.6 These repairs need to be carried out to the cap flashings on the false beam detail as well.

6.2 **Windows:**

.1 Remove 6-8 inches of stucco from the head and jambs of windows.

.2 Inspect and replace sheathing and framing as required.

.3 Repair building papers and apply peel-and-stick membrane from flange of window to building paper.

.4 Install plaster stops at the jambs of windows to form a proper rod and caulk joint.

.5 Install new through-wall head flashings.

.6 The repairs for bay windows and skylights would be the same as noted above.

6.3 **Balcony Scuppers:**

.1 Remove stucco from perimeter of scuppers. Inspect and replace sheathing and framing members as required.

.2 Replace with proper copper scuppers.

.3 Provide watertight seal to perimeter of scuppers.

6.0 REPAIR RECOMMENDATIONS -Continued

6.4 Suite 106 East:

.1 This is an isolated problem. To repair this area, sections of the exposed aggregate topping of sidewalk and the stairs to Suite 307 will require removal.

.2 The waterproof membrane below these areas will require redoing to ensure a proper tie-in between concrete slab and upstand wall.

.3 Sheathing and framing members in this area will require replacement.

7.0 CONCLUSIONS

7.1 At this time, the area requiring the most attention is the balcony upstand walls. As mentioned in our observations, severe deterioration of sheathing and framing members is already evident. Structural damage to the deck floor joists is inevitable, if not already present.

7.2 The second area to address is Suite 106 east. Severe deterioration of exterior wall framing is currently evident.

7.3 Further repairs to windows, etc. can be undertaken as monies become available.

7.4 We feel that, after the Strata Council has assessed this report, we should meet and formulate a repair program. I have included estimated repair costs from West Coast Buildings Coatings Inc. for your information

7.5 Gordon Spratt & Associates Ltd. can provide specifications and tender documents for the needed repairs. We can also contact and direct contractors in both the bidding and repair procedures.

7.6 If a repair program is adopted to repair problem areas only, two issues must be considered:

a) The patched areas will be visible, as it is impossible to get an exact match to the existing colour.

b) There is no guarantee that all problem areas will be found if all stucco is not removed.

7.0 **CONCLUSIONS** -Continued

7.7 After removal of stucco from around windows and balcony walls, the biggest percentage of stucco will already be removed. Thus, it would be more practical and less time-consuming to remove all of the stucco and replace it with a rainscreen/ cavity wall system.

.8 The City of Vancouver is now requiring that larger deterioated areas be repaired with a rainscreen/ cavity wall system. The City will need to be consulted on how much of your repairs will require this action. If required, then doing the entire wall should be considered.

If you would like me to attend a meeting to review this report with you and discuss the options, please call me at 880-8440.

Prepared by:
GORDON SPRATT & ASSOCIATES LTD.
Per:

Gary L. Bawtinheimer
Project Consultant
GLB/ls
Encl.

Reviewed by:

Gordon W. Spratt, M.Eng., P.Eng.

November 10, 1997

west coast
Building Coatings Inc.
Restoration Specialists

Gordon Spratt & Associates
2348 Yukon Street
Vancouver, B.C. V5Y 3T6
Fax: 872-1274

November 8, 1997
Quote #WC1318

Re: Birch Gardens
1318 W 6th Ave
Vancouver, B.C

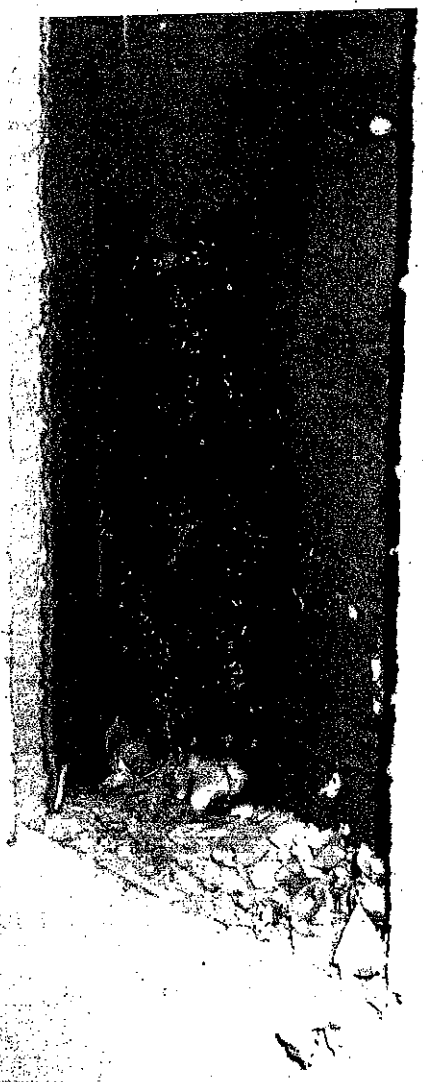
Att: Mr. Gary Bawtinheimer

We are pleased to submit to you a quotation for the above said project. The scope of work is as follows.

Exposed Windows:
To remove six to eight inches of stucco from header and both jambs. To pull back wire lathe and clear away all stucco debris. To install primer and membranes up either side then across top. Then to install head flashing with treated lumber under, to keep positive slope in flashing. A peel and stick membrane will be again applied over head of window. Stucco stops to be installed around window leaving a 3/8" gap all around where new. The new stucco to be applied, and when cured an acrylic finish. These windows will be rodded, primed and caulked with Urethane Sealant. The head flashing to stucco will be end damned, the underside of flashing to window will be sealed.

Balconies:
The railings to be removed, cap flashing taken off and stucco removed from either side a twelve to sixteen inch up on saddle connections. To install new copper scuppers with proper flange and tied into membrane. To install new building paper and membranes at these balconies. All saddle connections and papaphets will be membraned in a proper fashion. New flashing to be made so that the flashings will turn up wall four inches beneath the existing building papers. Upon completion of all paper and membrane lathes, stucco and finish to go on. Followed by some caulking and railing installation.

STRATA PLAN LMS 572 - BIRCH GARDENS
1318 WEST 6TH AVENUE, VANCOUVER, B.C.
Photographs Taken October 30, 1997 by Gary Bawtinheimer



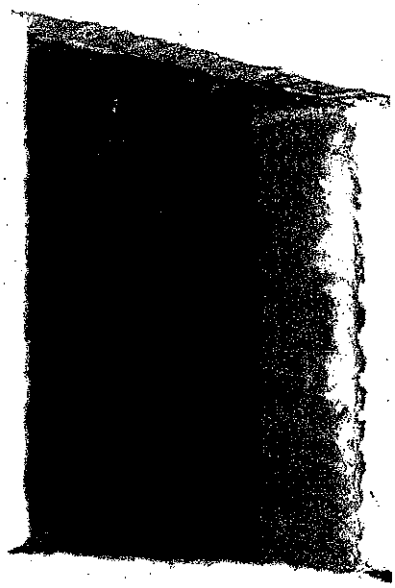
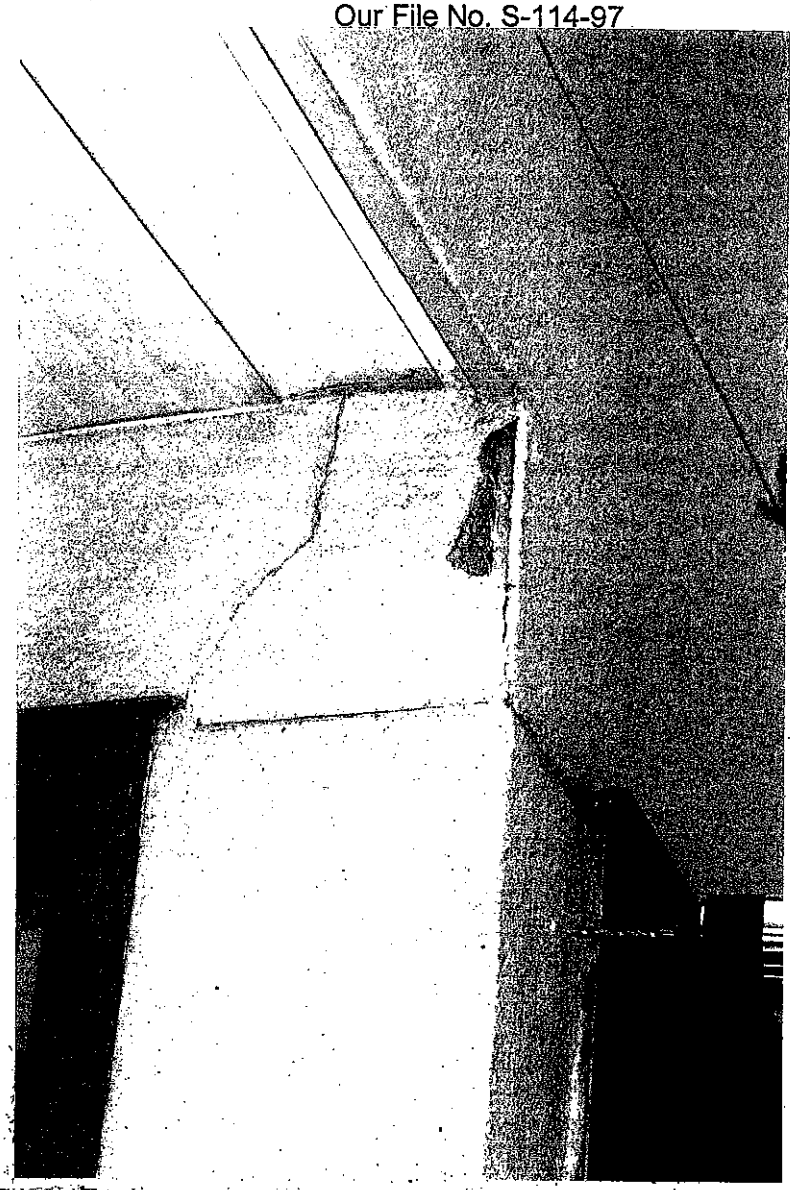


Photo No. 1 and 2

Photo No. 5 and 6



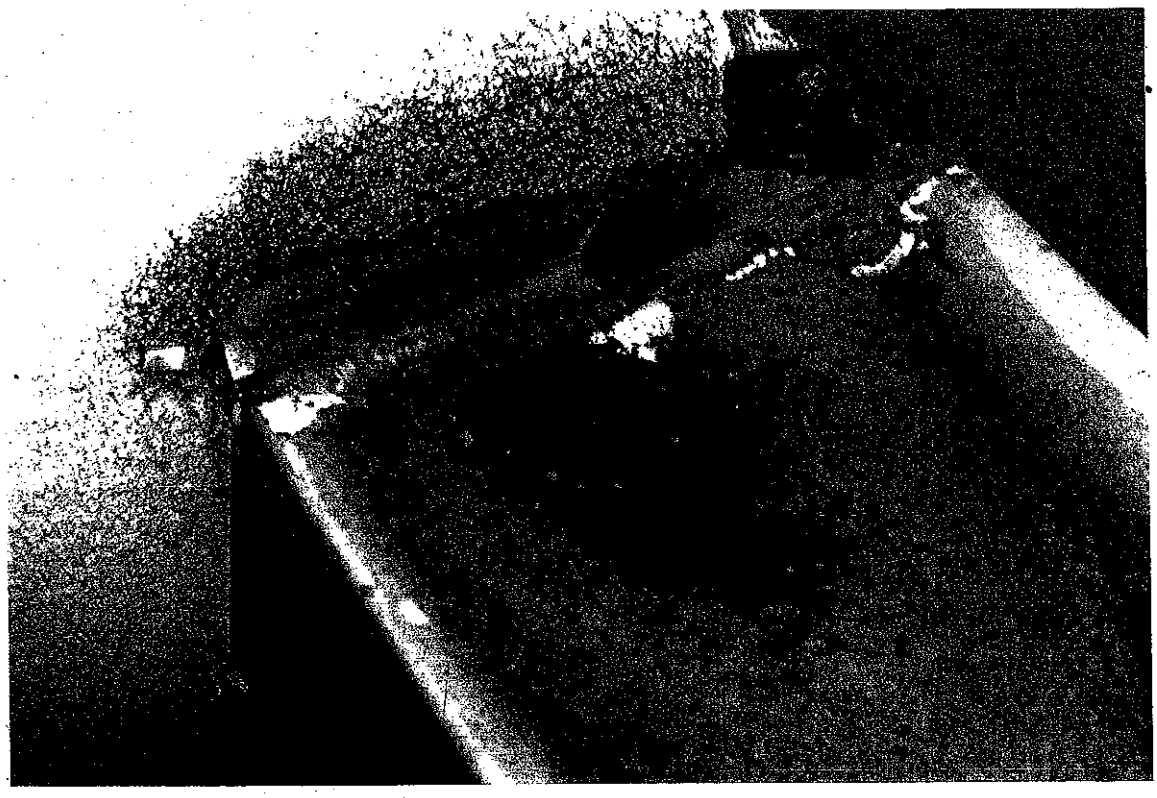
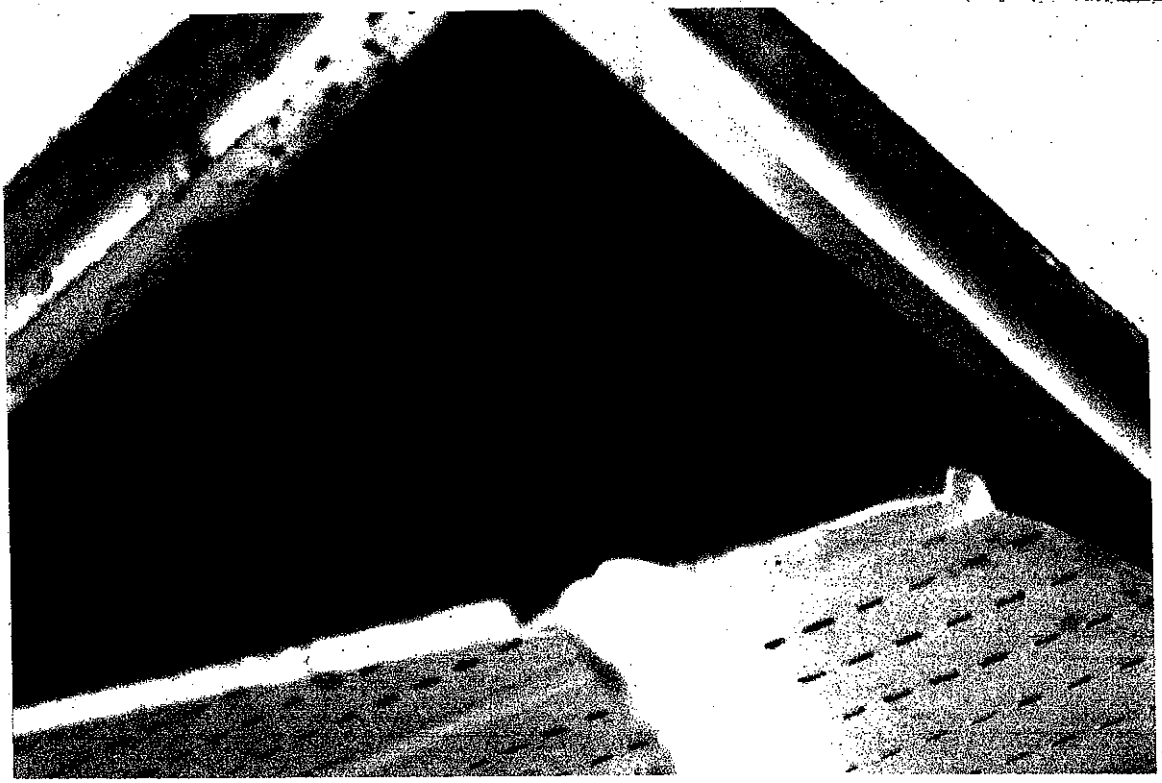


Photo No. 7

Photo No. 3 and 4



west coast
Building Coatings Inc.
Restoration Specialists

Saddle Connections:
Throughout the two buildings there are numerous saddle connections at roof and second floor areas. At these saddle connections the stucco to be removed up ten to twelve inches and down four to six inches, this saddle can then be properly membraned with new saddle flashing tie in into existing. Then to be restuccoed.

Skylights:
The same procedure as the windows will take place here, with the exception they might need a few more flashings.

Stairs:
At the exposed staircase on the West building on the south side from the third floor, this will have to be cut away from the wall two feet and jack hammered out also approximately two feet by two feet at the landing before going down again. At this time removal of stucco up the wall to a height above stair and landing. There will be a proper membrane tie in at this location to prevent water ingress in this corner. When the stairs are repoured, will be tried to match as close as possible. All stucco to be then re instated where removed. New concrete to have a sealer applied after its twenty eight day curing time.

All work to be carried out as per Gordon Spratt & Associates Ltd repersentitive. And as per manufacturers reccomendations. All work areas to be covered over to keep dry during bad weather.

NOTE:
Any sheathing or framing repairs due to deterioration will be at a time and material basis.

Time and Material Costs:

Foreman	-	$42.00 per hr.
Journeyman	-	$37.50 per hr.
Labourer	-	$26.50 per hr.

west coast
Building Coatings Inc.
Restoration Specialists

East Building - $99,178.00

West Building - $66,390.00

Sincerely,

Rick Barley
West Coast Building Coatings Inc.