

ROOF INSPECTION REPORT

January 14, 2009



Delano Building Group 2983, 3023 & 3083 West 4th Avenue.

Prepared for: **ColyVan Pacific Real Estate Management Services**

Attention: **Mr John Fournier**

DELANO BUILDING GROUP

This building group is roofed with a 4-ply built up roof with gravel ballast. The roof deck is plywood on wood frame construction. There are 3 main roof sections and numerous small sections and all are of similar construction

The insulated roof space is ventilated and there appear to be an adequate number of vents. We opened 4 vents and found no evidence of moisture. When this roof is scheduled for reroofing a venting analysis should be carried out. This may have been done as part of your Building Envelope Retrofit and would be adequate for a new reroofing spec.

Numerous repairs have been done; due to ridging of membranes on all the main roof sections; with SBS modified membranes. This work was well executed and these repairs are in good condition except for one small one.

This roof system is approximately 12 years old. The asphalt flood coat is just starting to alligator (crack) and the felts are drying but our cut tests confirm they still retain good resilience. There has been some new perimeter stripping and flashing work completed as part of the Building Envelope Upgrade 5 years ago. This new stripping work is in excellent condition.

There is more ridging occurring on all of the main roofs and one of the small roof sections. Ridging is indicative of moisture entering the roofing system due to localized membrane failure, venting deficiencies or workmanship issues. When the paper felts get wet they expand and form up into ridges. If the ridges are left exposed the felts rot and form a weak spot in the membrane. During cold weather the roof membranes shrink and these weakened areas split open and roof leaks occur. The amount of ridging on these roofs is unusual considering the overall condition of the roof membrane and the age of the installation. We suspect this ridging was caused by trapped moisture due to staged construction, venting deficiencies pre the Envelope Upgrade and possibly workmanship issues during application.

The center section is in the worst condition but cut tests indicate the roofing felts still have good strength and show little sign of extensive deterioration. The ridges are not significantly eroded and the felts are not saturated. These ridges are still reliably repairable with SBS Modified Membrane.

We would expect 3 to 6 years of reliable life remaining in these roof membranes with regular inspection and repairs. The center section will need reroofing first and should be inspected annually to insure reroofing is done before there is a risk of major leakage.

Recommendations;

1. Many of the metal vent covers and chimney flashings are rusting and should be cleaned and painted. A coat of Galvacon or similar zinc rich primer will extend the life as required.
2. Small areas where caulking has failed should be repaired.
3. About 150 feet of ridged membrane should be spudded and reinforced with torch applied SBS membranes.
4. Two blisters on the east roof should be repaired.
5. All three drains on the west roof should be spudded and restripped.
6. The moss should be raked up, removed and the gravel redistributed.
7. Inspect all roof sections and maintain regularly until replacement.

We can recommend a RCABC member repair contractor for this work. These initial repairs will be less than \$5000. and should be no more in ongoing years. I should be on site when ridges are being opened to determine what exactly is occurring and how it may affect repair methodology and future longevity.

This roof system should be inspected yearly for ridging and age related deterioration and appropriate repairs made. Any roof leaks will likely not show up in the building until significant insulation has become wet and drywall damage could be extensive. A quick annual inspection will cost about \$350. per building and will help determine how long past the 3 year point reliability can be maintained. This inspection can be carried out by a consultant or reputable repair contractor.

Roof replacement costs for this type of work are presently about \$15 per sqft. Budget estimates for 2009 would be about \$150,000. per building for replacement with a long lived 2-ply SBS roof system and new industry standard flashing components. These roofs could be redone in sections over a multi year period with minimal additional cost if this better meets funding availability. Integration of existing new envelope related roof work into the reroof specification will reduce costs especially on the center roof section.

Reroofing costs have been rising quite rapidly for the last few years with the construction boom. We are now seeing costs falling just as rapidly due to the construction slowdown etc.

We also noted the Envelope Upgrade related parapet restripping was done differently on the various roofs. We would have expected the optimal methodology used on the center section to be applied overall. The other work however will certainly be adequate until reroofing occurs. [see photos]

Delano

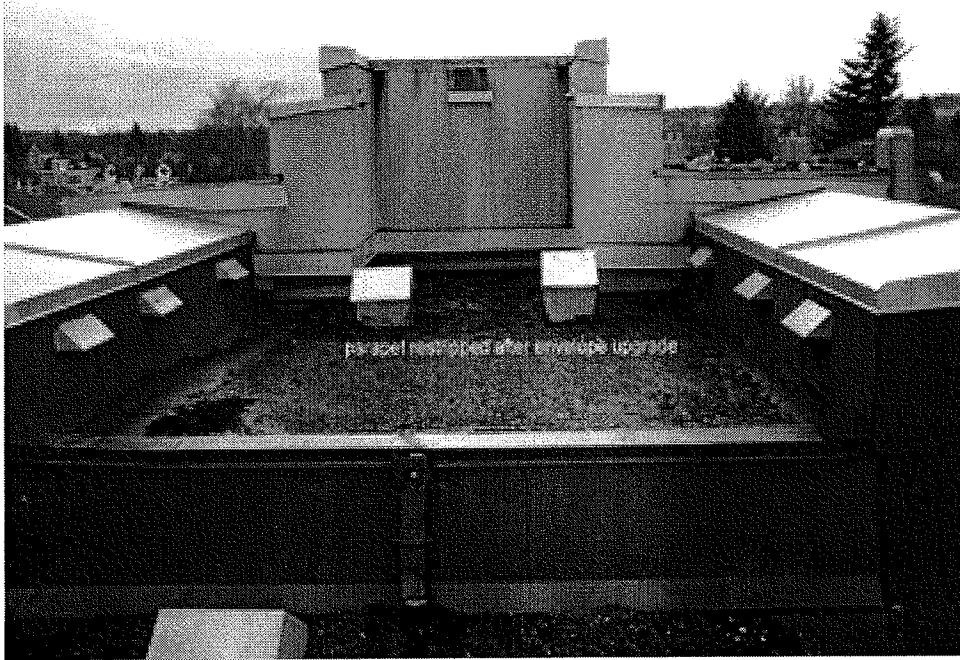


typical blister east roof



typical ridge in membrane

Delano



parapets center



parapets west

Delano

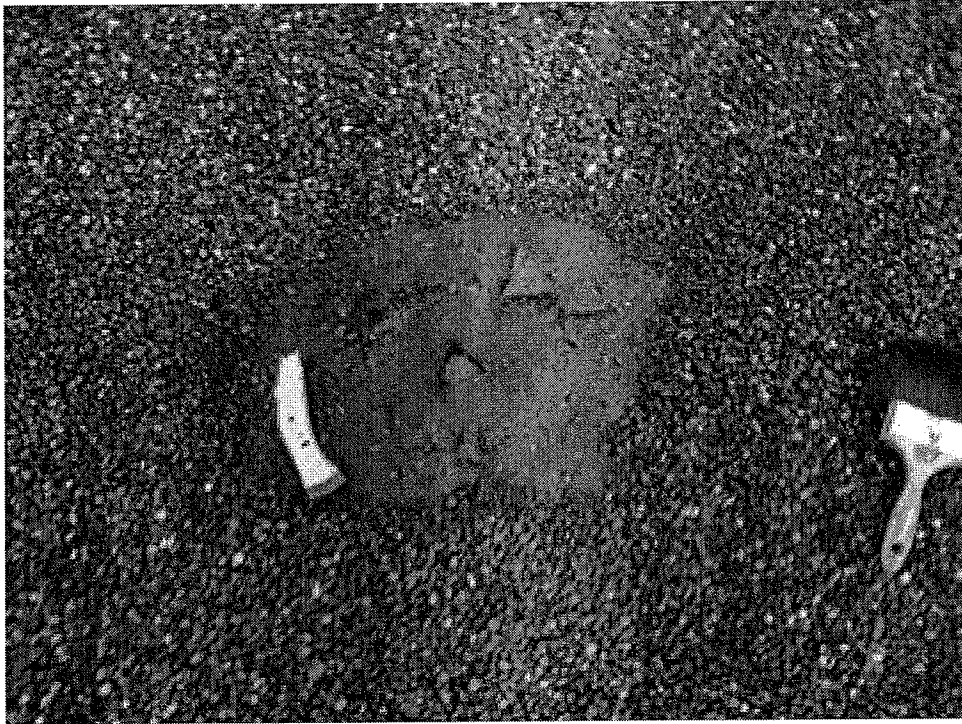


center roof

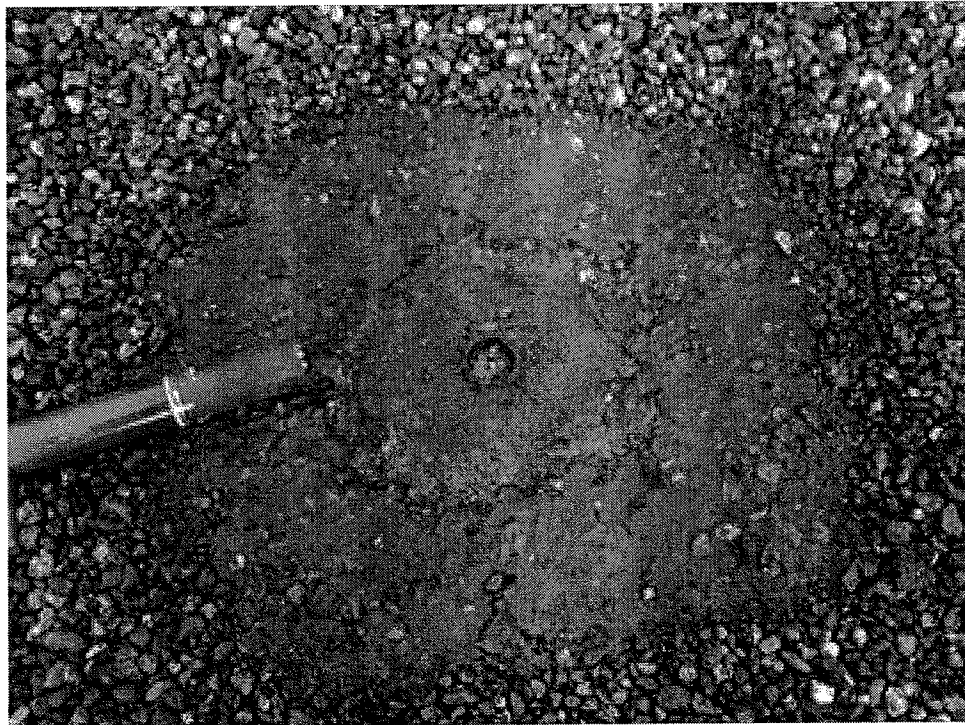


center roof

Delano



cut test center roof

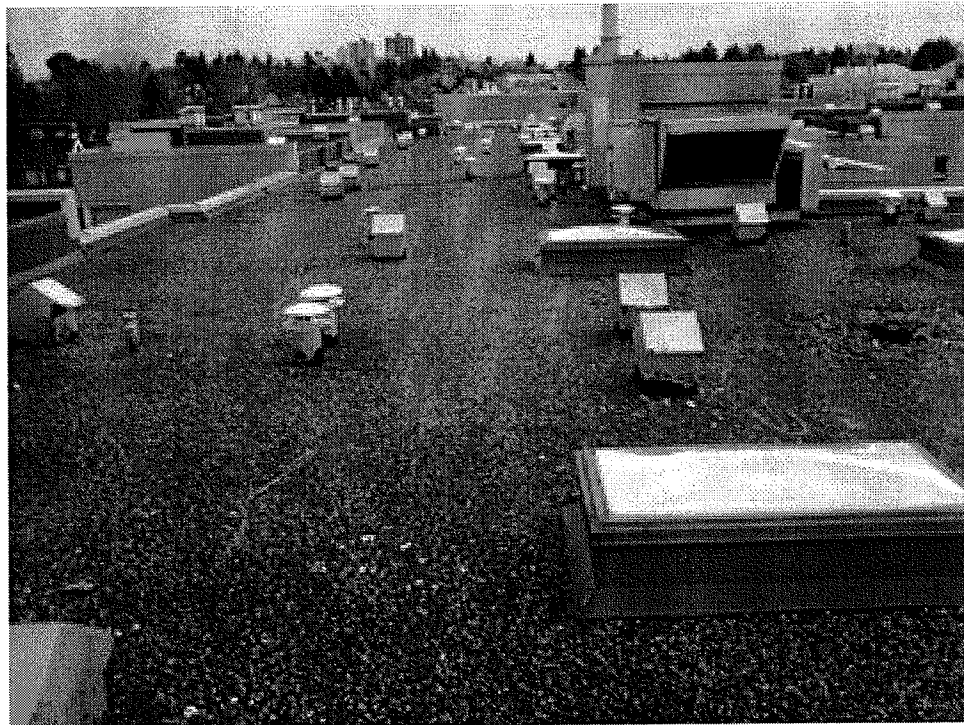


core test east roof

Delano



east roof



east roof

Delano



west roof



tarped unit on west roof

Delano



old repair OK



old repair failed