

Strata LMS 280 - 1272 Comox Street
***by* Inter-Provincial Roof Consultants Ltd.**

April 28, 2008

Job Ref. No.: 08-109 S



Inter-Provincial Roof Consultants Ltd.

Mike's
COPY

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Consulting, Condition Reports, Specifications & Roof Observation Services

April 28, 2008

Southview Property Management Inc.
110 - 7580 River Road,
Richmond, B.C. V6X 1X6

ATTENTION: BRIAN SLATER

Dear Sir:

Re: Strata LMS 280 - 1272 Comox Street, Vancouver, B.C.

The following are the results of our April 2008 survey of the existing roof system on the above noted project. This report will relate the current general condition of this roof system and describe any deficiencies that were found. It will also include recommendations for repair, renewal, and reinspection based on our findings. Any recommendations for renewal will be accompanied with an opinion of probable cost figure, based on our knowledge and experience with like projects in the recent past.

EXISTING ROOF SYSTEM

The existing roof system is comprised of a liquid applied rubberized membrane which was applied directly onto the concrete roof deck. 2" of rigid extruded polystyrene insulation was then laid over the cooled membrane. A filter cloth and ballast were then added.

OBSERVATIONS

Please refer to the following photographs, corresponding comments and roof plan drawing for specific areas being discussed. Unless otherwise stated, photos are typical of the entire building.



1 – This overview shows the main roof area as well as the upper elevator shaft roof. Notice the large area where the insulation and ballast has been removed in an attempt to locate the source of ingress in # 802. Also notice the paving stones and the metal railings which have been incorporated into the roof assembly.



2 – This photo shows a large amount of dry portland cement which was probably spread out in an attempt to prevent ingress during inclement weather. Although this product is commonly used for this application it is considered to be a temporary correction at best. Other products would be better suited for temporary repairs on this type of roof membrane as removing it may prove difficult and result in excess damage to the roof system.



3 – This is a photo of a crack in the membrane. Typically a strip of reinforcement membrane is installed to all the transitions in the uprights during the original membrane application. This photo of the upper elevator shaft roof indicated no membrane was present. This hole in the membrane could potentially allow water to ingress the building.



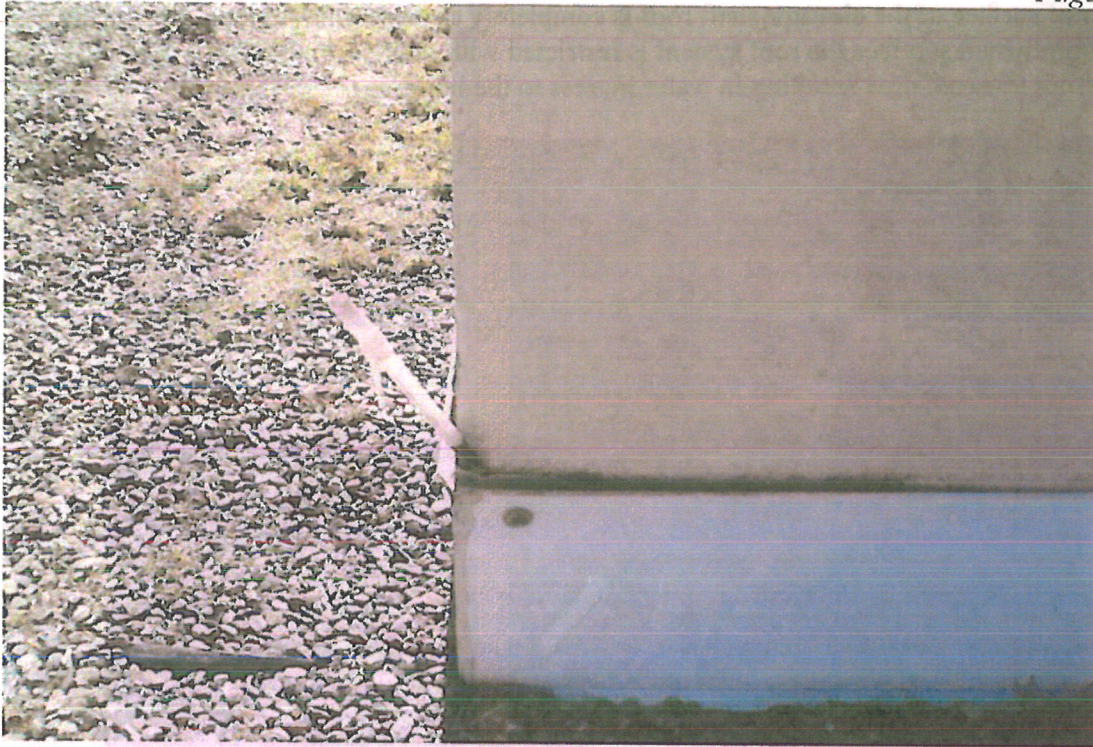
4 – This is another photo of a temporary repair which was installed on the elevator roof area. Again portland cement was used and should be carefully removed as soon as the weather permits so an adequate permanent repair can be applied.



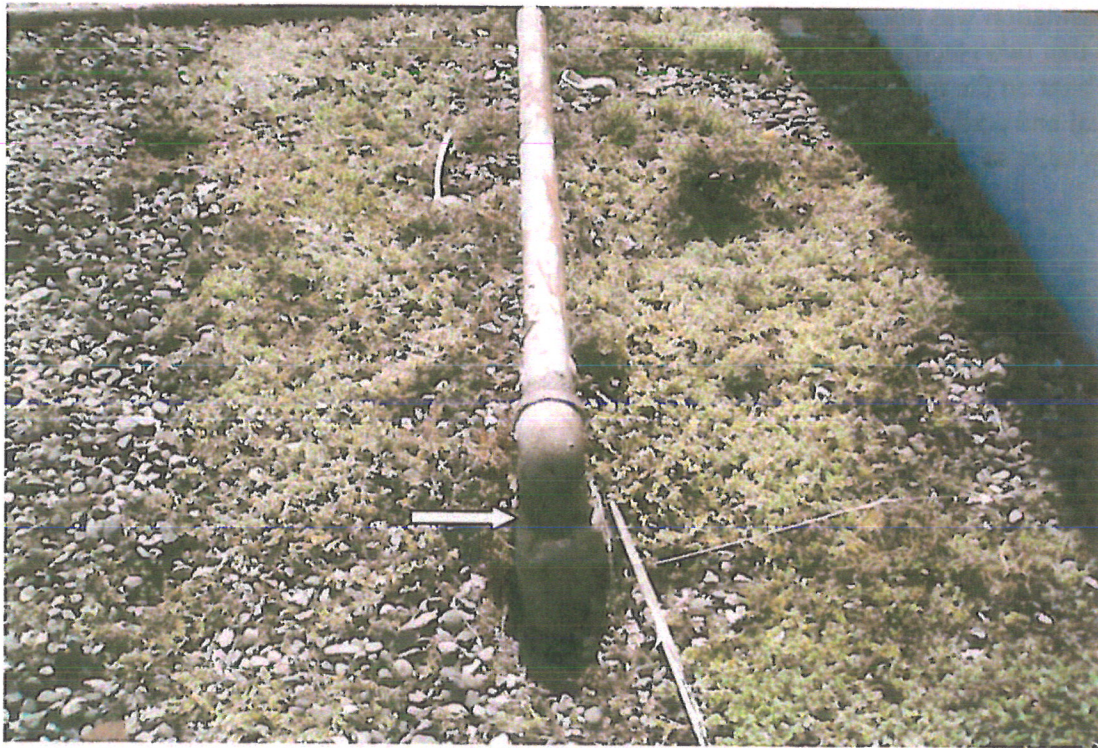
5 – The roof surface of the elevator shaft roof is completely covered with organic debris. The scupper drain which services the roof system is restricted with debris which could impede drainage from this roof area resulting in water ingress to the building.



6 – The insulation was not removed as it may have resulted in damage to the roofing membrane. It appears that two electrical conduits like the one shown in this photo extend through the deck and are reliant on the rubber membrane to remain watertight. This should not be considered a reliable seal and could result in water ingress. Also notice the corrosion on the conduit as well as the bottom edge of the flashing.



7 – The solvents in the caulking have dried out and as a result the caulking has shrunk and cracked. Water ingress through this flashing could attack the leading edge of the membrane and enter the building.



8 – The top edge of the flashing which services this gas line is approximately 3 "off the finished roof surface and sealed with deteriorated caulking. This has a high potential to allow water to

ingress the building. The gas line appeared to be capped off so eliminating the line and flashing may be a possibility. A licensed gas fitter may need to verify that the gas has been shut off before it can be eliminated.



9 – This photo of the stairwell roof shows an aluminium sleeve which appears to have been installed into the scupper drain hole. It does not appear to be sealed with membrane only a bead of caulking around the flashing. The caulking on the outside of the flashing would do very little to prevent water from flowing under the flashing and attaching the seal on the scupper. Also notice the corrosion that has developed on the bottom edge of the flashing.



10 – The rubber membrane on some of the walls is very thin which has resulted in exposed concrete. Again these areas have potential to allow water to ingress the building.

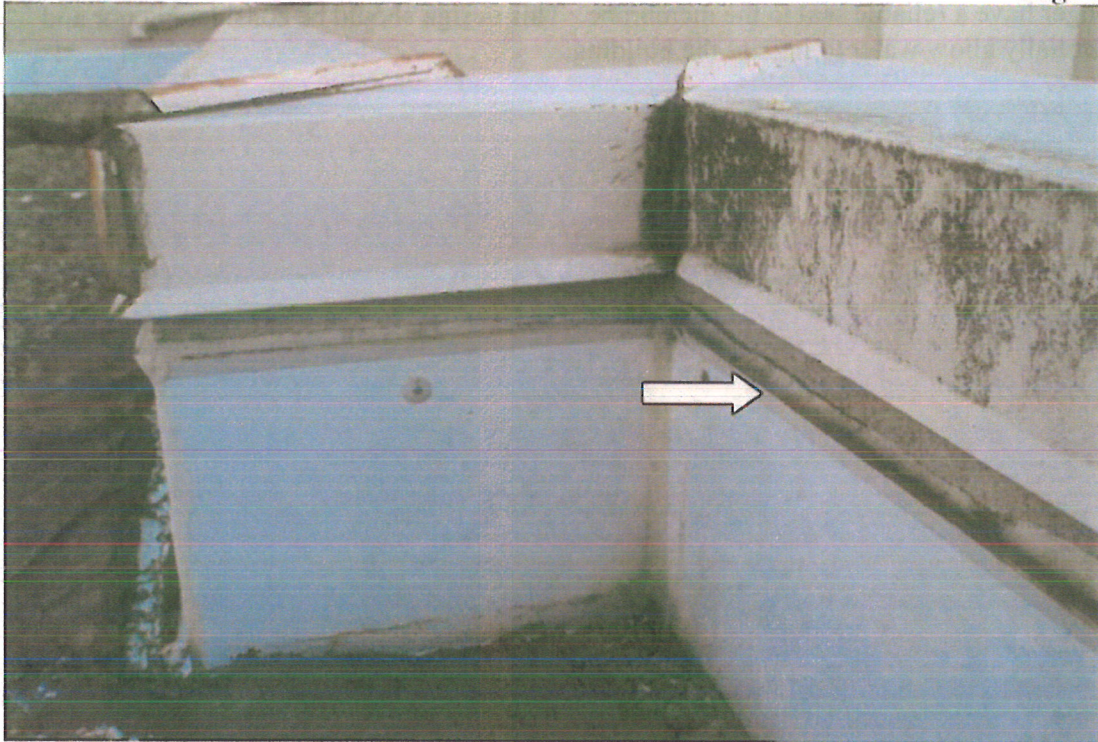


11 – The aluminium rails which surround several of the areas on the main roof were installed directly into the roofing membrane. The bolts which support it have suffered extensive corrosion

and no longer have a reliable seal to the membrane. This design should be considered poor and could potentially allow water to ingress the building.



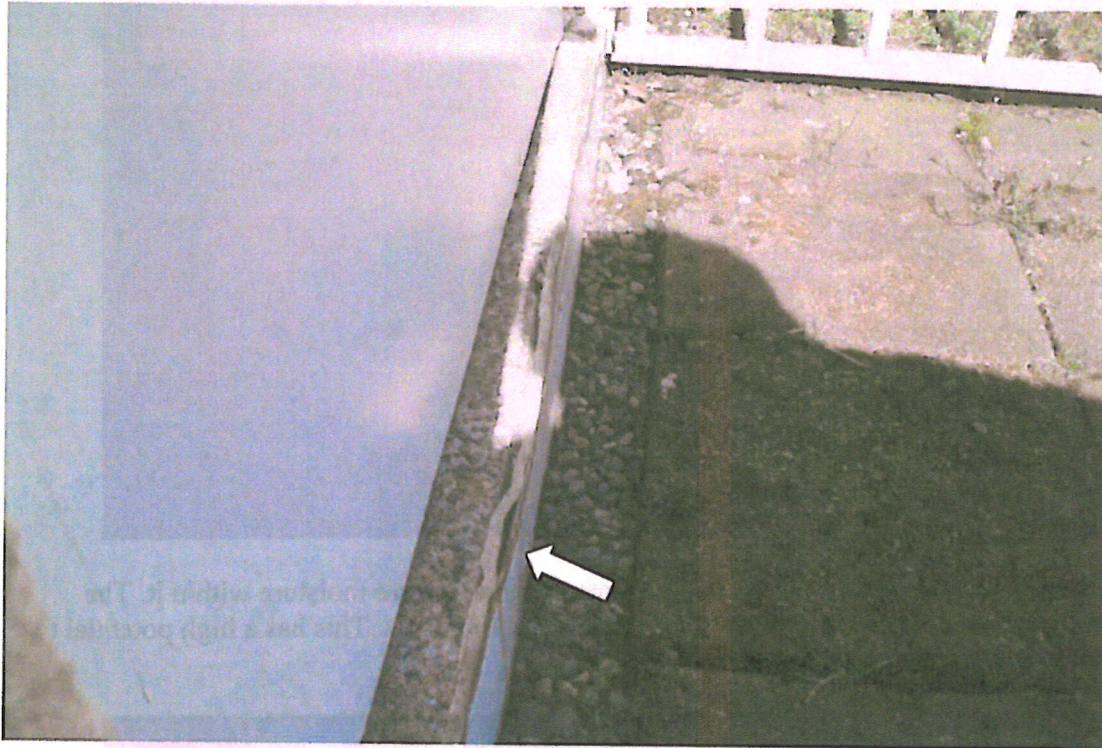
12 – The liquid applied rubber membrane which serves as this building's roof system is reliant on being fully bonded with the concrete substrate for its longevity and waterproofing integrity. Blisters such as the ones shown in this photo become easily ruptured potentially allowing water to ingress the building.



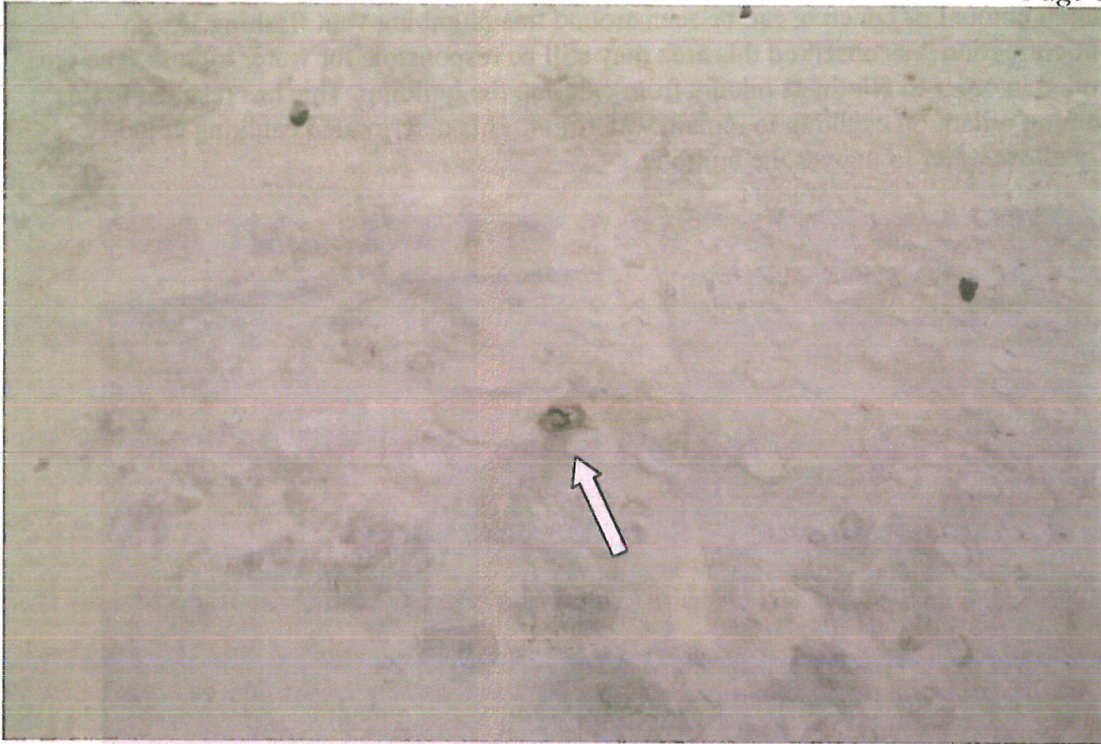
13 – The caulking which serves this wall flashing has shrunk and cracked which could potentially allow water to attack the leading edge of the roof system. Typically the wall flashing would extend up and under the edge of the cap flashing which would shed the water and eliminate the need for caulking. Again this should be considered a poor design.



14 – A small amount of concrete can be seen around this plumbing vent flashing. As no permanent correction was observed this area may still be responsible for water ingress. The pipe was extended in order to eliminate odours from entering the building. This has resulted in this pipe becoming reliant on caulking to remain watertight. This deteriorated caulking could potentially allow water to ingress the building.



15 – The caulking used to seal the flashing to this doorway threshold is no longer bonded and could potentially allow water to ingress the flashing and attack the leading edge of the roof system.



16 – The hole in the membrane shown in this photo appears to have moisture within it. The membrane in this area appeared to be very thin with several blisters. This has a high potential to allow water to ingress the building.



17 – The drain shown in this photo is part of the area which was cleared off in order to locate the source of water ingress. The drain screen was removed and could potentially allow debris to

enter the drainage pipes resulting in blockages in the pipes. This could result in costly repairs to the pipes as well as interior damages. Also notice the bead of caulking which was installed to the edge of the drain.



18 – Several of the settlement caps do fit correctly which could result in water ingress between the pipe and the flashing.

CONCLUSION

The liquid applied rubber membrane which serves as this building's waterproofing membrane is reliant on its bond to the substrate for its longevity and waterproofing integrity.

The membrane on this building is very thin with blisters developing in many areas. These blisters could potentially rupture like balloons under pressure and result in water ingress.

Several temporary repairs with dry portland cement are evident throughout the building. The cement may prove difficult to remove without causing extensive damage to the membrane.

The supports for the aluminium rail were installed directly through the rubber membrane which should not be considered a quality detail and offers a high risk of water ingress to the building as these bolts begin to corrode.

Many of the metal flashings on this building are suffering from deteriorated caulking as well as poor design which could also result in water ingress.

RECOMMENDATIONS

The membrane on this building should not be considered a quality roof system. With leaks as well as temporary repairs evident on this building the cost of repairs as well as interior repairs should not be considered cost effective for this roof system.

We recommend replacing this roof system with a new two ply S.B.S. modified asphalt roof assembly. The aluminium rails would need to be removed and new supports should be engineered as not to be secured through the membrane. The capped off gas line should be eliminated if it is no longer being used. Newly designed metal flashings would complete the roof assembly.

OPINION OF PROBABLE COSTS

REPLACEMENT ROOF SYSTEMS

The following probable cost figures are approximate only and are based on application of new roof systems (as briefly described below) at current labour and market costs.

Note: Probable cost figures are based on our knowledge of recent projects of similar nature, in nearby locations.

Probable cost figures could be affected by one or all of the following:

- Time of year that the project is to be implemented.
- Increase in labour or materials.
- Industry workload at the time of the tendering process.
- Companies that tenders are sent to.
- Stipulations put on the contractor at the time of the tendering process.
- Type and duration of guarantees called for.

We hope this information meets with your approval. Should you have any further questions or concerns, please do not hesitate to contact our office.

Inter-Provincial Roof Consultants Ltd.

Sincerely,

Mike Kosman T.Q.

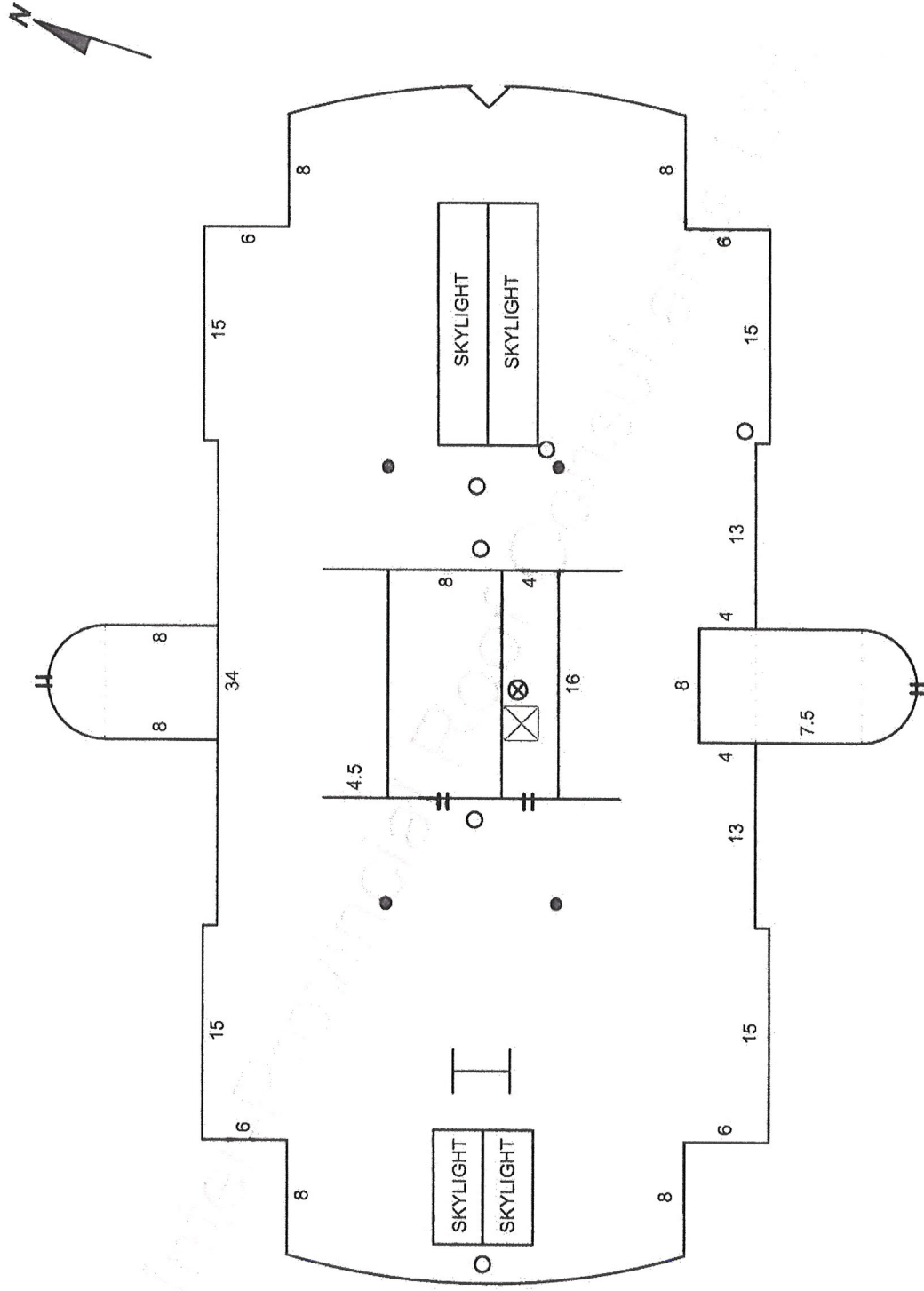
LEGEND

Project: Strata LMS 280





















Job Ref. No:08-109S

Date: May 2008

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Drawing and measurements may not be exact and should not be relied upon for estimating purposes.

	Metal Chimney
	Masonry Chimney
	Skylight
	Ventilator Curb
	Roof Hatch
	Fan
	Metal Curb Chimney
	Roof Drain
	Plumbing Vent
	Roof Vent
	Roof Slope
	Turbine Ventilator
	Attic Vent
Control Joint	
C.T.	Cut Test
	Unit on Curb
	Ridging
	Blister
	Scupper
	Ponding
	Unit on Sleepers
	Walkway
	Mastic Pan
xxxxxx	Flashing Problem
	Roof Anchor
	Bare Spot