Roofing and Sheet Metal Contractors

89 Research Drive, P.O. Box 2218, Stamford, Connecticut 06906-0218 PHONE: (203) 323 8173 Website: mgottfried.com FAX: (203) 359 2498

TO: Viking Construction, Inc.

1387 Seaview Avenue Bridgeport, CT 06607 ATTN: JoAnn Michaels **DATE**: February 13, 2020

RE: Roof report and repair quotation

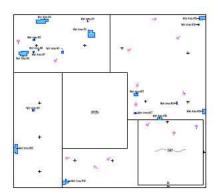
Cloonan Middle School 11 West North Street Stamford, CT 06902

Dear Ms. Michaels,

As per your request we went to the above school to perform an inspection of the roofs, and, using the Infrared Thermographic Roof Moisture Analysis Report as a guide, look for possible sources of water leaks in the noted "wet area". We also were to perform test cuts, if necessary, to verify the wetness and determine the roof components in those areas. We were also asked to provide pricing on replacing the wet area, and to provide a recommendation and pricing for roof maintenance.



Cloonan Middle School



Area of moisture shown on Roof Scan

Cloonan Middle School was reroofed in 2001 using a Sarnafil roofing system with a 20-year warranty. The warranty expires 10/21/2021. Eighteen (18) suspected "wet" areas were noted in the thermal scan. Our inspection found that about half of the wet areas were caused by holes. The roofing system is still in good condition, but roof maintenance is needed.

Wet areas Wet Areas # 1



Wet area #1 falls at a row of walkway pads and a field lap. We could see over-welded membrane, or "burn marks" along the side of the walkway pads. We believe that over time the weakened membrane at the pads has worn through and allowed water to penetrate the system.

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Wet Area #2





The moisture in wet area #2 appears to be coming from the penetration pocket. The sealant in the pocket has shrunk and it appears attempts to reseal it have occurred. When the wet area is replaced a new penetration pocket as well as new vent pipe and partial curb flashing would be installed.

Wet Area #3



A hole in the membrane was found in the area #3.

Wet Area #4





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Wet area #4 is located over a section of roof where a batten bar has been installed over the membrane near the roof perimeter. In area #4 we found holes over the screws that hold the batten bar. Water can enter these holes and spread throughout the marked area.

Wet Area #5



The issue at wet area #5 is similar to area #1. Burn marks are found where the walkway pad is welded to the field membrane. We also saw a hole in the roof membrane within the marked area.

Wet Area #6



Wet area #6 starts by a skylight and extends toward the edge of the roof encompassing an area of ponded water. Holes are present in the "cleaner area" of marked area. We could not determine if holes or other issues were covered by the dirty ponded area.

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Wet Area # 7



Wet area #7 is found at flashing of a steel dunnage support post. The post should be reflashed.

Wet area #8



Wet area number 8 is occurring at another burn mark at the side of a walkway pad.

Wet area #9



Moisture appears to be getting in at the vent pipe flashing in area #9.

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Wet area #10





An open lap and membrane flashing was found at wet area #10. The membrane near the edge of the roof in this area is also loose.

Wet areas # 11, #12 and #13









Holes were found in the roof in these areas.

Wet area #14



There is a lifting patch in area #14. We believe water is getting in under this patch.

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Wet areas #15, #16, #17 and #18



Holes are evident in each of these marked wet areas.

Suggested roof maintenance

Our visual inspection of the roof revealed a number of roof maintenance items that need to be addressed.

Holes and punctures



We found many holes and punctures in the roof membrane. All of these can let water into the roof system and cause leaks.

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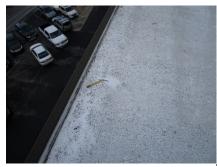
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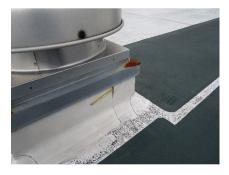
Cuts in the roof membrane





Cuts were found in the membrane near the roof edge.

Open laps in flashings



We found some laps on curbs that are starting to open. All curbs and penetrations should be checked, and any open flashing patched.

Foreign material on roof membrane



We believe the material shown in the picture was placed over a hole in the roof to attempt to stop a leak. The area should be cleaned, and a proper membrane patch installed.

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Penetration pockets







Some of the penetration pockets at the steel dunnage are very low. The filler in them has started to shrink. These should be topped off with new sealer. Other penetration pockets have insulated pipes running into the sealer. The joints in the metal wrap of the insulation can let water into the pocket and eventually cause leaks. The insulation should be cut, and new sealant added to make sure there are no gaps between the sealant in the pocket and the pipe. A cover may also be put over this pocket and the cover flashed to all penetrations.

Broken skylights





There are a number of barrel vault skylights on the roof. We found some of the skylight sections are cracked or broken. The end section on one of the skylights was covered with strips of a white duct tape.

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Summary

The roofing system at Cloonan Middle School is nearing the end of its warranty period. Even though 18 wet areas were found in the moisture scan, those areas represent less then 1% of the total roof area. We found other items in our walk-through that could lead to water infiltration and leaks if left unrepaired in areas not marked in the infra-red report. If repaired and maintained, the roof as a number of years of useful life remaining.

Unfortunately, Sarnafil is one of the few roofing manufacturers for whom we are not an authorized applicator. If it is desired to perform the replacement of the wet areas and needed maintenance work and maintain the current warranty, we cannot perform the work. If, since there is only a year and a half left on the warranty, it is not important to have the warranty cover the repair and maintenance work, we can perform the work using material compatible and equal to Sarnafil.

If we were to perform the repair and maintenance work, it would include.

- Removing and replacing the marked wet areas. Any penetration, curb or vent withing the marked wet area would be reflashed.
- Inspect the entire roof. Clean, prime and patch any hole, puncture or cut in the roofing membrane.
- Inspect all curb flashings. Clean prime and patch any open joint or lap.
- Inspect field laps. Clean prime and patch any open area of lap.
- Inspect all penetration pockets. Dig out (if necessary), prime and top off as needed.
- Check all roof drains and clear any debris from roof.
- Replacement of broken skylight sections or individual skylights is not included but can be quoted upon request.

Our price to perform wet area removal, repair and maintenance work discussed is: \$81,200.00 Again, if we perform the maintenance and repair work, that work would not be covered under the current roof warranty.

Please let us know if you have any questions.

Respectfully,

David Lederman

Paul Lederme