The Garland Company, Inc.

Roof Asset Management Program

Margaret A Neary Elementary School - Roof Insection

Prepared By

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Prepared For

Keith Lavoie

June 26, 2025

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Client Data

Client: Southborough Public Schools

Client Data

Name	Southborough Public Schools		
Address 1	53 Parkerville Rd		
City	Southborough	**State**	Massachusetts
ZIP	01772	**Country**	United States

Contact Info

Contact Person	Keith Lavoie	**Title**	Assistant Supervisor of Operations
Mobile Phone:	617-750-7589	**Office Phone:**	-
Email:	klavoie@nsboro.k12.ma.us		

Facility Summary

Client: Southborough Public Schools

Facility: Margaret A Neary Elementary School

Facility Data

Address 1	-
City	-
State	-
ZIP	-
Type of Facility	School
Square Footage	60,500
Contact Person	Keith Lavoie

Asset Information

Name	Date Installed	Square Footage	Roof Access
EPDM Roof Section		-	

Construction Details

Client: Southborough Public Schools

Facility: Margaret A Neary Elementary School

Roof Section: EPDM Roof Section

Information			
Year Installed	-	Square Footage	-
Slope Dimension	-	Eave Height	-
Roof Access	-	System Type	EPDM

Photo Report

Client: Southborough Public Schools
Facility: Margaret A Neary Elementary School
Roof Section: EPDM Roof Section

Report Date: 06/26/2025
Title: Roof Inspection

Photo 1

The insulation is completely failed and lifted across the entire roof system. The insulation has become detached from the structure and is essentially floating between the roof deck and the roof membrane. Catastrophic failure is imminent. Walking on the roof is dangerous as well due to voids where insulation should be causing a tripping hazard. This condition is present across the entire roof system.

Photo 2

More failed insulation.

Photo 3

Failed insulation.

Photo 4

Failed insulation.

Photo 5

Failed insulation.

Photo 6

Failed insulation.

Photo 7

Failed insulation.

Photo 8

Not only has the insulation failed, most of the seams are completely open. Although the amount of leaks in the building don't match the condition of the roof, water is entering the roof system and more than likely is going somewhere. Indoor air quality should be a major concern.

Photo 9

This section is completely failed and never drains.

Photo 10

The seams are open in the area.

Photo 11

Water was still present on the roof and it had not rained for more than a week.

Photo 12

Failed insulation.

Photo 13

Failed insulation.

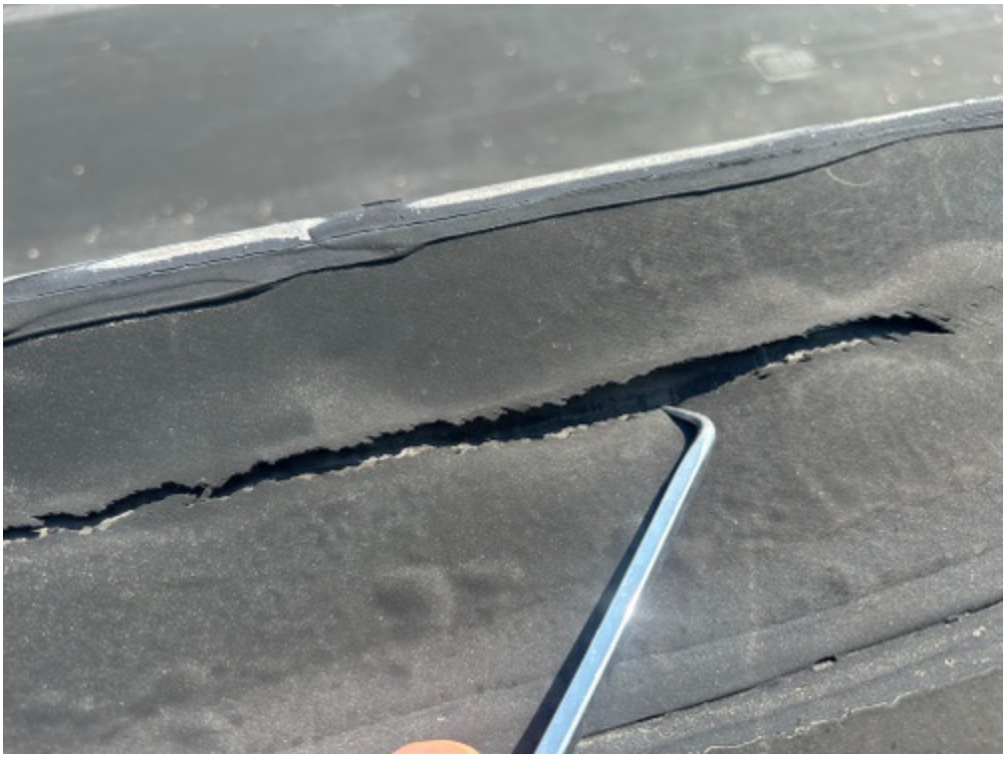

Photo 14

The EPDM membrane is so old that it has no elasticity left and the entire perimeter is torn since it can't expand any more.

Photo 15

More ponding and failed insulation.

Photo 16

More ponding and failed insulation.

Photo 17

Failed insulation.

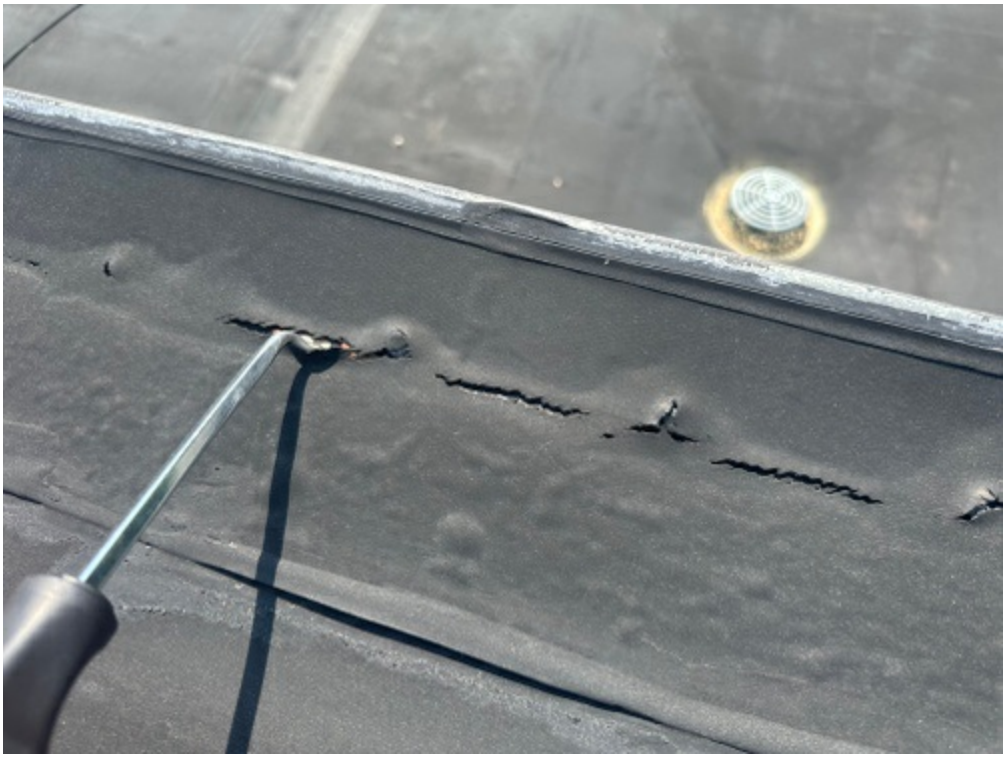

Photo 18

Torn perimeter.

Photo 19

Failed seam.

Photo 20

Torn perimeter.

Photo 21

Failed insulation and ponding.

Photo 22

Failed insulation and ponding.

Solution Options

Client: Southborough Public Schools

Facility: Margaret A Neary Elementary School

Roof Section: EPDM Roof Section

Replace Options

Solution Option:	Replace	**Action Year:**	2026
Square Footage:	-	**Expected Life (Years):**	40
Budget Range:	$3,500,000.00 - $4,000,000.00		

This roof has completely failed and there are little options available, other than replacement, that exist for this roof. Close attention should be paid to the areas of lifted insulation because once this happens, it only takes one strong wind storm to cause a catastrophic failure. Water is coming into the roof system from all over and although there are not many leaks present in the building, the water is going somewhere. Indoor air quality risks are high. This building has a tectum roof deck which is highly susceptible to water damage, if deck replacement is needed, your already high budget for this roof will increase exponentially. This roof needs to be replaced ASAP, it is past the point of no return and there are no real options otherwise. Repairs are a waste of money at this point, other than for stop gap or emergency purposes.

The budget to replace this roof would be $3,500,000 to $4,000,000

Roof System:

The system I recommend is a 2-ply Mod Bit using a Cold process. Cold adhesive is a polymer modified liquid asphalt that is squeegeed into place, with the base sheet rolled out for 100% coverage, the modified cap will lap creating redundancy and we now have a 400 mm water proofing membrane. The modified cap sheets incorporates dual scrims that have better resistance to punctures and tears. They are also polymer modified to age better and deal with the four seasons of New England. We can heat weld the seams but this roof does not have excessive roof traffic. This system carries a 30 year water tight warranty.

Green Roofing:

The roof systems we've been doing in the Central Massachusetts area and in the Northborough/Southborough School District for the past decade or more incorporate recycled materials in the modified cap sheet. These modified sheets incorporate recycled crumb rubber from discarded tires, recycled glass as the silica parting agents and recycled boiler slag for the sheets under coating. The roofing system we've been installing are very good long term roof assemblies that will have excellent return on investment for local schools, towns and cities.

Note: Scope to include, but not limited to

1] Remove entire roofing system down to the deck
2] Install new vapor barrier
3] Install new insulation assembly R-30
4] Install 1 ply of modified base sheets in cold process
5] Install 1 ply of modified cap sheet

6] 2 ply flashing system dives 4 plies at the turn
7] Install new 040 edge metal and wall panel system
8] Cool roofing finish of your choice

At no additional cost we will:

- Assist in the design of the roof replacement
- Attend pre-bid & pre-construction meeting to answer questions
- Daily job site inspections to insure proper materials and procedures are followed
- Run final inspections and punch list followup
- Provide a 30, 35 or 40 year warranty on the roofing system
- Perform annual follow-up inspections

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Over the years there are on going studies looking at commercial roofing. Including the Army Core of Engineers, NRCA, the Ducker Study and plenty more. Year after year it clearly shows that multi-ply built-up roofing is the best performing systems for longevity and life cycle costs. In the BUR family the modified BUR systems, which utilize a modified cap sheet, are the highest performing group concerning puncture resistance and fatigue. The modified built-up system is a three ply system with the top ply being a modified cap sheet. The cap sheet [a modified felt] can be the last layer of protection or it can be followed up with a flood and gravel. Each felt has a layer of bitumen below and above it to adhere the layers giving you more layers of added protection. The flashing are the weakest point of all roofing systems and is why another two layers are added to give the field termination five layers of protection.

While the built-up system is more expensive than an EPDM to start, it's low maintenance over it's 30 year life cycle make it the cheapest and least time consuming roofing system available. With proper maintenance these systems can last past their 30 year projection.

The average life span of single-ply system is 8-12 years. They're the least expensive roofing system for up-front costs, but demand high annual maintenance and the high life cycle cost makes them the more expensive system. The EPDM membrane is approximately 40-60mm thick, the same as a bicycle tire. It is easily punctured or damaged and requires high year round monitoring/maintenance with allot more headaches.

PVC [Polyvinyl Chloride] roofing systems are a stronger single-ply system than EPDM, but still suffer the same short comings. Puncture resistance and seam splitting are the leading shortcomings in a single membrane. Like EPDM it requires year round monitoring and maintenance. The PVC roof is more expensive than the EPDM, often equivalent to the built-up system. At the end of it's life span you have spent more than most roofing systems available. A long term problem coming to light with the PVC material is the environmental impact in recycling after the roof is removed. Europe made PVC roofing material popular and it was finally introduced to the United States. Europe is now in the process of eliminating PVC material as a whole and many countries have already banned it as a roofing membrane. Leading manufacturers like Nike, Mattel, Baxter International,Lego and IKEA have also eliminated PVC material from all their products. Many Fire Depts. dislike PVC roofing due to the chlorine gases released in a fire. From the cradle to the grave, PVC is not an environmentally friendly product.