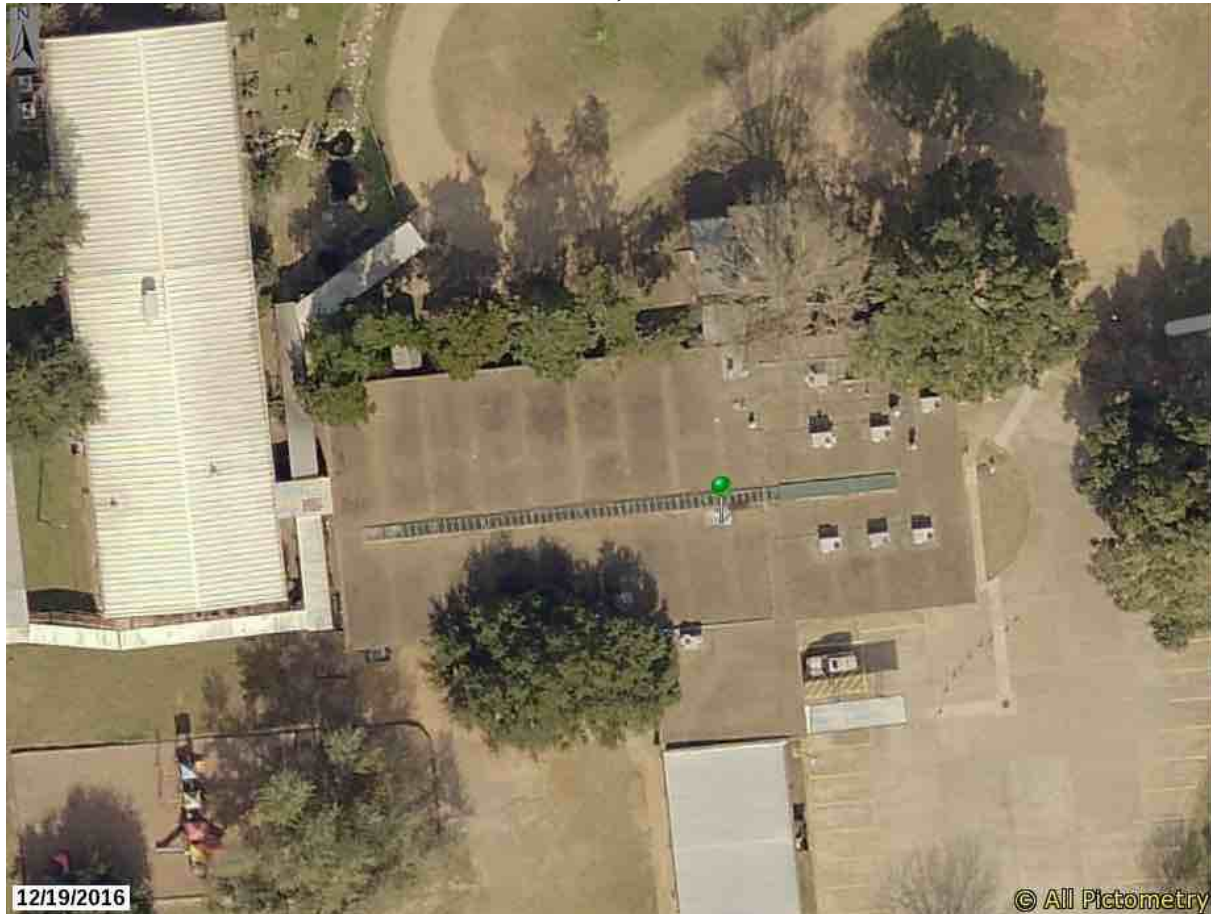


Roof Inspection

Feb 06, 2020



Roof Overview

Project: Bellville ISD	Address: 7453 Ernst Pkwy, Industry, TX
Roof Area: Approximately 19,700 sq. ft.	Roof Type: Main Roof – Asphalt Built-Up Roof Membrane over Fiber Insulation and Wood Roof Deck
Estimated Cost to Replace: Replacement - \$395,000.00 Recover – \$246,000.00	Estimate of Age: Approximately 20 Years
Estimated Cost Maintenance/Repairs: N/A – Only Recommend Repairs until Replacement can be Scheduled	Estimate of Remaining Roof Life: 1-3 Years

Observations:

The roof used on the building appears to be an Asphalt / fiberglass felt built-up roof membrane installed over a fiber insulation board on a wood roof deck.

We observed the following issues/concerns in my inspection:

- Areas of exposed felts; Sun damaged membrane;
- Age damaged base flashings and areas of missing granules;
- Stains / rot observed at areas below the roof indicating leakage; Possible mold growth;
- Tarps installed on roof to discourage leakage;
- Plant growth on roof; and
- Failed sealants at roof detail flashings:



Photo shows overview roof area. Note plastic on roof to discourage leakage.

Photos



Photos show tarps placed on roof to discourage leakage.



Photo on left shows exposed reinforcement matting at end of expansion joint cover. Photo on right shows plant growth on roof.

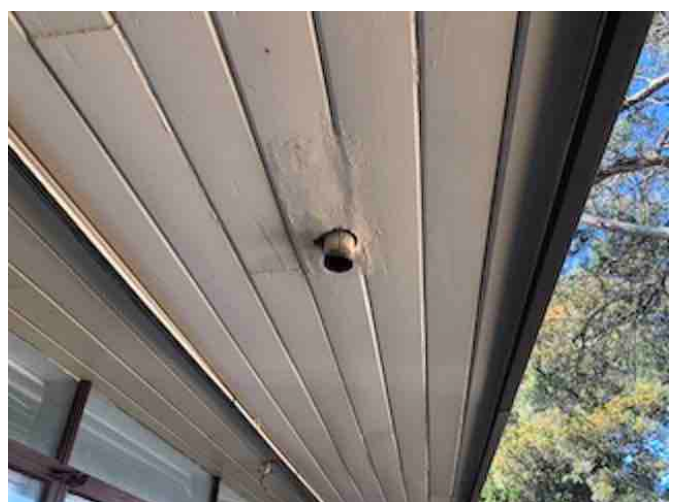
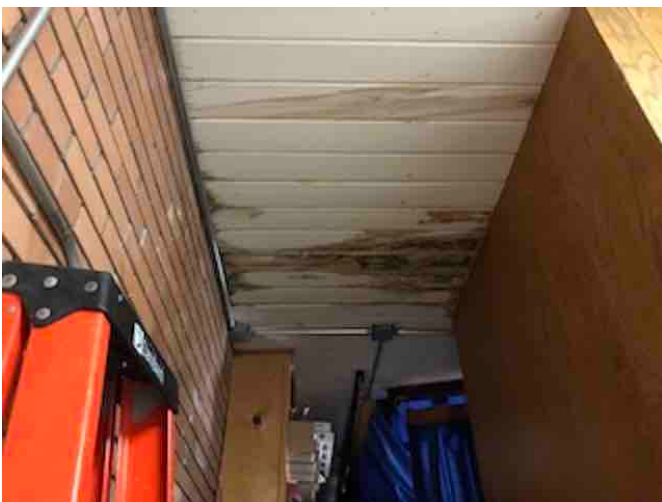


Photo on left shows evidence of leakage. Photo on right shows deck damage at roof drain area.



Photo on the left shows an area of exposed membrane. Membrane was noted to be in poor overall condition and at the end of its service life. Photo on the right shows typical base flashing condition at curbs, and walls. There is significant granule loss and age-related damage.

Synopsis

Based on our visual review the roof on the above referenced Bellville school appears to be at the end of its useful service life.

Although roof leaks could likely be repaired for a short time, it appears that repairs would only be a stop-gap measure until roof could be replaced.

With this in mind, it appears that the roof on the building should be considered for replacement or be recovered with a new assembly, as soon as reasonably possible.

Recommendations

Replacement:

Replacement would entail removing existing membrane and insulation down to the wood roof decking and installing a new roof assembly with new R25 insulation installed above the roof deck to accommodate the energy code. The new insulation height would require raising some of the roof curbs and installing more wood blocking at perimeters and penetrations.

Approximate Cost \$20.00 per foot.

Recover:

A recover would need some further verification, to make sure that the roof is a candidate, however, if the old membrane is left in place and a new system installed over it, we do not have to abide by the R25 requirement of the energy code. This would save considerable money as less insulation would be required, it would limit additional wood blocking that would be required to accommodate the membrane height, and some equipment may not have to be raised.

The recover scenario would need to start with an infrared survey to determine how much of the present insulation under the roof deck is wet. Any wet insulation below the present roof would need to be removed as part of the recover project. This would remove the damaging water, and also allow a review of the roof deck to make sure that any necessary structural repairs can be addressed. Following this, all loose gravel surfacing on the roof would be removed, then a new assembly installed with a minimal amount of insulation installed over the present roof, and then a new roof membrane.

Approximate Cost: \$12.50 per foot.

Lexington Pace RRO, CDT Consultant