Smart Start Business Incubator
Roof Assessment

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Executive Summary

This report contains an evaluation of the current condition of the roof covering the Smart Start Business Incubator building. A modified bitumen membrane roofing system currently covers the building. A raised expansion joint sits at the approximate midpoint of the roof, dividing the roof into a north and a south section.

Ms. Martin, office manager for Smart Start New Port Richey, reported that water was found leaking from the ceiling in a utility room located under the north section of the roof along the east wall of the building. The roof was repaired shortly after the leak was discovered and no water has been seen since. No other stains were found on the drop ceiling. However, staining of an older ceiling, located above the present drop ceiling, was found under the north section of the roof.

The north section of roof has extensive granule loss, numerous patches, areas of deteriorated sealant and membrane, large depressed areas where the loose granules have collected and water ponds, and several areas that feel "soft" when walked upon. There are places along the edges of the roof where the membrane has deteriorated, curled, or simply shrunk and no longer covers the drip edge. Pipe penetrations have deteriorated sealant around them, and there is a small depression around the entire perimeter of the north section of roof.

The south section of roof has minimal granule loss, small areas where loose granules have collected, and sealant in good condition. There are some small spots of deteriorated membrane with exposed fibers along the expansion joint. A concrete "disc" that looks like a manhole cover and fist-sized chunks of concrete are also atop this section of roof.

The expansion joint is slightly elevated above the roof and covered with a black fabric with no visible tears attached with mechanical fasteners that have some corrosion. The gutters and downspouts extend around the entire perimeter of the building and are in good condition.

The north section of the roof is at the end of its service life. The south section of the roof has an estimated 10 to 12 years of service life left. The fabric covering the expansion joint is in excellent condition and has many years of service life left.

It is recommended that the north section of the roof be replaced with a thermoplastic polyolefin (TPO) roofing membrane. During installation, any rotted decking should be replaced as well. The south section of roof is in good condition and needs no repair work. The large concrete "disc" and several chunks of concrete on top of the south section need to be removed. The expansion joint and gutters and downspouts are in good condition and do not need to be repaired or replaced.

Background

This report contains an opinion of the current condition of the roof covering the Smart Start Business Incubator building located at 6345 Grand Boulevard, New Port Richey, Florida. The building is a single story structure that is approximately 9,000 square feet containing numerous offices, a large classroom, and co-working space. According to the Pasco County Property Appraiser website, the building was constructed in 1959, the exterior walls are made of Concrete Masonry Brick (CMU) with a stucco finish, and the roof is clad with a modified bitumen membrane.

The interior is divided into office spaces and meeting rooms by partitions clad with drywall. A CMU wall runs east—west at the approximate mid-point of the building. A raised expansion joint sits directly over this CMU wall dividing the roof into a north and south section. The ceiling is a drop ceiling that hangs below the main roof structure with flush mounted light fixtures.

Observations

Interior

A visual inspection of the roof and ceiling took place on November 17 and 18, 2015. Ms. Becky Martin, the office manager for Smart Start New Port Richey, was kind enough to point out areas of concern. Ms. Martin reported that water was found leaking from the ceiling in the utility room located under the north section of the roof along the east wall of the building. Ms. Martin stated that the roof was repaired shortly after the leak was discovered and no water has been seen since. Ms. Martin also reported another leak was found in an office under the south section of the roof along the east wall. However, Ms. Martin stated that the water was found to be originating from condensation that formed on HVAC duct work located above the drop ceiling at this location.

Two gentlemen working at Tampa Bay Multi Media, which is located in the south half of the building, were also asked about possible leaks. They explained that no water has been seen dripping from the ceiling is this area of the building.

The ceiling in other areas of the building was also inspected. No stains were found on the ceiling tiles in the hallway, offices, and classroom. Ceiling tiles in several rooms were removed and the area above the ceiling and below the roof was inspected. Staining of an older

ceiling, believed to be from original construction, was found in a hallway that leads to a door on the west side of the building under the north section of the roof.

Roof

The roof is flat and divided into two sections; a north section and a south section, which are roughly equal in size (the north is slightly larger). A raised expansion joint of the roof runs east-west and sits directly over an interior CMU wall. Gutters extend around the entire perimeter of the roof. Both sections of the roof are clad with a modified bitumen membrane, which is a roofing system composed of a built up roof membrane with 2 or 3 plies of fabric and a polymer-modified bitumen cap sheet. Granules adhere to this cap sheet for color and to protect the membrane from the adverse effects of the weather and sun.

The north section of roof has extensive granule loss, numerous patches, areas of deteriorated sealant and membrane, and large depressed areas where the loose granules have collected. Although the last rain event occurred about two weeks before the inspection took place, pictures taken by Public Works show large areas of ponding water on the roof. There are also several areas in the roof that feel "soft" when walked upon. Pipe penetrations in this section of roof and have deteriorated sealant around them.

There are a couple of depressed areas in the north section of roof where a large amount of granules have collected. There are two smaller depressed locations where granules have accumulated over an inch in thickness in this section as well. There are places along the edges of the roof where the membrane has deteriorated, curled, or simply shrunk and no longer covers the top of the drip edge.

There are numerous patches on the north section that are up to approximately four feet by four feet in size. The sealant used to place these patches has deteriorated. Long strips of membrane have been placed along the three external edges of the roof. However, the seams on these strips have been placed on top of the existing membranes. There is also a small depression around the entire external perimeter of the north section of roof.

The south section of roof has minimal granule loss, small areas where loose granules have collected, and sealant is in good condition around an electrical utility box that sits atop the roof. Small amounts of sealant used to apply the roofing membrane are visible and in good condition as well. There are some small spots of deteriorated membrane with exposed fibers along the expansion joint that separates the south and north sections of the roof. A concrete "disc" approximately three feet in diameter that looks like a manhole cover and fist-sized chunks of concrete are also sitting atop this section of roof.

The expansion joint is slightly elevated above the roof and covered with a black fabric attached with mechanical fasteners. Strips of roofing membrane run along both sides of the joint and are installed under the black fabric. There are no visible tears or rips in the fabric. There is some corrosion of the mechanical fasteners. The gutters and downspouts extend around the entire perimeter of the building and are in good condition.

Conclusions

Based on the observations made during the visual inspection, the north and south sections of roof have been installed many years apart. The extensive granule loss, numerous patches, deteriorated sealant, soft spots, and depressed areas where water ponds on the north section are consistent with a roofing system that is at the end of its service life. The south section has some granule loss and exposed sealant in good condition suggesting that this section of the roof has upwards of 10 to 12 years of service life left.

The gutters and downspouts are in good condition and do not need to be replaced. The expansion joint in the middle of the roof is in good condition also and needs no repairs.

Recommendations

It is recommended that the north section of the roof be replaced with a thermoplastic polyolefin (TPO) roofing membrane, which is a common roofing system installed on flat, commercial buildings. During installation, any rotted decking should be replaced as well.

The south section of roof is in good condition and needs no repair work on it. There is a large concrete "disk" that is very heavy and several chunks of concrete on top of the roof that need to be removed.

Figure 1: Stains are visible on the original ceiling in a utility room under the north section of roof along the east wall of the building.

Figure 2: Stains on the original ceiling are visible in a hallway under the north section of roof.

Figure 3: North section of the roof looking south.

Figure 4: Depressed area in north section of roof where granules have accumulated over 1" thick.

Figure 5: New patch, loose granules, and deteriorated sealant are found over the utility room where water was leaking from the ceiling.

Figure 6: Extensive granule loss, deteriorated sealant, and patches are found on the north section of roof.

Figure 7: Deteriorated membrane and extensive granule loss are visible on the north section of roof.

Figure 8: A small depression extends around the perimeter of the north section of roof.

Figure 9: Torn and deteriorated membrane reveals portion of the drip edge around the perimeter of the roof.

Figure 10: The expansion joint divides the north (left) section from the south (right) section of the roof.

Figure 11: The south section of roof looking south.

Figure 12: A concrete "disc", chunks of concrete, and sealant around an electrical utility box are visible on the south section of roof.

Figure 13: Minimal granule loss is present on the south section of the roof.

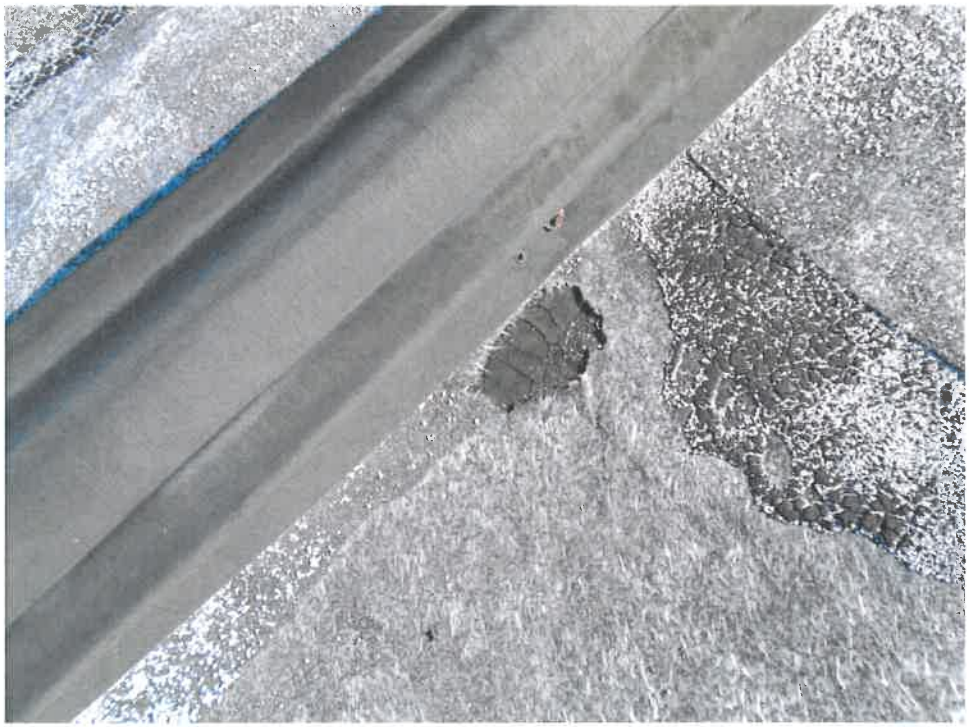

Figure 14: Small areas of deteriorated membrane are visible near the expansion joint.