

General Description:

- **Location:**
Michigan
- **Profile:**
35 Buildings, 1.5 Million sq. ft.
4 Complexes:
Capital, Outstate,
North, and Secondary
- **Project:**
StructureScan™ Survey

Services Provided:

- *StructureScan*™ Survey
- Development of Long-Range Program with Roof Condition Index based on *StructureScan*™

Challenge:

- Multiple complexes with special requirements for coordination, access, and security clearance
- Classified facilities requiring special security measures
- Great diversity of types of roof construction
- Multiple complexes geographically dispersed throughout Michigan
- Provide accurate, comprehensive recommendations in a Roof Condition Index

Solution:

- Continuous lines of communication between project manager and client to ensure all requirements were met
- *StructureScan*™ crews went through security clearance with the Property Management Division
- Used multiple cameras with both shortwave and longwave capabilities to delineate between ballasted and non-ballasted systems for accuracy
- Team effort with multiple crews
- Core extractions and verifications were performed during the day



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Michigan Department of Management & Budget Property Management Division Thirty-Five Buildings

The Michigan Department of Management and Budget's Property Management Division was exper-

tain the overall extent of the degradation - that is, which roofs required total replacement versus removal and replacement of



Overview of Williams Building

ing profuse leakage intermittently on the majority of their buildings throughout multiple complexes. These leaks were dealt with as they arose with repairs, rather than having a prioritized plan. The Property Management Division (PMD) needed a comprehensive evaluation that would delineate on the construction and the conditions of the roofs for all their buildings, as well as the best solutions for their roofing needs. StructureTec was contracted as their roof consultant and recommended that a *StructureScan*™ infrared survey be performed to benchmark the status. With thirty-five buildings spread out throughout the state on four complexes, the scope of work was extensive. Roughly twenty-five percent of the buildings were either newly constructed or had recently undergone roof replacements. The scan was used for warranty-related provisions on these buildings, enabling recourse where necessary from the contractors. On older buildings, the scan would be used to determine the sources for moisture ingress into the buildings and ascer-

localized wet insulation. A major challenge on this project involved dealing with multiple complexes. Each complex had special requirements for coordination, access to the sites, and working procedures. In particular, the infrared scanning needed to be done during off hours, during the evening and into the night, which required special security clearance and supervision. Also, some of the buildings contained



The StructureScan™ Survey revealed wet, saturated insulation at this location. Deficiencies in the flashings appear to have allowed this moisture ingress.



Overview of Joint Laboratory rooftop equipment and projections



Flashing lap is open and leaking at the expansion joint.

classified information requiring further levels of security. The solution was to maintain continuous communication with the client to ensure all requirements were met, as well as passing the scanning crews through security clearance with the PMD, enabling them access to the sites. The crews were then coordinated by the project manager at StructureTec. Another challenge arose from the number of buildings with their mass of square footage and diverse types of construction. The solution to this challenge was to use multiple cameras with both shortwave and longwave capabilities to delineate between ballasted and non-ballasted roof systems. The geographic range of the complexes throughout Michigan also posed a challenge. This challenge was solved by dispersing multiple crews as a team effort to accomplish the objective. As a part of the program, a Roof Condition Index was developed based on these scans. In order to accurately develop these ratings, core extractions were taken and verifications were performed on each building during daylight hours to verify the original survey results. This allowed the PMD to successfully develop a five- to eight-year plan with budgets for both major capital projects and maintenance-related projects on a prioritized basis. In conclusion, the PMD was able to accurately understand the status of their roofing assets and establish a concerted plan for dealing with warranty issues, maintenance needs, and replacement requirements. ■

FEATURES

Determines the exact extent of wet, saturated insulation

High level of accuracy as opposed to guesswork

Scientific approach to problem-solving

Total building evaluation and review

Ascertain the extent of substrata degradation where maintenance is not viable

Infrared shortwave capabilities in addition to longwave

Quality Assurance for newly constructed roofs

Develop a Roof Condition Index rating

BENEFITS

Saves dollars by eliminating unnecessary roof replacement

Precise repairs to eliminate leakage conditions

Addresses the cause of the problem, not just the effect

Able to develop a long-range strategic plan

Properly invest dollars in areas that absolutely require replacement

Able to scan ballasted roof systems

Able to capitalize on warranty provisions and take recourse with the contractor

Establish budgets for future work

Total Building Envelope Management Solution SM

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