

General Description:

- **Location:**
Grand Blanc, Michigan
- **Profile:**
888,535 sq. ft.
- **Project:**
Data Management Services
Roof Evaluation & *StructureScan*™

Services Provided:

- Evaluation
- DMS Implementation
- DMS IT Task Management
- Development of Five-Year Long-Range Program

Challenge:

- Needed infra-red scan performed on ballasted roofs
- Exterior walls exhibiting intermittent leakage conditions

Solution:

- Used the appropriate equipment, tools, and skills to scan ballasted roofs
- Scientific approach combined with experience to solve problems for the entire building envelope

Grand Blanc Community Schools

Entire District - 14 Schools

In preparing for a bond issue process, Grand Blanc Community Schools (GBCS) needed



Overview of Grand Blanc High School

to determine the specific requirements for their roofs and walls, as well as develop the associated budgets. GBCS had not historically had a formal plan of action and wanted to implement one. StructureTec was chosen for the project because of the high level of expertise needed in developing that type of program, combining technical knowledge with the ability to develop a customized database. GBCS also wanted a thermal imagery scan done, and StructureTec had the ability and technology to scan their roofs, 80% of which were ballasted. One of the challenges of the project was the fact that the majority of GBCS' roofing assets had been retrofitted over the last decade. Most of the retrofits were an in-

stallation of single-ply EPDM over an existing roof system which contained wet, saturated insulation or which did not provide suitable criteria for an overlay. The exterior walls were also exhibiting leakage conditions intermittently throughout the facilities. These walls were evaluated along the roof line, and follow-up investigations were performed on select facilities for building envelope remediation as a supplement to the initial evaluation. In regard to the roof, the condition report included information on copings and parapet walls, counterflashings, baseflashings, drainage systems, projections, and roof top equipment. The roof membrane condition report outlined problems with shaling ballast, delamination, open seams, deteriorated lap sealant, punctures, ponding water, and wet in-



Sharp edges observed at the shaling ballast.



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*Deteriorated membrane observed at wall flashing.
Exposed wood nailer and insulation observed.*

sulation. The report identified areas for repair, wet insulation replacement, and complete tear-off and removal and also delineated on roof age and warranty status. Photographs and schematics were included for every school. Test cuts were taken to confirm the construction, the integrity, and the findings of the StructureScan infra-red thermal imagery survey. Design solutions were outlined and defined. All of this information was then processed by Data Management ServicesSM (DMS), a division of StructureTec, and a customized software program was developed. The program which was developed recorded all of the evaluation information and provided Grand Blanc Community Schools with a work order program for all their roofs, as well as a life-cycle cost analysis program which allowed them to analyze different roof systems



Open lap observed. EPDM seams appeared to be deficient.

FEATURES

Develop a roof condition index rating

Prioritization which encompasses all roofs

Delineate which roofs need replacement and which need maintenance

StructureScan Survey of ballasted roof systems

Building envelope exterior wall evaluation at the roof line

BENEFITS

Establish budgets for future work

Complete inventory of all roof assets

Able to allocate their resources properly, maximizing the return on investment

Able to identify substrata conditions

Incorporate the "Total Envelope Concept" to develop total facility solutions

and maintenance strategies in order to maximize their return-on-investment. Contractor ratings and glossaries are also included with the software. Contractor ratings are particularly important to GBCS, which is publicly funded and uses the ratings as a way to qualify the bids they receive on their projects. This comprehensive database of inventory for all the buildings' construction, conditions, and recommendation with associated reports and budgets was provided in both a hard copy format, as well as a usable software format for day-to-day operation. In conclusion, this information enabled GBCS to achieve their goal by providing appropriate budget allocations to support their bond issue process. ■

Total Building Envelope Management SolutionSM

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