

General Description:

- **Location:**
Battle Creek, Michigan
- **Profile:**
Manufacturing Facility
- **Project:**
Roof Replacement, Roof Repair, and Wall Remediation

Services Provided:

- Evaluation
- StructureScan
- Design Development
- Construction Documents
- Bidding
- Field Quality Assurance

Challenge:

- Limited budget for work
- Significant ponding water and deck degradation
- Small void between roof and wall system
- Significant distress and lack of watertight integrity on masonry wall

Solution:

- Used value engineering with repair and remediation when possible to obtain maximum results
- Designed a fully tapered insulation system with additional roof drains and required deck replacement
- Designed a slip insert counterflashing
- Designed a tuckpointing/cladding remediation combination that was cost-effective and efficient

Michigan Paperboard Battle Creek Manufacturing Facility

Michigan Paperboard, a subsidiary of Field Container Company, was experiencing significant leakage in their plant. StructureTec was contracted to evaluate the building. StructureTec discovered that there were three main areas of concern – a low slope roof, a barrel roof, and the wall next to the barrel roof.

inadequate and random intermittent moisture had been present for many years, which had degraded the deck. StructureTec solved this by designing a fully tapered insulation system with additional roof drains, as well as deck replacement in required areas. The next challenge that arose was a void that existed between the low slope roof

base flashing and the existing metal wall system. StructureTec solved this by designing a special sheet metal counterflashing that would be installed in conjunction with the new base flashings for the roof system. The masonry wall also posed a challenge. The wall was experiencing significant structural distress and lacked wa-



Overview of facility prior to work commencing.

All of these areas were contributing to the leakage conditions within the plant. One challenge StructureTec faced was the limited budget Michigan Paperboard was able to allocate toward the work. A StructureScan survey was performed to determine the amount of wet insulation and whether remediation of the old roofs was possible. It was soon determined that the barrel roof could be repaired but that the low slope roof required complete replacement. Another challenge arose from the significant presence of ponding water. With the low slope roof, drainage was

tertight integrity. Because of the extensive work required by the other areas, a cost-effective approach was vital for this area. StructureTec answered this



The masonry wall was exhibiting significant distress and required structural remediation.



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The roof was experiencing significant distress and required replacement. (BEFORE)

concern by designing a tuckpointing and cladding solution. The structural integrity of the wall would be restored with the tuckpointing. The watertight integrity of the wall would then be ensured by installing a metal cladding system over the wall. This solution was economical, aesthetically pleasing, and solved the problems. StructureTec then wrote the specifications, bid the project, and began conducting Construction Review and Administration to ensure qual-



Before...



...and After



A new slip insert counterflashing and deck replacement were part of the roof replacement project. (AFTER)

ity. Coordinating the jobs and trades was also a challenge, but careful coordination between roofing and restoration personnel allowed the project to progress smoothly and in a timely manner. In conclusion, Michigan Paperboard was able to address their multiple facility needs while remaining within the necessary budget, achieving the maximum return on investment. ■

FEATURES	BENEFITS
Designed built-up system	Durable for high traffic areas
Installed new structural support and decking	Provided additional structural support for rooftop equipment
Reconstructed new perimeter edge detail	Provides proper tie-in from roof to wall
Application of new reflective aluminum coating	Provided long-term weatherproofing to membrane
Wet, saturated insulation was replaced in like kind	Prevents further degradation of roof deck/overall system
Performed structural review	Ensured integrity of masonry and stability of wall
Designed structural support and cladding system	Provides watertight integrity and prevents degradation