CDR - Pigments & Dispersions
Building 14

General Description:
- **Location:** Holland, Michigan
- **Profile:** Approx. 8,500 sq. ft. replaced
- **Project:** Roof & Partial Deck Replacement

Services Provided:
- Evaluation
- Design Development
- Construction Documents
- Bidding
- Field Quality Assurance

Challenge:
- Required a roof that would withstand the heavy foot traffic
- Extensive ductwork occurring in conjunction with modified HVAC system installation
- Prolonged moisture content had caused deck degradation

Solution:
- Designed a hybrid built-up and modified bitumen roof system to provide a high level of protection and longevity
- Provide interface and coordination between all various trades
- Designed a partial deck replacement as a part of the roofing project

CDR - Pigments and Dispersions, a major manufacturer in Southwest Michigan, was experiencing extreme leakage conditions, occurring over a critical manufacturing process in the building. StructureTec was hired to perform an evaluation including a StructureScan Survey. The evaluation revealed that the roof was very deteriorated. The *StructureScan*™ Survey had indicated significant major areas of wet, saturated insulation, which necessitated complete removal and replacement. In addition, as a result of the prolonged moisture content in the roof system, it was anticipated from the outset that significant deck degradation had occurred. This was confirmed with a structural analysis of the deck. This was the first challenge because the partial deck replacement needed to be coordinated with the roof replacement. Also, the manufacturing process necessitated extensive rooftop equipment and heavy foot traffic. This situation posed a unique challenge because a roof would have to be designed which could withstand this traffic. The roofing project was being completed in conjunction with an HVAC renovation. This challenge involved extensive ductwork that had to be coordinated with the roofing project and also required special attention to detail for proper flashing and integration with the roof system. During the design development stage, a hybrid built-up and modified bitumen roof system was designed to withstand the heavy foot traffic and the manufacturing process. The multi-ply configuration was the first step of this protection. The modified bitumen cap sheet then provided a thick "skin" on the roof for further protection. Finally, a flood

Overview of completed roof replacement.

Extensive rooftop equipment and penetrations received careful attention to detail as flashings were incorporated into the roof replacement project.

StructureTec® *Project Profile*

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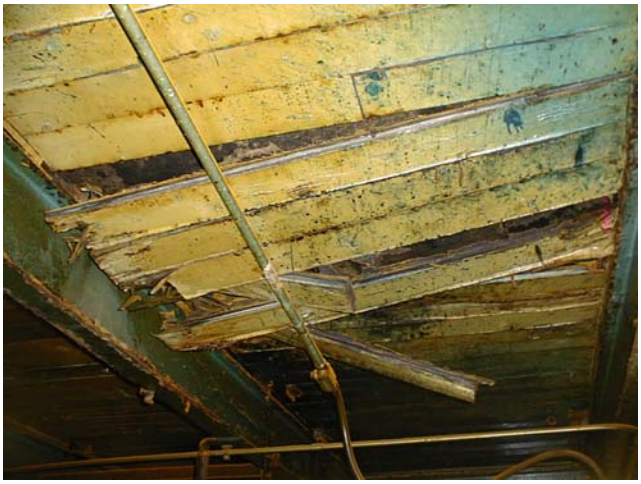
Roofing - Corporate



Existing wooden deck was completely degraded due to the extensive, prolonged moisture ingress in the roof system.

New decking was installed to provide structural integrity for the roof and the rooftop equipment.

coat and aggregate surfacing was applied over the cap sheet to provide ultimate protection. A partial deck replacement was incorporated with an additional structural beam to support the extensive rooftop equipment. Flashing details were designed to incorporate the ductwork. The Construction Documents were then written and the project was bid out. During the construction phase, extensive site visits provided Field Quality Assurance and helped ensure the highest quality end product. In conclusion, CDR has a durable, watertight, well-supported and integrated roof system with a high rating for longevity which maximizes their return on investment. ■

StructureScan™ Survey revealed wet insulation in this area. Note orange pigment dispersed from process below.

FEATURES	BENEFITS
Designed new drains	Helped eliminate ponding
Designed hybrid modified bituminous system	Durable for high-traffic areas
Provided field of the roof metal flashing details	Long-term details requiring minimal maintenance over the service life
Deteriorated wood decking was replaced with new lumber	Provided structural integrity to support new roof system
Designed an additional structural beam below the deck	Provided additional structural support for extensive rooftop equipment
Obsolete rooftop equipment was removed	Provided greater watertight integrity for new roof system
Designed structural supports and flashings for newly installed rooftop equipment	Attention to detail ensured total system integration with less potential for future leakage
Provided Field Quality Assurance	Ensured higher quality end product
Life cycle cost (high rating for longevity	Maximized the return on investment

StructureTec® Project Profile