

General Description:

- **Location:**
Three Rivers, Michigan
- **Profile:**
Manufacturing facility
- **Project:**
Multiple system roof replacement project

Services Provided:

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

Challenge:

- Diverse roof decking, slopes, and applications
- Extensive transitions
- Inadequate drainage and degraded decking

Solution:

- Designed different roof systems to meet the facility requirements
- Designed specialty fabrications with intense detailing
- Designed additional drainage and areas of deck replacement

Armstrong International *Three Rivers Plant*

Armstrong International, a major manufacturer of steam, air, and hot water systems, was experiencing significant leakage conditions at one of their plants in

in numerous locations for an extensive amount of time. This had caused areas of the deck to become extremely degraded and require replacement. StructureTec



Overview of plant with work in progress.

Three Rivers, Michigan. With more than a century of history in the Three Rivers area, Armstrong International had undergone significant changes and expansions over the years. This had caused a diversity in the roofing systems in terms of decking, slopes, and applications. This diversity posed the first challenge for StructureTec, who had been contracted to implement a roof replacement project on portions of the plant. A related challenge was with the diversity of transitions in the building. Parapet walls, expansion joints, and other connections required special attention. A third challenge arose from the fact that inadequate drainage and wet, saturated insulation had existed

then began designing several different roof applications for the different areas, in order to satisfy the diversity of the roof conditions. A built-up roof was designed for low-slope, high traffic areas where durability was essential. For the steep slope applications, a modified bi-



Different slopes and interconnected roof areas were challenges during the project.



Web: www.structuretec.com
Email: geninfo@structuretec.com

All rights reserved.



Extensive detailing ensured that all transitions were watertight.

tuminous roofing system was determined to be the best fit to tie in with the other systems. Specialty metal fabrications were specified to accommodate the copings, counterflashings, and other tie-ins at the transitions with parapet

walls. Intense detailing was implemented to tie together all of the diverse components and specialty applications. StructureTec also designed additional drains and deck replacement where necessary to prevent ponding water and ensure the structural stability of the new roof. The project was then competitively bid out. During the con-

struction phase, StructureTec conducted all necessary Field Quality Assurance to ensure that all of the details of the project were correct, ensuring the highest overall quality. In conclusion, Armstrong International had new, diverse roof systems which met the requirements of their facility. Because all applications were designed for durability and longevity, Armstrong International was assured the greatest return on investment. ■



StructureTec conducted Field Quality Assurance to ensure that all the details of the project were correct.



Because of extreme degradation,...



...portions of the deck were replaced.

FEATURES

Designed built-up with modified cap sheet

Replaced existing corroded deck with new anticorrosive steel deck

Designed new coping system

Designed new drains

Provided field of the roof metal flashing details

Designed modified bituminous smooth surface membrane

BENEFITS

Durable for high traffic areas and longevity

Provided sound substrate for new roof system

Provided watertight integrity at the perimeter

Helped eliminate ponding

Long-term details requiring minimal maintenance over the service life

Durable for high sloped areas

Total Building Envelope Management SolutionSM

www.structuretec.com
(800) 745-7832