

**General Description:**

- **Location:**  
Battle Creek, Michigan
- **Profile:**  
Multistory Elementary Building
- **Project:**  
Steep Slope Roof

**Services Provided:**

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

**Challenge:**

- Steep slope visible from below
- Deteriorated wood deck
- Protection for inside building during deck replacement
- Multistory building

**Solution:**

- Aesthetically pleasing granular surfacing
- Coordinated replacement of deck with roof replacement
- Temporary protection designed within the building
- Helped coordinate staging procedures

## Battle Creek Public Schools *Roosevelt Elementary School*

Battle Creek Public Schools, a school district in South-west Michigan consisting of

fact that the project needed to be completed during summer break. The building would also need to



*Overview of completed roof replacement.*

more than twenty-five buildings, had been experiencing leakage conditions at Roosevelt Elementary School for a long time. StructureTec was contacted to perform an analysis of the roof. StructureTec determined that complete removal and replacement were necessary. Several challenges became evident. The new system needed to be aesthetically pleasing because it had a steep slope and was visible from the road. An additional problem arose from the fact that it was anticipated that portions of the wood deck were deteriorated. These efforts would need to be coordinated with the rest of the project, which was already on a strict schedule due to the

be protected on the inside while the new decking was installed. A final challenge was the height of the building. The construction efforts would need to be carefully coordinated for staging, safety, and timeliness. During an expanded design stage, these challenges were ad-

dressed. Construction Documents were then developed and the project was bid. During the construction phase, the decking was replaced in areas which had rotted and deteriorated. These efforts were carefully coordinated and monitored in order to ensure



*Fully-adhered insulation board is being installed.*



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*Deteriorated wood decking was not structurally sound.*



*Deteriorated wood decking was replaced with new lumber.*

that everything was performed sequentially and in a timely manner. A temporary envelope had been created to ensure that the inside of the building would be protected during these efforts. A modified bituminous roof system was installed, consisting of three plies of fiberglass felt, as well as a modified bituminous cap sheet with a granular surface. The completed roof assembly conformed to a steep slope environment and was aesthetically pleasing when viewed



*Bituminous plies were installed overlapping and fully adhered.*

FEATURES	BENEFITS
Designed new fascia system	Prevented splits and fractures along edge detail
Designed modified bituminous roof system	Durable for traffic and conforms to steep slope
Provided granular surfacing	Aesthetically pleasing when viewed from below
Reconstructed areas of deteriorated wood decking	Provided sound substrate for new roof system
Provided Field Quality Assurance	Ensures higher quality end product

from the road. Field Quality Assurance was an important part of this project in order to coordinate all of these activities, as well as to oversee the staging and ensure safety and timeliness. In conclusion, Battle Creek Public Schools has an aesthetically pleasing, watertight roof which has a high rating for longevity and will yield the greatest return on investment. ■