Kellogg Community College
Learning Resource Center & Davidson Building

General Description:
- **Location:** Battle Creek, Michigan
- **Profile:** Two College Facilities
- **Project:** Roof Replacements Grant-funded Upgrades

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

Challenge:
- Project needed to be completed during summer season prior to fall term
- Project needed to be coordinated with internal building remediation being performed
- Originally designed flashing heights were inadequate for window panels at high-bay/low-bay juncture
- Natural lighting required inside designated areas of building
- Roofs designed with dead level decks which required positive water flow for drainage but inadequate flashing heights on perimeters for tapered insulation

Solution:
- Design work and bidding completed during winter months so project could start on time
- Progress meetings for coordination and communication with all parties
- Window panels removed, flashings redesigned, and new panels installed to accommodate proper flashing height
- Special skylight system designed with proper flashings
- Designed zoning of insulation, as well as additional drains

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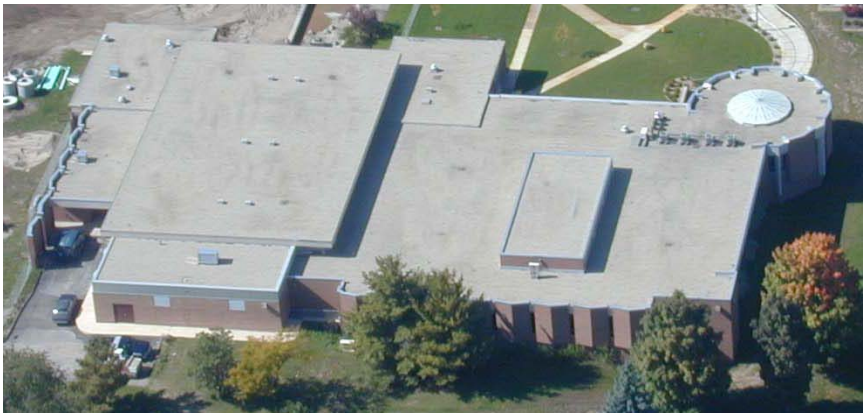
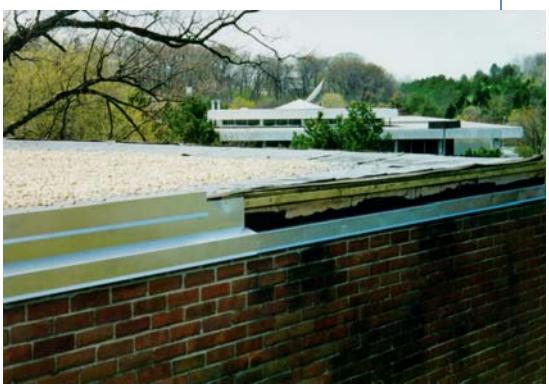
Kellogg Community College, a leading provider of higher education in Southwest Michigan, had been experiencing significant leakage in the Learning Resource Center and the Davidson Building. Both facilities still had original roofs, which had realized their full life expectancy and were now expired. Kellogg Community College was currently in the process of receiving grant money from the State of Michigan to upgrade their facilities in a comprehensive five-year plan. Roof replacements were scheduled to be a part of this program. StructureTec was contracted to design and implement these roof replacements. A challenge arose because this work needed to be completed during the summer season prior to the fall term. In order to accomplish this objective, StructureTec designed the replacements, developed construction documents, and bid the project during the winter so that the contractor could schedule the work early, enabling both a timely start and finish. This work was also occurring concurrently with internal remodeling projects which were being facilitated by an architect. This remodeling included a major upgrade internally of all the components which these facilities supported. Special care was required to ensure that these internal operations were not disturbed. This challenge was met by scheduling progress meetings and maintaining good lines of communication with all parties involved. The next challenge arose from deficient flashing heights around the window panels at the high-bay/low-bay juncture. The original window panels were scheduled to be removed and replaced as part of the renovation. The flashing details were redesigned to achieve a proper height with watertight integrity. Another challenge arose from the fact that natural lighting was required at designated areas within the building. This was solved by designing a specialty skylight system with proper flashing details which allowed it to integrate with the roof system. A final chal-



Overview of Learning Resource Center



New fascia system was designed with careful attention to detail to allow for perimeter movement.

StructureTec® *Project Profile*

Roofing - Institutional

Existing roof was extremely degraded, experiencing leakage, and at the end of its service life.

The new built-up roof system, which incorporated zoned insulation, replaced the original roof.

lenge arose from the fact that the roofs had been designed with a dead level deck. The perimeter walls were of inadequate height to design a tapered insulation system with proper flashings. The solution was to zone the insulation and add additional drains. Zoning is a process which combines tapered edge strips with layering traditional insulation, creating a sumping effect where flashing heights do not allow for tapered insulation. Although it does not provide as much of a slope as a tapered insulation system, this assembly, combined with additional drains, is an enhanced solution to the problem of ponding water. Once all of the design challenges had been solved, construction documents were written for the new built-up roof and the project was bid out. During the construction phase, field quality assurance was employed in order to ensure that the project was being completed correctly. In conclusion, Kellogg Community College received upgraded new roofs which were fully integrated with their upgraded facilities, allowing the greatest return on investment. ■

Original flashing heights around window panels were of inadequate height for watertight integrity.

New flashing details and window panels were installed as a part of the roof replacement.

FEATURES	BENEFITS
Designed built-up roof	Durable for longevity
Designed new counterflashing system at window detail	Prevented moisture ingress behind flashing detail
Designed additional sumped drains	Prevented standing water by aiding water dispersion
Designed zoning of insulation	Allowed water to flow toward the drains
Designed new skylight assembly	Provides natural lighting and maintains watertight integrity
Life-cycle cost (high rating for longevity)	Maximizes the return on investment
Provided Field Quality Assurance	Ensures higher quality end product

StructureTec® Project Profile