ELARA
ENGINEERING

Big Picture Thinking. Practical Approach. Sustainable Design.

KCC The Advanced Technology Education Center (ATEC)

Project Highlights and Results
- LEED Gold Designation
- Obtained $133,048 Department of Commerce and Economic Opportunity (DCEO) incentive
- New building design features classrooms and functional, green technology labs; including wind, solar thermal, solar photovoltaic, and electrical simulation labs
- Requires approximately 30% less energy than a baseline ASHRAE 90.1-2004 building
- Project designed in 2009 utilizing BIM software
- Design included "Roof Labs" where the photovoltaic cells were installed with walk-out roof access for hands-on student/classroom use and learning.

Project Background
Owner:	**Kankakee Community College (KCC)**
Location:	**Kankakee, IL**
Team/Team Lead:	**Steve Maze, Claudine Harig, David Morris, Bhupendra Tailor,**
Elara Role:	**MEPFPIT Design Engineer**
Type:	**New Construction**
Construction Cost:	**$5,000,000**

Project Overview
Building Type:	**Higher Education**
Building Attributes:	**Two-Stories, 20,000 SF**
Initial Construction:	**2019**
MEPFPIT Systems:	**Geothermal Heating & Cooling, Solar, Wind, DOAS, Natural Ventilation, DDC**

Innovation
- New state-of-the-art learning center intended to serve as an integral part of students' learning experience.
- Engineering features include:
  - Alternative energy sources for space conditioning
  - Rainwater capture and harvesting
  - Variable ventilation/demand CO_2 control
  - A dedicated outside air system to provide fresh air at floor level
  - A single pipe loop geothermal/ground source heat pump system for heating and cooling; single pipe loop reduced pipe and insulation consumption and material costs
  - Natural ventilation
- High-efficiency lighting used throughout the building with external and internal shading to help maintain a comfortable learning environment.
- Incorporates renewable energy generation through solar photovoltaic and solar thermal cells on the roof, and the use of nearby wind turbines for electrical power.