

## Case Study – Stevenson Area Public Schools



### The Challenge

- Escalating energy costs and already tight operating budgets
- Inefficient and dated HVAC and water heating systems
- Various sources of energy loss throughout the facilities
- Overall environment was not optimized for learning (e.g., lighting and comfort of classrooms)
- Understood need for improvements; however, a creative solution was required to overcome budget challenges

### The Solution

- Sheren Energy conducted an energy audit to learn how and where we were using energy
- Stephenson's customized energy savings plan for two buildings (high/middle school and elementary) in the district included:
  - **Replaced boiler and upgraded domestic hot water system**
    - **Replaced two inefficient package fire tube boilers with high efficiency condensing boilers**
    - **Used indirect fired, domestic hot water heating**
    - **Included variable frequency drives on the hot water heating system**
  - **Installed Energy Recovery Ventilators on air handling units**
  - **Provided intelligent occupancy sensors for concession machine control**
  - **Replaced lighting fixtures with more efficient fixtures**
  - **Added occupancy sensors to lighting**
  - **Replaced obsolete management system with a new energy management system**
  - **Provided test and balancing for HVAC systems, monitoring and ensuring proper air and water flow to each device in the system**
  - **Provided a commissioned report to ensure all devices are working at optimal levels**
  - **Created an energy playbook, establishing a school-wide energy policy**
  - **Provided ongoing training for staff, administration and teachers and helped the district create an energy curriculum**
- We quantified the amount of anticipated energy savings in terms of usage and dollars.
- The team also created a financing plan whereby Stephenson Area Public Schools could use the identified savings to pay for the needed upgrades...meaning no out-of-pocket expenses for the district.

## **The Results**

- **Enabled a savings of...**
  - **\$51,410 annually in energy costs**
  - **\$5,000 annually in operational costs**
- **Resulted in a total savings of \$668,644 over 10 years**
- Combats escalating energy costs
- Provides a more comfortable and conducive to learning
- Offers systems that are easier and less costly to maintain