CLASS PRIZE Phase 2 – Efficient and Healthy Schools Initiative

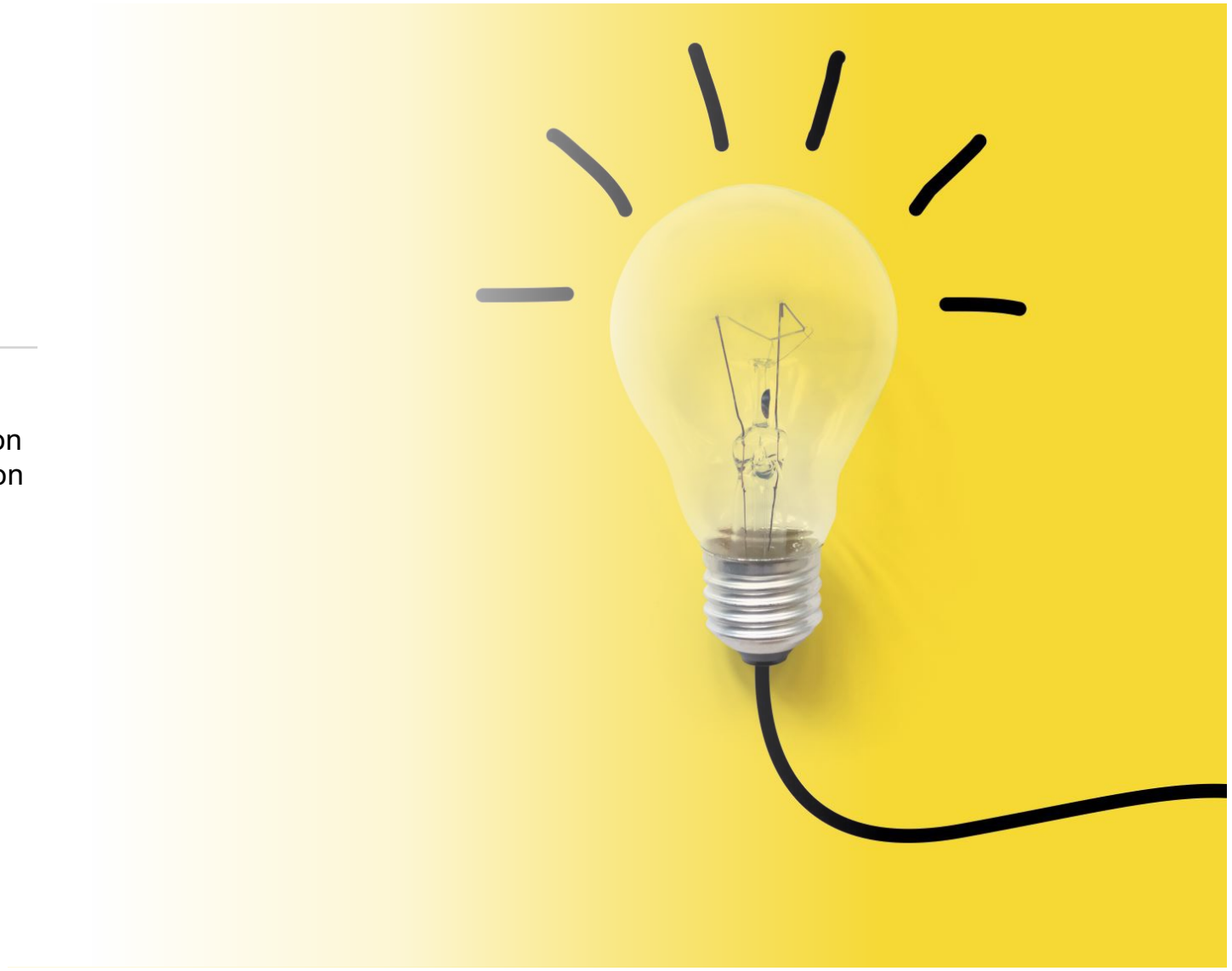
Canajoharie Central School District

Our Vision:

“Every Learner, Together, World Ready”

Team Description – CCSD POWER Team

The CCSD POWER Team is a cross functional team focused on the development, communication and implementation to create a safe, healthy and efficient learning environment.



Team Description - LEA Information

Organization Name

- Canajoharie Central School District

Location

- Canajoharie, New York

Type

- K-12 Public School District

Student Enrollment

- 900

Annual Energy Savings

- 3% Electricity / 7% Natural Gas

Team Description - Demographics

Services:

The District provides public educational services, employs 190 staff, serves as a disaster relief shelter and is a CBO.

Service Area:

100 square miles of Towns and Villages in Montgomery County, New York.

NCES Locale Code: Town: Distant (32)

NYSED High Needs District (Title 1)

Facilities:

Elementary School

Middle School

High School

Athletic Center with an indoor pool

Transportation Facility

Team Description - Utilization of the Training/Coaching Program

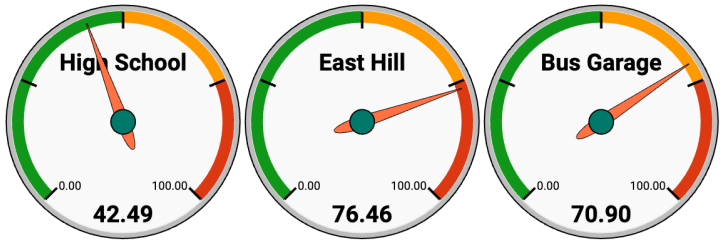
The CLASS Prize provided extensive professional development of the team for the creation, communication and implementation the Energy Management Plan that is the road map for the goals of the District.

The training and coaching covered topics that created a comfortable understanding of the buildings, systems, stakeholders and methodology to create Efficient and Healthy Schools beginning with a baseline and benchmark of energy use.

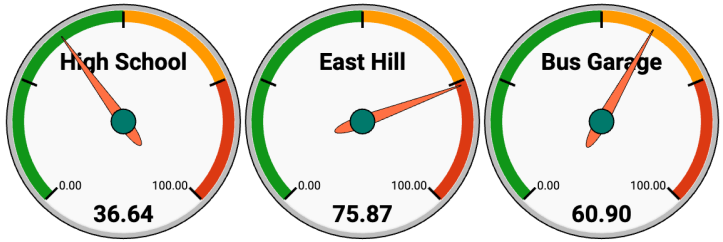
The knowledge and information gained is utilized to inform stakeholders and steer the development of the Energy Management Plan to make strategic decisions for the present and future needs of the District including technologies, funding and buy-in.

Progress Made During Phase 2 – Energy Assessment

2022 Median Energy Utilization Index For Total Site KBtu/Sq.ft.



2023 Median Energy Utilization Index For Total Site KBtu/Sq.ft.



Lessons established the starting point as a baseline and tracking that allows for the quick identification of the performance at each building and indicates which energy source and building stands out as a priority.

The buildings were benchmarked in ENERGY STAR Portfolio Manager for comparison to each other and to similar buildings nationwide.

Progress Made During Phase 2 – Improvements Implemented

No-Cost Conservation and IAQ Measures: (scheduling, deletion and practices)

- Plug Load Controllers (scheduling)
- Computer Power Management (scheduling)
- Lighting Adjustment (scheduling)
- HVAC Run Time Scheduling (scheduling)
- Obsolete Device Removal (deletion)
- Outdated Fixtures (deletion)
- Redundant Appliance Awareness (practices)
- Conservation Habits (practices)

Low-Cost Efficiency and IAQ Measures: (periodic maintenance and repairs)

- Regular Equipment Service (periodic maintenance)
- Missing/Damaged/Unseated Ceiling Tiles (repairs)
- Heating/Plumbing System Leaks (repairs)
- Defective Faucets (repairs)
- Roof Leaks (repairs)
- Operational Equipment (repairs)

Progress Made During Phase 2 – Knowledge Gained/Shared

The knowledge gained is shared among the stakeholders. Each engagement is tailored for the audience to provide understanding and promote buy-in.

- Fundamental Building Science – Operations and Maintenance
- Benchmarking and Energy Management – Facilities Management
- Indoor Air Quality - Faculty
- Resiliency - Community
- Procurement Strategies - Board of Education
- Stakeholder Engagement - Students
- Business and Communication Skills – Administration

Progress Made During Phase 2 - Bolstering Success

CCSD has completed an Energy Management Plan that involves the advancement of energy initiatives, funding and education. It details the current conditions, states the goals of the District and defines the steps required to achieve the goals.

This plan is a living document that is reviewed and adjusted as the District progresses towards its goals for assessment of what is working and what isn't and reveals the underlying factors that affect outcomes. Reviews provide opportunities to make informed adjustments to the plan that bolsters success.

Associated Impacts

More Efficient and Healthy Schools

- Strategic decisions for technologies and timelines
- Lower Energy Costs through increased efficiency
- Increased Indoor Air Quality through Periodic Maintenance
- Choices towards resilience and sustainability
- Diversity and combinations of funding
- Healthier learning environment for the number 1 stakeholders - students
- Buy-in by keeping Energy at the forefront

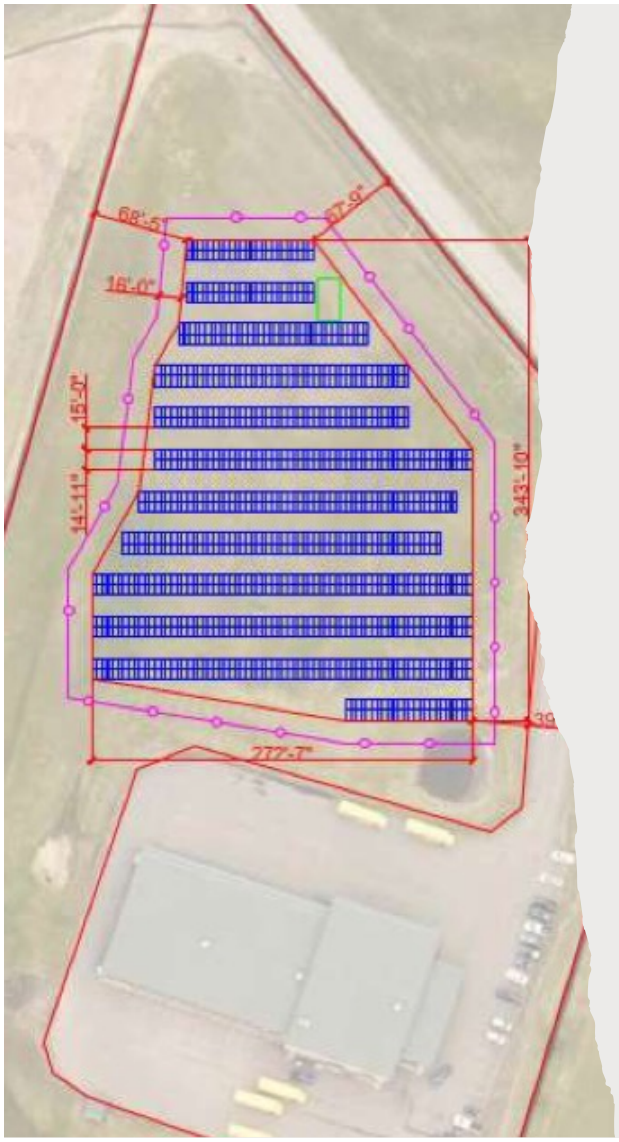
Facilities Addressed

350,000 sq. ft.

Spanning 3/4 of a century in construction and systems technology

Facilities Addressed – Focus Issues

- Reactive and deferred maintenance
- Indoor Air Quality factors
- Energy waste
- System retro commissioning
- BMS integration
- Resiliency and Sustainability
- Emissions Reduction
- Fleet Transition to BEVs

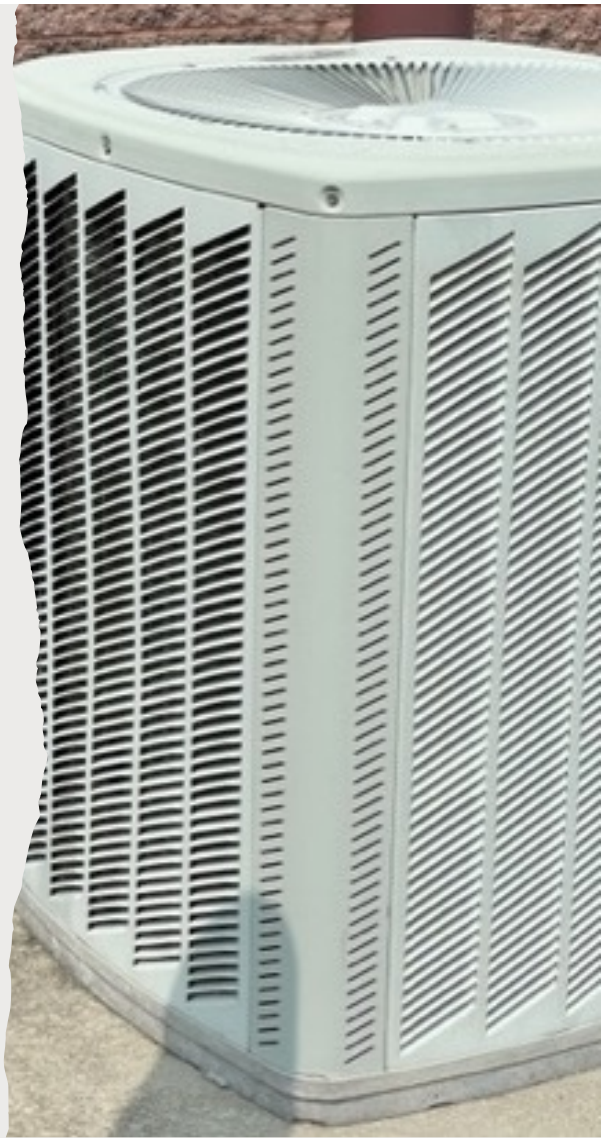


Proposed Building Upgrades

Solar PV - Electrification Readiness to support decarbonization, resilience and sustainability.

GSHP/ASHP - Electrification of the Elementary School, Middle School and Athletic Center heating systems will provide cooling for resilience and Solar offsets the switch to electrical energy from natural gas for sustainability.

Deletion - Full implementation of the future upgrades allows for the deletion of certain natural gas fired equipment and validates decarbonization.



Proposed Transportation Upgrades

BEV/EVSE - Decarbonization of transportation activities including battery storage by using electric buses with V2G technology and compounding savings with renewable energy for resilience and sustainability.

Impacts – Savings, Health and Learning

Financial savings from renewable energy will provide an offset of electrical consumption. This upgrade is the “on ramp” for future upgrades focused on carbon and emissions reduction.

The initial electrification of heating systems will provide emissions reduction creating air quality improvements and lessening environmental impacts for all stakeholders with more improvements to follow.

Electrification of the bus fleet will eliminate fossil fuel consumption and emissions related to bus transportation activities and in the communities in which they travel.

Impacts from the proposed building projects will positively affect the attendance and learning of students through a healthier learning environment and for the community at large.

Next Steps for Implementation – Funding Strategy

Funding is the most influential aspect of project implementation. The mechanisms for funding come in various forms and combinations that are examined to suit each project.

Next Steps for Implementation - Identify and Prioritize Stakeholder Engagement

The purpose of the school is to educate and prepare students for their future. Energy Transition is a part of that future making students the #1 stakeholder.

Administration sets the path for the faculty and staff to deliver on that responsibility, their support is essential as the #2 stakeholder.

Faculty is the mechanism by which the educational goals are met making their understanding and participation crucial as the #3 stakeholder.

Next Steps for Implementation - Hidden Stakeholder Engagement

Maintenance staff implements the physical aspects of the initiatives requiring support and the sharing of knowledge and reasoning.

The community is not only the financial stakeholder for the schools they also provide the individual support to each student stakeholder. Sharing the district's plans, projects and progress with the community relates to what the students are learning and experiencing.

Other Stakeholders such as local government and BOE can influence plan success, it is important to recognize them and sustain a dialog.