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## Case Study: ASHRAE Memphis Chapter's Involvement with Memphis-Shelby County Schools in the 2023 Renew America's Schools Grant

### Executive Summary

In 2022, the ASHRAE Memphis Chapter partnered with Memphis-Shelby County Schools specifically Riverview K-8 School, as part of their involvement in the *Renew America's Schools* Grant. This initiative, backed by the U.S. Department of Energy (DOE), aims to improve energy efficiency and indoor air quality (IAQ) in schools, with a focus on disadvantaged communities. The ASHRAE Memphis Chapter's expertise, combined with strategic partnerships with local organizations, played a key role in helping Memphis-Shelby County Schools secure the \$9.5 million Renew Americas Schools Grant and implement transformative upgrades at Riverview K-8 School. The success of this project serves as a model for other ASHRAE chapters to engage with local school districts and drive improvements in energy, IAQ, and sustainability.

### Background: Riverview K-8 School



Riverview Elementary/Middle School, located in a DOE Disadvantaged Community in southwest Memphis, serves a diverse population of approximately 437 K-8 students. The surrounding neighborhood ranks in the 99th percentile on several Environmental Protection Agency Environmental Justice indices, reflecting a community in need of both environmental and economic improvement.

Riverview is not only an educational facility but also a community shelter, providing a critical role as a safe haven during emergencies. Given its significance to the local population, Riverview was chosen as the demonstration site for a series of improvements aimed at improving energy efficiency, IAQ, and overall sustainability. The broader goal of the project was to create a model for Memphis-Shelby County Schools, which operates 163 facilities throughout the region, to replicate in other schools.

### ASHRAE Memphis Chapter's Role

The ASHRAE Memphis Chapter was instrumental in guiding Memphis-Shelby County Schools through the process of applying for the *Renew America's Schools* Grant and in assisting with the technical aspects of the improvements. The Chapter's involvement began organically, with several key members, including past presidents and local engineers with ties to the district, playing a significant role in the project.



#### 1. Collaboration with Industry and Educational Partners

The ASHRAE Memphis Chapter brought together a diverse group of stakeholders, including the University of Memphis, Memphis Light Gas and Water (MLGW), the Memphis Regional Chamber, and others. Through its student branch at the University of Memphis, the ASHRAE Memphis Chapter facilitated

student involvement and industry training in the project, particularly in energy-related learning activities that could be replicated across other schools. The collaboration was further strengthened by partnerships with organizations like the Peer Power Foundation and The Works LLC, and community groups such as 100 Black Men Memphis.

## 2. Technical Assistance and Expertise

ASHRAE Memphis members, in collaboration with a local engineering firm, helped conduct energy audits and identified key areas for improvement at Riverview. The proposed upgrades included lighting replacement, HVAC system upgrades, boiler plant electrification, new exterior windows, and the installation of a solar array. ASHRAE's technical expertise ensured that the recommended solutions adhered to the latest industry standards for energy efficiency and IAQ, while also considering the unique needs of the community.

## 3. Weekly Check-ins and Project Management

As part of its commitment, the ASHRAE Memphis Chapter played an essential role in managing the application process and organizing weekly check-in meetings to ensure project alignment. These meetings addressed critical questions such as application procedures, requirements, and the allocation of technical tasks among ASHRAE members. The project management approach helped keep the team on track and fostered a collaborative environment among all stakeholders.

## 4. Engagement of Students and Community Members

Memphis-Shelby County Schools leveraged its College, Career, and Technical Education program to embed the project into the curriculum at Riverview's Innovative Design Lab. Students were engaged not only in the implementation of the energy upgrades but also in the learning activities related to sustainability, energy efficiency, and workforce development. By the end of the grant period, the project was designed to include community stakeholders, municipal leaders, local businesses, and workforce groups, all working together to ensure long-term sustainability.

## Outcomes of the Collaboration

The *Renew America's Schools* Grant led to significant upgrades at Riverview Elementary/Middle School, with improvements focused on energy efficiency, IAQ, and sustainability:

### ▪ Energy Efficiency and Sustainability

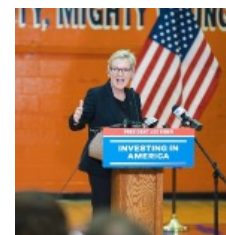
The installation of energy-efficient lighting, HVAC system upgrades, and the introduction of a solar array allowed Riverview to reduce energy consumption and lower operational costs. The electrification of the boiler plant and the installation of new windows further enhanced the school's energy profile, contributing to long-term savings and a reduced carbon footprint.

### ▪ Improved Indoor Air Quality (IAQ)

Through the upgrade of HVAC systems and the implementation of enhanced filtration and ventilation systems, Riverview now enjoys improved IAQ. These measures ensure a healthier environment for students and staff, reducing the risks associated with airborne pathogens and improving overall air quality.

### ▪ Educational and Community Impact

The project has served as a demonstration site for energy efficiency and sustainability initiatives, providing a valuable learning opportunity for both students and educators. Additionally, it has fostered community involvement and workforce development, particularly in the local workforce and labor groups, as Memphis-Shelby County Schools committed to involving diverse populations in the project's implementation.



Jennifer Granholm  
U.S. Secretary of Energy



## Challenges and Solutions

While the collaboration was highly successful, the project did encounter several challenges:

### 1. Lack of Consensus Understanding of the Renew Americas Schools Grant

The initial challenge was aligning the various departments within the district, such as community safety, workforce, and facilities management, to understand the goals and requirements of the grant. To address this, the ASHRAE Memphis Chapter and the working group organized informational meetings to clarify the RFP and bring the right stakeholders to the table.

### 2. Staffing Changes within the School District

During the project, Memphis-Shelby County Schools experienced changes in key staff positions, which initially slowed progress. To overcome this challenge, the ASHRAE Memphis Chapter, in partnership with the local engineering firm, helped maintain momentum through the management of the energy audit and ongoing technical guidance.

## Lessons Learned and Recommendations for Other ASHRAE Chapters

While the collaboration was highly successful, the project did encounter several challenges:

The ASHRAE Memphis Chapter's involvement with Memphis-Shelby County Schools offers several valuable lessons for other ASHRAE chapters looking to engage with local school districts:

### 1. Leverage Local Partnerships

Collaborating with local educational institutions, engineering firms, and community organizations can strengthen the impact of a project. ASHRAE Memphis utilized its ties to the University of Memphis and local engineering firms to ensure that both technical expertise and student involvement were prioritized.

### 2. Early Engagement is Key

Engaging school districts early in the process allows for a smoother application and implementation process. ASHRAE chapters should be proactive in reaching out to local districts and understanding their specific needs.

### 3. Incorporate Workforce Development

Integrating workforce development opportunities into school projects can help build local capacity and provide students with valuable career skills. The Riverview project, for example, utilized the CCTE program to engage students in hands-on learning activities that will benefit them in the future.

### 4. Maintain Clear Communication

Ensuring that all parties involved have a clear understanding of the project goals and requirements is essential for success. Regular check-ins, transparent communication, and collaborative meetings helped keep the Riverview project on track.

## Conclusion

The successful partnership between the ASHRAE Memphis Chapter and Shelby County Schools on the *Renew America's Schools* Grant has demonstrated the powerful impact that ASHRAE chapters can have in improving the energy efficiency, sustainability, and IAQ of local schools. By leveraging technical expertise, community partnerships, and workforce development, ASHRAE Memphis has set a precedent for other chapters to follow. This case study illustrates how ASHRAE chapters can play a vital role in improving the learning environment for students and creating lasting change in their communities. ASHRAE chapters across the country can use this model as a guide to support their local schools, drive innovation, and contribute to a healthier, more sustainable future for the next generation of learners.