



CASE STUDY



Johnston County Public Schools

DISTRICT LEVERAGES FEDERAL FUNDING TO IMPROVE ENERGY EFFICIENCY AND COMFORT

K-12 HVAC ENHANCEMENTS

Carrier works with school districts across the country to implement layered HVAC replacement and retrofit solutions that improve learning environments.

With solutions tailored to each school's needs, Carrier is committed to helping foster the long-term well-being of students and staff and helping districts navigate funding options to make critical improvements that will impact generations of students.

Project Objectives

With a growing student population and aging infrastructure, Johnston County Public Schools (JCPS) faced the challenge of improving energy efficiency and enhancing comfort levels across five of its schools in Smithfield, North Carolina. JCPS is located in one of the nation's fastest growing counties and is the seventh largest school district in the state.

The district sought to modernize its HVAC systems to help promote healthier learning environments while taking advantage of Elementary and Secondary School Emergency Relief (ESSER) Funds, a set of stimulus funds granted by the U.S. government to support schools with pandemic learning loss, by re-opening and maintaining the health and safety of America's schools.¹

The district's primary objectives were to:

- Replace outdated equipment with more efficient and reliable equipment.
- Improve energy efficiency to reduce operational costs.
- Enhance comfort for students and staff.



The Solution

Carrier engineers assessed the five schools, collaborating with the district to develop a comprehensive plan to leverage the ESSER funds to replace a dozen chillers. The school district selected Carrier's AquaSnap® 30RB, an air-cooled liquid chiller offering an effective all-in-one package that is easy to install and maintain. The new equipment replaced chillers that were between 20 to 25 years old.

School officials appreciated that Carrier's AquaSnap Greenspeed® intelligence technology provides best-in-class part-load efficiency with quiet part-load operation. The school district needed the reliability of the aluminum fin copper tube condenser coils and the simplicity of the scroll compressor technology to handle compressor repairs in-house. Due to older piping infrastructure in many of the schools, they preferred the shell and tube evaporator as it is less susceptible to fouling and clogging up from dirty piping systems.





On-Site Training for Long-Term Success

In addition to installation and startup of the chillers, Carrier provided on-site training for the district's maintenance staff ahead of the new school year. This equipped facilities staff with the knowledge and confidence to maintain effective operations and longevity of the new HVAC systems.

An in-depth series of studies² showed that better indoor air quality can **raise occupants' cognitive function**, potentially enabling students, teachers, and staff to stay better focused, think more clearly, retain and use information more clearly, make better decisions, and respond more successfully to crises.

Project Summary

LOCATION: Smithfield, North Carolina

PROJECT TYPE: New equipment within existing facilities

FACILITY USAGE: Education

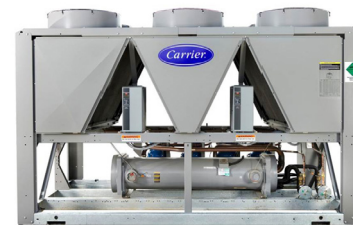
OBJECTIVES: Replace outdated equipment; Improve energy efficiency and reduce operational costs; Enhance occupant comfort

EQUIPMENT: Twelve 30RB air-cooled chillers; Three 39M AHUs

MAJOR DECISION DRIVERS: K-12 and ESSER funding expertise; Greenspeed® intelligence technology; shell and tube evaporator; aluminum fin copper tube condenser coils and scroll compressor technology

UNIQUE FEATURES: Carrier provided on-site training to district facilities staff, equipping them with the knowledge to maintain optimal HVAC operations.

INSTALLATION DATE: 2023



References

- 1 https://oese.ed.gov/files/2021/03/FINAL_ARP-ESSER-FACT-SHEET.pdf
- 2 <https://thecogfxstudy.com/study-1/cognitive-function-tests-scores-doubled/>

For more information, contact your local Carrier representative, call 1.800.CARRIER or visit carrier.com/k-12

