

Strategic Infrastructure & Efficiency Partnership

FINAL DESIGN OVERVIEW

Bibb County Board of Education | September 17th, 2026

SE ADVISORY SERVICES

CENTRAL OFFICE RENOVATION

Project Overview

Why Is Modernization Needed?

Almost all the Central Office's core HVAC infrastructure is more than 25 years old. Because major equipment serves the entire building, a single failure could eliminate heating or cooling and disrupt District operations. Aging controls, deteriorating ductwork, and outdated zoning also contribute to inconsistent temperatures and recurring maintenance challenges.

Benefit to the District

This project will modernize critical building systems to improve reliability, comfort, and efficiency. Redundant equipment will reduce the risk of building-wide disruptions, while additional facility upgrades will enhance security and efficiency. The turnkey approach provides cost certainty, single-point accountability, and increases the value of this key District asset.

Project Scope

- Comprehensive mechanical renovation, including new heating and cooling equipment, redundant systems, air distribution, and improved zoning
- New building automation system (Carrier i-Vu)
- Elevator modernization
- Interior LED lighting upgrades
- New secure entrance vestibule in lobby

CENTRAL OFFICE RENOVATION

Project Details

Project Impact

23.7%
Reduction in Energy Consumption

39.2%
Reduction in Natural Gas Consumption

77.3%
Reduction in Water Consumption

Project Scope

- **Two air-cooled chillers and two high-efficiency condensing boilers** for improved redundancy
- **Nine-fan variable-speed fan wall** with built-in fan redundancy
- **Complete replacement and rezoning of terminal units on Floors 2 through 4**
- **New Carrier i-Vu building automation system** with remote monitoring, alarms, trending, and improved system control
- **Comprehensive elevator modernization**, including new controls, operating panels, wiring, and safety systems
- **Temporary cooling** and phased implementation to maintain operations during construction
- **Full system testing, balancing, integration, and commissioning**
- **LED upgrades** to improve efficiency, standardize lighting quality, and reduce maintenance
- **New controlled-access lobby vestibule** to improve visitor management, security, and the visible impact of the renovation

Core Project Outcomes

Improved Comfort & Building Performance

- Complete zoning overhaul on floors 2 through 4 to match actual floor plan and space use
- Modernize the central plant and penthouse air handling system
- Ensure long-term performance with integrated TAB and commissioning

Strengthen Reliability, Accessibility & Resiliency

- Add redundant chiller, boiler, pumps, and fan capacity
- Modernize elevator controls and safety systems
- Reduce the risk of emergency outages and extended service disruptions

Improve Efficiency & Operational Control

- Install high-efficiency equipment with variable-speed operation
- Replace antiquated BAS with remote monitoring, alarms, trending, and electrical metering
- Improve staff visibility, troubleshooting, and ongoing system management

Minimize Disruption to Operations

- Provide temporary cooling during chilled water plant upgrades
- Maintain dedicated temporary HVAC service for the bank
- Phase construction around building operations and occupied spaces

Turnkey delivery includes engineering, construction management, commissioning, staff training, and ongoing performance support.

Air Terminal Units

Complete overhaul of zoning to improve staff comfort

Challenge

- Internal zones use VAV boxes with modulating dampers. Perimeter zones use PIUs with hot water coils and constant-volume fans for supplemental airflow while heating.
- Zoning was not updated after renovations, leading to widespread comfort issues and uneven conditioning across spaces
- Staff would prefer to get rid of the PIUs, as the fans are a maintenance burden
- Internal zones cannot heat during morning warm up due to lack of reheat coils and preheat in AHU

EXISTING



Existing PIU w/ Hot Water Coil

Proposed Solution

- Remove existing 2nd, 3rd, and 4th floor: fan powered units with reheat, variable volume units without reheat, low-pressure ductwork (between medium-pressure ductwork and terminal units), duct runouts (between terminal units and supply registers), supply registers, and hot water piping runouts to terminal units.
- Install new 2nd, 3rd, and 4th floor: variable volume units with reheat, variable volume units without reheat, low-pressure ductwork, duct runouts, supply registers, return grilles, and hot water piping runouts to terminal units.
- Work would be completed during spring and summer months. Only one floor would be impacted at any given time while VAVs, ducting, and piping are being replaced.

Impact

- Updated zoning matches current floorplan and loads, improving comfort throughout the updated floors.
- Increased number of zones will reduce hot/cold complaints.
- Dedicated terminal units for corner offices will eliminate simultaneous heating and cooling.

Cooling System

Improve redundancy with two air-cooled chiller conversion

Challenge

- One 320-ton water-cooled chiller with a single-cell cooling tower supplies chilled water to the lone AHU. Constant-volume pumps circulate both chilled and condenser water.
- Every component (chiller, tower, pumps) is a single point of failure
- Chiller frequently short cycles during shoulder months, resulting in frequent outages

EXISTING



Existing Water-Cooled Chiller



Existing Cooling Tower

Proposed Solution

- Remove existing: water-cooled chiller, chilled water pump, cooling tower and concrete curbs, condensing water pump, condensing water piping, chemical feed tank and associated piping, expansion tank, and screen wall.
- Install new: two (2) air-cooled chillers, chiller structural mounts, two (2) variable-speed primary chilled water pumps with VFDs, two (2) variable-speed secondary chilled water pumps with VFDs, buffer tank, expansion tank, air dirt separator, and piping required to tie into existing system.
- Complete work during winter months to limit impact to operations. Temporary cooling will be provided to building while work is being completed.

Impact

- New chillers and pumps will provide redundancy to the building's cooling system.
- Switching to air-cooled chillers will make maintenance easier for staff.
- Multi-staged chiller configuration and added buffer tank will allow system to properly ramp down during shoulder months.

Air Handling

Improve redundancy with variable speed AHU fan wall retrofit

Challenge

- One penthouse AHU serves all five floors. AHU is equipped with chilled water coils and a single supply fan controlled by a VFD.
- The supply fan is a single point of failure
- No heating coil in AHU, which may be leading to comfort issues in internal zones

EXISTING



Existing AHU Supply Fan and Motor



Existing AHU Chilled Water Coils

Proposed Solution

- Remove existing: AHU variable-speed supply fan and motor, AHU supply fan VFD, AHU chilled water coils and internal piping, AHU roll filter, energy recovery unit with supply and exhaust fan, and unit heater.
- Install new: AHU variable-speed fan wall with nine (9) fans and motors, AHU supply fan wall VFD, AHU chilled water coils and internal piping, AHU filter rack, exhaust fan, fan coil unit, and four (4) unit heaters.
- Complete work during summer months to limit impact to operations. Building would be without air while work is being completed. Temporary air would be provided for bank.

Impact

- Fan array would provide significant redundancy to the existing AHU.
- New chilled water coils will provide improved control of building cooling and dehumidification.
- New unit heaters will serve as pre-heat for the air handling, improving building warmup and internal zone comfort issues.

Hot Water & ERU

Add redundant boilers and remove ERU

Challenge

- Heating is generated by a non-condensing, gas-fired boiler with two constant-volume circulation pumps.
- While pumps provide partial redundancy, the boiler is a single point of failure
- The ERU originally had an energy recovery wheel, but it has been removed. Fans are constant-volume but only exhaust fan is being used.
- The energy recovery wheel has been removed and the ERU is effectively acting as an exhaust fan

EXISTING



Existing Single Hot Water Boiler



Existing Energy Recovery Unit (ERU)

Proposed Solution

- Remove existing: non-condensing boiler, two (2) hot water pumps, expansion tank, and air separator.
- Install new: two (2) condensing boilers, two (2) variable-speed hot water pumps with VFDs, expansion tank, air dirt separator, and piping required to tie into existing system.
- Remove existing ERU and install new common building exhaust fan.
- Work would be completed during summer months when existing boiler is typically shut down.

Impact

- New boilers and pumps will provide redundancy to the building's heating system.
- Condensing boilers improve efficiency and turndown capacity.
- Replacing the ERU with an exhaust fan eliminates points of failure and improves maintainability.

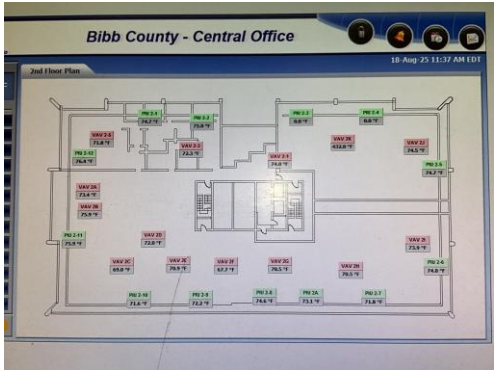
Building Automation

Replace existing system with new Carrier i-Vu system

Challenge

- Existing automation system is outdated, and replacement parts can be difficult to source, creating inefficiencies in maintenance, integration, licensing, and staff training
- Memory failure due to age and rewrites has resulted in controllers dropping offline with no BAS control until manually reset by a power cycle
- Pneumatic controls and air compressor are an added maintenance burden and inefficient

EXISTING





Proposed Solution

- Replace existing Honeywell (Trend) BAS with new Carrier i-Vu BAS with direct digital control of the chilled water plant, hot water plant, air handling unit, split system units, variable volume terminal units, fan powered terminal units, unit heaters, fan coil unit, and exhaust fan.
- A new front-end will be provided for remote monitoring and control.
- New controllers will be provided for existing variable volume and fan powered terminal units.
- Existing hot water control valves will be reused for existing fan powered terminal units and unit heaters.
- New thermostats will be provided throughout the building.
- A new building-level electrical sub meter will be provided that will be visible on front-end.
- Full system integration, testing, and commissioning.

Impact

- Standardized BAS platform for more operational visibility and control
- Improved system reliability, better occupancy comfort, & improved energy efficiency

Elevator Modernization

Upgrade elevator controls for improved reliability

Challenge

- While the core mechanical components remain serviceable, sourcing replacement parts for the elevator controls has become difficult
- This is leading to extended outages whenever an elevator goes out of service

EXISTING





Proposed Solution

- New individual elevator controllers, group controller, and motor encoders.
- New rope brake systems with associated safety devices.
- New brake pick switches.
- New hall stations on each floor.
- New car operating panels.
- New traveling cables and associated hoist way wiring.
- Full system integration, testing, and commissioning.

Impact

- Improved Access and Reliability
- Reduced Maintenance

LED Lighting Upgrades

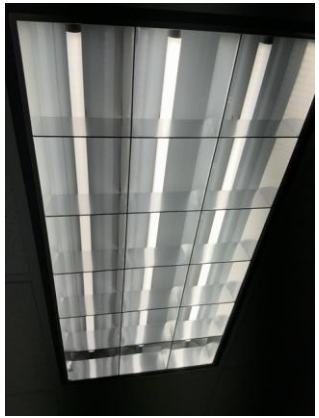
Standardize entire building with high-efficiency LED lighting

Challenge

- The district has replaced most of the lighting at the Admin Building with LEDs, but there are a variety of fixture and lamp types
- While adjacent street and parking lot fixtures provide lighting around the building, there is minimal perimeter lighting for the building

EXISTING







Proposed Solution

- Conducted comprehensive lighting study to analyze existing lamp and fixture configurations, space and task types, and existing light level readings
- Retrofit existing T8, T5, and LED troffer fixtures with volumetric LED retrofit kits.
- Relamp existing T12, T8, and high-wattage LED surface mounted fixtures with linear LED tubes.
- Retrofit existing incandescent, CFL, metal halide, and halogen lighting to LED.

Impact

- Standardize Appearance
- Reduced Maintenance and Energy
- Better Work Environment
- Increased Safety and Security

Access Control

Security vestibule for improved access control

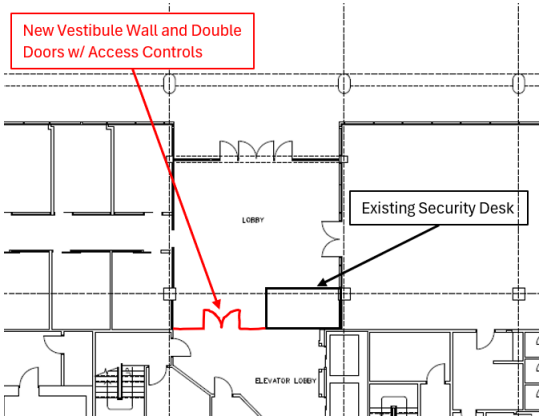
Challenge

- Main lobby relies solely on a security guard for access control during normal business hours
- There have been multiple instances of visitors gaining unauthorized access to the elevators
- Visitors in the elevators have unrestricted access to all floors

EXISTING



PROPOSED



Proposed Solution

- Install new ~15’ interior aluminum-framed storefront vestibule wall with one set of double doors in the 1st Floor Lobby.
- Install new access controls for new doors, including electric strike, electrified panic device, card reader, door position switch, request-to-exit device, and controlled release.

Impact

- Enhanced Security for District Staff
- Limited Visitor Access to Elevators

Annual Energy Baseline & Impact

Comparing current usage to projected reductions for total impact of project

	Electric Usage (kWh)		Gas Usage (Therm)		Water Usage (CCF)		Total Energy (MMBtu)	
Month	*Current Usage*	*Reduction*	*Current Usage*	*Reduction*	*Current Usage*	*Reduction*	*Current Usage*	*Reduction*
Jan	75,078	6,480	4,060	778	45	20	662	100
Feb	88,149	9,566	3,756	796	52	27	676	112
Mar	112,482	25,840	3,327	1,829	75	50	717	271
Apr	134,441	34,517	2,849	1,992	113	88	744	317
May	164,619	39,820	2,720	2,308	154	129	834	367
Jun	176,982	23,227	1,508	1,165	170	145	755	196
Jul	182,052	22,102	184	-31	176	151	640	72
Aug	186,384	24,046	21	-76	179	154	638	74
Sept	156,131	32,127	508	224	144	119	584	132
Oct	114,707	10,015	1,825	501	107	82	574	84
Nov	84,664	13,892	1,870	473	73	48	476	95
Dec	68,380	5,377	3,543	306	32	7	588	49
Annual	**1,544,069**	**247,009**	**26,172**	**10,265**	**1,319**	**1,019**	**7,887**	**1,870**
Post-Project Usage	**1,297,060 kwh**		**15,907 therms**		**300 CCF**		**6,017 MMBtu**	

Energy Impact Summary

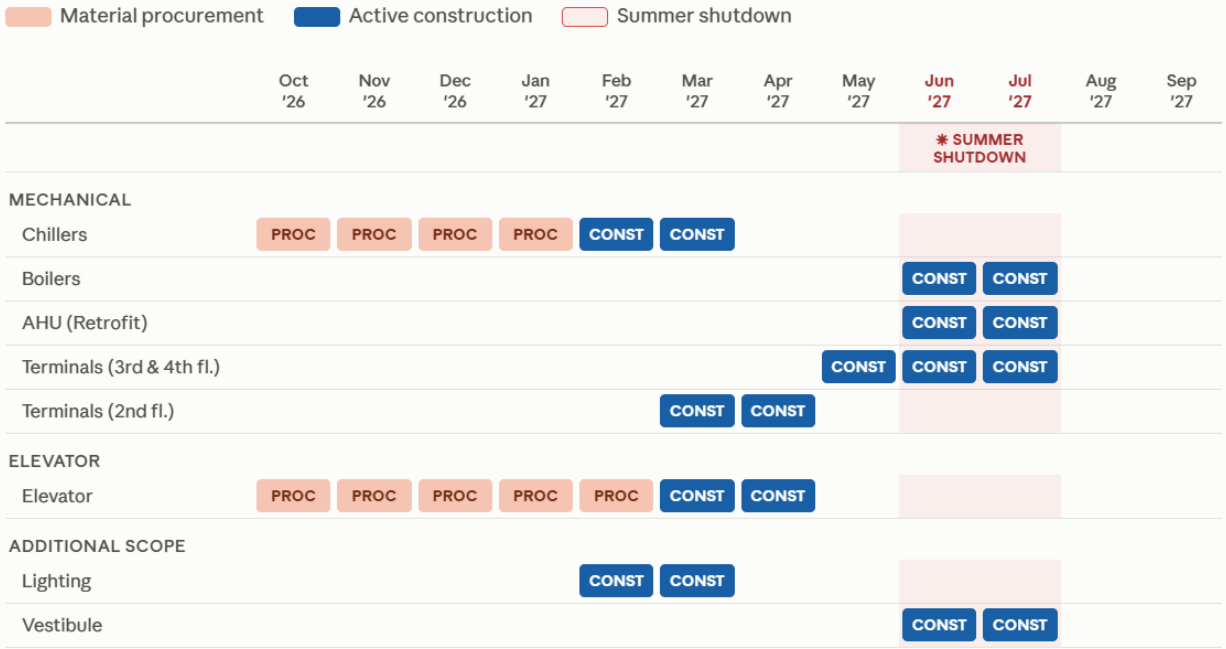
	Energy	Gas	Water
	kBtu/sf	*kBtu/sf*	*ft3/sf*
Current	70.0	32.2	1.2
After	53.4	14.1	0.3
% Savings	**23.7%**	**39.2%**	**77.3%**

Schneider Electric

Preliminary Phasing Plan

Pre-construction through summer shutdown: Oct 2026 – Sept 2027

This renovation is a complex and invasive effort that will require careful sequencing and tight coordination. The Schneider Electric team has worked closely with staff to co-develop a construction plan that keeps the facility's needs at the forefront throughout the project.



Phasing Considerations

Lead Time Implications:

- Electrical panels have longest lead time at up to 20 weeks
- Next longest are Chillers and AHUs at 12 Weeks
- Boilers and Terminal Unit lead times are less than 12 weeks and not of concern
- Critical path is chilled water plant – **September approval is key to meet this timeline**