



## PROJECT DETAILS

### CLIENT

Merritt Properties for its Schilling Green III Building Complex

### GENERAL CONTRACTOR

Merritt Properties

### MECHANICAL CONTRACTOR

Fidelity Mechanical Services

### ARCHITECT

Christopher R. Lester, AIA, LEED AP  
GVA Architects

### INDUSTRY

Commercial

### CATEGORY

Office Building

### GROSS SQUARE FOOTAGE

98,000 Square Feet

### COMPLETED

2021



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## BACKGROUND

In December 2019, Fidelity Mechanical Services was retained by Merritt Properties, a fully integrated developer with a vast portfolio of commercial space in the Baltimore/Washington, DC markets, to install a new HVAC system at its redeveloped Schilling Green III building. Located in Hunt Valley, Maryland, this commercial real estate complex includes three levels with a total floor space of almost 100,000 square feet.

Fidelity Mechanical Services worked closely with the project's architect, GVA Architects, to ensure that energy conservation measures requiring a LEED Gold Building Certification were met.

## OBJECTIVES

The objectives of this project were to install an energy-efficient HVAC system that met required LEED Gold Building Certification standards. Fidelity Mechanical Services designed plans that included the installation of energy-efficient cooling systems, boilers/heat pumps, and dedicated outdoor air systems (DOAS).

Fidelity Mechanical Services also addressed the comfort of the building's occupants and efficiency of the mechanical system by providing 100% redundant chillers and boilers to the heating and cooling plants, eliminating any interruption around heating and cooling capacity to the building in the event of a chiller/boiler malfunction.

## SOLUTION

There were four areas that Fidelity Mechanical Services constructed for this project, including: cooling systems, boilers/heating pumps, fan coil units, and DOAS.

### COOLING SYSTEMS:

The cooling systems were provided by a chilled water system complete with high-efficiency air-cooled chillers and variable speed primary chilled water pumping systems. The chillers are equipped with variable speed compressors for increased part load efficiency.

### BOILERS/HEATING PUMPS:

High-efficiency boilers and variable speed heating water pumping systems were provided to serve the heating water terminal unit systems.

### TERMINAL UNIT 4-PIPE FAN COIL UNITS:

Heating and cooling are provided to the core spaces and tenant-occupied spaces by four pipe-chilled and heating water fan coil units. Chilled and heating water is provided by the chillers and heating water plants.

### DOAS:

Fidelity Mechanical Services installed three DOAS to meet the buildings' required ventilation code. In addition, to assist in the LEED objective and increase indoor air quality (IAQ), ventilation air is provided at a rate 30 percent higher than the minimum ventilation code requirements. Each DOAS is provided with variable refrigerant flow (VRF) compressors for increased part load efficiency, as well as an energy recovery system to capture heating and cooling energy from the exhaust systems to be reintroduced into the outdoor air system effectively. This preconditions the outdoor air to each space to conserve energy. Dedicated exhaust systems are provided to serve the core janitor's closets, the core and shell IT and telephone rooms, and the mechanical/electric rooms.

## EQUIPMENT

### CHILLED WATER PLANT

- (2) 200 Ton Air-Cooled Trane Chillers with variable speed compressors
- (2) Variable Flow Armstrong Chilled Water Pumps

### HEATING WATER PLANT

- (2) Patterson Kelly High-Efficiency Heating Water Boilers
- (2) Constant Flow Primary Heating Water Pumps
- (2) Variable Flow Secondary Heating Water Pumps

### DEDICATED OUTDOOR AIR SYSTEM

- (2) 10000 CFM Valent Dedicated Outdoor Air System with Integral Exhaust, Energy Recovery and Variable Speed Compressors
- (1) 3000 CFM Valent Dedicated Outdoor Air System with Energy Recovery and Variable Speed Compressors

### INDOOR TERMINAL UNIT EQUIPMENT

- (90) 4 Pipe Low Profile Fan Coil Units of varying capacities



## OVERCOMING OBSTACLES

This project presented two unique challenges, including restrictions with available ceiling space to install HVAC systems and restrictions related to the COVID-19 pandemic. Because the ceilings needed to remain at 10 feet, there was little room for HVAC equipment installation. Fidelity Mechanical Services quickly recognized a solution and proposed a chilled/heating water system with 4-pipe fan coil terminal units that could be installed above the ceiling.

The second challenge was dealing with COVID-19 restrictions. The start of the project was prior to the onset of the pandemic; however by March 2020, Fidelity Mechanical Services had to quickly pivot and implement mitigation efforts and additional safety protocols to keep Team Members and other contractors safe. Fidelity Mechanical Services saw this as an opportunity to build on its commitment to a Culture of Safety and immediately supplied personal protective equipment (PPE) to all of its personnel, as well as conducted daily, on-site temperature checks. COVID-19 also had an impact on equipment lead times and other essential materials, but thanks to its solid partnerships with equipment and material vendors and suppliers, Fidelity Mechanical Services was able to complete the project on time.

## RESULTS

Fidelity Mechanical Services met all HVAC/Mechanical requirements to help ensure the building receives a LEED Gold Building Certification. And while COVID-19 did present unforeseen obstacles, it managed to complete the project on time.

“While we understood that the particulars of this project would require the knowledge and skills of a company like Fidelity Mechanical Services to complete the job, we weren’t expecting to be suddenly faced with a global health crisis that impacted us from a health and safety standpoint, as well as a supply and demand one,” says Joshua Asbury, VP of Development and Construction of Merritt Properties. “But from the onset, we were confident that the Fidelity Mechanical Services team would strategically manage this crisis, and they absolutely delivered on their promise of Proactive, World-Class Service.”

