

Project Overview



Federal Research Center at White Oak Silver Spring, Maryland

*“Through the agreement we’re able to invest additional funds at the White Oak campus, creating the best environment for the FDA and surrounding community; and **we’re guaranteed to recoup that investment**, which demonstrates the benefits of this type of public-private cooperation.”*

Shapour Ebadi, Director, Office of Campus Development, GSA



Developer/Host



Tenant

The Federal Research Center at White Oak is a state-of-the-art 3.9 million square foot, \$1.5 billion Food & Drug Administration office and lab compound built by the General Services Administration. The campus is located on the site formerly occupied by the Naval Surface Warfare Center. The final build-out of the campus will be comprised of five groups of interconnected buildings and their shared infrastructure.

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What Were the Issues?

The Food and Drug Administration (FDA) and the General Services Administration (GSA) are working together to consolidate FDA operations at the government owned White Oak site in Montgomery County, Maryland. A series of ESPC projects was used to accelerate the timeline for the move, reduce the costs associated with the mechanical systems in the new buildings, and provide a reliable and efficient energy infrastructure to support the White Oak campus.

The Impact on White Oak

Newly constructed buildings at White Oak will replace all the existing fragmented facilities in which FDA activities were housed prior to 2003. The new state-of-the-art laboratory and office complex is more appropriate than the facilities being replaced given the critical importance of FDA's mission; and the proximity of the facilities promotes synergy among the various FDA elements.

What was Needed

- Energy Infrastructure Master Planning
- Establishment of Microgrid
- Critical Load Redundancy/ Firm Capacity
- Demand Response Capability
- Energy VE of Building Designs
- Phased Energy Infrastructure Development
- Adaptive Reuse of Historic Building
- Support to Building LEED Certification

Special Project Requirements

ESPC business model was combined with a federal new construction project and applied to a campus developed in phases.

About the Project

Honeywell delivers a comprehensive energy savings performance contract to construct a combined heating and power central utilities plant. The facility generates electricity primarily through a dual-fueled reciprocating engine and multiple gas turbines. The facility is designed to be expandable to meet the power, heating and cooling needs of the entire campus. The project incorporates renewable energy through the use of photovoltaic panels that convert sunlight into electricity. In addition to operating and maintaining the central plant, Honeywell provides total operations and maintenance for all campus buildings. Service beyond the ESPC order include commissioning of campus buildings constructed by others and the revitalization of an existing campus substation.

Central Plant Equipment

Generation Equipment/Systems

Current

- One 5.8 MW dual fuel engine driven generator
- Four 4.5 MW turbine generators
- One 2 MW standby diesel generator
- 30 kW photovoltaic array
- Integrated plant controls and building automation systems

In Construction

- Two 7.5 MW turbine-generators (Dual fuel)
- One 4.5 MW turbine-generator (Natural gas only)
- One 5 MW steam turbine-generator
- Two 2.25 MW diesel black-start generators
- Integrated plant controls and building automation system expansion

Cooling

Current

- Three 1,980-ton electric centrifugal chillers
- Two 1,130-ton absorption chillers
- Two 1,130-ton electric centrifugal chillers

In Construction

- Three 2,500-ton electric centrifugal chillers
- 2 million gallon thermal energy storage

Heating

Current

- Three 10 MMBtu/hr dual fuel hot water boilers
- 52 MMBtu/hr heat recovery boilers

In Construction

- 132,000 PPH heat recovery steam generators
- 25,000 PPH dual fuel steam boiler

Distribution

Current

- Hydronic and electric distribution systems

In Construction

- Hydronic and electric distribution systems expansion
- Steam distribution system

Project Results:

Performance Contract: 20+ years

- Reduced first-cost to government
- Reduced recurring costs to government
- More energy efficient campus
- Fixed accountability for systems perform
- Flexibility to meet evolving program req.
- Enhanced energy security

Energy & Environmental Benefits

Annual Energy Savings:

- 640,000 MBtu (Current)
- 275,000 MBtu (In Construction)

Pollution Prevention (annual):

- 50,000 metric tons CO₂-equivalent (Current)
- 22,000 metric tons CO₂-equivalent (In Construction)



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