



SHOWCASE PROJECT: PHILADELPHIA HOUSING AUTHORITY HEADQUARTERS BUILDING

SOLUTION OVERVIEW

The Philadelphia Housing Authority recently moved into a new high-performance and dedicated headquarters building. Located in North Philadelphia, it is part of a multi-phased, mixed-use development under the Sharswood/Blumberg Choice Neighborhoods Transformation Plan. The Housing Authority will consolidate several of its functions at this 1.4-acre site. The modern design of the building, with its large glass windows, conveys transparency and an outward looking agency. The building has been designed to achieve a LEED-NC Certification rating and to meet the latest, and all applicable, ENERGY STAR® standards.

The headquarters new neighborhood, locally known as Sharswood-Blumberg, is in the middle of a \$500 plus million redevelopment by the Housing Authority and its headquarters will act as an economic driver for rebuilding the community. While economic growth and sustainable transportation play an important role in the redevelopment effort – including 2 accessible and 3 car share/hybrid parking spaces, 10 Indego bicycle docks and 10 on-street bike parking spaces and 16 off-street bike parking spaces located on the property – an energy efficient building will be the centerpiece of this effort.

SECTOR TYPE

Multifamily

LOCATION

Philadelphia, Pennsylvania

PROJECT SIZE

132,000 Square Feet

SOLUTIONS

Estimates placed the annual cost of operation and rent at PHA's prior location in Center City of upwards to \$1.5 million a year, yet the facility failed to meet the agency's needs. Additionally, the average annual energy performance of their many office spaces exceeded 167 kBtu/sq.ft., which is twice that of the expected performance of the new building.

The energy performance of the new Philadelphia Housing Authority headquarters is expected to exceed the ASHRAE 90.1 2007 baseline by more than 25 percent. The key features of the building

include:

| Feature | Details | Efficiency Beyond Code |
|----------------------------|---|------------------------|
| Exterior Walls | Steel framed construction with R-24 batt plus R-10ci (U-0.051Btu/h-ft ² -°F). | 25% |
| Window Glazing | Thermal pane construction with ratings of U-0.37 and SHGC-0.30. | 49% |
| Roof Insulation | Above deck with a rating of R-30ci (U-0.031Btu/h-ft ² -°F). | 55% |
| Lighting | The proposed lighting design utilizes high-efficiency LED fixtures combined with a highly efficient layout and dimming photocell controls. It has been modeled with an overall lighting power density (LPD) of 0.58 W/ft ² (EEM L-1). | 46% |
| HVAC (Design Fan Power) | The primary system design will feature high-efficiency variable refrigerant flow (VRF) heat pumps with a dedicated outdoor air system (DOAS). Ventilation air will be provided via the DOAS that also features a gas fired DX energy recovery unit. | 70% |

OTHER BENEFITS

The headquarters will become an anchor for the neighborhood transformation plan, which aims to create 1,200 housing units that will be a mix of affordable and market-rate apartments. Ideally, these facilities will serve employees and neighborhood residents, and provide residents with job

opportunities as PHA continues its ongoing efforts to revive the neighborhood's Jefferson Street and Ridge Avenue commercial corridor. In addition to bringing the HQ here, PHA is also collaborating with local businesses and community organizations to redevelop other properties. The Authority has already completed 57 units, opened a high school, and will reopen a senior high-rise building. A supermarket and other retail will join PHA along Ridge Avenue, further strengthening the commercial corridor.

Annual Energy Use

(Source EUI)

BaselineASHRAE
90.1-2007()



Actual(2019)



Energy Savings

58%

Annual Energy Cost

BaselineASHRAE
90.1-2007()



Actual(2019)



Cost Savings

\$37,540



PHA Headquarters Building, Philadelphia, PA