

# Groundbreaking Efficiency Retrofits for Affordable Housing



**Mercy Housing, Inc.**, is a leading national affordable housing nonprofit that has participated in the development, preservation, and/or financing of more than 48,200 affordable homes. Mercy Housing operates in 41 states and has 35 years experience developing, preserving, managing, and financing affordable housing, serving low-income communities.

## Objectives

- Reduce operating costs
- Improve resident comfort
- Reduce environmental impact
- Source funds to perform efficiency upgrades

## Challenge

Mercy Housing wanted to lower operating costs while keeping tenants comfortable in an affordable and sustainable way. Part of the solution: upgrade buildings to use less energy and water while delivering better comfort. But securing funds to pay for efficiency upgrades outside of a refinance year was difficult. Even with incentives that are available from utilities and the government, Mercy Housing needed a more creative solution.

## Solution

Mercy Housing partnered with Bright Power and Affordable Community Energy Services Company (ACE) to help upgrade around **48 properties** of their California portfolio. Through our ongoing collaboration, Mercy Housing is able to utilize a "Pay from Savings" financing model to complete efficiency improvements when they are needed most, rather than waiting for refinancing or taking out a secondary loan. As Mercy Housing's energy and water management partner, Bright Power first used our EnergyScoreCards cloud-based energy analysis platform to understand areas of waste and underperformance. Bright Power used this data to determine which properties needed an onsite energy audit to better identify high-impact opportunities for improvement. Mercy Housing, Bright Power, and ACE then prioritized phases of work based on factors such

as building performance, location, and available government and utility incentive programs like California's Low Income Weatherization Program (LIWP).

ACE's innovative "Pay from Savings" financing approach, with funding through Reinvestment Fund, gave Mercy Housing the ability to complete the needed upgrades and use project savings to pay for the improvements over a 10-year period. Like all EnergyScoreCards clients, Mercy Housing is paired with a dedicated Energy Analyst to monitor their buildings' energy performance and calculate savings. To further ensure project returns, Bright Power is providing operations and maintenance support to the properties for the duration of the 10-year agreement.

## Our Role

Bright Power provided the below services across all properties:

- EnergyScoreCards data analysis and benchmarking
- Comprehensive energy auditing and assessments
- Turnkey design-build energy efficiency project implementation
- Incentive procurement
- Measurement and verification in EnergyScoreCards
- Ongoing remote and onsite operations and maintenance support



## Improvements

Energy and water improvements were implemented at various properties. Each property did not receive every upgrade listed below.

- Upgrade LED lighting in common areas & resident apartments
- Install heat pump hot water heating (HPWH) systems
- Install high-efficiency heating systems
- Install energy-efficient boilers
- Install heating controllers for boiler room outside air temperature resets
- Install Variable Speed Drive (VSD) recirculation pump & controls for DHW
- Install VSD for pool & spa pumps
- Install Domestic Hot Water (DHW) & new steam cycle controls
- Retro-commissioning existing steam cycle controls
- Install Thermostatic Radiator Valves (TRVs)
- Install orifice plates
- Service steam traps
- Insulate DHW & heating pipes
- Install occupancy sensor thermostats in resident apartments
- Replace tub diverters
- Install wire crank timer for in-unit bathroom heat lamps
- Install weather based irrigation controls & optimize schedule
- Implement low-flow fixtures on faucets & shower heads
- Install water-efficient toilets
- Install ENERGY STAR washers & refrigerators
- Install vending misers

*"Working with Bright Power and ACE on this project has been a positive experience for Mercy Housing. The team's experience in implementing efficiency in affordable housing was invaluable to the successful implementation of the design and construction phases of this project."*

**Caitlin Rood**  
**Environmental Sustainability Director**  
**Mercy Housing**

## Results

With this innovative "Pay from Savings" model, Mercy Housing didn't need to spend or raise capital to cut energy and water usage and cost, improve resident comfort, and reduce their carbon footprint. Under this model, other affordable and supportive housing organizations can secure funding to achieve similar results.

Bright Power is actively verifying savings in EnergyScoreCards and engaging with site staff to help optimize operations and maintenance throughout the 10-year financing term.

Mercy Housing is seeing positive results and the following owner savings across the 48 properties:

**17%**

**GAS USE REDUCTION**

**13%**

**ELECTRIC USE REDUCTION**

**15%**

**SITE ENERGY REDUCTION**