



SHOWCASE PROJECT: STATE OF NORTH CAROLINA: UNIVERSITY OF NORTH CAROLINA WILMINGTON PERFORMANCE CONTRACT #2

SOLUTION OVERVIEW

The University of North Carolina at Wilmington (UNCW) partnered with the energy service company Ameresco to conduct an investment-grade audit of campus facilities that identified potential energy efficiency measures (EEMs). Twenty-four EEMs were selected and are under consideration to be implemented between 2012 and 2013.

This project is the second performance contract for UNCW and focuses on the remaining large, general-funded buildings not included in the first contract. The campus facilities addressed include classroom/office space, research, teaching and necropsy labs, an animal holding facility, a coliseum, a natatorium and others. These government-owned buildings are funded through State appropriations.

SECTOR TYPE

Education, State Government

LOCATION

Wilmington, North Carolina

PROJECT SIZE

970,000 square feet

FINANCIAL OVERVIEW

Project Cost \$14,000,000

SOLUTIONS

UNCW established a performance contract valued at around \$14M and lasting 18 years. In accordance with industry standards, this performance contract will leverage EEMs with quick payback periods, like lighting projects, in order to fund other projects with longer payback periods such as infrastructure expansion and replacing large equipment like air handling units, chillers and boilers.

The following is a list of EEMs, with their costs and estimated savings figures that are under consideration to implemented as part of the project:

- Lighting system improvements: Cost \$343,447, Savings \$99,831
- Lighting controls: Cost \$48,553, Savings \$3,331
- Tridium controls upgrade/occupancy sensors: Cost \$1,724,112, Savings \$169,597
- Meters/monitoring & reporting upgrades: Cost \$329,270, Savings \$63,148
- Expand campus centralized utilities and tie in: Cost \$2,429,839, Savings \$107,609
- Install demonstration active chilled beam system: Cost \$190,690
- Install variable speed compressor mini Dx system: Cost \$122,587, Savings \$2,545
- Boiler room piping modifications: Cost \$5,295, Savings \$376
- Chiller replacement: Cost \$240,384, Savings \$14,936
- Boiler replacement: Cost \$175,470, Savings \$1,046
- Fume hood conversions to low flow: Cost \$61,981, Savings \$40,120
- HVAC upgrades: Cost \$342,791, Savings \$21,866
- Air handling unit condensate recovery/repair: Cost \$3,046, Savings \$4,323
- Replace/repair natatorium HVAC unit: Cost \$24,864, Savings \$3,846
- Installation of condensing domestic hot water heaters: Cost \$55,811, Savings \$15,471
- Commission building: Cost \$31,455; Savings \$21,780
- Pool heating: Cost \$89,494, Savings \$16,423
- Replace steam system trask complex: Cost \$478,212, Savings \$8,419
- Co-Gen/Tri-Gen installation: Cost \$446,409, Savings \$40,965
- Window replacement: Cost \$112,024, Savings \$598
- Vending and ice machine controls: Cost \$15,495, Savings \$2,348
- Cooling tower wells: Cost \$248,033, Savings \$50,543
- Solar pool heating system: Cost \$234,858, Savings \$13,102
- Campus-wide lighting: Cost \$961,218, Savings \$66,268

Not every ECM is being implemented in each building

OTHER BENEFITS

The upgrade of direct digital controls and utility meters to the individual buildings will allow the University to better monitor their buildings and maintain their efficient operation. The University will also be able to trend consumption information and explore its use in established benchmarking programs.

Annual Energy Use

(Source EUI)

Baseline(2012)
325 kBtu/sq. ft.

Expected(2018)
190 kBtu/sq. ft.

Actual()
Coming soon

Energy Savings

42%

Annual Energy Cost

Baseline(2012)
\$1,943,000

Expected(2018)
\$1,071,000

Actual()
Coming soon

Cost Savings

\$873,000



Aerial photo of the campus



UNCW campus map