

Project Announcement

Virginia Commonwealth University: Solar Renewable Project

Virginia Commonwealth University has been an early adopter in the quest to reduce greenhouse gas emissions. In February, President Michael Rao Ph.D. signed the American College and University Presidents' Climate Commitment, renewing VCU's commitment to address global warming by working to neutralize greenhouse gas emissions on campus. The main thrust of the commitment is for participating universities to develop a comprehensive climate action plan to achieve climate neutrality on their campuses as soon as possible. The signing of the commitment coincides with VCU's Year of the Environment, which highlights the contributions and leadership that universities can bring to further improve Virginia's sustainable practices and the impact on national resources.

In April Johnson Controls was awarded a \$3.1 million contract to design and build the following renewable energy projects;

Solar Photovoltaic Systems:

- 163.30KW Solar PV Structure on the top floor of the N-Deck on 10th St.
- 179.4KW Solar PV Structure on the top floor of the Broad St. Deck.
- Up to (4) pole mounted dual axis tracking PV Systems with potential for 14.4KW

Solar Thermal System:

- Domestic Hot Water Heating System at the Monroe Park Campus Shafer Dining Hall

Johnson Controls will provide overall project development and management support for the installation of the high-efficiency solar PV and solar thermal technology for the University. To allow for the proper array configuration an optimal use of available roof space, Johnson Controls specified the use of a canopy shade structure for mounting of the solar arrays. The PV array modules selected for this installation were chosen because they are highly efficient and are constructed with all American made materials. Upon completion this project will be one of the largest rooftop solar arrays in the Commonwealth of Virginia.

The proposed structure on N-Deck is a total of 303 feet long and 33 feet wide and is tilted towards the South East. An additional structure will be added to each end of the deck such that 710 Panels will make up the roof and the combined output of these panels is 163.30KWDC.



The proposed structure on the Broad Street Deck is a total of 425 feet long and 33 feet wide and is tilted towards the South West. 780 Panels make up the roof and the combined output of these panels is 179.4KWDC.



The solar domestic hot water heating system at the Monroe Park Campus Shafer Dining Hall will utilize 15 glazed solar collector panels in conjunction with a new 750 gallon solar thermal storage tank. The predicted renewable energy contribution to the overall heating requirement during low usage period is projected to be 50 per cent.



Communication Kiosks

Three kiosks will be installed throughout the campus in high traffic areas such as the dining hall, library and student registration hall, increasing visibility of the University's commitment to environmental stewardship and participation in the American College and University Presidents' Climate Commitment.

The technology kiosks will serve as a valuable educational tool for students, faculty, and visitors to heighten awareness of renewable technologies. Through compelling imagery and textual content, this interactive tool teaches users about the various renewable technologies at work on campus; what they are, how they work, and their long-term environmental benefits. Live data feeds will be used to track and display energy usage across the key technologies and other pertinent data as follows:

- PV panel energy output, both current energy and cumulative annually
- Solar Thermal energy output in BTUs
- Current weather attributes such as temperature, solar irradiation
- Environmental attributes such as GHG

The kiosk will provide an interactive overview of VCU's commitment to sustainability.



Johnson Controls is pleased to be selected as the design/build provider for the Virginia Commonwealth Universities ambitious solar photovoltaic and solar thermal installation project. The University is to be applauded as a leader in energy efficiency and sustainability. This latest renewable project will further demonstrate the Universities on-going commitment to environmental stewardship and neutralize greenhouse gas emissions on campus.