

Virginia Commonwealth University

Established in 1838, Virginia Commonwealth University (VCU) in Richmond, VA, is dedicated to discovery and creativity. With a diverse student enrollment over 30,000, it fosters strength in the bold and unconventional, is ranked a top 100 research university and home to a no.1 public graduate arts school.



In July 2019, WCU designated the Engineering and Utilities building at 700 Grace Road as a pilot building for Tune® Filter installation. One of the older buildings on campus, it has undergone multiple renovations over the years with more sub panels per square foot than is typical for a building of its type. This required the installation of 17 Tune® Filters, where a more common setting would only require seven or eight. For the pilot installations confidence factor, additional pre-pilot data for weather normalization was collected for comparison.

During this pilot period, raw energy usage resulted in a 9% KWh savings, and recorded a 10% reduction in electrical consumption, or 12% as weather normalization was factored in.

DESCRIPTION

Engineering and Utilities building as a pilot test on the Virginia Commonwealth University campus.

LOCATION / REGION



EQUIPMENT / SOLUTIONS

17 Tune® Filters installed across multiple sub panels.

RESULTS

9%
KWh SAVINGS

10%
SAVINGS IN
COST OF
ELECTRICITY

MONTHLY KWH (RAW) USE / 2019 vs 2018 - avg 10% saving

MONTH	2019 BILLED	2018 BILLED	2019 KWh SAVED	2019 % SAVED
July	41,400	43,800	2,400	5%
Aug	40,200	43,200	3,000	7%
Sept	35,700	42,300	6,600	16%
Oct	29,700	32,400	2,700	8%
Nov	31,200	36,000	4,800	13%
TOTAL 2019	178,200	197,700	19,500	10%



WEATHER NORMALIZATION NOTES

Fall and summer are two seasons each year when consumers shift from air conditioning to heat. These seasons are also the lowest consumption times each year.

“Normalizing for weather” takes a 20+ NOAA history of an area and smooths the annual weather variations. A 12-month prehistory of electricity consumption to the pilot period is then used to create a ‘consumption pattern’ for the building. This along with the confidence factor that the consumption can be predicted for future periods before and after the pilot period.

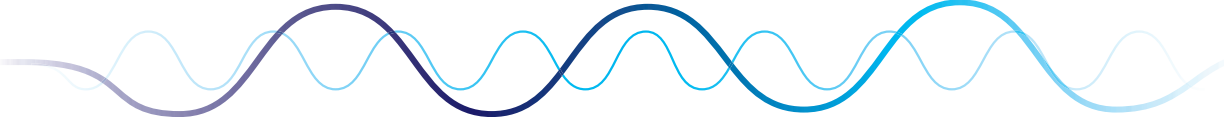
We use trusted algorithms from third-party engineering groups to take the historical and the pilot period data to compare with the predicted consumption, so that the pre-pilot period and the pilot period are both weather normalized for comparison.

The confidence factor for the VCU, 700 Grace Road building is over 96% that our model is accurate.

Dominion Power is subject to the VA Public Service Commission rate structure, which has limited increases in KWh while approving increases in the peak demand charges subject to primarily commercial consumers. Since the peak charges are not broken out distinctly on the power bills, they range between \$825 to \$950 of each monthly bill examined. These charges change annually.



In educational applications, Tune® delivers robust energy savings.



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