

# Sustainability: More than a buzzword at RU's new Sustainable Facilities Center

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Rowan University researchers are interested in keeping things green and cost-effective – not only on campus, but also in readiness centers (formerly known as armories) and other sites across New Jersey.

Through the Henry M. Rowan College of Engineering's [Sustainable Facilities Center](#), students gain experience using cutting-edge technology to save energy, money and the environment. The Center may be “new,” but the award-winning projects on which it was founded include longstanding, ongoing collaborations with the [New Jersey Department of Military and Veterans Affairs](#) (NJDMAVA) and [Army National Guard](#)(NJARNG).

## What real sustainability means

People like to throw around the word “sustainability,” said Dr. Jess Everett, professor of Civil & Environmental Engineering and director of the Sustainable Facilities Center, yet many people don't understand what true sustainability is – a fact Everett's team intends to change.

Sustainability takes into account environmental, social and economic factors, what Everett calls the “Triple Bottom Line.” Each factor is important for achieving a balanced, secure future.

“Of course our enterprises must be profitable, but what worth is profit if one ends up living in a polluted environment or oppressive society?” said Everett.

In the case of the Sustainable Facilities Center's projects, working toward sustainability means a strong focus on environmental impacts and on changes that can save money. NJDMAVA and NJARNG currently have agreements with Rowan University to support the Sustainable Facilities Center's activities with more than \$6 million over 10 years. One project has already recommended changes that could save \$1.2 million. Other projects help the agencies manage properties more efficiently.



## A surprisingly long history

Though the Sustainable Facilities Center officially opened in fall 2018, it has grown organically from numerous sustainability projects spanning more than a decade.

Collaboration started with a wide array of ad hoc projects. Rowan students conducted their first energy audit for NJDMAVA in 2008 at Fort Dix Headquarters in Burlington County. From there, their work was piecemeal – building by building, contract by contract. The fragmentary nature of the collaboration meant that teams couldn't move seamlessly from one project to the next. To streamline the work, Everett suggested that students do a set number of audits per year, resulting in the first 10-year agreement with NJARNG and, ultimately, the founding of the Sustainable Facilities Center.

In addition to NJDMAVA and NJARNG, Rowan engineers have worked with or for local farms, municipal utilities authorities in Mount Laurel and Atlantic City and facilities on Rowan's campus. Already, hundreds of students have participated in the projects that led to the creation of the Center.

## The Sustainable Facilities Center team's work



Sustainability includes the entire lifecycle of a facility, but the projects in cooperation with NJDMAVA and NJARNG so far have focused on the use portion of the lifecycle. Student teams search for opportunities in readiness centers to improve sustainability, often by upgrading or replacing less-efficient systems and materials.

Students use high-tech scanners with laser technology in real-world readiness center settings.

They create 3D models with software that only advanced computer technology can handle. These projects are the first time many students are putting their engineering knowledge to work not just for a grade but also for a real project and a real client.

The Sustainable Facilities Center is interdisciplinary. Each of the six teams taking part in the clinic includes students from different engineering majors. The Building Information Modeling team uses the laser scanners. A Facility Management team works to implement a work order system that goes far beyond simply keeping a record of repairs needed and instead allows for better overall system management. Another team is devoted to energy outreach and planning. Three teams conduct energy audits on different sites.

“It has been a cool experience to be at the heart of something and make it grow so much,” said Samantha Valentine, 28, program manager of the NJARNG Energy/BIM/BUILDER software implementation project. Valentine, who is from Egg Harbor Township, earned her bachelor's degree in civil engineering from Rowan in 2012 and became the first master's student to graduate from the

program in 2014. She enjoys being able to “impact and mentor so many students,” adding that her work with the program “feels like a good achievement to start off my career.”

Everett said, “I’m happy to be involved in projects with a sustainable focus.” For him, one of the benefits of this clinic is that it has “a really practical side” which will allow students to learn the hands-on skills they need for success, including how to analyze data and write reports.

## **Students’ takes**

The sustainable facilities projects are a win-win, offering entities like NJDMAVA and NJARNG thorough audits and actionable recommendations. However, the primary focus, of course, is education. Each year, 40 to 50 new students will work in the Center as part of their engineering clinic. The Center also offers paid internship positions during the summer.

Alexander Guzman, 20, a junior civil engineering major from Cape May, was an intern this past summer. For Guzman, the internship “was definitely a good experience” that showed him “a different world.” He learned a lot in this internship, but it wasn’t all work and no play. Guzman said he had fun visiting the readiness centers and traveling for fieldwork.

For students new to Rowan Engineering, the difference between this practical, hands-on clinic and other engineering coursework they have completed is especially pronounced. Junior mechanical engineering student Mary Sojka, a 20-year-old Mount Laurel transfer student from Rowan College at Burlington County, has enjoyed the chance to “work with a client, like you would in the real world,” rather than completing work only for a grade.

As it is, the work run through the Center is something special – so special that military entities nationwide are taking notice. The work with NJDMAVA and NJARNG has won recognition as one of the top five Army community partnerships in the nation as well as the 2016 Federal Energy Management Program Award in the category of the Office of Energy Efficiency & Renewable Energy. Other states are closely watching and modeling the work Rowan engineering students are doing, Everett noted.

“I am especially proud of this program having been part of the initial effort in developing the framework from which the NJDMAVA could partner with an institution of higher education. Our partnership with Rowan University and all the benefits and successes it provides to the NJARNG has surpassed our expectations. We continue to look forward to future successes and remaining a model example in the Army National Guard,” said LTC Vivienne E McNamara, Construction and Facilities Management officer, NJARNG.