

POWER PROFILE

Customer: YMCA Piscataway Community Center

Location:

Piscataway, New Jersey

Customer Business Issue:

Standby power

Solution:

G3512 gas generator sets (2),
Master Control Panel

Cat® Dealer:

Foley Power Systems



With backup power at the ready, the community center doesn't miss a beat when grid power is interrupted due to brownouts or major weather events.

POWER NEED

First established in 1666, Piscataway, New Jersey, is one of the oldest settlements in the U.S.

Located 40 miles southwest of Midtown Manhattan, Piscataway is a township of nearly 61,000 people. As the home of Rutgers University's Busch and Livingston main campuses, SHI Stadium, and a significant portion of Robert Wood Johnson Medical School, the township has advanced academic and research facilities. Commercial businesses include a vibrant life sciences sector, information technology and data centers, transportation logistics, and a wide variety of other commercial and industrial companies.

In 2019, *Money* magazine ranked Piscataway in its Top 100 Best Places to Live in America—the fourth time Piscataway was featured on the list.

About 20 years ago, town leaders envisioned a new community center that would bring people together from all walks of life. The goal was not only to provide an outlet for recreation, but also a focal point for community support and safety.

That goal was realized last year with the opening of the YMCA Piscataway Community Center (YPCC). The 83,000 square-foot, state-of-the-art facility features an aquatic center with three pools, a fitness center and group exercise studios. There is also a training/coaching office, a gymnasium with 202 bleacher seats, a child watch room, dance and art studios, a café, and a teen center.

The second floor consists of an indoor track above a full-sized basketball court. There is an outdoor water park open during the summer months with a pirate theme that has two open flume water slides, two spray cannons, a deck geyser, and a large super splash bucket connected to the ship's bow surrounded by hose sprayers and arches. Outdoor seating is also available for families to enjoy.

"This is definitely a state-of-the-art facility," says senior facility director Muhammed Derti. "From the lighting controls to the generators to the pool systems, the mechanicals, and even the flooring—everything we have here is basically brand-new technology and materials."

As the design of the building was contemplated, Superstorm Sandy hit New Jersey in October 2012, leaving many people without power for five days or more, recalls Mayor Brian Wahler, who is now in his 21st year in office.

"It dawned on us and our emergency management community that we needed an official evacuation site for the town," Wahler says. "So, what was envisioned as a place to bring people together for exercise and other activities morphed into a place for people to seek refuge during times of crisis."

"And one of the big components of that was if you're going to send people here, we needed to have a reliable backup energy source to keep the power on," Wahler continues. "So, at that point, we started looking into designing the building as if everything was going to be powered by backup generators when there is a grid power outage."

SOLUTION

Based on specifications from its engineering consultant, the township chose two Cat® G3512 gas-fueled generator sets and controls supplied by Cat dealer Foley Power Systems as standby power for the new community center. The decision to utilize natural gas instead of diesel-powered gensets was influenced by the experience with Sandy, when diesel fuel could not be delivered to many locations in the wake of the massive storm.

"The great thing about having natural gas is you don't have to have a service contract with a diesel company," Derti says. "If there's a storm and they run out of fuel or the roads are blocked, they can't get diesel fuel to you."

"By having natural gas, it's already in the building, so you know you're never going to run out of fuel," Derti says. "We can literally run the generators for the entire week, and they will keep running. You don't have to worry about the delivery guy getting here with fuel. With natural gas, it's a dependable supply of fuel to the generator."

Beyond major weather events, New Jersey is subject to brownouts and other interruptions from the utility grid. With backup power at the ready, the community center doesn't miss a beat.

"Having the doors open and keeping the lights on and everything maintained with no power outages is key," Derti says. "If someone's exercising, nothing shuts down. When we have our summer camp programs and the kids are using the facility and we have a power outage or a thunderstorm, everyone stays comfortable in this facility. And our members can also swim and use the pools as well. So, we never shut down."

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Piscataway officials decided to locate the Office of Emergency Management (OEM) within the new community center, further cementing the building's role as a safe haven. The OEM offices housed within the YPCC will serve as a command and control center in an emergency for Piscataway Township. And the entire building will serve as an official evacuation site.

"That's why we thought that the Office of Emergency Management should be housed in this building, Wahler says. "So we don't have to worry about power going down in an emergency. It'll be a base of operations. The office is near the side entrance, so staff can come and go without interrupting other activities in the building."

For added security, the YPCC has approximately 90 television screens and more than 100 security cameras throughout the building.

In early September, the remnants of Hurricane Ida caused a tremendous amount of rain in central New Jersey, which led to extensive flooding throughout the region. As part of a coordinated emergency response, the township's community center was opened as a shelter.

Thus far, officials from communities throughout the state of New Jersey have toured the model facility as they contemplate building their own community centers.

"One of the things that I strongly suggest is that they have an emergency management component because in a time of crisis, it's all hands on deck—even at a community center," Wahler says.

"It's not just our experience with Sandy; we went through Hurricanes Floyd, Irene, and Sandy," Wahler adds. "The lesson was that we need to have a redundant power supply for our government buildings, pumping stations, intersections—things that the average person does not think about. But we as officials have the responsibility to think about it because those are items that make cities and towns operate safely and efficiently.

"And when it goes down without power, chaos can ensue very easily," Wahler continues. "And that's why it was incumbent upon us to make sure that we have a redundant source of power backing up our primary systems to give our emergency management officials and volunteers peace of mind."

The YPCC was designed with sustainability in mind, says Kyle Strohm, executive director of the YMCA Piscataway Community Center. (The YMCA operates the facility for the town.)

"People depend on trustworthy power sources to be able to go about their daily lives," Strohm says. "Regardless of what's happening outside, they can come here and charge their electric vehicles, connect with WiFi, hold their meetings, and plug in their smart devices—all of these things that we tend to take for granted. We now have the ability to provide that for our community of 8,000 members."

RESULTS

The Cat G3512 generator sets were chosen because it was the only natural gas genset that could comply with all specifications, including the necessary 1000 kW power output, and have the ability to start and accept load within 10 seconds per NFPA 110, according to Joe Hendershot, a principal with Associated Technology, Inc., who specified the genset for Piscataway.

"The selection criteria dictated that the community center install generators that start and energize emergency load within 10 seconds," Hendershot says, adding that the gensets are set up in an N+1 configuration.

"The Cat G3512 gas gensets have the capability to start within that timeframe, plus the EMCP 4.4 generator controllers manage paralleling and load management sequences of operations, and there is a remote touchscreen Master Control Panel (MCP) for viewing and control located in the adjacent electrical room.

"Mayor Wahler agreed that fueling with natural gas had unique advantages compared to other options such as diesel," Hendershot says. "So that was a deciding factor in selecting gas-fueled generator sets as the backup power source."

The generators were selected with critical grade silencers and sound attenuated enclosures to meet requisite noise ordinances.

"These two generators are so quiet that you actually don't need to wear headphones," Derti says. "We have houses right behind us, and they never complain about the noise when they're running. The only thing you'll hear is the exhaust flap when it kicks on."

Derti appreciates the ease of use of the standby power system.

"I can look at what the generators are doing from a touchscreen in my office," he says. "I can literally turn on the generator and run it from my office. The setup is just user friendly."



The Cat® G3512 generators were chosen because natural gas is more readily available in an emergency. The gas gensets also comply with the required standby power specifications.