

GENERAC®

INDUSTRIAL POWER

CULINARY AND NUTRITION CENTER

Springfield, Massachusetts

CASE STUDY

CHALLENGE:

Integrate a cost effective backup power solution with redundancy into an existing building with limited space that needs to run during natural disasters.

SOLUTION:

Generac 1500 kW MPS solution consisting of three paralleled 500 kW generators.

RESULT:

A powerful solution utilizing multiple Generac natural gas units providing redundancy, reliability and flexibility within the existing footprint of the space.

“ASNE and Generac are who we think of when we think of quality generators. They went above and beyond expectations.”



Powering Healthier Food Options for Students

In Springfield, Massachusetts, a new \$21 million culinary and nutrition center opened its doors, offering healthier food options to students. Springfield is the first city in the nation to use federal food service funds in a unique city-school partnership. The city bonded for \$14 million towards the project in order to rehabilitate the warehouse to make it a viable space. The goal of the center is to create jobs and feed fresh food, not packaged or processed food, to the kids.

Pat Roach, chief financial and operations officer for Springfield Public Schools, said the process to feed the children in his district healthy food was absurd. “One of our middle schools has a garden and the kids grow vegetables. If they want to serve them in the cafeteria, we have to ship the vegetables to Rhode Island, where they’re washed, cut, processed, and shipped back.” He said with the new facility they can do that in house.

The 62,000-square-foot facility includes all the resources necessary to prepare fresh ingredients for breakfast and lunch at every public, parochial and charter school in Springfield, and train staff to prepare meals from scratch right in the school kitchens. Roach said the program means students, most of whom live in poverty, will be sure to get quality food. According to the U.S. Census Bureau, an estimated 12.3-percent of Americans live below the poverty line. In Springfield, the poverty rate is 28.7-percent. That number is even higher for students in the Springfield Public Schools. The poverty rate in the district

is 76.7-percent. “We want to be feeding the kids and we want to give them something fresh,” Roach said. “Instead of buying processed food that costs a lot of money, we know we can do things in-house cheaper and better.”

When rehabilitating the facility, several things needed to be considered, including the addition of a backup generator. “The greatest challenge for this project was utilization of an existing site and converting it to meet the needs of the client,” said Jeremy Barnes, electrical engineer, EDM – Architecture, Engineering, & Management. “Since this is a hub for food production and distribution for the Springfield Public School system, the building required a substantial production kitchen, in addition to a training room, storage, shipping/receiving and offices.” Barnes said it took careful planning to make sure there was enough space for the facility to function properly and for equipment to fit within the confines of the space.

In the case of a power outage, the entire facility needed to be able to run on backup power. “We have a 10,000-square-foot freezer that’s full of food,” said Roach. “If the power went out we would lose all of that food. We’ve also had a few natural disasters and our food service vendor, Sodexo, helps feed the first responders as well as residents in the evacuation centers. The facility needs to be up and running no matter what in order to provide warm and safe meals.”

CASE STUDY CULINARY AND NUTRITION CENTER



APPLICATION:
Education

SYSTEM CONFIGURATION:
1500 kW MPS

MODELS:
3 x 500 kW Natural Gas



Roach said when considering a backup power solution, they really wanted redundancy and natural gas fuel. “We have natural gas available on site and using it instead of diesel reduced labor for us and makes everything more turnkey. We didn’t want to have to worry about diesel deliveries and tracking levels.”

During the design phase, a partnership between EDM, Wayne J. Griffin Electric, Authorized Services of New England (ASNE) and Generac Industrial Power helped ensure an ideal backup power solution. “We worked with the engineer and designed the system around our Generac Modular Power System (MPS),” said Robert McEvoy, sales manager, ASNE. The original design by EDM specified a single 1500 kW natural gas generator. However, one unit didn’t provide the redundancy the customer wanted. “If they had a single unit and the generator needed to be taken offline for maintenance, then the facility wouldn’t have backup power,” said McEvoy. “With MPS, if a single unit

needed maintenance, the facility would still have access to backup power.”

Another complication to a single unit was that it took up a lot of space. “We just don’t have a lot of room for one large generator,” said Roach. “One large generator would have taken up too much real estate at the site and we would have lost parking, which we needed to be building code compliant.” Roach said cost was also a huge factor for the project, one large single engine would have cost more compared to several smaller gen-sets.

ASNE recommended a Generac 1500 kW MPS. The MPS solution consisted of three paralleled 500 kW natural gas generators. Paralleled generators offer redundancy, reliability and flexibility. Generac was able to guarantee that at least one of the three generators would be serving life safety loads in less than ten seconds. Even if one or two units are offline for maintenance, systems will still be supported.

Another benefit to the MPS solution is the redundancy it provides, making the facility National Electrical Code (NEC) compliant. The state of Massachusetts has adopted the 2017 version of the NEC and the code now states if you have an emergency power application, you cannot be without backup power, even if your generator is being taken down for routine maintenance. “If you have just one generator, and you need to take it out of service, you would have to rent or bring in a different generator so you are not without emergency backup power,” said Barnes. He said by having multiple gen-sets, it eliminates this extra expense.

In the end, the MPS wouldn’t have been as successful without the use of natural gas fuel. “We took the need for a large generator for a facility and broke it up into multiple units,” said McEvoy. “It brought down the amount of gas needed, it brought down the

cost of the project and added the value of redundancy.” McEvoy said natural gas is becoming a preferred fuel source because of the complications of managing diesel fuel. “Diesel requires a lot more maintenance from the end user perspective and if they don’t do that maintenance it becomes an unreliable fuel source,” he said. “So if you don’t treat and manage your diesel, the fuel will break down and cause problems and when you go to start your generator it won’t start.”

Barnes said choosing the right fuel for a project depends on the use of the generator, maintenance cost and available fuel supply. In this case, he said natural gas was the right way to go. “The natural gas gen-sets offered by Generac were the perfect backup power solution due to smaller footprint, plug-and-play configuration and no need for storage for fuel.”

Another unique aspect of this project’s design was the exhaust stacks. According to Massachusetts Department of Environmental Protection, an emergency engine or emergency turbine with a rated power output equal to or greater than 300 kW requires an exhaust stack with a minimum stack height of ten feet above the rooftop or the engine or turbine enclosure, whichever is lower. ASNE and Generac were able to make sure all components of the system were code compliant.

Even though it was Barnes’ first time working with ASNE, he said he wouldn’t hesitate to specify them again. “I have nothing but positive feedback,” he said. “They were willing to assist with any questions I had. I will certainly reach out to them for any future projects.”

Barnes wasn’t alone in the feeling. “Everyone was excellent to work with and we are very happy with the solution that was provided,” said Roach. “When we selected ASNE for the project it was because of their reputation of having quality generators. During the process, they went beyond expectations by helping with the design and just helping us every step of the way.”

Patrick Roach

Chief Financial Officer,
Springfield School
District



Patrick Roach was appointed to the position of chief financial officer for the Springfield School District in 2013. He previously worked for the school department, including serving as assistant chief financial officer and previously as budget director. Prior to the school department, Roach worked for the city's Finance Department as a senior financial analyst and project manager, as a business process analyst and as a financial accountant.

Robert McEvoy

Sales Manager,
ASNE



Robert McEvoy has been a member of ASNE for over 6 years. His previous experience within the Power Systems Industry was with Caterpillar as a Project Manager and Sales Representative. He has experience in providing application and installation support on projects involving gaseous and diesel generators, switchgear and UPS systems throughout New England.

Jeremy Barnes

PE Electrical Engineer,
EDM



Jeremy completed his undergraduate studies at Union College in New York in Electrical Engineering. He is an experienced Electrical Engineer with over 15 years of experience and has been part of projects from concept to completion. Some of his favorite projects include his first Data Center project in North Carolina, a University Office and Data Center Facility that was successfully completed under an aggressive schedule and a Visitor Center Building that involved a large team of architects and engineers working closely together. Jeremy joined EDM in 2017, and specializes in lighting and power design.