

# THE SKY'S THE LIMIT:

## SOLAR ROOF POWERS THE NJIT CAMPUS CENTER

BERNADETTE MOKE SITS ON THE ROOF IN THE SUN, READING A BOOK AND DRINKING IN THE SUNLIGHT. SHE IS NOT ALONE IN HER EFFORTS TO SOAK UP AS MUCH SUNLIGHT AS SHE CAN ON THIS INVITING ROOF-TOP TERRACE. FOR JUST BESIDE HER, IN THE CENTER OF THE ROOF, ARE 160 SOLAR PANELS, SOME OF WHICH AUTOMATICALLY FOLLOW THE PATH OF THE SUN.

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“The solar panels even move a little at night,” says Moke, an NJIT junior majoring in information technology with a concentration in multimedia. “The panels absorb whatever light is left in the night sky. It’s fascinating. In an age when natural resources are becoming more scarce, it’s good that NJIT has turned to an alternative source of energy.”

Moke’s words would make Leon Baptiste happy. In the summer of 2004, Baptiste installed the solar panel array on the roof of the new Campus Center. Baptiste, who graduated from NJIT in 1991 with a degree in electrical engineering, says the solar installation should be a model for other universities and businesses.

### **A solar showpiece**

“This solar unit is the most advanced in the state,” says Baptiste, who is president of LB Electric, a firm he founded. “It’s a showpiece. The solar roof saves NJIT and the taxpayers money while preserving the environment. It’s a win-win for everyone.”

Baptiste delights in explaining the benefits of the installation. An array of 160 solar panels, comprising a 50-kilowatt system, converts sunlight directly into electricity by means of the silicon-based photovoltaic cells covering each panel. Of the system’s

160 solar panels, 144 are stationary. The rest, whose movement Moke likes to observe, can track the sun in the course of the day.

The panels provide power for the Campus Center, and it’s estimated they could save the university nearly \$30,000 a year in electric bills. NJIT received a \$216,000 rebate from the New Jersey Board of Public Utilities (NJBPUB) to offset the \$504,000 cost of installing the system. The NJBPUB was so impressed with the solar unit that it recently held a press conference on the roof to promote greater use of solar energy throughout the state.

The solar-powered system, Baptiste adds, is also environmentally benign. By reducing the need for electricity from coal-burning power plants, it can cut the amount of carbon dioxide, nitrogen oxide and mercury released into the air. These are pollutants typically produced when coal is used to fuel power plants.

“Solar is the best way to create electricity,” Baptiste says, as he enters the Campus Center and points to a kiosk whose computer screen continuously tallies the amount of energy saved by the panels. Since the system was installed in August 2004, according to the screen, enough energy has been saved over some eight months to power 555 houses for one



day or to make 1,018,477 cups of coffee. The solar panels have also prevented, the screen shows, 98 pounds of nitrogen oxide and 25,000 pounds of carbon dioxide from being emitted into the air. “That’s the beauty of solar electricity,” says Baptiste, “and that’s why I got into this business.”

### **From NJIT to LB Electric**

Baptiste grew up in Newark, New Jersey. His father worked as an X-ray technician and his mother was a housewife. After spending some time at Cheney University, in Pennsylvania, he transferred to NJIT in 1985 because of its superior engineering program. He also enrolled in NJIT’s Educational Opportunity Program (EOP), which helps minority students build careers in science and technology.

Seeing that Baptiste needed financial assistance, an EOP staff member helped him secure an internship at Nordling, Dean Electric Co., in Chatham. He did so well that Nordling hired him to work part-time while he pursued his degree and that led to a full-time position with the company after graduation in 1991.

He left in 2000 to form LB Electric, which is now flourishing. Although LB is based in Landing, New Jersey, Baptiste recently opened a second office in NJIT’s Enterprise Development Center, a business incubator that provides various forms of assistance for small high-tech companies. In addition to installing the solar roof, LB’s work at NJIT includes interior lighting for the restoration of the university’s oldest building, Eberhardt Hall, and lighting for the renovation of the green in the center of the campus. LB has also completed projects for Rutgers and the University of Medicine and Dentistry of New Jersey, as well as for Prudential and the municipality of Morristown.

But as successful as he has become, Baptiste has not forgotten the role NJIT’s Economic Opportunity Program played in his life. He is helping to develop an outreach program for EOP students — one that will provide internships and apprenticeships for students who want work in the construction industry. Baptiste is also the educational chairman of the Metropolitan Electrical League, in Long Valley, a non-profit association comprised of some 300 companies. The league offers co-op employment and scholarships to NJIT students who study electrical engineering or telecommunications.

“The staff at EOP gave me advice, direction and mentorship, things all students need,” says Baptiste. “Having someone to guide you when you are a student makes a huge difference. I’ll never forget the help I got at NJIT.”

Installing the solar panels was also a way of giving back to NJIT, says Baptiste. The system is virtually maintenance-free, he adds, and it will help the university save money on its electricity for years to come.

Mike Thompson, plant engineer for NJIT, calls the solar-powered roof a great addition to the campus. “The solar roof saves NJIT money on its electric bills and it’s environmentally friendly, helping to ward off global warming,” says Thompson. “You can’t get much better than that.”

And Moke, the student who likes to sit on the roof and read, says that installing the solar roof keeps NJIT in the forefront of technological leadership. “NJIT is a tech school,” she says, “and it’s right that we should use the best environmental technology to power our buildings. The solar roof makes me proud to be a student here.” ■

**Electrical engineering at NJIT: <http://ece.njit.edu>**