

## GE's Nela Park Facility

### More Than 100 Years of Lighting Innovation



[https://www.cleveland.com/business/2017/09/ges\\_nela\\_park\\_an\\_uncertain\\_fut.html](https://www.cleveland.com/business/2017/09/ges_nela_park_an_uncertain_fut.html)

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By [Marcia Pledger, The Plain Dealer](#)

EAST CLEVELAND, Ohio - Nela Park in East Cleveland remains the headquarters for General Electric's lighting division.

**Nela was the first industrial park in the world**, and it was added to the **National Register of Historic Places in 1975**. But the future of the campus is uncertain. In June, 2019, General Electric announced plans to put its **iconic lighting business up for sale**.

**In 1912, two decades after General Thomson-Houston merged with the Edison General Electric Company to form GE**, the foundation for the company's lighting division was being laid at Nela Park industrial park. GE absorbed the National Electric Lamp Association (NELA) into its lighting business.

GE has been moving away from consumer electronics and toward machinery such as aircraft engines, Industrial Internet services, and wind turbines. Last year, GE's lighting business made up less than 2 percent of its total revenue, and the company only employs about 300 people in the lighting division in Northeast Ohio. Just four years ago, the company employed about 700 people in the area.

Five years ago, a new generation of GE employees, dug up a time capsule buried a century earlier, and buried another. Inside the one buried 100 years ago, was lighting technology from the horse and buggy era.

Artifacts inside the lead box, included photos of Nela's founders, journals, a book of technical specifications, and a Plain Dealer dated March 21, 1912. Above the box in the interior of the cornerstone were five incandescent light bulbs, packed in sand.

"It's fitting that this time capsule was meant to be unearthed when significant changes in the incandescent light bulb occurred," GE Lighting's President and CEO Maryrose Sylvester, said in a statement. "We're

celebrating innovation at a time when GE scientists and engineers at Nela Park and around the world are developing advanced lighting solutions that are transforming not only the application of lighting, but also the business of lighting."

The Nela Park campus consists of 20 Georgian Revival-style buildings, all but four of which were built before 1921. The campus continues to be popular to the general public because of its annual holiday lighting display at 1975 Noble Road. It's been a holiday destination for nearly 100 years. Last year the display included more than 500,000 LED lights. For the past 52 years, GE has also provided the lighting for the National Christmas Tree in Washington, D.C, according to the company.

GE is the only company listed in the Dow Jones Industrial Index that was also included in the original index in 1896. But, Nela Park is a shell of what it used to be. In June, the Plain Dealer reported an uncertain future of Cleveland's MC2STEM High School, a specialized school partly based at General Electric's Nela Park campus.

The unique school has students spending their freshman year in classrooms at the Great Lakes Science Center and sophomore year at Nela Park before spending their final two years of high school on the Cleveland State University campus.

Since 2008, more than 100 students have shared the cafeteria at the East Cleveland campus with GE Lighting employees. They've been mentored by GE employees and some have done internships with the company. It is a partnership the district and supporters have been proud of, regularly boasting that its students go to class at a Fortune 500 facility.

"We're the spark that created the GE Company and the lighting industry," Sylvester said in a previous article. "Cleveland has played a significant role in just about every major lighting invention."

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## A strong reference to this facility is in the 2019 movie, **Current War**

Three brilliant visionaries set off in a charged battle for the future in **The Current War**, the epic story of the cutthroat competition that literally lit up the modern world. Benedict Cumberbatch is **Thomas Edison**, the celebrity inventor on the verge of bringing electricity to Manhattan with his radical new **DC technology**. On the eve of triumph, his plans are upended by charismatic businessman **George Westinghouse** (Michael Shannon), who believes he and his partner, the upstart genius **Nikolai Tesla** (Nicholas Hoult), have a superior idea for how to rapidly electrify America: with **AC current**. As Edison and Westinghouse grapple for who will power the nation, they spark **one of the first and greatest corporate feuds in American history**, establishing for future Titans of Industry the need to break all the rules.



**Dr. Bruce P. Johnson**  
Professor Electrical Engineering  
University of Nevada Reno, retired

Dr. Johnson's area is high frequency electronics and electromagnetic compatibility. He is trained as a Physicist including courses in nuclear and health physics. Research interests include solar and piezoelectric energy generation and high frequency instrumentation.

I took my brother-in-law, Dr. Bruce Johnson to the movie. Bruce worked on the research development of the **first LEDs at the GE Nela Park Lighting facility in 1972.**

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After his B.S. in Physics, he got his M.S. degree in Physics at the University of New Hampshire. After teaching Physics at Hobart and Williams College in Geneva, NY for two years, he enrolled at the University of Missouri and completed a Ph.D. in Physics in January, 1967 specializing in Solid State Physics.

He joined General Electric Medical Systems in Milwaukee, Wisconsin where he focused on X-ray Imaging in semiconductor materials. In 1970 he transferred to the Lighting Division of General Electric at Nela Park in Ohio where he participated in the early development of the Light Emitting Diode, (LED). He worked with GE's Research and Development Center and is credited with growing a 7 percent efficient GaP diode which set a new record for electron-photon conversion in this material. (*In solid-state physics, a band gap, also called an energy gap, is an energy range in a solid where no electron states can exist*).

In 1974 GE decided to get out of the LED business and so he returned to his first love of teaching at the University of Nevada, Reno. He has enjoyed a great career with focus in solid state physics, electronics and electromagnetic compatibility. He reported on one of the first car-self driven techniques using microwave reflection from a painted stripe on the road.

While at UNR he was twice appointed to the United States Metric Board. He also served as International President of Eta Kappa Nu the Electrical Engineering Honor Society. He was active in IEEE and was student activities coordinator for Region 6 as well as advisor for the local chapter.