



University of Birmingham

Case Study



Leading UK university achieves sustainability and energy objectives through IoT lighting control

23K
Sensors

38K
Students

20%
Reduction of carbon emissions

Digital sensor and analytics technologies create world's first smart campus

For more than a century, the University of Birmingham has pursued and shared knowledge through outstanding teaching and world-leading research. Established in 1825, the university is a globally ranked, top-100 public research and teaching institution, as well as a member of the prestigious Russel Group. With one of the largest populations of any UK university, the institution supports a global community of more than 8,000 staff and 38,000 students, including an affiliated campus in Dubai.

The University of Birmingham has achieved a remarkable milestone by implementing the most extensive IoT technology deployment ever seen on a university campus. By integrating cutting-edge digital sensors, advanced analytics, and behavioral science principles, the university has successfully revolutionized occupant behavior. This transformative initiative has now earned it the distinction of being the world's inaugural smart campus and living lab. All the data from the university building technologies,

“

Our goal is to deliver the university of the future, using cutting-edge technologies to make our campuses in Edgbaston and Dubai the smartest globally. This will enhance our student experience, create new research and innovation opportunities, whilst significantly reducing our carbon footprint.

”

TREVOR PAYNE

Director of Estates
University of Birmingham

estate infrastructure, and energy plants will be used for innovation, R&D activities, and teaching. Committed to achieving net zero by 2035, the university has also committed to making its Edgbaston and Dubai campuses among the smartest, most intelligent, and globally sustainable.

Getting started

The University of Birmingham selected Enlighted's innovative IoT technology to help reach its sustainability and energy efficiency goals while also preparing the campus for the future.

- **Reach sustainability goals:** Enlighted's advanced IoT technology will help the university achieve carbon net zero by 2035 by significantly lowering CO2 emissions, currently reaching over 52,000 tons of CO2 per year.
- **Cut energy costs:** Implementing occupancy-based lighting and HVAC systems have proven energy-reduction results.
- **Create a campus of the future:** New technology will help the university create a smart, net-zero campus that promotes research, learning, and innovation to positively impact world challenges.

Setting the foundation with a full lighting retrofit

Phase one of the project consisted of a full lighting retrofit with new LEDs. Next, the university installed 23,000 Enlighted IoT sensors that integrated with the lighting fixtures.

Every installed sensor provides data on energy consumption, occupancy, motion, and temperature across the campus. Analyzed through Enlighted's Manage platform, this data can inform better decisions on space utilization and energy efficiency.

Enlighted has helped the university make significant progress toward sustainability, culminating in the successful achievement of their 2020 goal to reduce carbon emissions by 20 percent. Emissions have continued to decline at a rate of 2,856 tons annually, equivalent to five percent of current emissions.

Looking ahead

The University of Birmingham has ambitious plans for two additional phases, intended to extend sensor deployment to both campuses while simultaneously implementing IoT technology to digitize infrastructure and harness renewable energy sources.

To further drive innovation and enhance sustainability, the university has also forged a long-term partnership with Siemens for energy and IoT services. This 10-year collaboration will provide the university with access to cutting-edge technology and invaluable industry expertise. Additionally, the IoT technology rollout provides a vast amount of precise data that creates new educational and research opportunities, including potential sponsorship of 20 PhD candidates in the coming years.



I am personally proud to be a part of this partnership, and I look forward to continuing to work together to drive innovation and sustainability in the years to come. It is through true collaborations like this that we can make a real difference in creating a more sustainable future for generations to come.



STEFAN SCHWAB

CEO
Enlighted