

International Union of Operating Engineers



Crosby, TX



International Training & Education Center

About the International Union of Operating Engineers

The International Union of Operating Engineers (www.iuoe.org) is an advanced trade union with a fundamental mission to represent a diverse group of heavy operators and stationary engineers within the construction, pipeline, facilities management, and environmental industries. IUOE members also include mechanics, surveyors, building and maintenance operators for industrial complexes, and public employees from many areas. Additionally, the organization works to improve its contractors' competitiveness all the while dedicating its resources towards the interests and well-being of its members. Founded in 1896, today it has more than 400,000 members in 123 local unions throughout the United States and Canada. Along with its major responsibilities, the organization manages and operates the IUOE International Training & Education Center (ITEC), supporting over 100 local training and

apprenticeship programs to guarantee that its members remain expertly skilled, productive, and safe.

Tackling ITEC's Operational and Educational Challenges

Project Summary

IUOE stationary engineers are expected to continually evolve and improve their skill sets to remain valuable and productive workers in the job market. It is therefore the IUOE's responsibility to train and prepare its members for these rapidly developing technologies and the ever-evolving job market. To achieve these goals, IUOE owns and operates its International Training and Educational Center in Texas. This state-of-the-art facility contains everything needed to host, support, and develop the skills of a constantly expanding and varied group of construction and maintenance professionals. Offering the following amenities, a visit to the ITEC facility encompasses



IUOE Training center



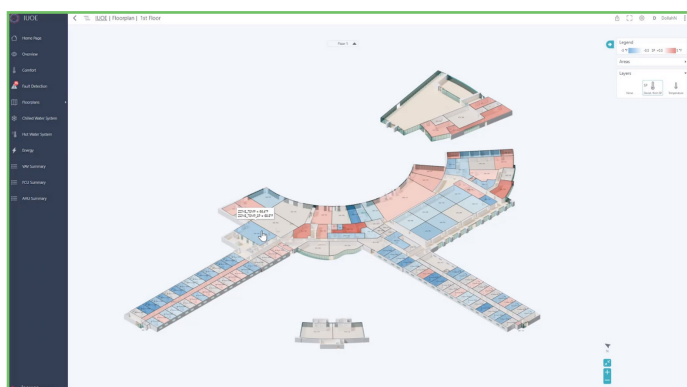
IUOE overview dashboard

education, hospitality, transportation, entertainment, and building operations:

- A 265-acre campus
- 8,120 square foot conference space with seating for up to 900 people
- 17 classrooms and labs
- 15+ pad crane field
- Simulator rooms
- A heavy equipment mechanics shop
- Welding bays
- Central utility plant with training redundancies
- A 227-room dormitory, fitness center, pub, and full dining facilities
- Proximity to major airports in the Houston area

Comprised of stakeholders at every operational level, the IUOE is extremely conscious about operational efficiencies, cost savings, and occupant comfort – all the aspects essential to a building owner. Therefore, the organization needed automation software to both train its members and efficiently operate and manage the ITEC facility.

As the ITEC building operation and management team would be using multiple Building Automation Systems (BASs), the IUOE researched the top BAS implementations, including Siemens, Johnson Controls, Honeywell, and several others which traditionally run entire facilities on a single vendor's platform. These major BASs are proprietary systems, and the organization was interested in a platform that could sit on top of multiple BASs and provide stand-



IUOE floorplan overview

alone addressable devices to aggregate the various data points for analytics and curriculum development. Being members of several "Building Trade" organizations, the IUOE worked closely with The Association of Union Contractors (TAUC) and E2E Summit (an industry group that researches emerging trends in the construction and building automation fields) to search for a suitable automation solution. Since IUOE was already using Microsoft Azure, the Microsoft Smart Building organization introduced IUOE to ICONICS in January 2019. After several meetings, and in accordance with IUOE's preference to seek out partners rather than vendors, the organization partnered with ICONICS.

ICONICS Solutions Deployed

The ICONICS solutions deployed included the following:

- **GENESIS64™** HMI/SCADA
- **AnalytiX®**

ICONICS' solutions were deployed during the height of the COVID pandemic. The project was completed mostly by teams working remotely from New York, California, Texas, Massachusetts, and Illinois utilizing conference calling and cloud computing along with just two personnel that were needed on-site: one building engineer and one IT expert.

Realized Real-Time Benefits:

Operational Intelligence and a Superior Training System

IUOE realized real-time benefits through ICONICS solutions including:

- Increased operational intelligence
- Dynamic real-time data
- Actionable insight for historical and trending data analytics
- Visibility to all systems in the buildings (regardless of vendor/manufacture)
- Monitoring and control of facility comfort levels (temperature, humidity, air quality)
- Integration with Wellstat to measure the Indoor Air Quality (IAQ) levels of CO₂, particulate matter, volatile organic compound, formaldehyde, ozone

ICONICS' platform is also used in IUOE's advanced Building Automation classes. Students can learn from a real system with real-time data from real equipment and thus are not limited to a lab setting.

Conclusion

ICONICS delivers operational intelligence by giving the IUOE the data they need to run an efficient facility and training operation. With ICONICS solutions, they have the ability to analyze the facility as a whole and centralize the data from all the systems in one place (regardless of manufacturer). Moreover, by facilitating proactive equipment maintenance, the IUOE now has the ability to diagnose building faults early on to reduce capital expense. The solutions also help in reducing energy expenses and in increasing equipment health and longevity. The IUOE realized significant cost savings and improved the comfort level for their occupants and staff. The organization can efficiently run and operate their facility to deliver superior training and education. Ultimately, the IUOE did not just choose a vendor; with ICONICS, they chose a partner.

“The implementation of the ICONICS Suite of applications allows us to optimize operational efficiency and keep an eye on energy costs. We use the real-time dashboards as part of our Advanced Building Automation Curriculum. Previously we relied on static data and theoretical concepts, but now we're able to show real-time data in a dynamic environment.

Two characteristics of the ICONICS technical architecture that stand out for me:

1. Our engineers can access automated monitoring from anywhere in the facility or off-site using laptops, tablets, or mobile phones. Makes for a more responsive workforce.
2. The vendor agnostic nature and ease of integration of the ICONICS platform give us visibility to various BAS's, other operational platforms, and addressable devices. This capability provides intelligence for our entire campus operation. ”

Dean Tallman

Chief Information Officer,
International Union of Operating Engineers

