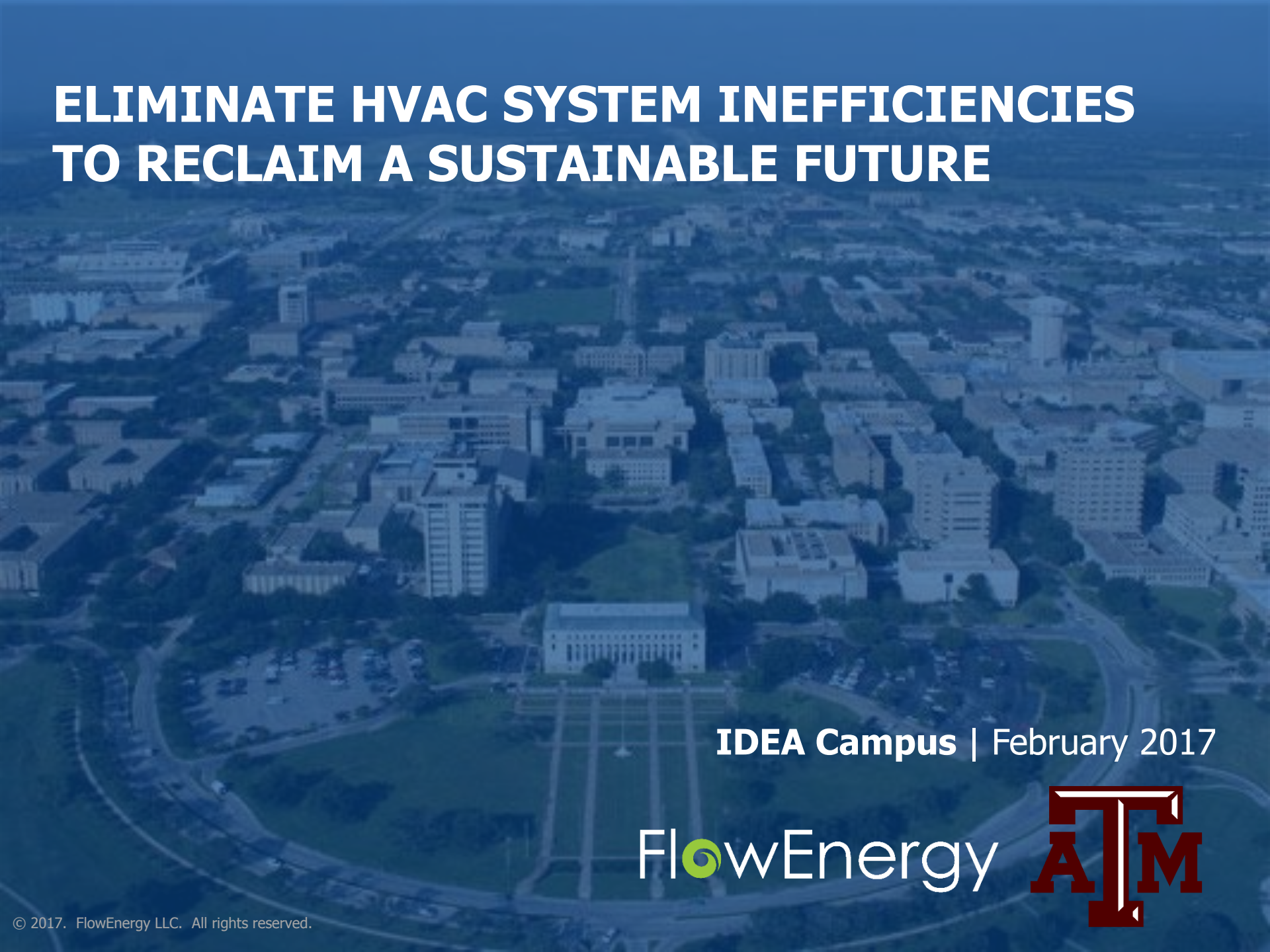
ELIMINATE HVAC SYSTEM INEFFICIENCIES TO RECLAIM A SUSTAINABLE FUTURE



IDEA Campus | February 2017

FlowEnergy

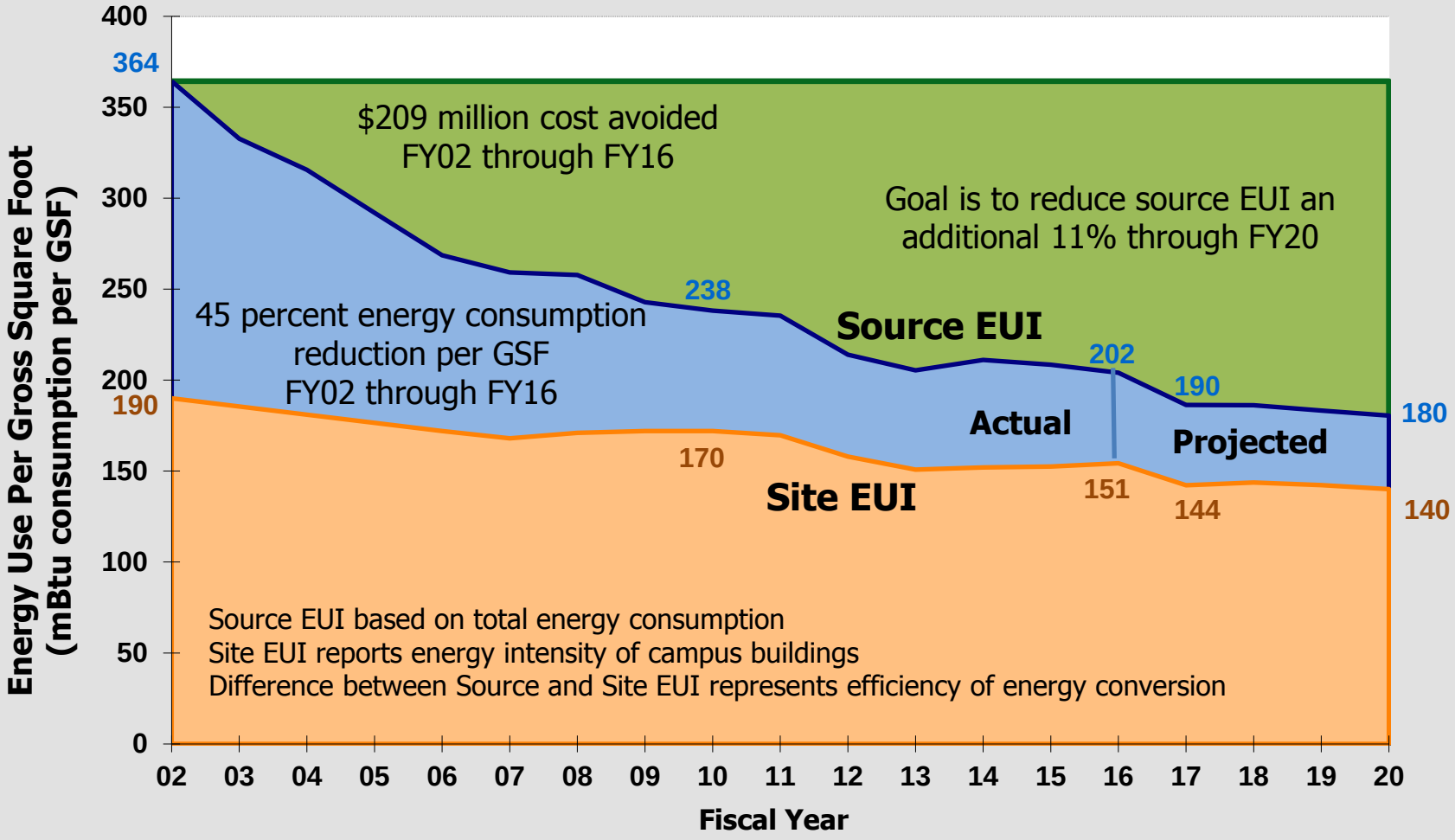
UTILITIES & ENERGY SERVICES

TEXAS A&M UNIVERSITY

Texas A&M University Utility Overview

- World class teaching & research with 60,000 students
- Over 25 million GSF served on 5,200 acres
- Continuous onsite power generation since 1893
- Power and steam generation with 50 megawatt CHP
- 65,000 tons of cooling capacity
- Extensive district cooling and heating distribution
- 2,000 revenue quality utility meters in ~700 buildings
- Building automation systems managed by UES

Energy Use Intensity
Energy Consumption per GSF



ENERGY CHALLENGES @ EDUCATIONAL CAMPUSES

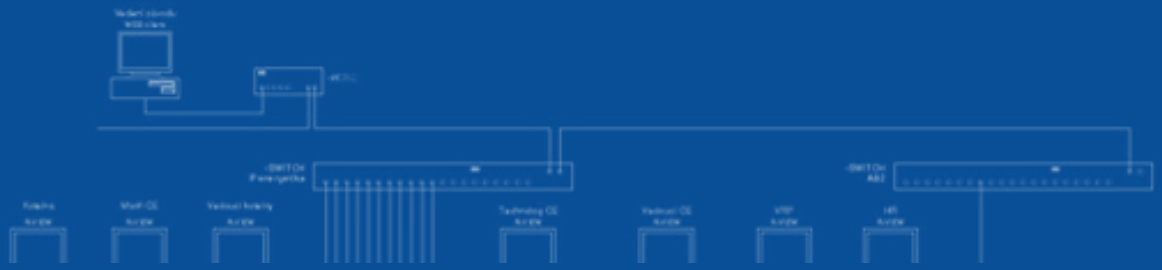
Sustainability leaders want to reduce consumption

Energy managers want to increase efficiency

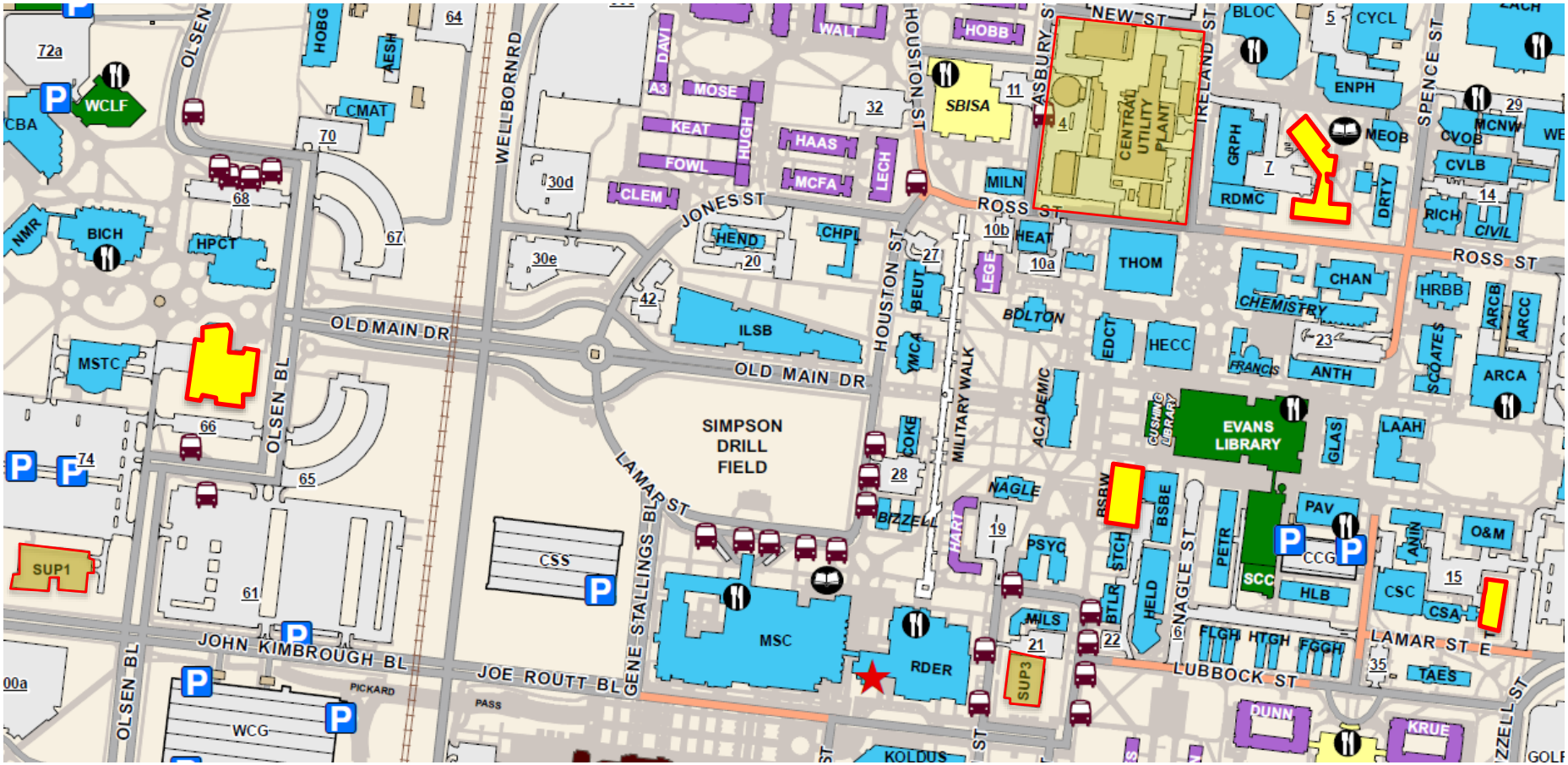
Facilities teams want to address preventative maintenance instead of comfort complaints

The greatest opportunity for targeting all of these objectives today's energy space is through HVAC solutions.

Texas A&M University selected FlowEnergy to help with this.

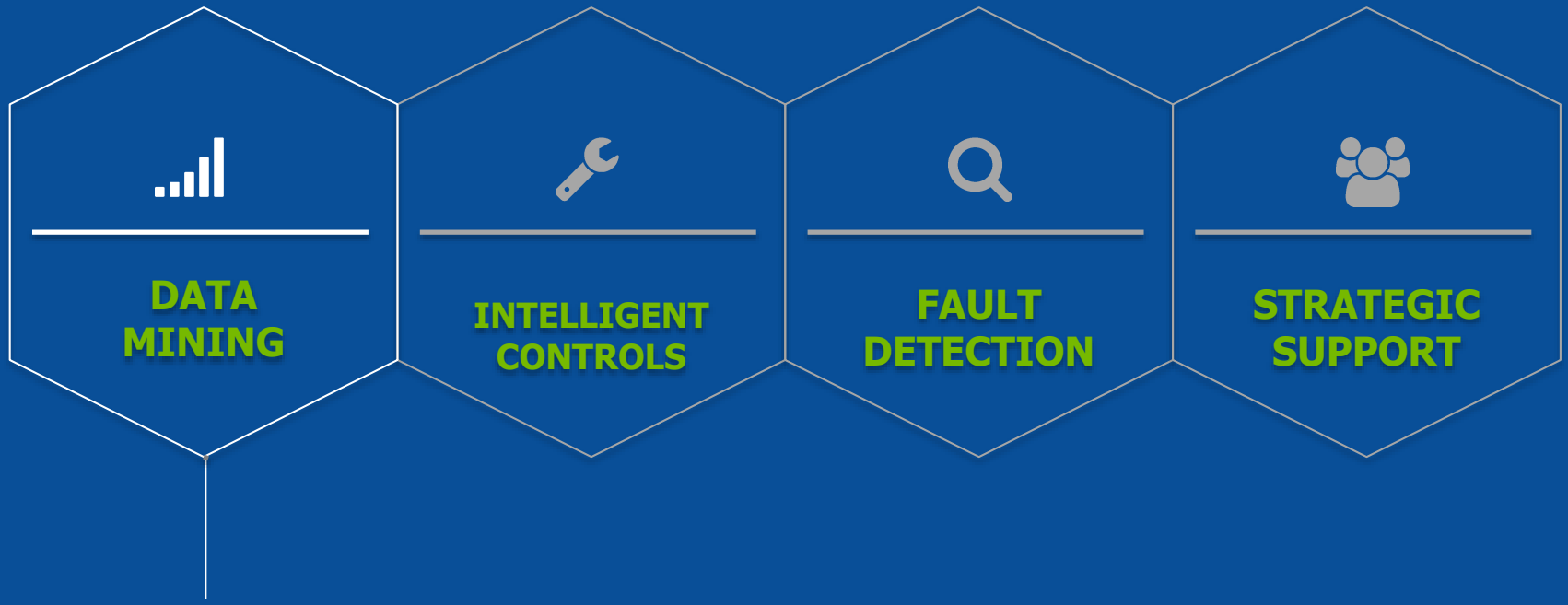


PROJECT SCOPE



Biological Sciences Bldg. West (1967), Halbouty Geosciences Building (1933), Kleberg Center (1978), Teague Research Center (1966)

THE OPPORTUNITY @ TEXAS A&M UNIVERSITY



- Gain **real-time data** for better visibility of cooling and heating loads within the building

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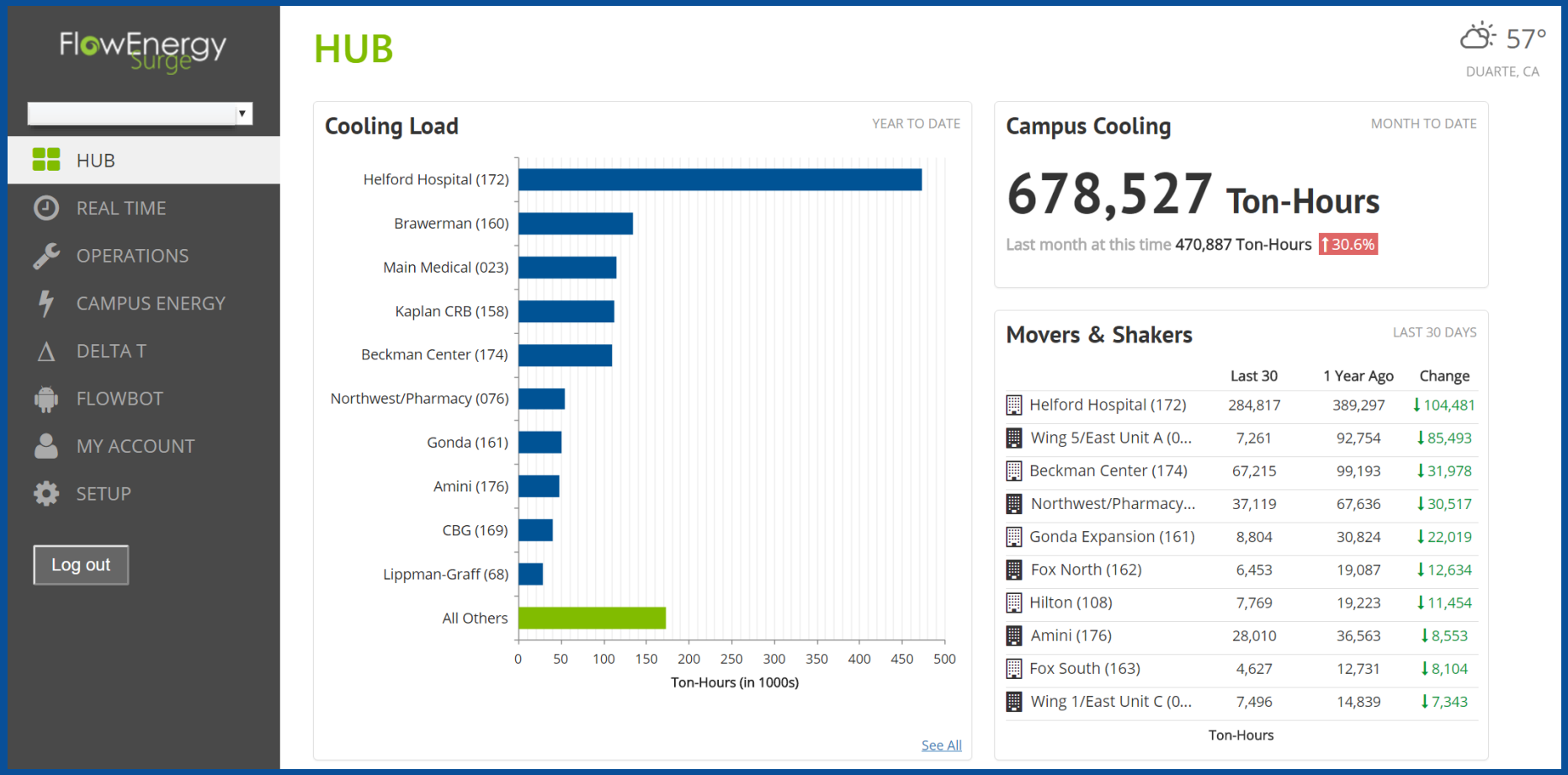
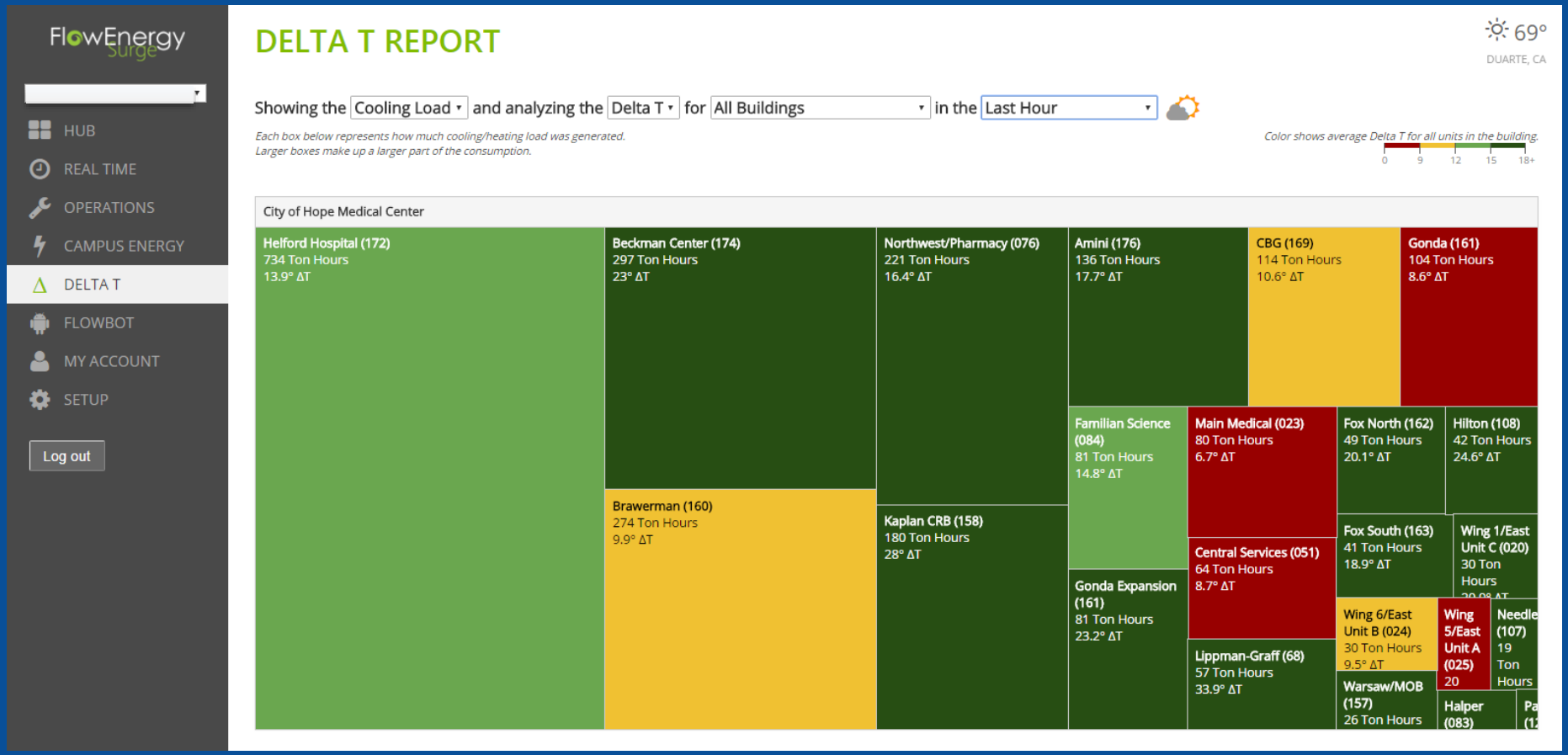


THE OPPORTUNITY @ TEXAS A&M UNIVERSITY



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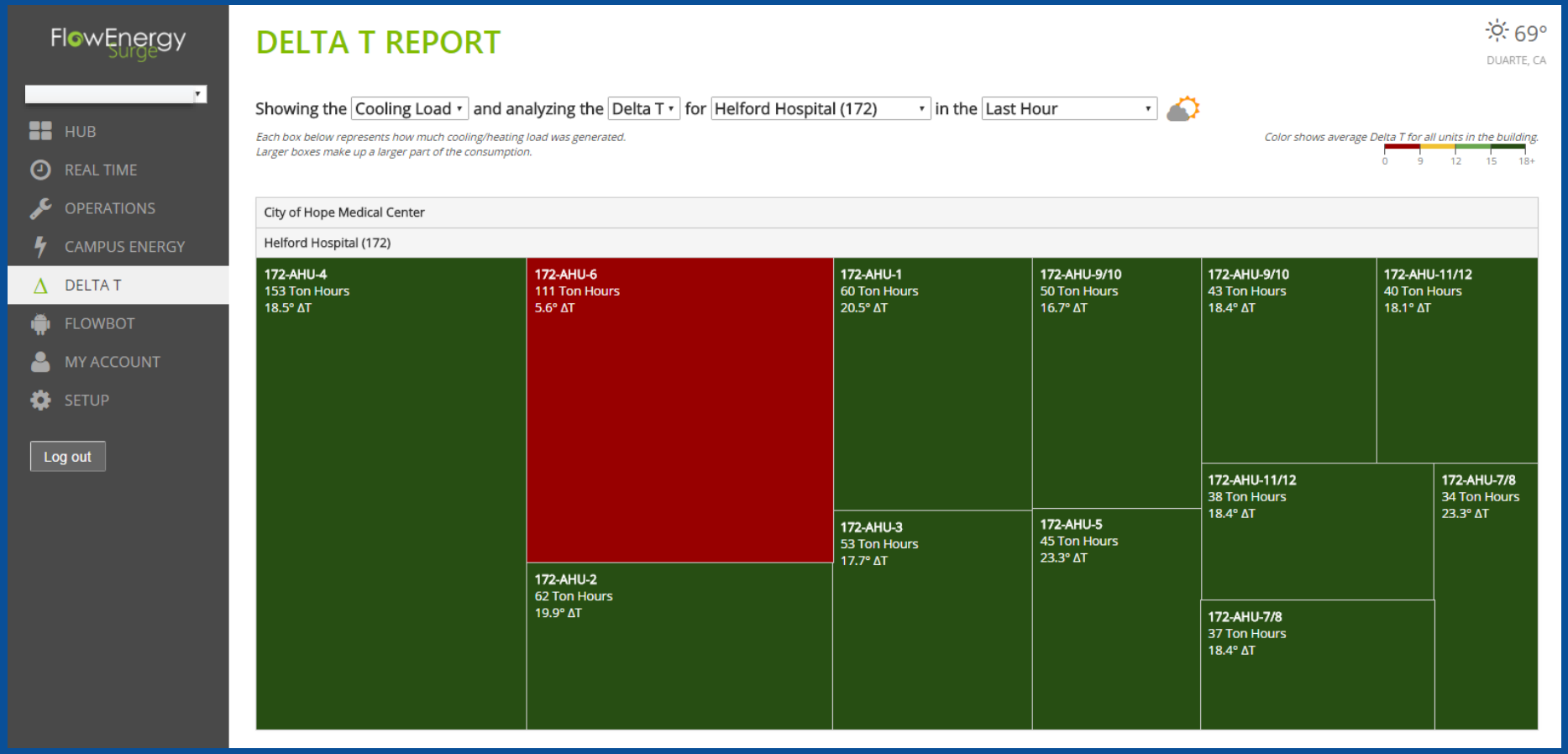

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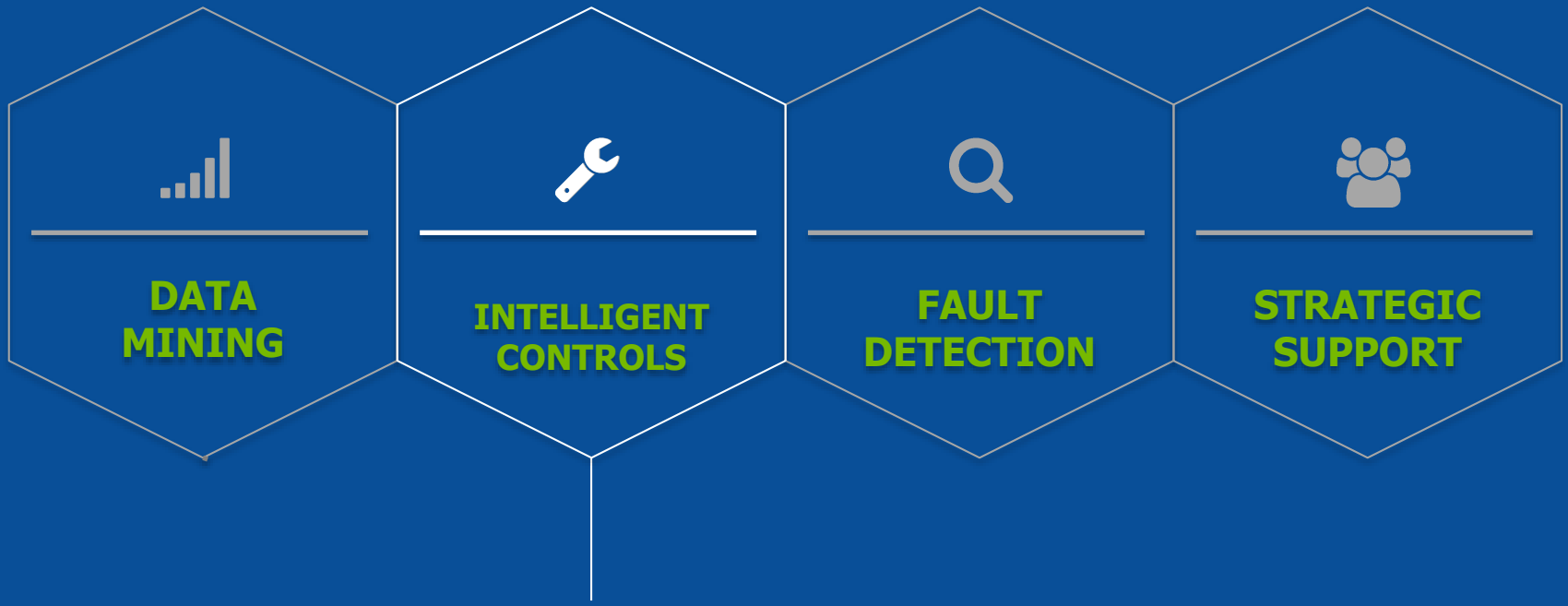

- Improve comfort with innovative control modes
- Auto-adjust based on specific conditions

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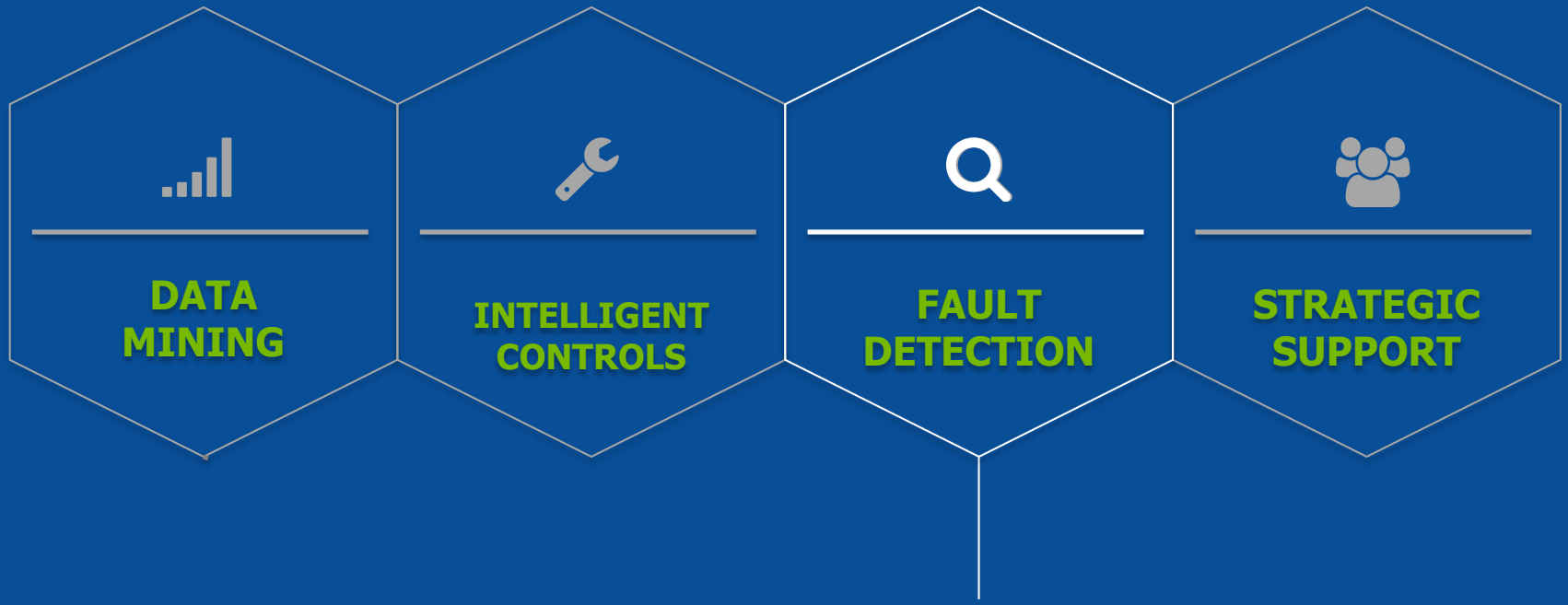

- Continuously monitor specific AHU performance indicators
- Receive alerts and recommendations for potential comfort & energy issues

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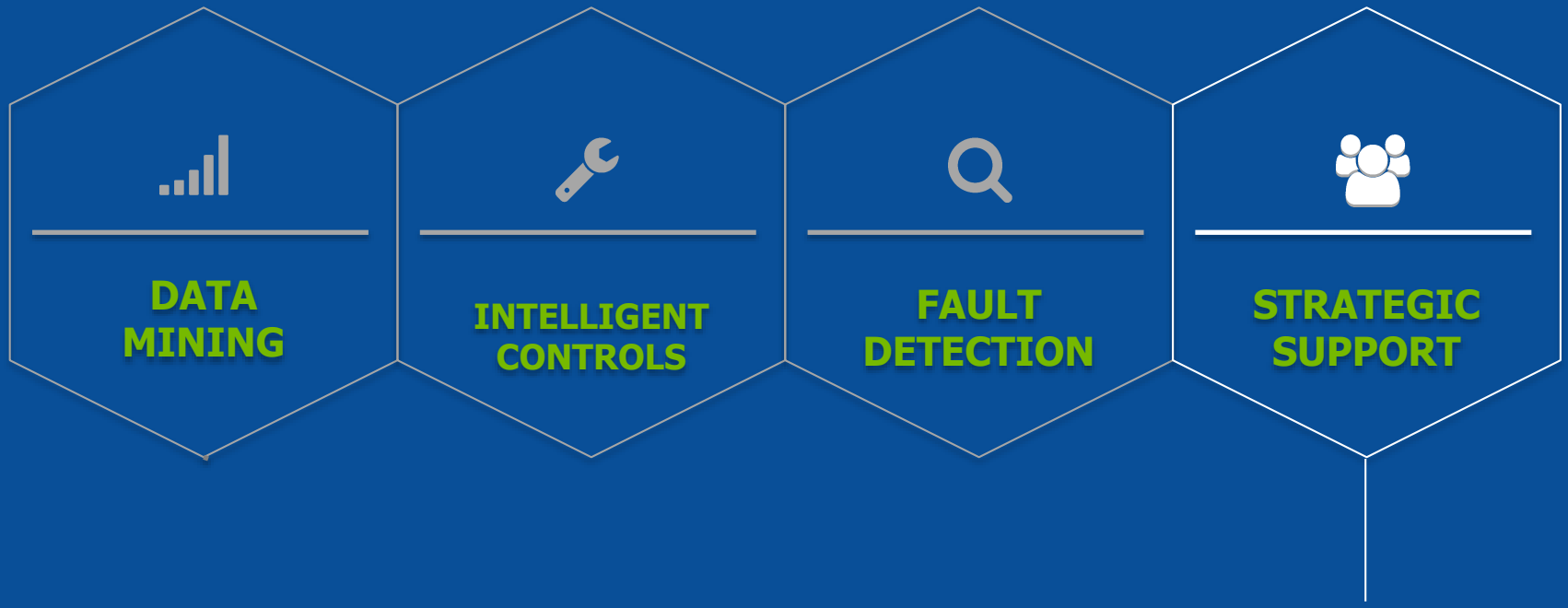

- System modeling & optimization keeps systems efficient
- Prioritize opportunities for additional optimization

PROJECTED RESULTS / GOALS

- Achieve leaving air temperature control at the Air Handling Units within +/- 0.1°F of setpoint
- 65%+ increased delta T at the AHU for chilled water coils
- 30%+ increased delta T at the AHU for heating water coils
- Recover approximately 225 tons of stranded cooling capacity
- Lower the chiller ton-hours associated with buildings by over 35%
- Provide a platform for monitoring based commissioning
- Provide submetering as required by LEED and/or current Energy Codes

THANK YOU.

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