ELIMINATE HVAC SYSTEM INEFFICIENCIES TO RECLAIM A SUSTAINABLE FUTURE
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

Source EUI based on total energy consumption
Site EUI reports energy intensity of campus buildings
Difference between Source and Site EUI represents efficiency of energy conversion

$209 million cost avoided FY02 through FY16
45 percent energy consumption reduction per GSF FY02 through FY16

Goal is to reduce source EUI an additional 11% through FY20

Source EUI

Actual

Projected

Site EUI

Fiscal Year

Energy Use Per Gross Square Foot (mmBtu 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)
Gain **real-time data** for better visibility of cooling and heating loads within the building.
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**HUB**

**Cooling Load**

- Helford Hospital (172)
- Brawerman (160)
- Main Medical (023)
- Kaplan CRB (158)
- Beckman Center (174)
- Northwest/Pharmacy (076)
- Gonda (161)
- Amini (176)
- CBG (169)
- Lippman-Graff (68)
- All Others

**Campus Cooling**

678,527 Ton-Hours

Last month at this time: 470,887 Ton-Hours (30.6%)

**Movers & Shakers**

<table>
<thead>
<tr>
<th></th>
<th>Last 30</th>
<th>1 Year Ago</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helford Hospital (172)</td>
<td>284,817</td>
<td>389,297</td>
<td>-104,481</td>
</tr>
<tr>
<td>Wing 5/East Unit A (0..)</td>
<td>7,261</td>
<td>92,754</td>
<td>-85,493</td>
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<td>Beckman Center (174)</td>
<td>67,215</td>
<td>99,193</td>
<td>-31,978</td>
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<tr>
<td>Northwest/Pharmacy (076)</td>
<td>37,119</td>
<td>67,636</td>
<td>-30,517</td>
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<td>Gonda Expansion (161)</td>
<td>8,804</td>
<td>30,824</td>
<td>-22,019</td>
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<td>Fox North (162)</td>
<td>6,453</td>
<td>19,087</td>
<td>-12,634</td>
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<td>Hilton (108)</td>
<td>7,769</td>
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<td>Amini (176)</td>
<td>28,010</td>
<td>36,563</td>
<td>-8,553</td>
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<td>Fox South (163)</td>
<td>4,627</td>
<td>12,731</td>
<td>-8,104</td>
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<tr>
<td>Wing 1/East Unit C (0..)</td>
<td>7,496</td>
<td>14,839</td>
<td>-7,343</td>
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</tbody>
</table>

See All
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- Improve comfort with innovative control modes
- Auto-adjust based on specific conditions
Continuously monitor specific AHU performance indicators
Receive alerts and recommendations for potential comfort & energy issues
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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