**Energy Conservation Initiative (ECI) Project Summary**

**Boyce Thompson Institute, Facility 1076**

**What We Did:** We upgraded and optimized the majority of the main air handlers for the building, with variable speed drives and new valves with modified ductwork to introduce return air thereby reducing energy consumption. We upgraded the legacy controls on the hot water heating systems to optimize and implement greater efficiency. We installed variable speed drives on exhaust fans to reduce energy consumption.

**What It Cost:** $377,000

**How Long It Took:** 6 months.

**Completed December 2014.**

**What We Saved:** $80,000 and 113 tons/per year carbon equivalent annually.

**Benefits:** The project addressed many deferred maintenance items removing pneumatic controls in installing variable speed drives on supply and exhaust fan motors. Updated control sequences were added to optimize energy use.

The energy conservation project at BTI addressed significant deferred maintenance. The updated building control system reduced energy use while increasing occupant comfort.

Mark Howe
Campus Energy Manager
Energy and Sustainability

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**Boyce Thompson Institute: ECI Savings Table**

<table>
<thead>
<tr>
<th>Utility</th>
<th>Historical Energy Use (MMBtu)</th>
<th>*Est. FY 2016 Energy Use (MMBtu)</th>
<th>Energy Savings (MMBtu)</th>
<th>% REDUCTION</th>
<th>Historical Cost (billed)</th>
<th>*Est. FY 2016 Cost (billed)</th>
<th>Annual Savings $</th>
<th>Equivalent # Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>17,000</td>
<td>16,800</td>
<td>200</td>
<td>1%</td>
<td>$348,000</td>
<td>$345,000</td>
<td>$3,000</td>
<td>5</td>
</tr>
<tr>
<td>Steam</td>
<td>11,200</td>
<td>8,900</td>
<td>2,300</td>
<td>21%</td>
<td>$252,000</td>
<td>$200,000</td>
<td>$52,000</td>
<td>30</td>
</tr>
<tr>
<td>Chilled Water</td>
<td>7,600</td>
<td>6,300</td>
<td>1,300</td>
<td>17%</td>
<td>$140,000</td>
<td>$115,000</td>
<td>$25,000</td>
<td>26</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>35,800</strong></td>
<td><strong>32,000</strong></td>
<td><strong>3,800</strong></td>
<td><strong>11%</strong></td>
<td><strong>$740,000</strong></td>
<td><strong>$660,000</strong></td>
<td><strong>$80,000</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

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**Energy use based on project scope**

Equivalent # Homes Savings based on average home use: 40 MMBtu Electric • 90 MMBtu Heat • 50 MMBtu Cooling