SOLUTION OVERVIEW
Built in 1972, Towson University’s Residence Tower houses over 400 undergraduate students and was the largest user of energy-per-square-foot of all residence halls on campus. This is largely due to its simple, poured-in-place concrete exterior with almost no insulative properties, antiquated and inefficient packaged terminal air conditioning units (PTACs), single-pane window glazing and outdated fluorescent lighting with minimal lighting controls.

Along with being a very high energy user, Residence Tower was considered aesthetically outdated, lacking a sense of connection to its site and campus. The ground floors lacked social, study, recreation, and academic support spaces. Additionally, existing elevators prohibited persons in wheelchairs from living in or visiting the upper levels of the building.

SECTOR TYPE
Education

LOCATION
Towson, Maryland

PROJECT SIZE
105,000 Square Feet

FINANCIAL OVERVIEW
$32.5 Million

SOLUTIONS
To improve the building’s performance, accessibility, and appeal, Towson completely renovated the interior and exterior of the building. The renovation included a number of energy and water efficiency improvements:

- Low-flow bathroom fixtures
- High-performance variable refrigerant flow (VRF) mechanical systems
- Premium efficiency LED lighting and controls throughout the building
- Thermally broken glazing and a lightweight, insulated cladding system
- Enhanced commissioning of all building systems

OTHER BENEFITS

https://betterbuildingssolutioncenter.energy.gov/showcase-projects/towson-university-residence-tower
For more information, visit https://betterbuildingssolutioncenter.energy.gov
Following completion, the building achieved LEED Gold Certification. With the selective demolition and enclosure of the first two levels of the building, the Residence Tower increased the student common spaces and increased the living-learning space at the ground levels from 2 square feet per student to over 14 square feet per student. This additional programming space creates a welcoming atmosphere and further fosters a sense of community for this population of nearly 450 students.

New program spaces include kitchen and dining spaces, social lounges, quiet study nooks, gaming areas, central laundry, and classroom and flex spaces. The main entry lounge and classroom spaces face the campus and allow visitors access to those spaces to create a stronger sense of connection to the greater campus. Additional space is provided for the residents of the building and is intended to foster community and interaction at the scale of the whole building. The upper floors were fully renovated with new bathrooms and room layouts, enclosed study spaces, and open community lounges on every floor. Finally, elevators were renovated with new cabs and a whole new elevator shaft was added to provide a larger elevator that was more accessible to non-ambulatory students, parents, and visitors.
<table>
<thead>
<tr>
<th><strong>Annual Energy Use</strong> (Source EUI)</th>
<th><strong>Annual Energy Cost</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline (2015)</strong></td>
<td><strong>Actual (2019)</strong></td>
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<tr>
<td>228 kBtu/sq. ft.</td>
<td>146 kBtu/sq. ft.</td>
</tr>
<tr>
<td><strong>Energy Savings</strong></td>
<td><strong>Cost Savings</strong></td>
</tr>
<tr>
<td>36%</td>
<td>$80,000</td>
</tr>
</tbody>
</table>

Baseline (2015) costs $253,000, while actual costs $173,000, resulting in a cost savings of $80,000.
Residence Tower Common Area

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