Passive Optimization | How can it improve your facility?

**Energy Savings with Little Investment**
Hospital | 4,000 ton plant

- 12% Energy Savings
- Reduced Operator Intervention
- Reduced Tower Fouling

**Improve Plant Performance**
Hospital | 2,000 ton plant

- 18% Energy Savings
- Improved Chiller Performance

**Partial Plant Replacement**
Government | 3,700 ton plant

- 35% Energy Savings
- Modernized Operation

**Full Plant Replacement**
University | 3,000 ton plant

- 50% Energy Savings
- Reduced C02 by 2,000 MTe

**New Plant**
Government | 9,100 ton plant

- 25% Energy Savings
- Over Unoptimized System

**RESULTS**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Current Avg. kWh/Ton</th>
<th>Optimized Avg. kWh/Ton</th>
<th>Current Peak kWh/Ton</th>
<th>Optimized Peak kWh/Ton</th>
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<tbody>
<tr>
<td>CWP</td>
<td>Pre-renovation</td>
<td>Post-renovation</td>
<td>Natural Gas</td>
<td>Electricity</td>
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<td>Towers</td>
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<tr>
<td>Chillers</td>
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</tr>
</tbody>
</table>

**Additional Project Information**

- Uncertain plant future
- Several ECMs already implemented
- Plant upgrades:
  - VSDs on secondary pumps
  - Selected sensors

**DETAILS**

- Aging, inefficient plant
- New chiller replacements
  - 1 of 3 chillers
  - New variable-primary CHWP
  - New towers and CW pumps
- Selected sensors

- New CHW and HW plant
- Buildings transitioned to LTHW
- Incorporated heat recovery
- All variable speed plant

**Additional Project Information**

- Plant serves campus expansion
- 40° chilled water supply temperature
- All variable speed plant