IN-HOUSE VERSUS OUT-SOURCE COMMISSIONING

Cameron Scott, SLC Commissioning Authority
AIA Quality Assurance

The Building Commissioning Association is a Registered Provider with The American Institute of Architects Continuing Education Systems (AIA/CES). Credit(s) earned on completion of this program will be reported to AIA/CES for AIA members. Certificates of the Completion for both AIA members and non-AIA members are available upon request.

This program is registered with AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.
Learning Objectives

1. Explain the history of services commoditization and why it matters for the future of commissioning.
2. Describe why client education and commissioning certifications are critical to everyone.
3. Define the value of a qualified commissioning provider.
4. Discuss the value of an owner having an in-house commissioning provider.
SLC Public Safety Building
Construction Cost $160MM and 167,000 SQ Ft

Goal: Carbon Net-Zero with On-site & Off-site Solar and Energy Star Rating of 100

Results:
Energy Star Score of 88 (Aug 2014)
382 Metric Tons CO\(_2\) above Carbon Net Zero Goal (2015)
SLC New Fire Station # 14
Construction Cost $7.5MM and 14,648 Square Feet

Goal: Net-Zero and LEED Gold

Geothermal System failed differential pressure test, and contractor and mechanical engineer wanted to accept failed test.
Reto-Commissioning Executive Order

• Executive order requiring retro-commissioning of buildings every 10 years
• Facilities Division manages 83 buildings totaling 1.8 Million Sq Ft
• Estimated budget for commissioning of $180,000 per year which is half of our deferred maintenance budget
• No additional budget to meet Executive Order
Benefits of In-House Commissioning

- Cost Savings
- Ownership of project after completion
- Captured labor costs
- Help identify problems and solutions
- Knowledge of building retained
SLC Public Safety Building (PSB)
PSB Tuning

PSB AHU SPEED

PSB Gas Usage
Hired McKinstry to install building analytics

- McKinstry developed rules
- Facilities investigated sparks and updated controls

DOE Better Buildings Smart Analytical Champain awarded the City with the Energy Performance in a Single Site Award
Results

<table>
<thead>
<tr>
<th>Metric</th>
<th>Aug 2014 (Energy Baseline)</th>
<th>May 2017 (Energy Current)</th>
<th>Target*</th>
<th>Median Property*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR score (1-100)</td>
<td>88</td>
<td>100</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>Source EUI (kBtu/ft²)</td>
<td>232.9</td>
<td>142.4</td>
<td>160.6</td>
<td>397.6</td>
</tr>
<tr>
<td>Site EUI (kBtu/ft²)</td>
<td>122.2</td>
<td>64.5</td>
<td>72.7</td>
<td>180.1</td>
</tr>
<tr>
<td>Source Energy Use (kBtu)</td>
<td>41,642,149.9</td>
<td>25,462,315.1</td>
<td>28,711,939.6</td>
<td>71,089,638.9</td>
</tr>
<tr>
<td>Site Energy Use (kBtu)</td>
<td>21,855,221.4</td>
<td>11,533,738.4</td>
<td>13,005,730.6</td>
<td>32,201,679.9</td>
</tr>
<tr>
<td>Energy Cost ($)</td>
<td>287,891.40</td>
<td>184,648.92</td>
<td>208,214.74</td>
<td>515,531.47</td>
</tr>
<tr>
<td>Total GHG Emissions (Metric Tons CO2e)</td>
<td>1,737.4</td>
<td>968.6</td>
<td>1,092.2</td>
<td>2,704.2</td>
</tr>
</tbody>
</table>

Commissioned multiple building controls upgrades
Design team member and commissioning agent on 2 net-zero fire stations
Developing analytics for all city-owned buildings
In-House Vs Out Source Commissioning

Benefits

• Cost Savings
• Ownership of project after completion
• Captured Labor Costs
• Help identify problems and solutions

Challenges

• Finding Qualified Commissioning Agents
• Specialized Skills like LEED and Analytics
• Focus on Commissioning
Cameron Scott
Cameron.scott@slcgov.com
801-535-6462