Avoiding the Commodity Trap

What is needed to keep commissioning a professional service in response to regulatory, code, and other influences?

Virtual Cx vs. Boots on the Ground

How do we navigate the value and challenges of technology in commissioning?

Building the Cx Team

Who’s on your commissioning team and how do we ensure they are trained to do the job?
Owners are more sophisticated purchasing Commissioning services

- Commissioning Teams Must Be
  - Qualified and Diverse
  - Specific to Project
  - Budget Friendly
Building the Cx Team

Buildings are complicated
• Whole Building Commissioning
• One person can’t do it all
• Mixed staff of qualified personnel
Building the Cx Team

Why can’t I find a CxA who has everything I’m looking for?

What training do I expect a CxA to have before I hire him or her?

What training can I offer to ensure future development of the next generation?
Building the Cx Team

What Matters
Technical Experience
Communication
Client Interface
Salary Requirements
Project Management

Potential Team Members
New Graduates
Experienced CxAs
Experienced Technicians
Building Specialists
Experienced Contractors
Specialty Contractors
Operating Engineers
Building the Cx Team
Building the Cx Team

- Educate
- Reward
- Empower
- Training
Building the Cx Team

Experienced CxA

New Graduate
Building the Cx Team

Experienced Technician

Experienced Specialist
Building the Cx Team
Building the Cx Team

- Building Type
- Budget
- Final Cx Team
- Personnel Decisions
- Training
## Building the Cx Team (Session 2)

<table>
<thead>
<tr>
<th>Title</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Level Engineer</td>
<td>$5.00</td>
</tr>
<tr>
<td>Intern</td>
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</tr>
<tr>
<td>Startup Tech.</td>
<td>$12</td>
</tr>
<tr>
<td>TAB Contractor/Tech.</td>
<td>$12</td>
</tr>
<tr>
<td>Building Operations Eng.</td>
<td>$12</td>
</tr>
<tr>
<td>Controls Technician</td>
<td>$12</td>
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<tr>
<td>Master Electrician</td>
<td>$14</td>
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<tr>
<td>PM (GC/CM)</td>
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<tr>
<td>Exp. Design Engineer</td>
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<tr>
<td>Architect/Envelope Spec.</td>
<td>$18</td>
</tr>
<tr>
<td>25-year Cx Engineer</td>
<td>$20.00</td>
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</tbody>
</table>
### Building the Cx Team

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<tr>
<td>Entry Level Engineer</td>
<td>$5.00</td>
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<tr>
<td>Manf. Sales</td>
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<tr>
<td>Software Folk</td>
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<tr>
<td>MEP Contractor</td>
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<tr>
<td>Controls</td>
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<tr>
<td>Tenured Field Engineer</td>
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<tr>
<td>T&amp;B Contractor</td>
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<tr>
<td>Navy Technician</td>
<td>$15.00</td>
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<tr>
<td>Experienced HVAC Tech</td>
<td>$15.00</td>
</tr>
<tr>
<td>Experienced Operations</td>
<td>$18.00</td>
</tr>
<tr>
<td>Design Engineer</td>
<td>$20.00</td>
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<tr>
<td>25-year HVAC Specialist</td>
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</tbody>
</table>
Building the Cx Team

Project 1
Hospital
75,000 sq. ft.
$70 budget

Project 2
Commercial Office Building
200,000 sq. ft.
$60 budget

Project 3
Hotel
100,000 sq. ft.
$50 budget

Project 4
Data Center/
Mission Critical
50,000 sq. ft.
$80 budget