Target Value Design Workshop
20 February 2020

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Summer Umstot
The 5 Biggest Challenges to Implementing Target Value Design?
Challenge 1: Failure to Understand the Value Proposition
Value

What the customer wants from the process. The customer defines value.

The value definition is composed of statements that describe expected outcomes, or “value” that the project will deliver.
Value is in the eye of the beholder.”
Spaceship 2.0
Poseidon Desalination Plant – San Diego

How water will flow through the Poseidon desalination plant:

1. Salt water from the Pacific Ocean enters Agua Hedionda Lagoon.
2. Sea water circulates through the power plant as coolant.
3. Some of the water is diverted to the desalination plant and the rest is discharged to the ocean.
4. Desalinated water is put into the regional water supply; the brine is diluted and then sent to the ocean.

Sources: Poseidon Water; San Diego County Water Authority; SanGIS

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National Renewable Energy Lab, Golden, Colorado

182,500-square-foot LEED Platinum Energy Systems Integration Facility
Total Cost of Ownership

Capital Costs

Operational Costs
Bullitt Center, Seattle
Occupant Productivity

Example of support “spread”
Frequency of use studies demonstrate support space that contribute to wasted steps.

Example of clustering support
Optimize floor plans to reduce travel distance and cluster based on frequency of use analysis.

Diagram courtesy of Health Strategies & Solutions, Inc.

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Understanding value through the eyes of the customer yields excellence!

Customer Satisfaction

Excellent
Good
Average
Poor
Challenge 2: Failure to Understand Constraints
The customer feedback journey
“If I had asked people what they wanted, they would have said faster horses.”

—Henry Ford
Challenge 3: Continued Use of Antiquated Estimating Practices
<table>
<thead>
<tr>
<th>System/Element Description</th>
<th>Reference</th>
<th>Total Cost</th>
<th>$/GSF</th>
<th>% of Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Foundations</td>
<td>A10</td>
<td>$5,830,293</td>
<td>$26.67</td>
<td>12.4%</td>
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<tr>
<td>2 Basement Construction</td>
<td>A20</td>
<td>$2,048,799</td>
<td>$9.37</td>
<td>4.36%</td>
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<tr>
<td>3 SUBSTRUCTURE - Subtotal</td>
<td>A</td>
<td>$7,879,092</td>
<td>$36.05</td>
<td>16.76%</td>
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<tr>
<td>4 Superstructure</td>
<td>B10</td>
<td>$4,180,798</td>
<td>$19.13</td>
<td>8.89%</td>
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<tr>
<td>5 Exterior Enclosure</td>
<td>B20</td>
<td>$4,169,397</td>
<td>$19.07</td>
<td>8.87%</td>
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<tr>
<td>6 Roofing</td>
<td>B30</td>
<td>$4,162,234</td>
<td>$1.9</td>
<td>0.89%</td>
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<tr>
<td>7 SHELL - Subtotal</td>
<td>B</td>
<td>$8,766,429</td>
<td>$40.11</td>
<td>18.65%</td>
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<tr>
<td>8 Interior Construction</td>
<td>C10</td>
<td>$5,158,774</td>
<td>$23.6</td>
<td>10.97%</td>
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<tr>
<td>9 Stairs</td>
<td>C20</td>
<td>$76,433</td>
<td>$0.35</td>
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<tr>
<td>10 Interior Finishes</td>
<td>C30</td>
<td>$3,129,422</td>
<td>$14.32</td>
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<tr>
<td>11 INTERIORS - Subtotal</td>
<td>C</td>
<td>$6,364,629</td>
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<tr>
<td>12 Conveying Systems</td>
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<td>$601,480</td>
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<tr>
<td>13 Plumbing</td>
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<td>14 HVAC</td>
<td>D30</td>
<td>$13,660,466</td>
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<tr>
<td>15 Fire protection</td>
<td>D40</td>
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<tr>
<td>16 Electrical</td>
<td>D50</td>
<td>$4,078,998</td>
<td>$22.78</td>
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<td>17 SERVICES - Subtotal</td>
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<td>$20,803,160</td>
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<tr>
<td>18 EQUIPMENT &amp; FURNISHINGS - Subtotal</td>
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<td>$1,142,946</td>
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<tr>
<td>19 SPECIAL CONSTRUCTION &amp; DEMOLITION - Subtotal</td>
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<td>$50,380</td>
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<tr>
<td>20 TOTAL BUILDING</td>
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<td>$215.05</td>
<td>100%</td>
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<td>21 TOTAL SITEWORK &amp; UTILITIES - Subtotal</td>
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<td>$3,138,865</td>
<td>$14.36</td>
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<td>22 TOTAL PROJECT DIRECT COST</td>
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<td>23 Escalation</td>
<td></td>
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<tr>
<td>24 ESCALATED PROJECT COST</td>
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<td>$55,118,914</td>
<td>$252.17</td>
<td>117.26%</td>
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<tr>
<td>25 MARKED UP FACILITY COST</td>
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<td>26 AntiTerrorism Force Protection</td>
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<td>27 Contingency</td>
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<tr>
<td>28 Supervision, Inspection &amp; Overhead</td>
<td></td>
<td>$1,971,642</td>
<td>$22.74</td>
<td>10.58%</td>
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<tr>
<td>29 TOTAL PROJECT COST</td>
<td></td>
<td>$111,560,898</td>
<td>$510.51</td>
<td>237.39%</td>
</tr>
</tbody>
</table>
Variation - Direct Building Costs (Normalized to St. Louis 2019)

The Danger of $/GSF

The Power of Big Data
Challenge 4:
Failure to Use Design Thinking
Great design has that “wow” factor that makes products more desirable and services more appealing to users.
Brainstorming Rules

Defer judgement. There are no bad ideas at this point. There will be plenty of time to narrow them down later.

Encourage wild ideas. Even if an idea doesn’t seem realistic, it may spark a great idea for someone else.

Build on the ideas of others. Think “and” rather than “but.”

Stay focused on topic. To get more out of your session, keep your brainstorm question in sight.

One conversation at a time. All ideas need to be heard, so that they may be built upon.

Be visual. Draw your ideas, as opposed to just writing them down. Stick figures and simple sketches can say more than many words.

Go for quantity. Set an outrageous goal—then surpass it. The best way to find one good idea is to come up with lots of ideas.
Challenge 5: Failure to Collaborate
PROJECT CHARTER

We value:
- Working safely
- Producing quality
- Collaborating & communicating effectively
- Having fun
- Delivering the highest value within budget
- Achieving schedule milestones
- Minimizing impacts on airport operations
- Meeting stakeholder expectations
- Innovating
- Managing risk effectively
- Making a fair & reasonable profit

We will:
- Foster an environment of trust with one another
- Establish & maintain a culture of collaboration
- Communicate transparently & fairly
- Promote a culture of safety
- Keep a positive attitude
- Succeed as a team
- Be open-minded
- Learn from one another
- Respect each other
- Ask for help
- Offer assistance

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VISUAL MANAGEMENT
YOUR TURN!