Total Cost of Ownership

In preparation for the Workgroup on Assessment & Funding of School Facilities

Webinar 2 of 4
August 7, 2019
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Ownership and Cycle of Life
Total Cost of Facility
Average Percentage Over 30 Years

- Planning: 0.5%
- Design: 3.0%
- Construction: 45.5%
- Operations and Maintenance: 51.0%
By year 40, Standing Seam is more cost effective.
# The Power of Early Decisions

## 30-Year Cost

- **$395 per square foot** = Construction cost (including soft costs)
  - $395.00

- **$329 per square foot x 2% per year** = Operations & Routine Maintenance Costs
  - $197.40

- **$329 per square foot x 2% per year** = Capital Maintenance (System-Replacement) Costs
  - $197.40

### Total Cost Breakdown

- For **70,000 sq ft**:
  - $395 per square foot = $395 x 70,000 = $27,650,000 up front
  - $329 per square foot x 2% per year = $329 x 70,000 x 0.02 x 30 = $197,400 per year
  - **Total Cost** = $55,286,000

- For **90,000 sq ft**:
  - $395 per square foot = $395 x 90,000 = $35,550,000 up front
  - $329 per square foot x 2% per year = $329 x 90,000 x 0.02 x 30 = $390,300 per year
  - **Total Cost** = $71,082,000

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The Power of the punchline

30-Year Cost

$395 per square foot = Construction cost (including soft costs)
$395.00

$329 per square foot x 2% per year = Operations & Routine Maintenance Costs
$197.40

$329 per square foot x 2% per year = Capital Maintenance (System Replacement) Costs
$197.40

$27,650,000
$27,636,000
$35,550,000
$35,532,000

20,000 extra square feet = $526,533 more per year over 30 years

(70,000 sq ft)
(90,000 sq ft)

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The Cost of Upsizing

CIP Amount Requested vs. Amount Allocated

<table>
<thead>
<tr>
<th>Year</th>
<th>Combined Requested</th>
<th>Combined Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>900</td>
<td>400</td>
</tr>
<tr>
<td>2010</td>
<td>800</td>
<td>300</td>
</tr>
<tr>
<td>2012</td>
<td>700</td>
<td>200</td>
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<tr>
<td>2014</td>
<td>600</td>
<td>100</td>
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<tr>
<td>2016</td>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>2018</td>
<td>400</td>
<td>40</td>
</tr>
<tr>
<td>2020</td>
<td>300</td>
<td>30</td>
</tr>
</tbody>
</table>

Average Gap: 107%
The IAC’s Total-Cost-of-Ownership Tools for Planning

**Educational Facilities Sufficiency Standards**
Help identify high-priority deficiencies in existing facilities

**Gross Area Baselines**
Describe reasonable outer boundaries of facility size
Support LEA discretion in facility design

**TCO Comparison Tool**
Helps LEAs compare the estimated total costs of ownership of various design options

**Life-cycle Cost Estimator (planned)**
Helps LEAs project the cost of a building’s systems using current age & condition
Estimated Required Annual Spending to Sustain Maryland’s Portfolio

**Capital Maintenance**
2% of Construction Cost (with soft costs) per year

\[ 0.02 \times \frac{395}{\text{GSF}} \times 140\text{M GSF} = \$1.106 \text{ Billion per year} \]

\[ \$1.106 \text{ Billion} + \$1.106 \text{ Billion} = \$2.212 \text{ Billion per year} \]

**Operations and Routine Maintenance**
2% of Construction Cost (with soft costs) per year

\[ 0.02 \times \frac{395}{\text{GSF}} \times 140\text{M GSF} = \$1.106 \text{ Billion per year} \]

**Industry Standards For Investment**
Educationally Effective + Fiscally Sustainable

**School Facilities Portfolio**

**Educationally Effective**
- Design (including configuration and equipment)
- Size
- Level of maintenance

**Fiscally Sustainable**
- Total cost of ownership, including
  - Construction
  - Operation
  - Maintenance
  - Capital Renewal and Replacement
- Resources (funding) available now and in the future

[Diagram with arrows connecting the two concepts]
... A healthy, safe, and educationally sufficient learning environment for every child in every seat in Maryland.

Questions?

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Up next...

Facility Maintenance and Maintenance Effectiveness

Webinar 3 of 4
August 12th, 2019
12:00 – 1:00 PM

Webinar 4 of 4
August 20th, 2019
12:00 – 1:00 PM

Workgroup Meeting
August 28th, 2019
9:00 – 1:00 PM