Interrelations of Strategic Facilities Management

**Space Impact**
- Planned targeted renovations will lower the age of campus
- High density factor & technical complexity impact operational demands

**Operating Impact**
- Planned Maintenance has seen growth in recent years. Further investment into PM will be essential as newly renovated buildings come online

**Capital Impact**
- Planned renovations will alleviate some of the growth in Backlog but will also create greater need for Stewardship reserves in coming years
- As campus has aged and funding levels have not met Target (though close), the Backlog of need has seen continual growth
The Age Profile Shifts with Time

A balanced age distribution alleviates risk

Campus Age Profile

<table>
<thead>
<tr>
<th></th>
<th>FY06</th>
<th>FY13</th>
<th>FY13 Peer Avg.</th>
<th>FY18*</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Space</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10</td>
<td>30%</td>
<td>22%</td>
<td>20%</td>
<td>38%</td>
</tr>
<tr>
<td>10 to 25</td>
<td>17%</td>
<td>23%</td>
<td>20%</td>
<td>36%</td>
</tr>
<tr>
<td>25 to 50</td>
<td>53%</td>
<td>55%</td>
<td>55%</td>
<td>26%</td>
</tr>
<tr>
<td>Over 50 years</td>
<td>5%</td>
<td></td>
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</tbody>
</table>

Buildings over 50
Life cycles of major building components are past due. Failures are possible.
Highest risk

Buildings 25 to 50
Major envelope and mechanical life cycles come due.
Higher Risk

Buildings 10 to 25
Short life-cycle needs; primarily space renewal.
Medium Risk

Buildings Under 10
Little work. "Honeymoon" period.
Low Risk

Campus space includes 1.31M GSF
*Assumes completed renovations to M, F, A, D and H
Defining Stewardship Investment Targets

Replacement Value: $699M*

Life Cycle Need
- Determined by:
  - Campus GSF
  - Campus Age
  - Function of Space
  - Technical Complexity

Target Need: Discounts for campus modernization, and replacement of components before life cycles come due

<table>
<thead>
<tr>
<th>3% Replacement Value</th>
<th>Equilibrium Need</th>
<th>Target Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>$21.0</td>
<td>$12.2</td>
<td>$4.3</td>
</tr>
<tr>
<td>$8.4</td>
<td></td>
<td>$6.3</td>
</tr>
<tr>
<td>$10.6</td>
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</tr>
</tbody>
</table>

*Replacement Value is unique from the institutional insurance value; it is calculated using the Sightlines model, based off the age, complexity and function of space. Does not include building content values.
Chasing a Moving Target

As the campus profile changes, the Target will continue to grow

Project Spending to Target

Stabilizing Backlog

Target Need

FY09-FY13 Funding Distribution: Harper

FY09-FY13 Funding Distribution: Peers

Annual Stewardship  Asset Reinvestment  Target Need
The Impact of Renovations on Deferred Maintenance

Theory, demonstrating Sightlines IFP estimated backlog & impact of renovating space

Estimated Backlog With Planned Renovations

- Total Existing Needs: $152 Million
- Post-Building D Renovation: $141 Million
- Building H Renovation: $8.15 Million
- Building M Renovation: $10.31 Million
- Building F Renovation: $6.04 Million
- Building A Renovation: $11.32 Million
- Estimated Backlog 2018: $105 Million
- 5 Year Add'l Deferred: $17.45 Million

$119/GSF (Post-Building D) + $108/GSF (Building F) = $80/GSF

*5 Year Add'l Deferred: estimated using FY09-13 average deferral rate x projected target FY14-18
Operational Performance
A Young, Complex Campus Requires Strong PM

Best practice institutions invest 10-12% of their budget on PM; Harper investing 5%

Total Planned Maintenance

PM as % of Total Operating Costs:

- Harper: 5%
- Peer Avg.: 4%
- Best Practice: 10-12%

$1 in PM today

Saves $3 in Daily Service tomorrow
19% reduction in BTU/GSF consumption from FY10 levels

Utility Initiatives

- $3.24M Energy Savings
  - FY10
  - $2.12M cumulative; $708K annually (FY11-13)
  - 65% of investment costs recovered in 3 years alone

FY10-13 Utility projects:
- L building chiller work
- D building chiller tank expansion
- occupancy sensors
- lighting controls
- A&W chilled water loop

*Savings calculated using normalized consumption (BTU/GSF) to each years unit price
Recent Successes

• Savings in energy cost and consumption due to conservation efforts

• Strategic project selection has resulted in high ROI investments that extend Life Cycles

• Ongoing renovations target high-need buildings

Ongoing Strategies

• While newly renovated buildings are reset, others are aging. Secure additional funds to keep up with the ongoing renewal needs of these spaces

• Commit to growing the Planned Maintenance program over the “run to fail” method
Discussion & Questions