Shippensburg University

Erica Barbuto and Becky Schroll

January 9, 2018
Sightlines by the Numbers

Robust membership includes colleges, universities, consortiums and state systems

- 170 New members since 2013
- 4 Canadian provinces
- 42 States+DC
- 52k buildings
- 90% Member retention rate
- 450 Colleges & Universities
- 335+ ROPA Members

Sightlines advises state systems in:
- Alaska
- California
- Florida
- Hawaii
- Maine
- Massachusetts
- Minnesota
- Mississippi
- Missouri
- New Hampshire
- Nebraska
- Pennsylvania
- Texas

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A Vocabulary for Measurement

The Return on Physical Assets – ROPA℠

Annual Stewardship

The annual investment needed to ensure buildings will properly perform and reach their useful life "Keep-Up Costs"

Asset Reinvestment

The accumulation of repair and modernization needs and the definition of resource capacity to correct them "Catch-Up Costs"

Operational Effectiveness

The effectiveness of the facilities operating budget, staffing, supervision, and energy management

Service

The measure of service process, the maintenance quality of space and systems, and the customers opinion of service delivery

Asset Value Change

Operations Success

The Return on Physical Assets – ROPA℠
## Peer Institutions – PASSHE System

<table>
<thead>
<tr>
<th>Institution</th>
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<tbody>
<tr>
<td>Bloomsburg University</td>
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<td>Slippery Rock University</td>
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<td>West Chester University</td>
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Pennsylvania’s 
STATE SYSTEM
of Higher Education

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Key Concepts

**Space:** Currently among the younger peers, Shippensburg’s space over 25 years old will grow 14% by 2028; largely driven by aging E&G buildings.

**Capital:** Aging buildings and limited investments into E&G spaces has lead to E&G buildings making up the majority needs coming due in the next 10 years.

**Operations:** Ship has one of the lowest operating resources of the peers while receiving the highest inspection score for FY18.

**Energy:** Infrastructure overhaul continues to reap rewards.
Stakeholders That Influence Capital Decisions

Each sector views the physical assets of campus differently to support the same mission.

Facilities
Assets to support the infrastructure & functionality of buildings

Capital decisions to support the same mission

Academic
Programmatic needs for research & teaching

Finance
Fixed & variable costs of facilities compared to institutional revenue
Space Profile
Higher Education Waves of Construction

Drivers of construction booms provide insight into future

<table>
<thead>
<tr>
<th>System</th>
<th>Life Cycle</th>
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<tr>
<td>Roofing</td>
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<td>Electrical</td>
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<td>Exteriors</td>
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<td>HVAC</td>
<td>30 years</td>
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<tr>
<td>Plumbing</td>
<td>35 years</td>
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First Wave
Driver: Enrollment Growth

Second Wave
Drivers: Program and Enrollment Growth
Changing Campus Age Through Renovations

Ship has been able to decrease their campus age by over 15 years through renovations.

*Ordered by Tech Rating
Campus Age Profile Younger Than PASSHE Peers

- **Buildings Over 50**
  - Life cycles of major building components are past due. Failures are possible. Core modernization cycles are missed.
  - Highest risk

- **Buildings 25 to 50**
  - Major envelope and mechanical life cycles come due. Functional obsolescence prevalent.
  - Higher Risk

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

- **Buildings Under 10**
  - Little work. “Honeymoon” period.
  - Low Risk

*Ordered by space under 25*
## Young Campus Today, Planning for the Future

### Renovation Age by Category

<table>
<thead>
<tr>
<th>Year</th>
<th>Under 10</th>
<th>10 to 25</th>
<th>25 to 50</th>
<th>Over 50</th>
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Age projections do not include any future space changes.

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E&G Buildings Driving Increase in Higher Risk Age Profile

While Auxiliary will see a large increase in space 10 – 25 years old, E&G space will grow by 25% in the next 10 years.
Operations
Operating Actual Expenditures Below PASSHE Peers

Shippensburg operating at just above $5/GSF after a large decrease in 2015; $0.84/GSF below PASSHE peers
Facilities Operating Actuals Below that of Peers

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Increasing Preventive Maintenance Investments

Ship has increased PM investments 55% since 2015; among top investing peers
Maintenance Staffing Metrics

Maintenance workers covering less GSF with higher levels of supervision but few resources

**Maintenance Staffing**
- GSF/FTE

**Maintenance Supervision**
- FTE/Super

**Maintenance Materials**
- $/GSF

*Ordered by Tech Rating

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Decrease in custodians led to Ship covering more GSF with fewer resources than peers; similar supervision

*Custodial Staffing Metrics*

*Custodial Staffing*

-Custodial Supervision*

-Custodial Materials*

*Ordered by Tech Rating*
Grounds Staffing Metrics

Grounds workers covering more acres with fewer resources and supervision than peers

*Ordered by Tech Rating

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Updated Inspection Process

Despite having below average operating resources Ship is the top performer in FY18 campus inspection
Infrastructure Overhaul Reaping Rewards

Large decreases in energy consumption since ‘03; decreasing 7% more than peers in that time

Total Utility Consumption by Fuel Type

Shippensburg

Peer Institutions

BTU/GSF

Fossil

Electric

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FY18 Energy Consumption Below Peers

FY18 Total Utility Consumption By Fuel Type

BTU/GSF

A B C D E F G H I J K L Ship M

Fossil Electric Peer Average

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Decreasing Energy Cost Over Time

Total Utility Cost by Fuel Type

Shippensburg

Peer Institutions

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Fossil & Electric Cost Avoidance

Ship has avoided almost $6M in fossil and electric costs since 2013
Capital
Total Campus Capital Investments

Largest investments into existing space; 35% of total capital on new space spending

Total Capital Investment

- Existing Space Investment
- Infrastructure
- New Space Investment
- Non-Facilities

Millions


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Defining an Annual Investment Target

Annual Funding Target: $8.1M

FY18 Annual Investment Target

- 3% Replacement Value: $17.7M
- Life Cycle Need: $8.6M
- Annual Investment Target: $6.9M
- Space/Program: $3.0M
- Envelope/Mechanical: $5.1M

Replacement Value: $560M

Functional obsolescence drives investment prior to life cycles & discounts the annual investment target.
Total Capital Investment vs. Funding Target (Not Including Infrastructure)

Includes only the investment in existing facilities

Total Capital Investment vs. Funding Target

$ in Millions

$0.0 $2.0 $4.0 $6.0 $8.0 $10.0 $12.0 $14.0 $16.0 $18.0


Increasing Net Asset Value

Lowering Risk Profile

Increasing Backlog & Risk

Annual Stewardship  Asset Reinvestment  Annual Investment Target  Life Cycle Need
E&G and Auxiliary Investments to Targets

Shippensburg auxiliary able to hit investments targets 9 times since 2003; E&G only hitting 3 times
ROPA + Prediction Need: Defined

Infrastructure & Modernization Need:
• Estimated based on building function and age, against a Sightlines database of needs.

Renewal Need:
• Life cycle needs coming due between 2019-2028.

Current Need:
• The subsystem has already failed
• The subsystem is functioning with substantial degradation of efficiency or performing at increased cost

<table>
<thead>
<tr>
<th>Asset Reinvestment Need</th>
<th>Dollars in Millions</th>
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$21
$77
$80
Capital Renewal by Campus

82% of current need in E&G; 70% of needs coming due in 10 years

Current Need

Dollars in Millions

$14

$66

Auxiliary
E&G

Renewal Need

Years

2019
2020
2021
2022
2023
2024
2025
2026
2027

Millions

E&G
Auxiliary
Impacts of Future Campus Renovations

The Franklin Science Center Renovation will help address over $11M of current and renewal need.
The Common Dataset creates a database of multiple data sources to aid in strategic campus decisions.
Common Dataset Tool
Utilizing datasets to identify the “Highest Maintenance” buildings on campus

Capital Demand:
- Capital Renewal $/GSF Score
- Capital Renewal $/GSF Backlog Score

Operating Demand:
- Work Order $/GSF Score
- Work Order Hour Score

Total Project Score:
Maximum score = High Maintenance
Minimum score = Low Maintenance
Key Takeaway

With strained operational and capital resources and an aging campus it is crucial for Shippensburg to strategically select projects. The best strategic decisions have buy in from multiple stakeholders and are based on consistent factors such as deferred maintenance, work order and utilization data. The Common Dataset can be utilized in order to aid in these important campus decisions.