



sightlines

ROPA+

building portfolio
solutions

University of Massachusetts Medical School

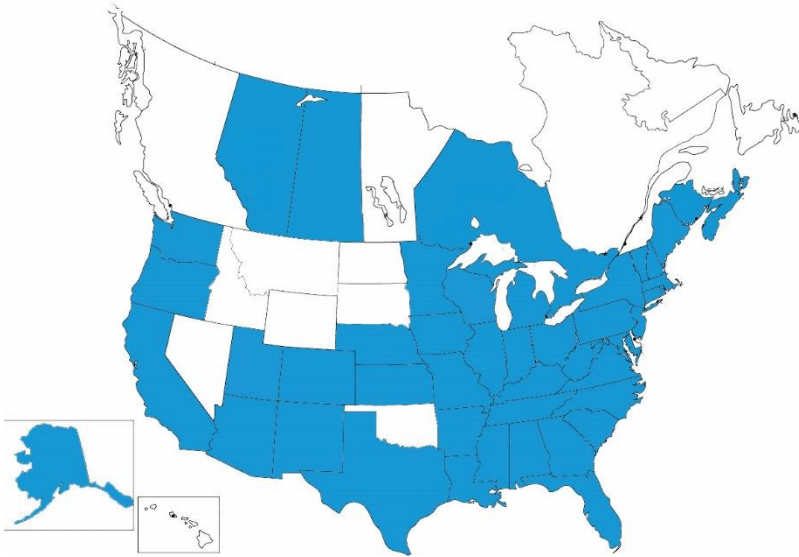
Presenters: Daniel Willman & Cody Lorentson

December 2016

Vanderbilt University
Virginia Commonwealth University
Virginia Department of General Services
Wagner College
Wake Forest University
Washburn University
Washington University in St. Louis
Wellesley College
Wesleyan University
West Chester University
West Liberty University
West Virginia Health Science Center
West Virginia Institute of Technology
West Virginia School of Osteopathic Medicine
West Virginia State University
West Virginia University
Western Connecticut State University
Western Oregon University
Westfield State University
Wheaton College
Widener University
William & Mary

Who Partners with Sightlines?

Robust membership includes colleges, universities, consortiums and state systems



Serving the Nation's Leading Institutions:

- 70% of the Top 20 Colleges*
- 75% of the Top 20 Universities*
- 34 Flagship State Universities
- 14 of the 14 Big 10 Institutions
- 9 of the 12 Ivy Plus Institutions

* U.S. News 2016 Rankings

Sightlines is proud to announce that:

- 450 colleges and universities are Sightlines clients including over 325 ROPA members.
- Consistently over 90% member retention rate
- We have clients in over 40 states, the District of Columbia and four Canadian provinces
- More than 125 new institutions became Sightlines members since 2013

Sightlines advises state systems in:

- Alaska
- California
- Florida
- Hawaii
- Maine
- Massachusetts
- Minnesota
- Mississippi
- Missouri
- Nebraska
- New Hampshire
- New Jersey
- Pennsylvania
- Texas

A Vocabulary for Measurement

The Return on Physical Assets – ROPASM

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

**Annual
Stewardship**

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

**Asset
Reinvestment**

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

**Operational
Effectiveness**

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

Service

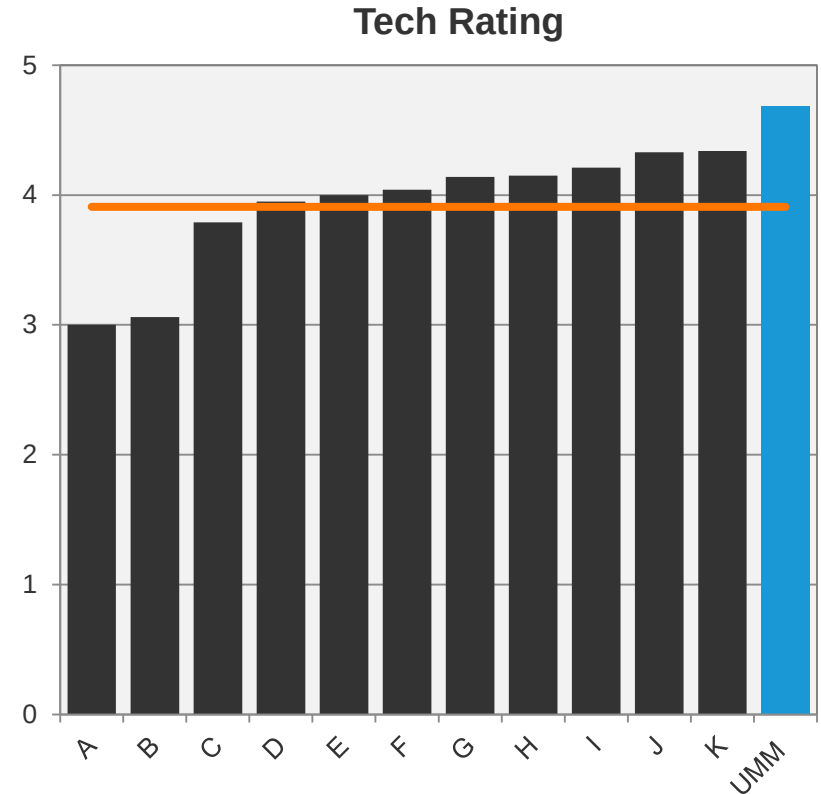
Asset Value Change

Operations Success

Facilities Peer Institutions

ROPA+ Analysis includes all space besides parking garages totaling 4.6M GSF

Institution	Location
Northwestern University	Chicago, Illinois
Thomas Jefferson University	Philadelphia, Pennsylvania
The University of Mississippi Medical Center	Jackson, Mississippi
Rutgers Biomedical Health Sciences	New Brunswick, New Jersey
Penn State - Hershey	Hershey, Pennsylvania
University of Florida - HSC	Gainesville, Florida
University of Kentucky - Medical Center	Lexington, Kentucky
University of Rochester - Medical Campus	Rochester, New York
University of Toledo - Health Science Campus	Toledo, Ohio
The University of Arizona - AHSC	Tucson, AZ, Arizona
Boston University Medical Campus	Boston, Massachusetts



Comparative Considerations

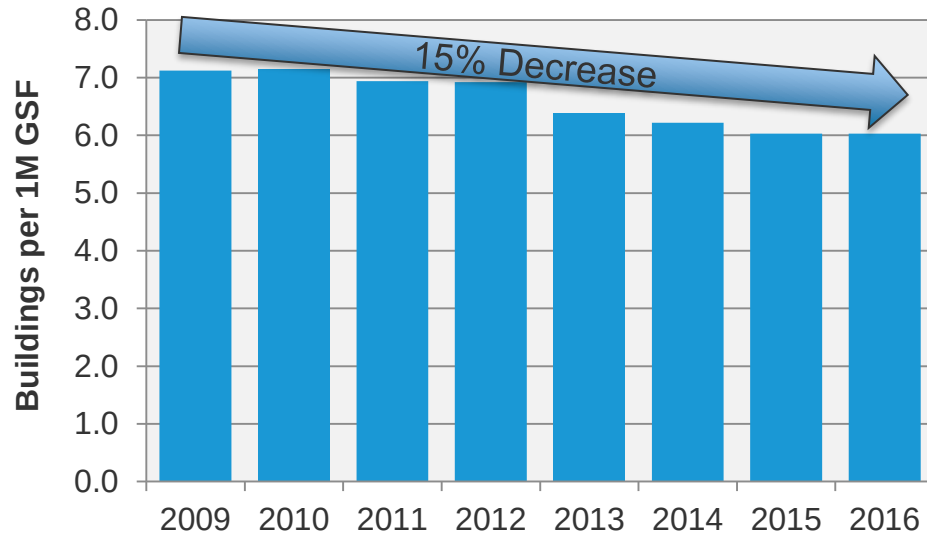
Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions

- > University of Massachusetts Medical School's buildings are larger, younger, and more complex than peers'. This necessitates a robust Planned Maintenance program to ensure building systems meet and exceed their stated life cycles.
- > Planned Maintenance and recurring capital funding increased in FY2016, but investments fell short of the Sightlines target of \$56.6M. Backlog is now approaching \$130/GSF and nearing the peer average.
- > The composition of 10-year need identified through the BPS is more heavily weighted toward reliability needs than the database. Reliability needs are those that if not addressed, threaten critical failure and operational disruption.
- > 81% of survey respondents thought Facilities met or exceeded expectations

UMM Has Larger Buildings Than Peers

Lower building intensity presents opportunity for greater economies of scale

Building Intensity Over Time



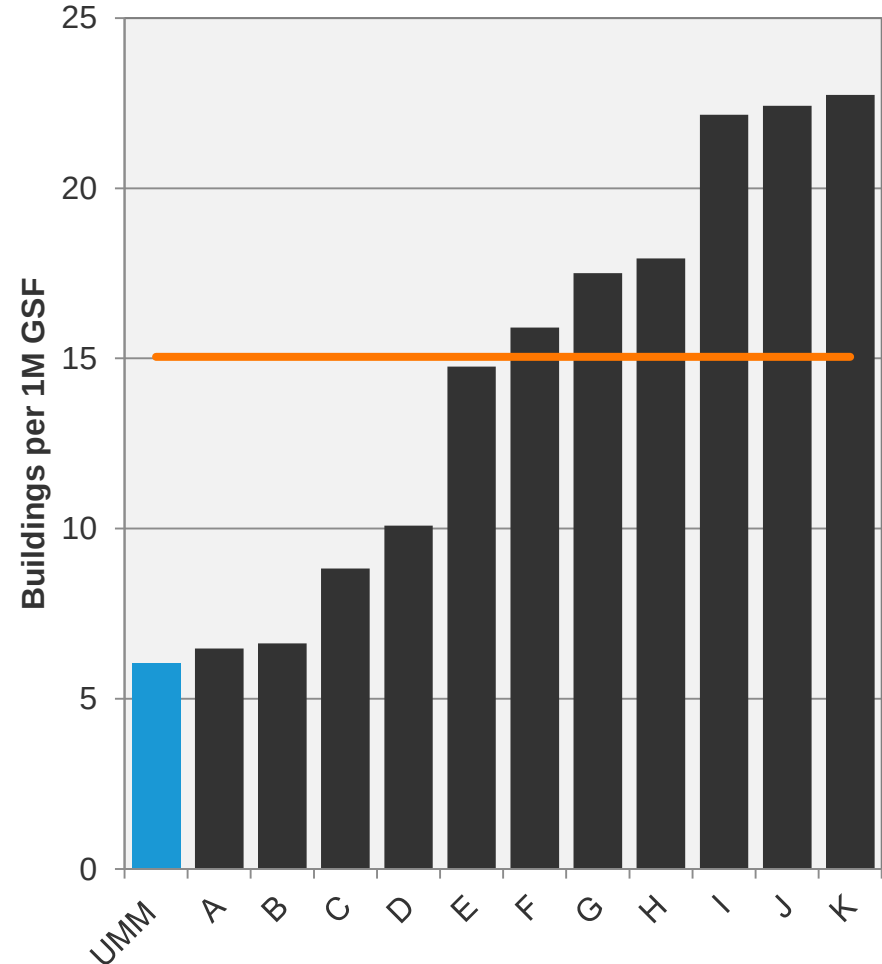
Higher Intensity

- More envelopes, boilers, roofs to repair/replace
- Lost time traveling between buildings

Lower Intensity

- Less envelopes, boilers, roofs to repair/replace
- Operational efficiencies in cleaning and maintaining larger spaces

Building Intensity



Putting Your Campus Building Age in Context

Post-War & Modern vintages comprise 60% of UMM's space

Pre-War

Built before 1951
Durable construction
Older but typically lasts longer

Post-War

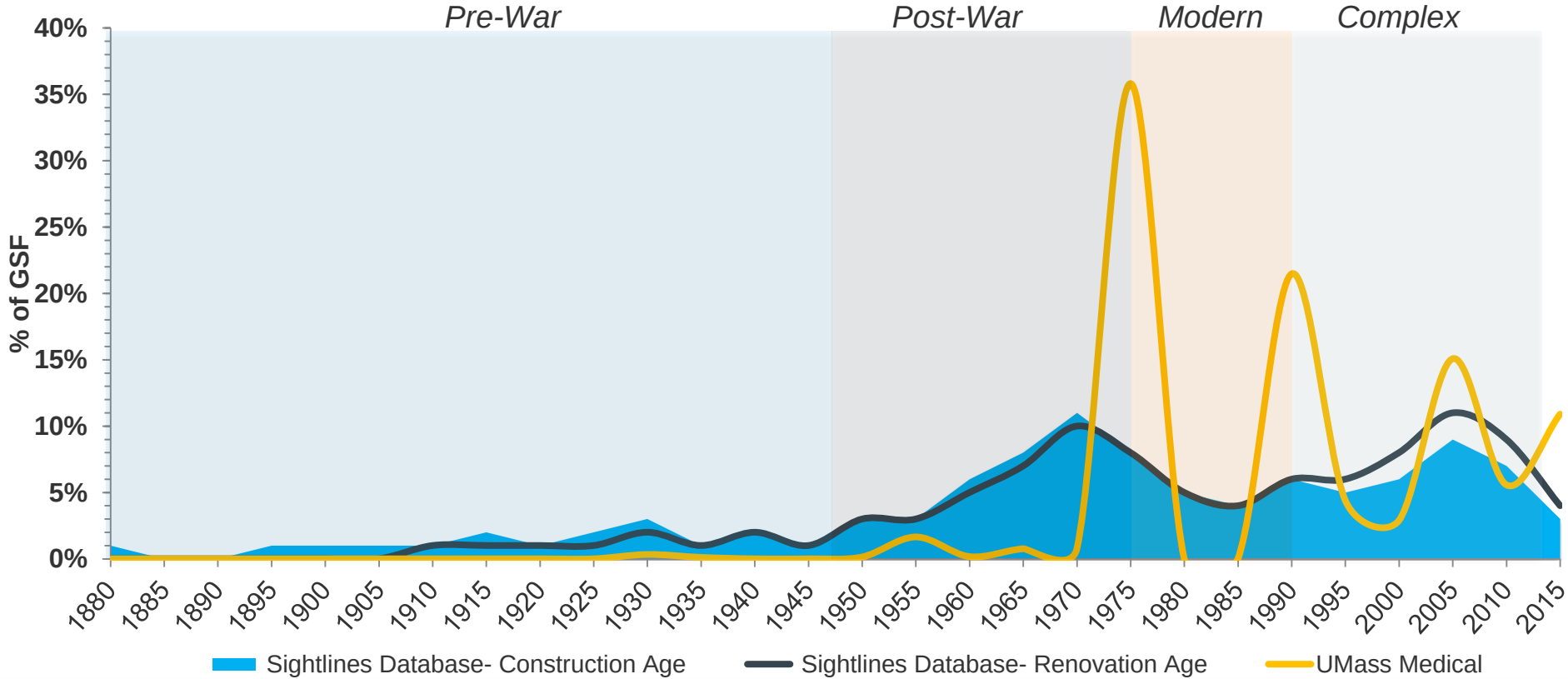
Built from 1951 to 1975
Lower-quality construction
Already needing more repairs and renovations

Modern

Built from 1976 to 1990
Quick-flash construction
Low-quality building components

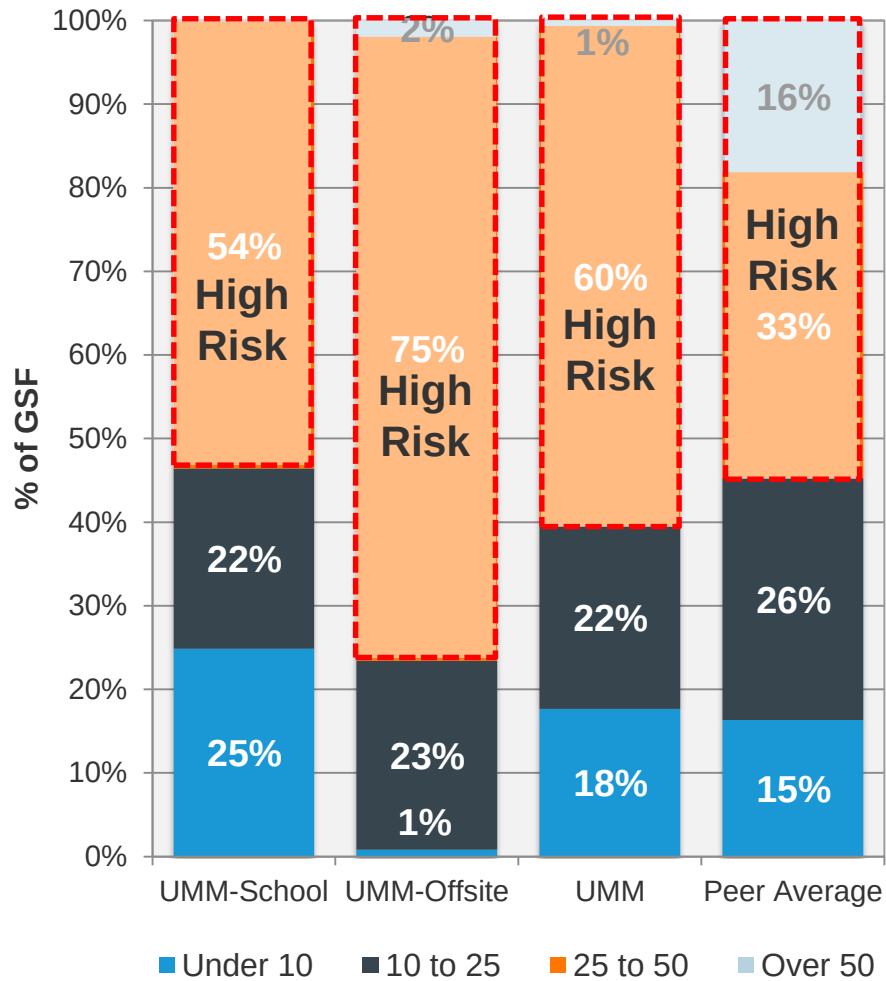
Complex

Built in 1991 and newer
Technically complex spaces
Higher-quality, more expensive to maintain & repair



Campus Age Profile – Identifying Risky Space

Campus Age by Category



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

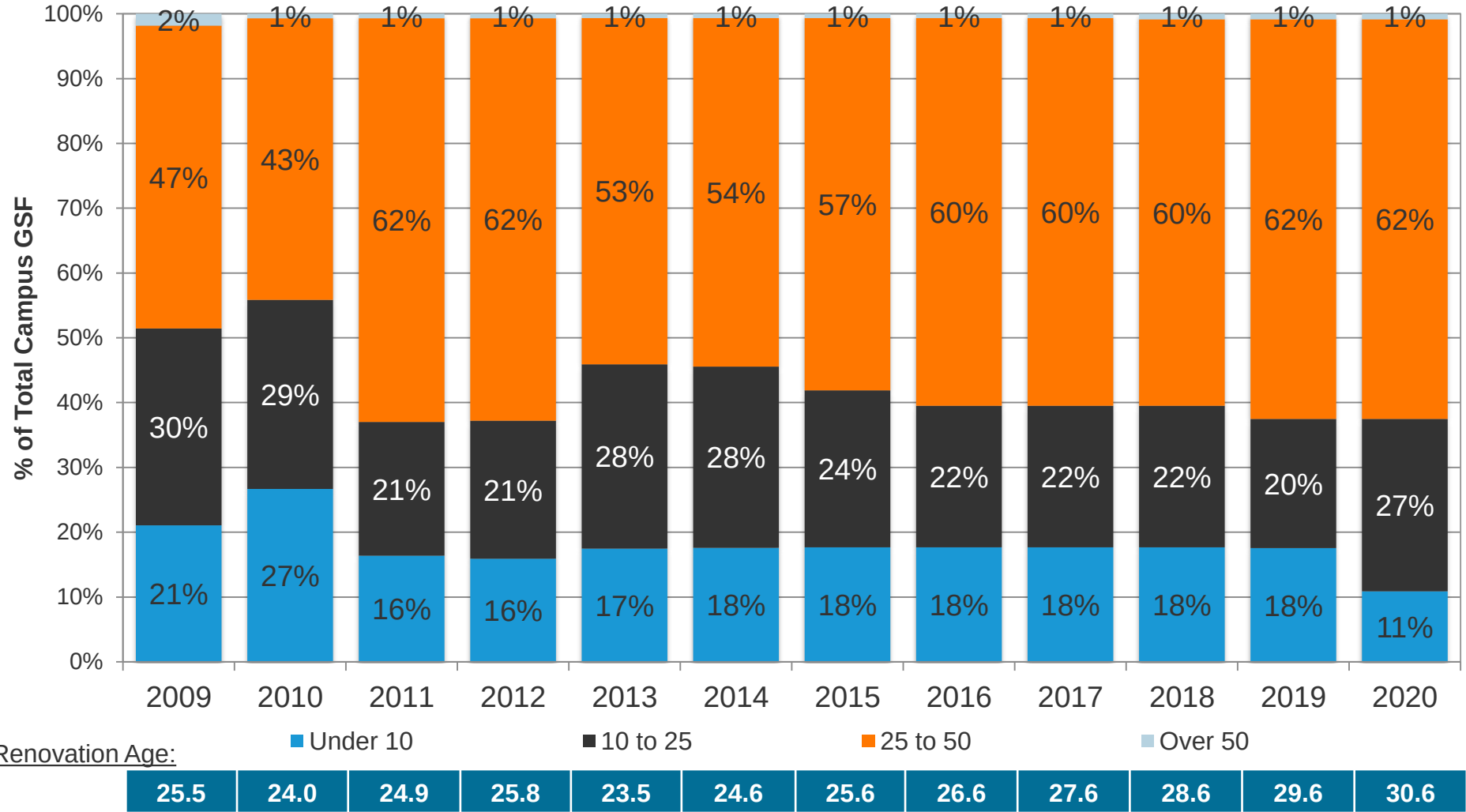
Little work. "Honeymoon" period.

Low Risk

Distribution of Space by Age Category

Projection shows high-risk space will grow in the next 5 years

Campus Renovation Age by Category

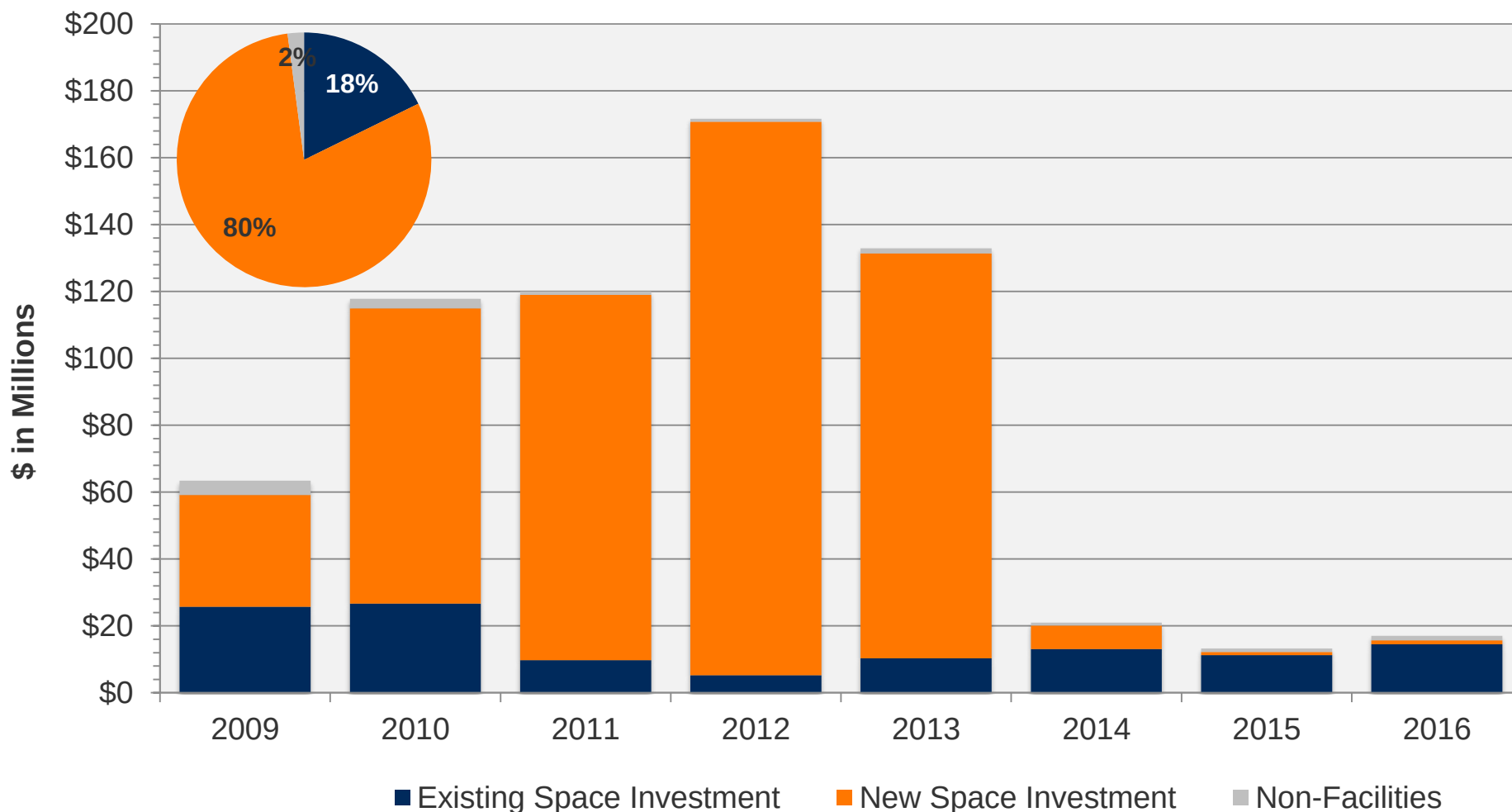


Capital Projects

Total Capital Investment

Historical investment focus has been on new space

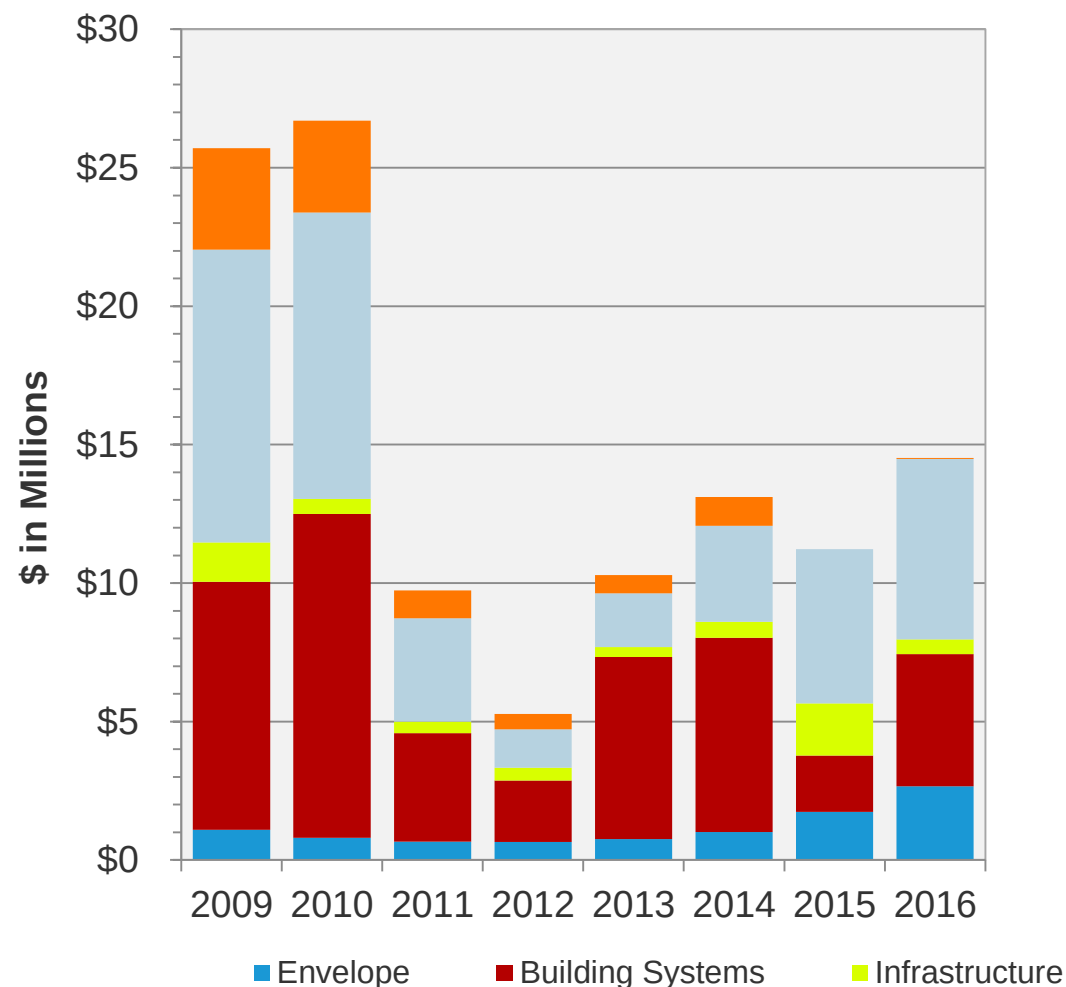
Total Capital Investment



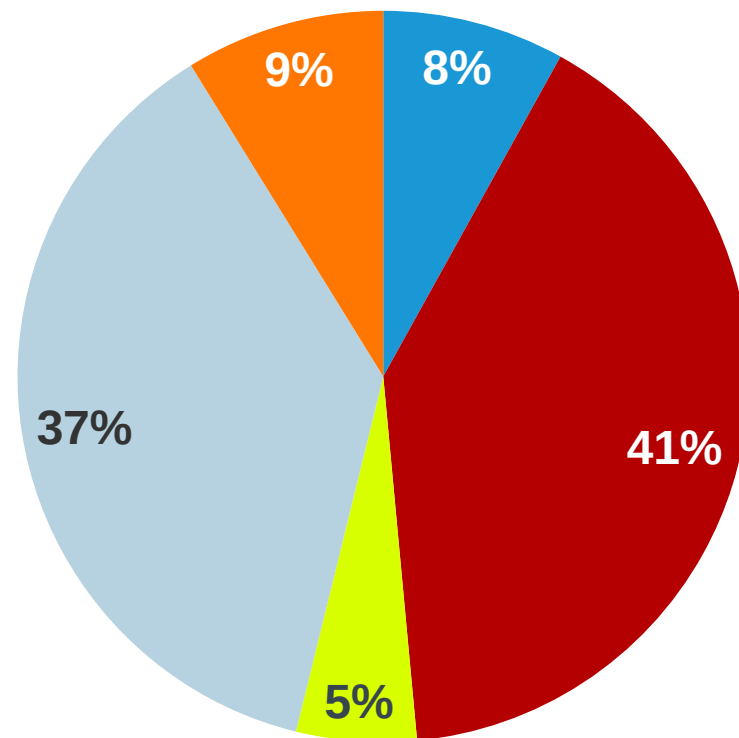
Total Project Spending by Package

Infrastructure has not received significant investment

Capital Investment Mix by Year



Total Investment Mix

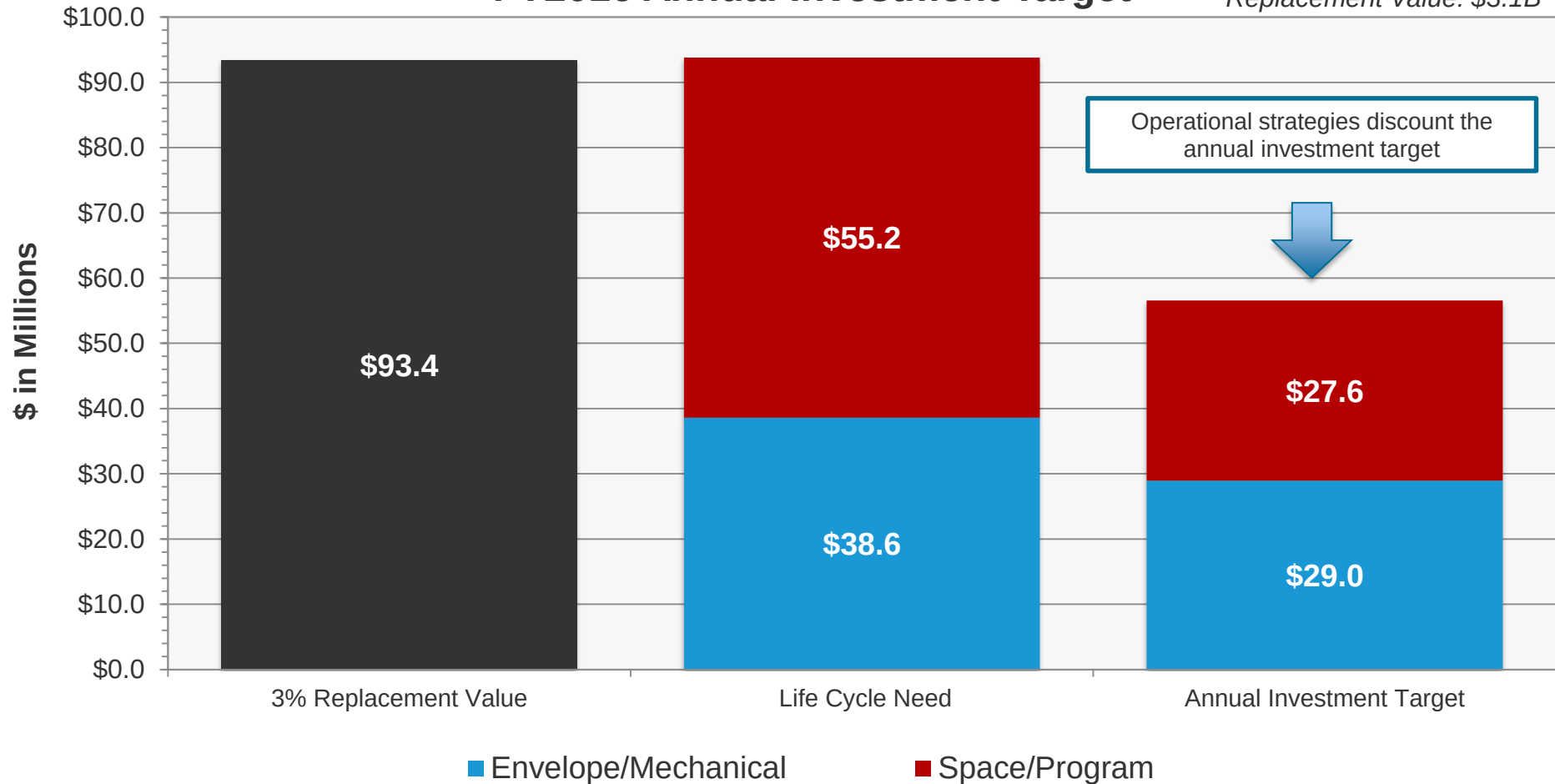


Defining an Annual Investment Target

Annual Funding Target: \$56.6M

FY2016 Annual Investment Target

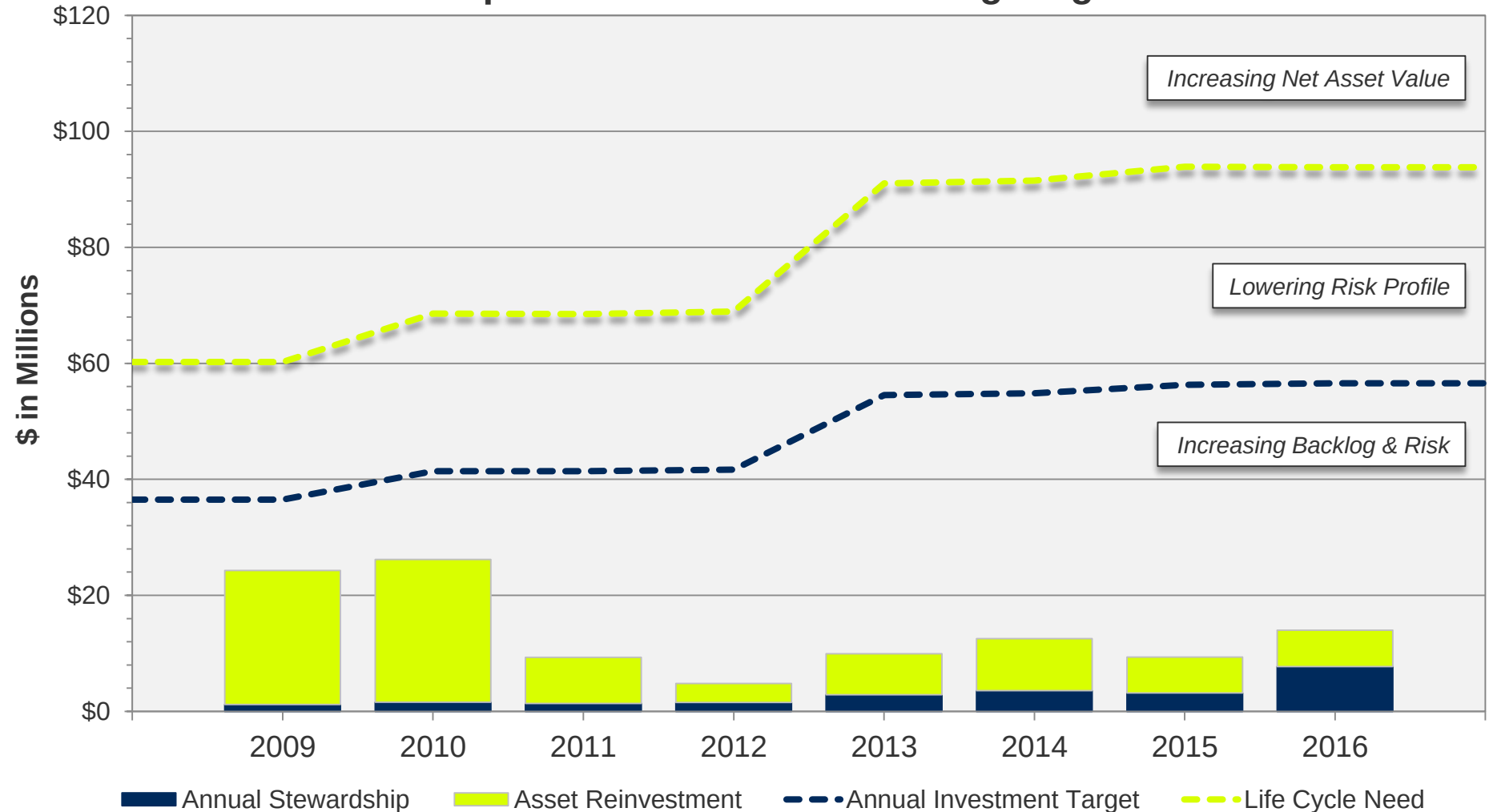
Replacement Value: \$3.1B



Total Capital Investment vs. Funding Target

Shortfall to target has resulted in estimated accrual of backlog

Total Capital Investment vs. Funding Target

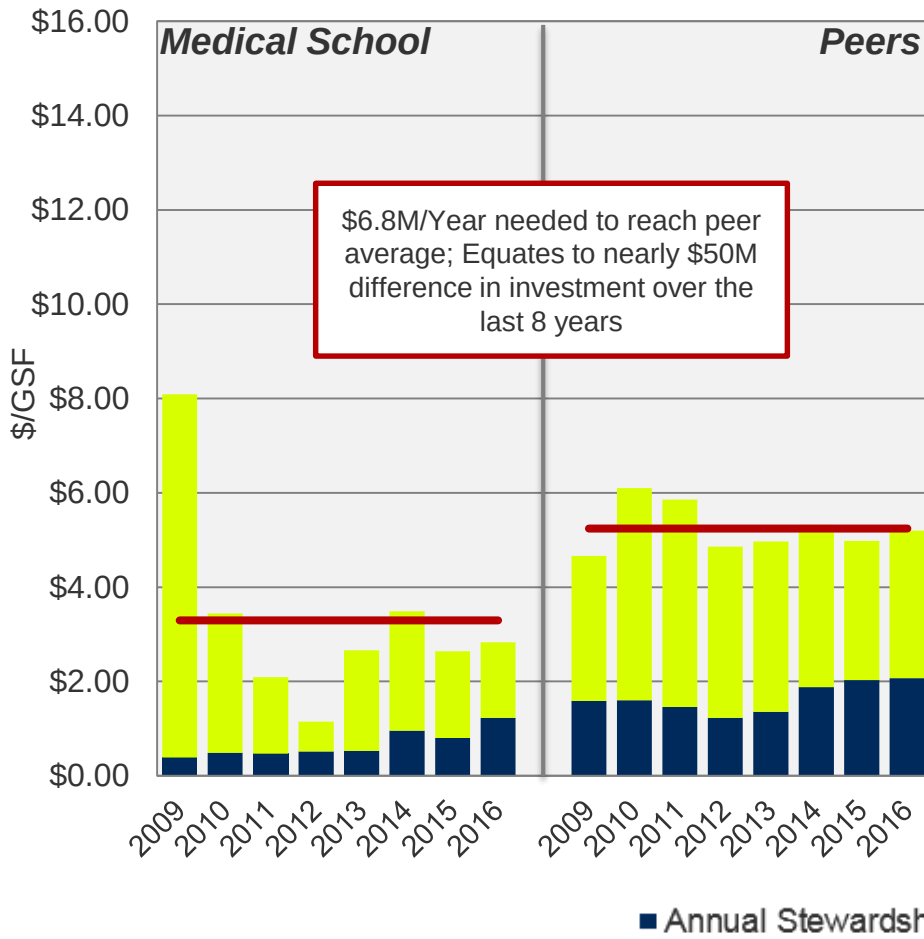


Note: Data shown does not include Infrastructure spending

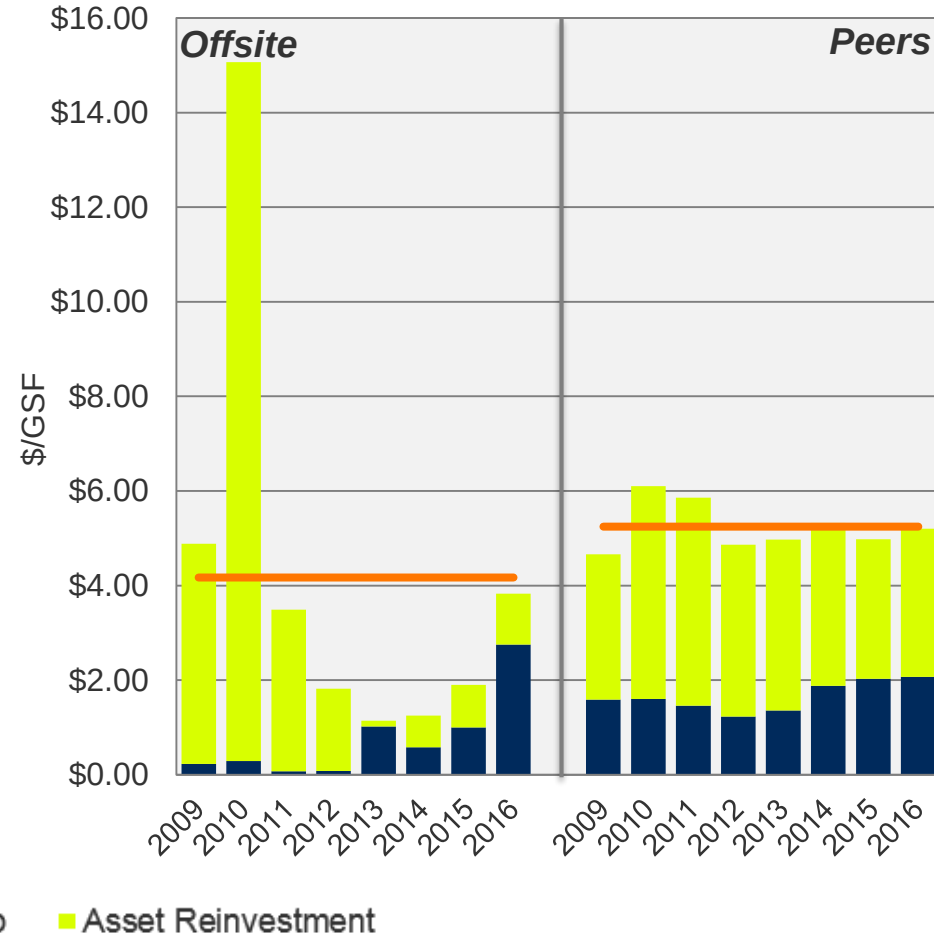
Peer Institutions Outspending UMass Medical

Stewardship funds growing toward peer average

**Medical School Total Project
Spending: \$/GSF**



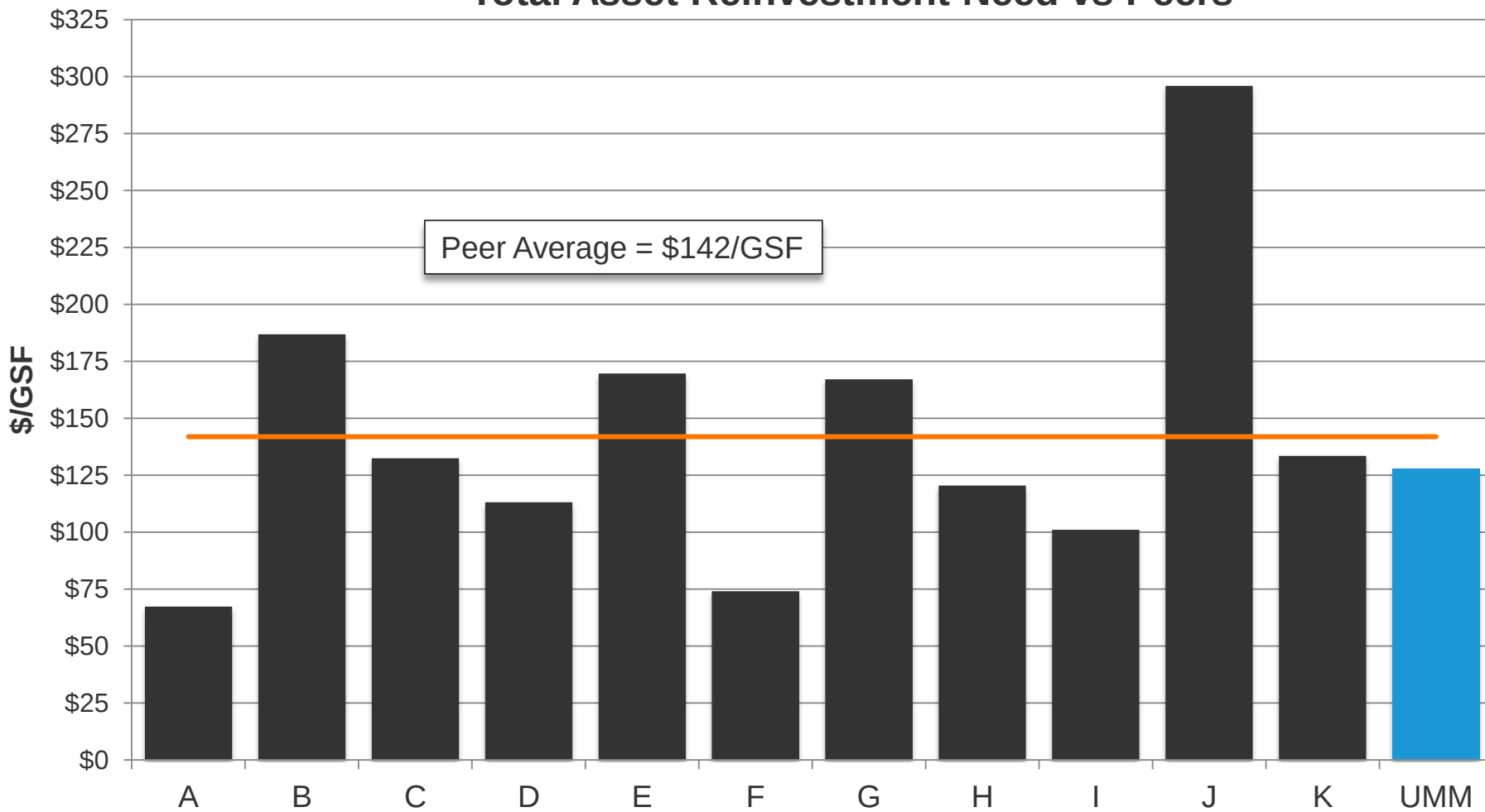
**Offsite Total Project
Spending: \$/GSF**



FY2016 Total Asset Reinvestment Need vs. Peers

10-Year estimated investment need approaching \$130/GSF

Total Asset Reinvestment Need vs Peers



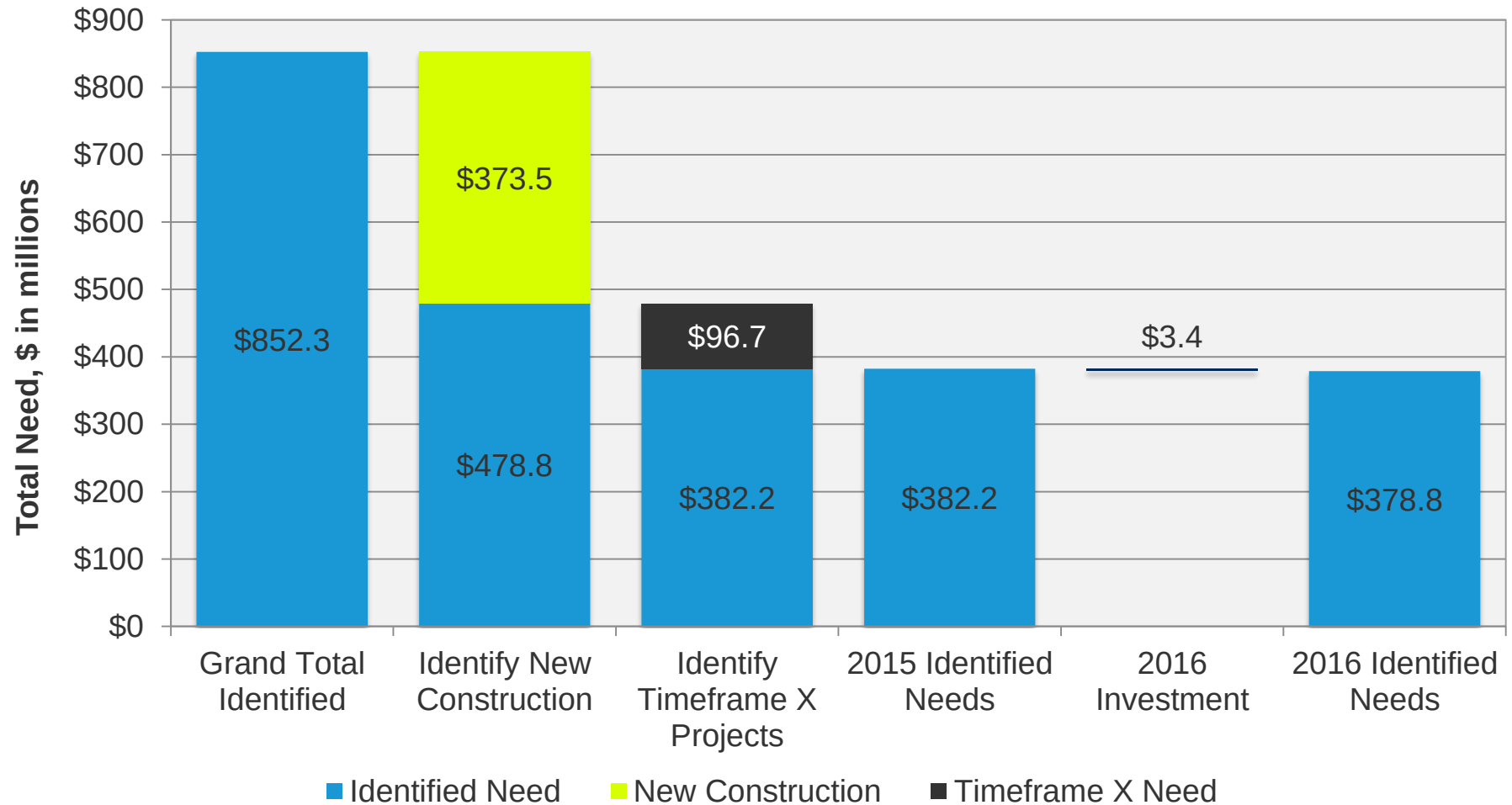
Using only needs and GSF quantified in BPS. Buildings include:
Medical Schools, Lazare, ASC, Biotech 2, 1st Road Garage, Power
Plant, Shaw Building, South Rd. Garage, Anderson House, BNRI

Building Portfolio Solutions Update

Total Identified Needs

\$378.8M in total identified need

Total Identified Needs

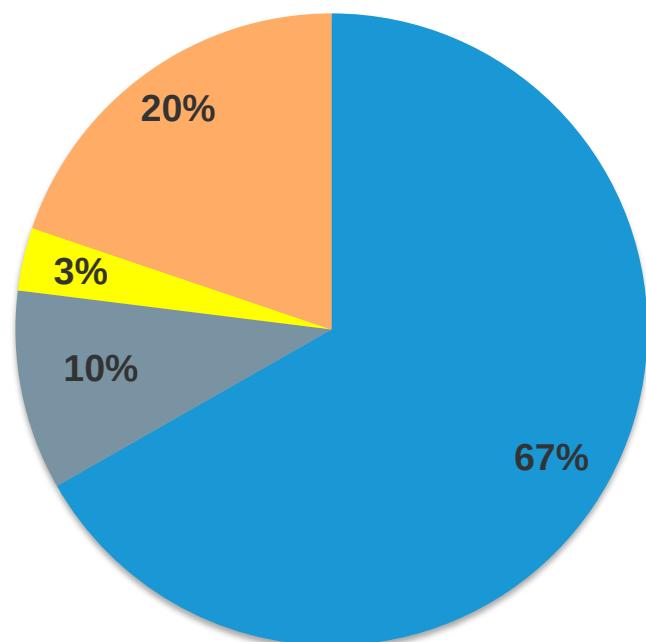


Identified Needs by Structure

Categorizing the \$472.3M in total campus needs – excluding X timeframe

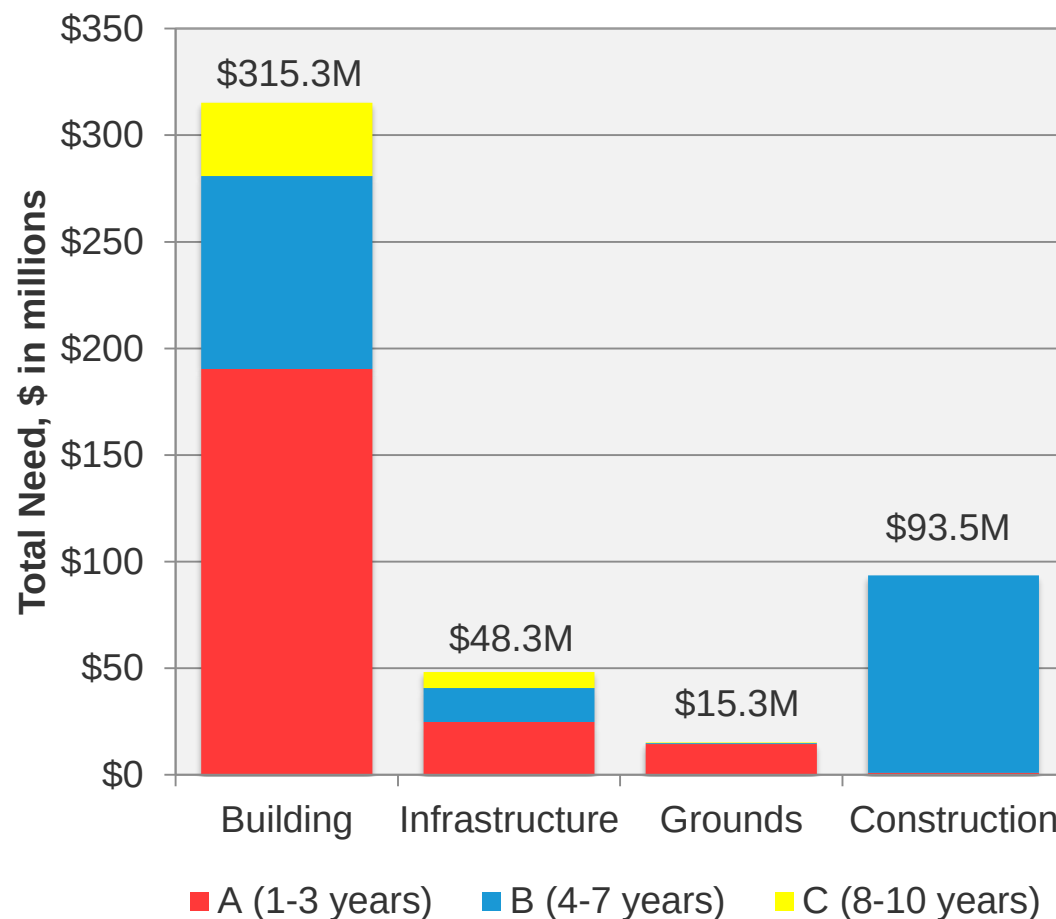
Total Needs by Structure

\$ in millions



■ Building Needs ■ Infrastructure
■ Grounds Needs ■ New Construction

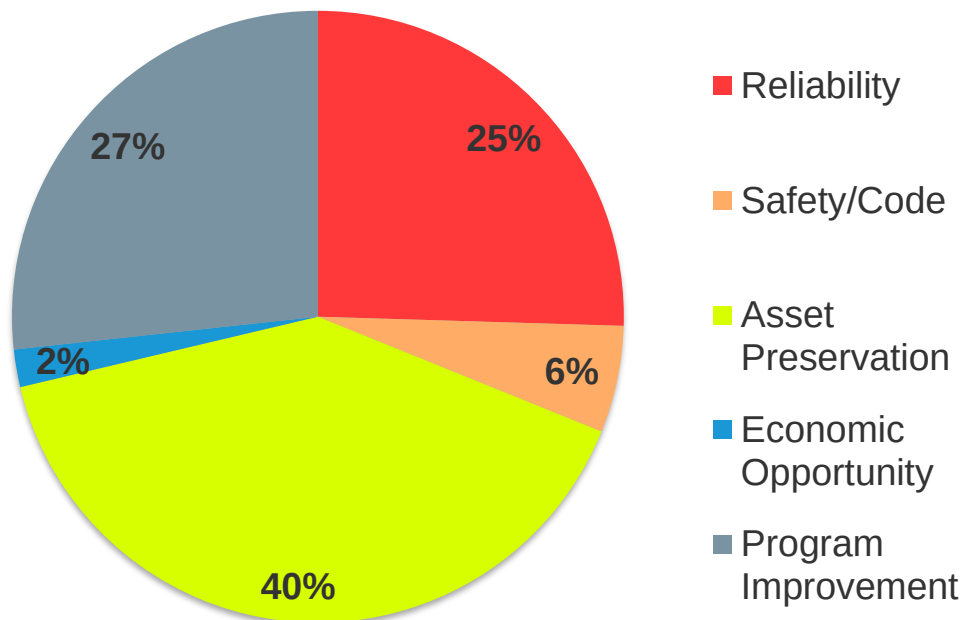
Total Needs by Structure and Timeframe



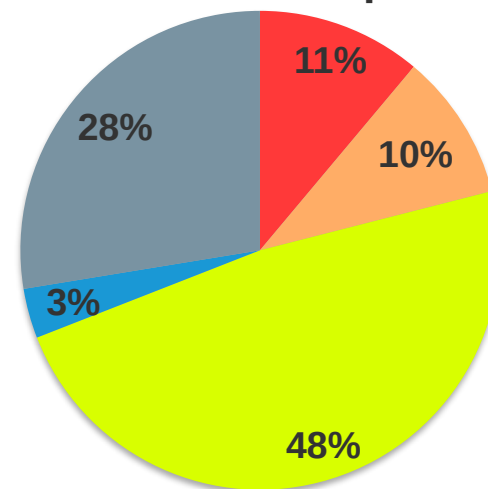
Identified Needs by Investment Criteria

Systems in critical condition comprise one fourth of identified need

BPS Identified Needs 2016



Recent BPS Experience



Reliability – Issues of imminent failure of compromise to the system that may result in interruption to program or use of space.

Safety/Code – Code compliance issues and institutional safety priorities or items that are not in conformance with current codes, even though the system is “grandfathered” and exempt from current code.

Asset Preservation – Projects that preserve or enhance the integrity of buildings systems or building structure, or campus infrastructure.

Economic Opportunity – Projects that result in a reduction of annual operating costs or capital savings.

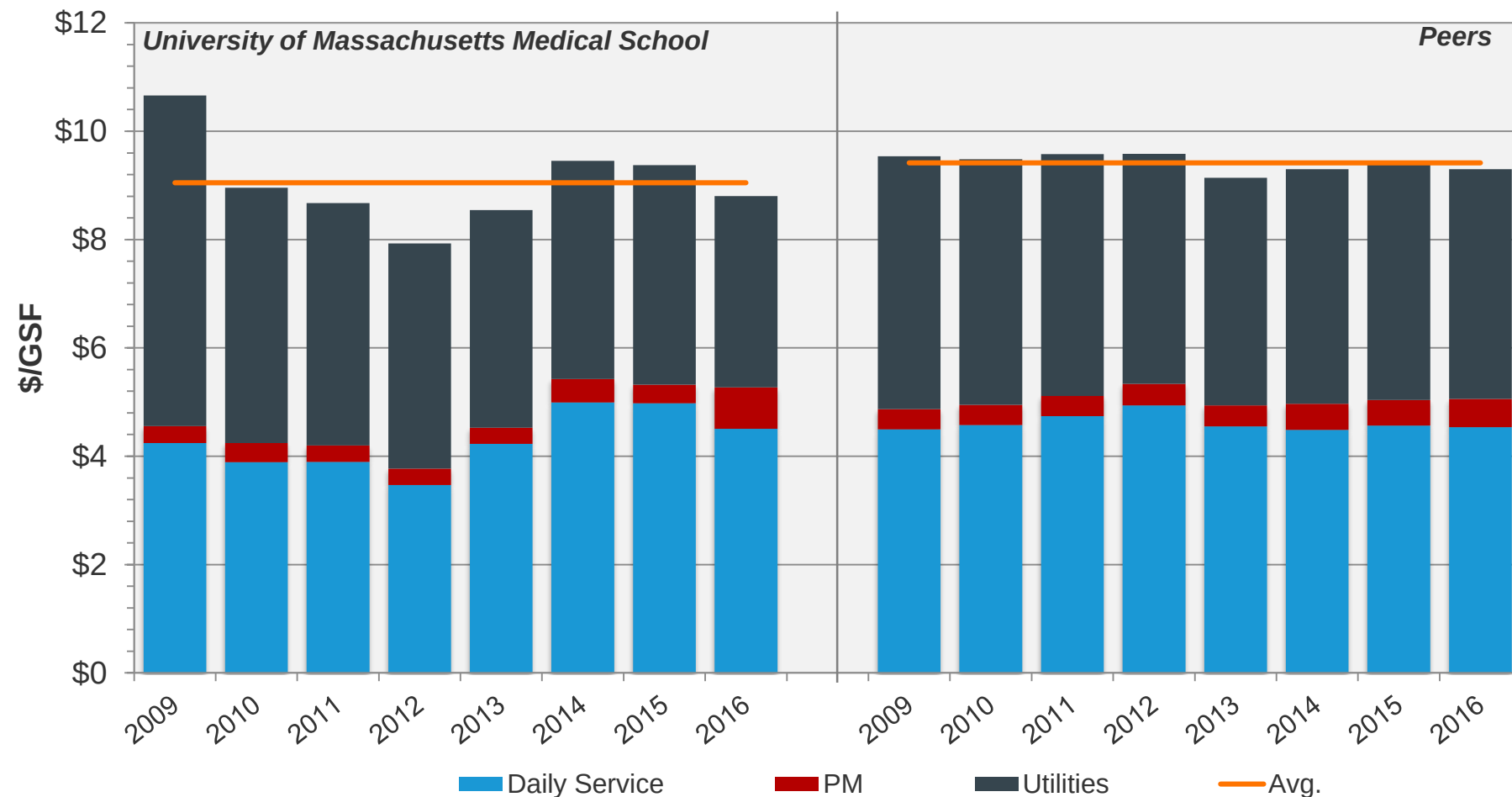
Program Improvement – Projects that improve the functionality of space, primarily driven by academic, student life, and athletic programs or departments. These projects are also issues of campus image and impact.

Operations

Facilities Operating Expenditures vs. Peers

Planned Maintenance spending increased from 2015 to 2016

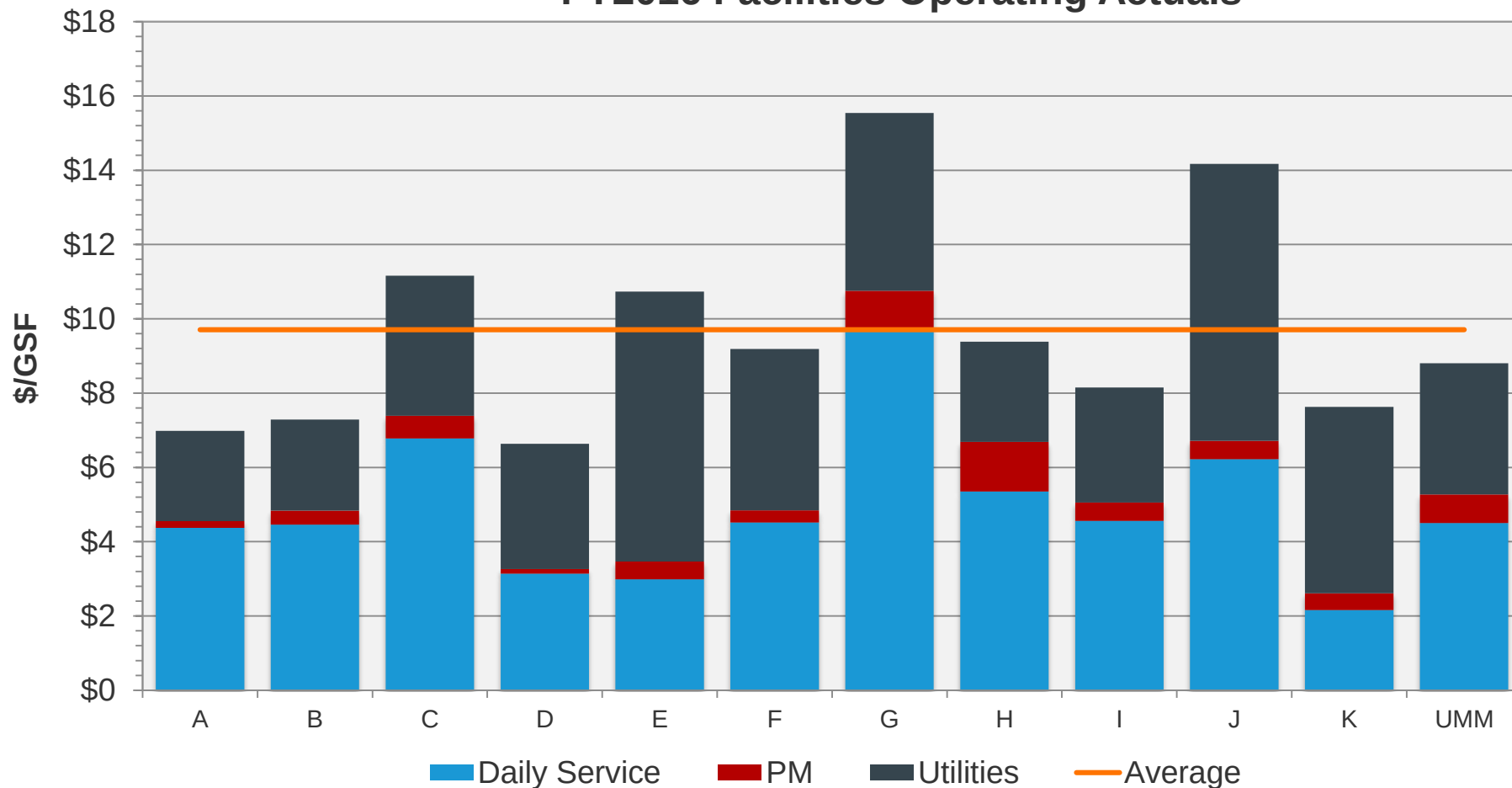
Facilities Operating Actuals



FY2016 Facilities Operating Expenditures vs. Peers

UMM has fewer operating resources than peers despite having the highest tech rating

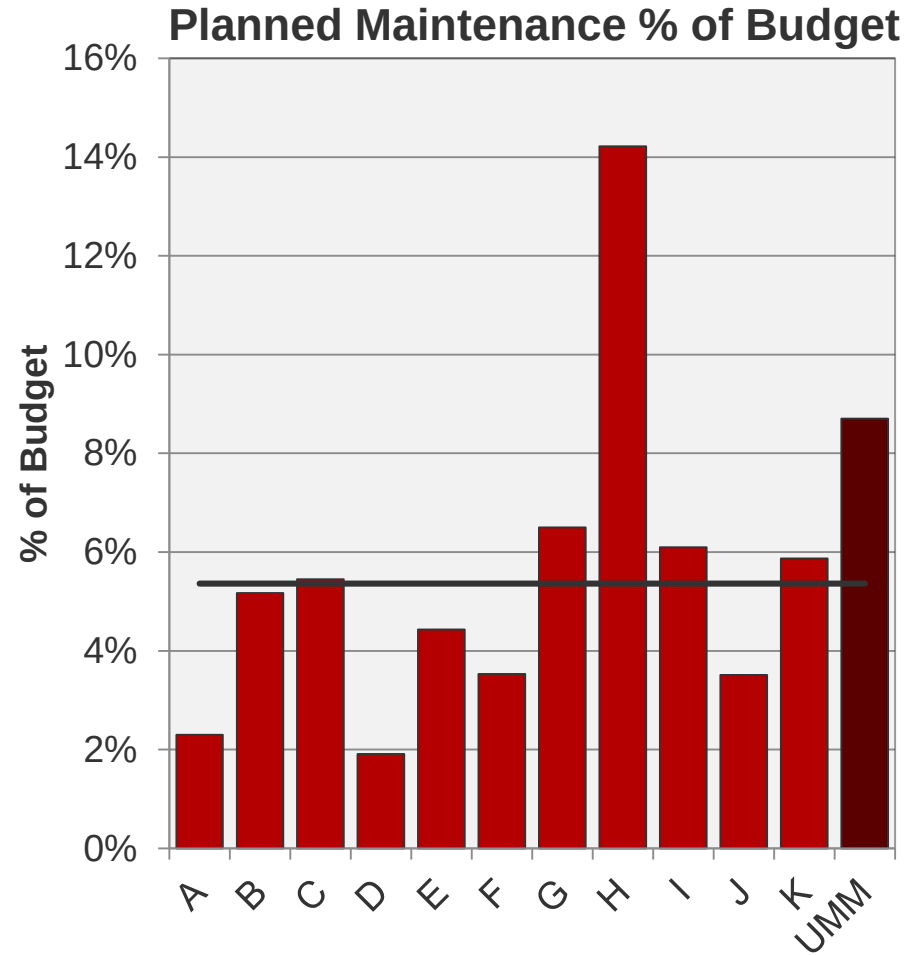
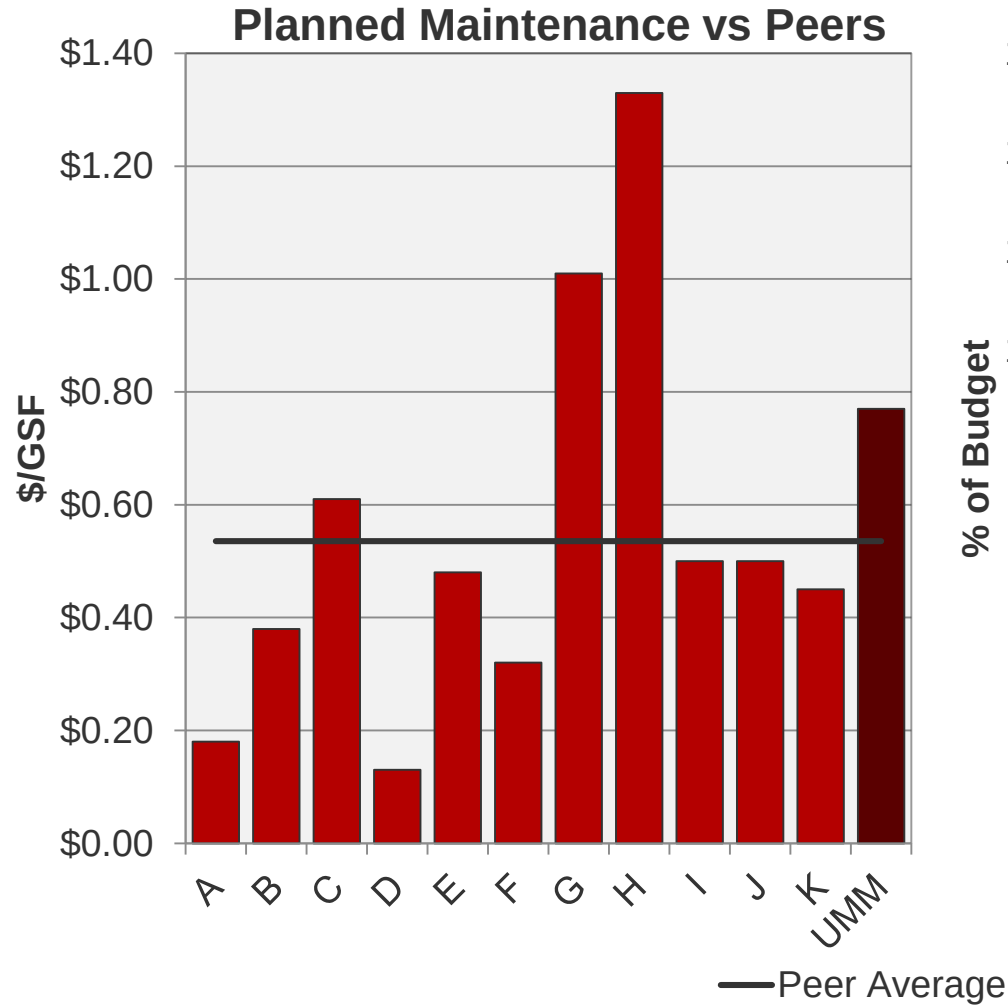
FY2016 Facilities Operating Actuals



* Institutions arranged by Tech Rating

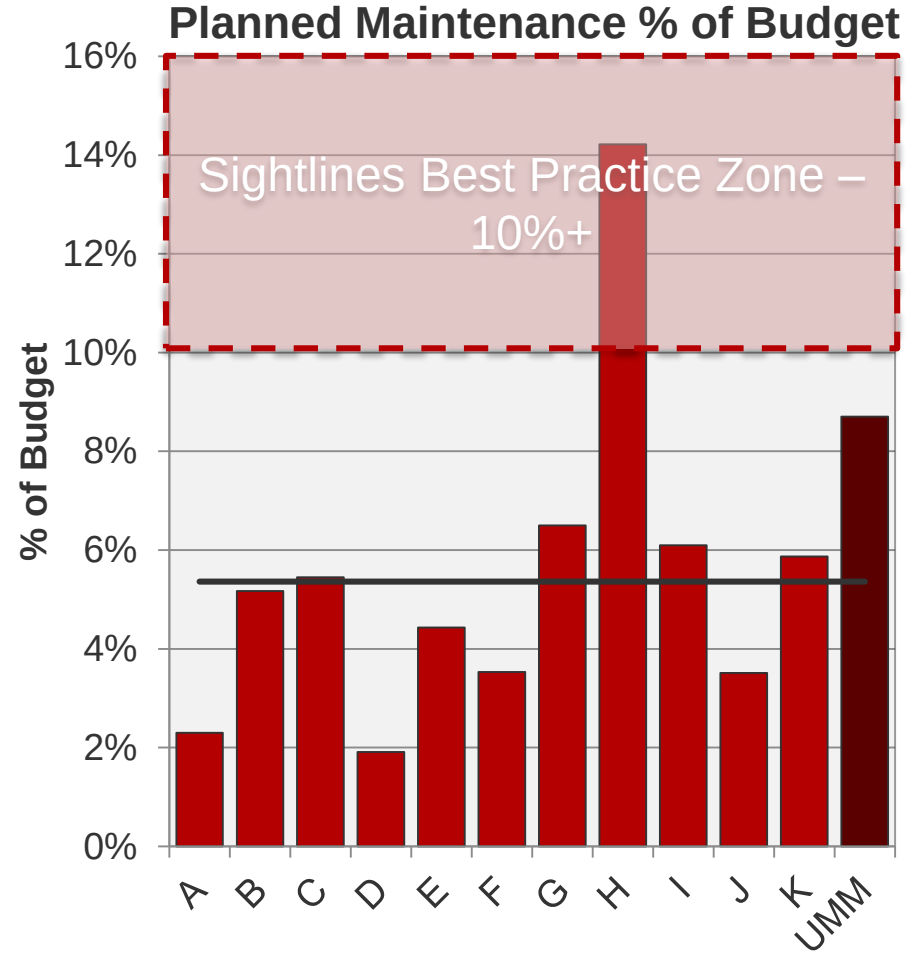
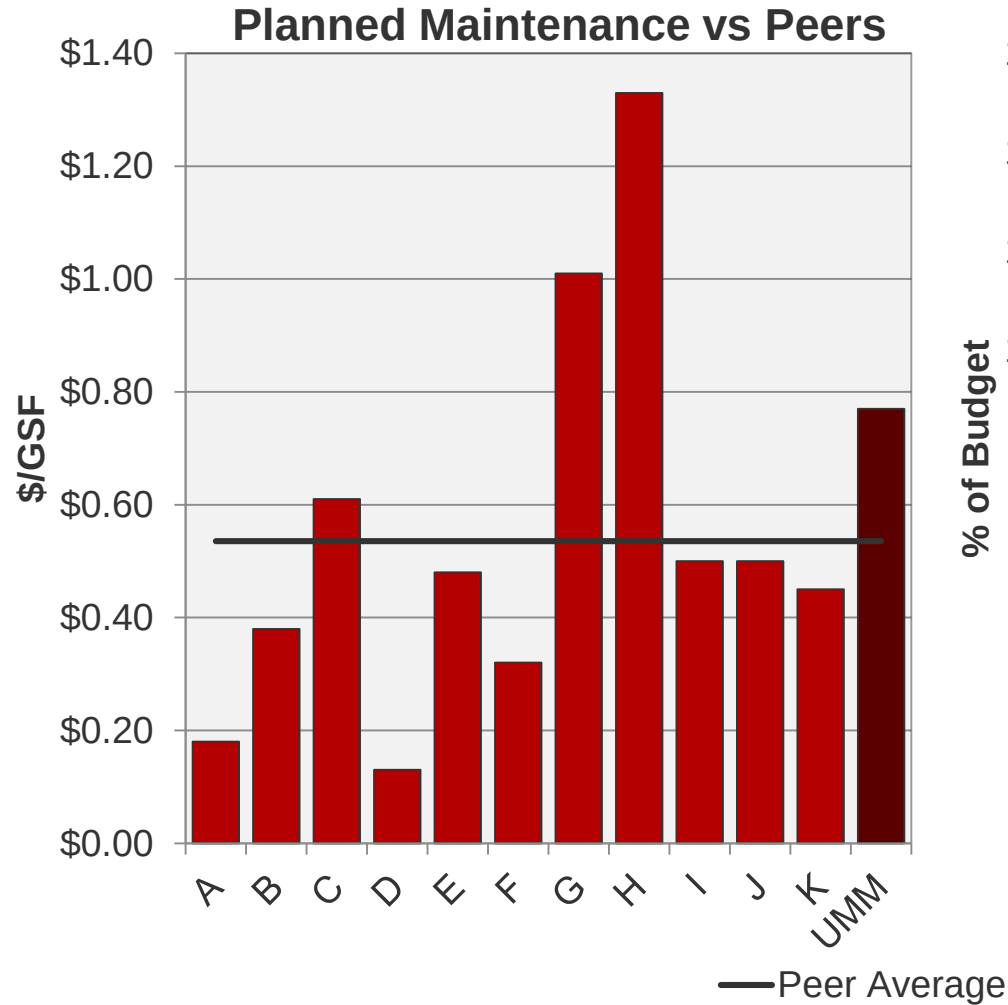
UMM PM Outperformed Peers in 2016

As planned maintenance dollars increase, daily service decreases



UMM PM Outperformed Peers in 2016

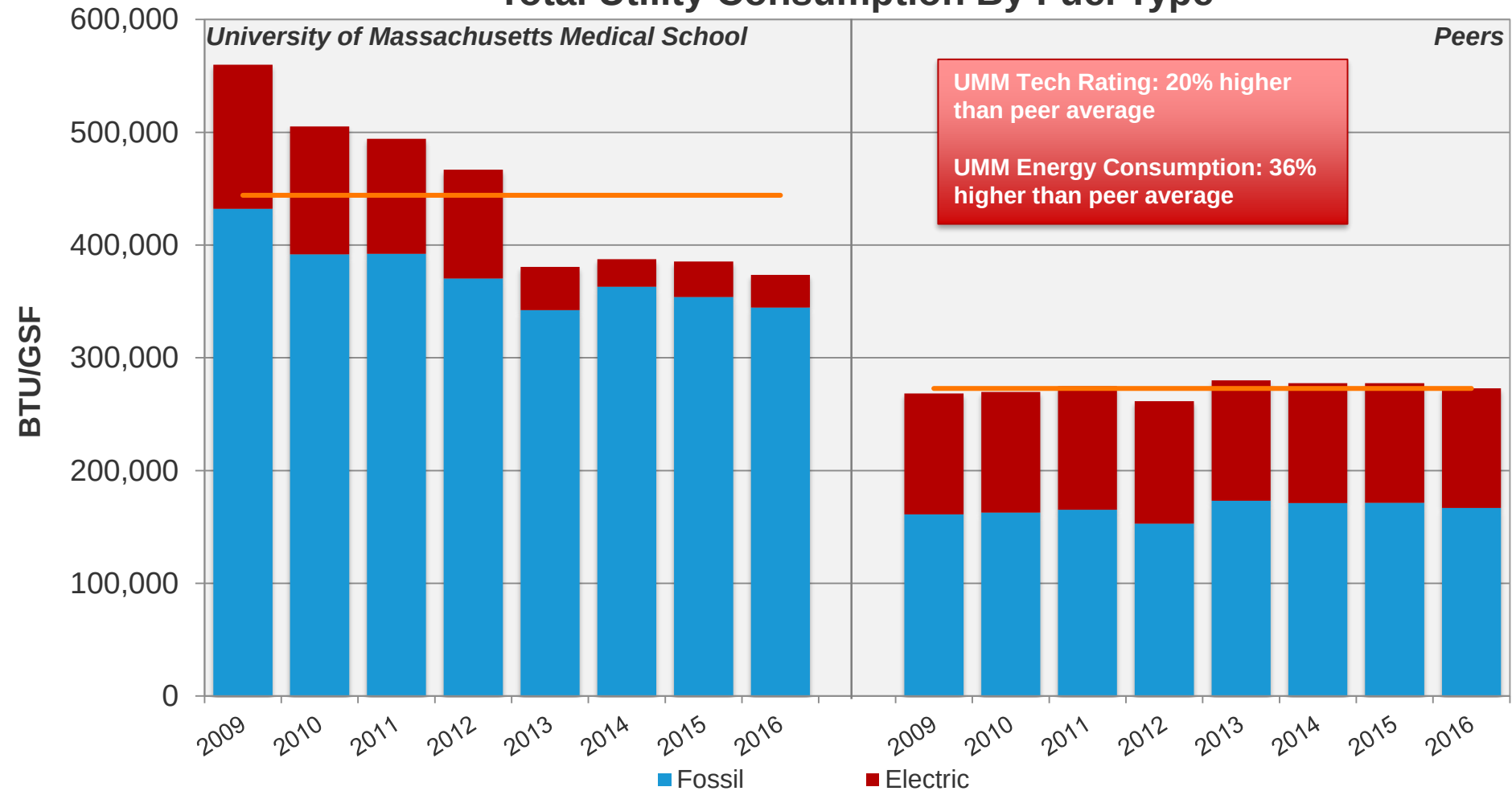
Best practice in Sightlines database is above 10% of total operating budget



Energy Consumption vs. Peers

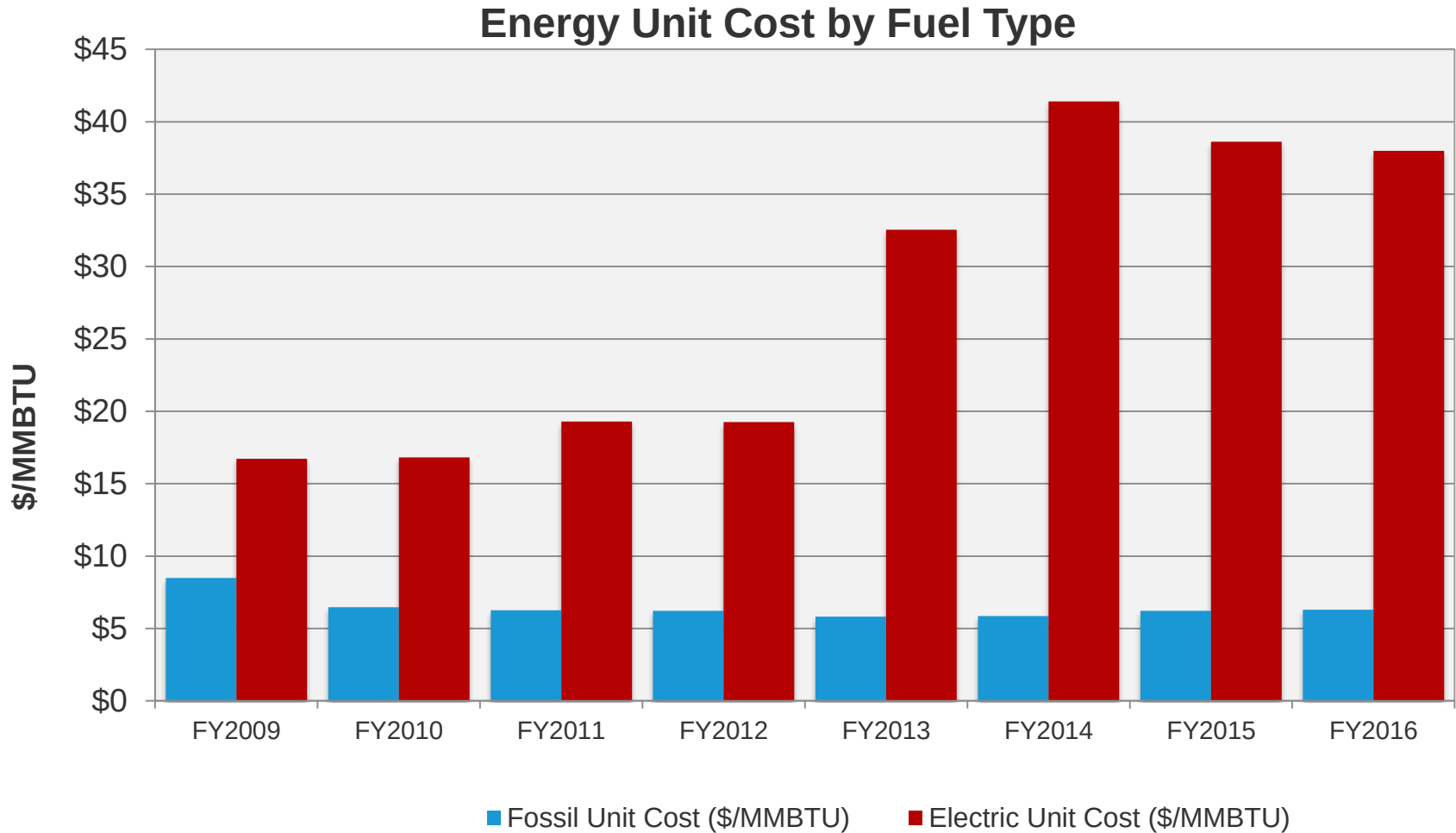
High tech rating contributes to higher energy consumption compared to peers

Total Utility Consumption By Fuel Type



Energy Unit Cost by Fuel Type

\$/MMBTU

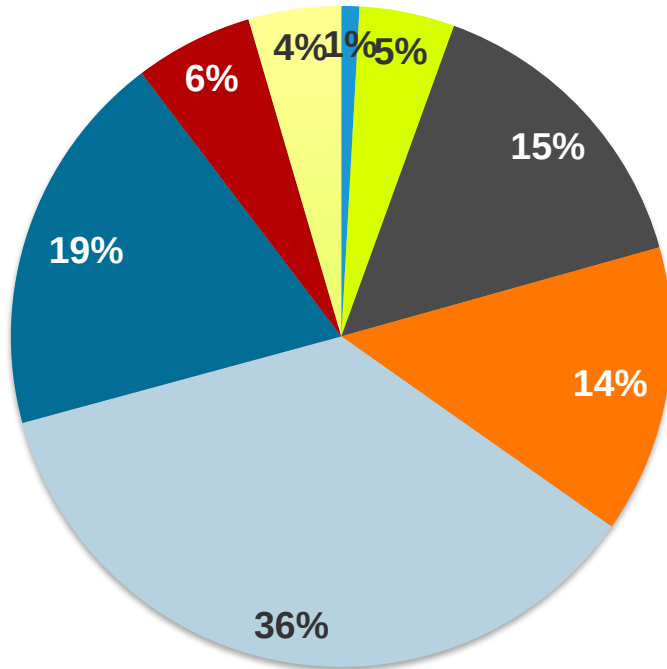


Customer Satisfaction Survey Results

Demographic of Respondents

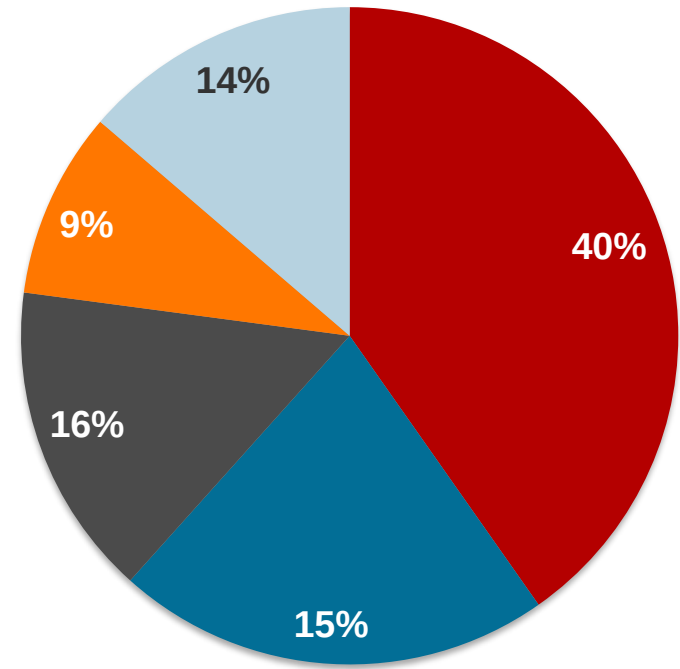
690 Total Respondents; 243 Respondents answers questions past survey logic

Survey Demographics



- Dean/VP
- Manager
- Staff
- Student
- Department Head
- Administrative Support
- Faculty
- Other

Number of Years at UMM

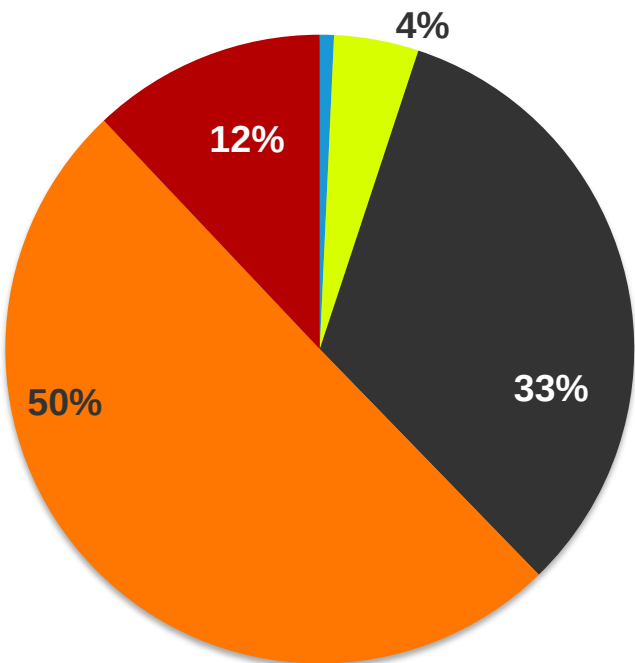


- 0-5
- 6-10
- 11-15
- 16-20
- 20+

Facilities Department Expectations vs. Satisfaction

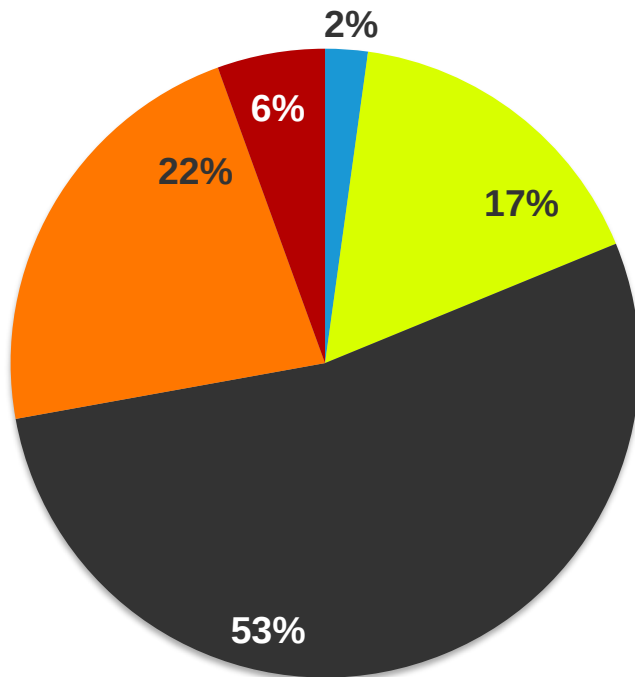
81% of participant satisfaction was *met or exceeded* by the facilities department

Expectations of Facilities Performance



- Very Low Expectations
- Low Expectations
- Moderate Expectations
- High Expectations
- Very High Expectations

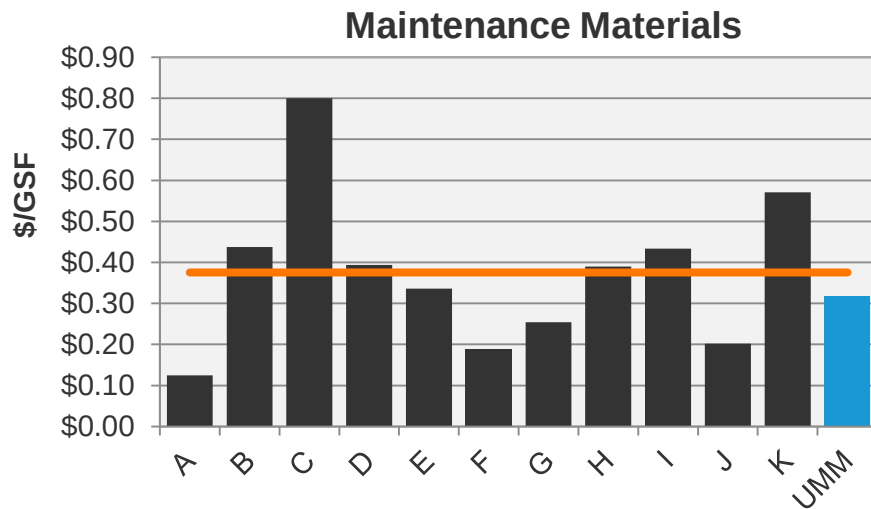
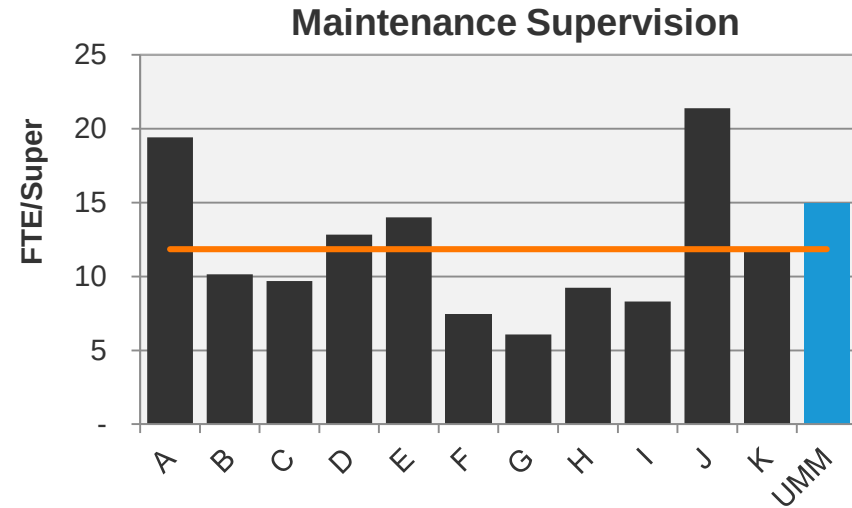
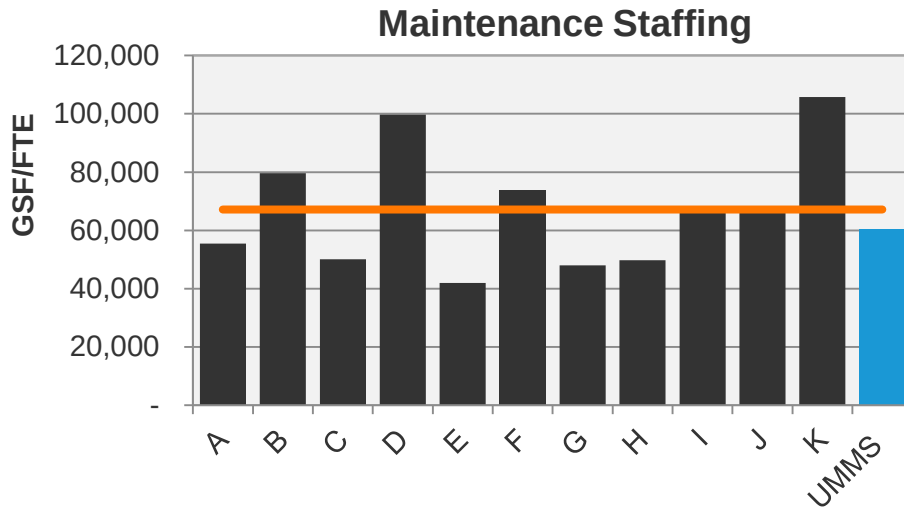
Satisfaction with Facilities Performance



- Far Below Expectations
- Below Expectations
- Meets Expectations
- Exceeds Expectations
- Far Exceeds Expectations

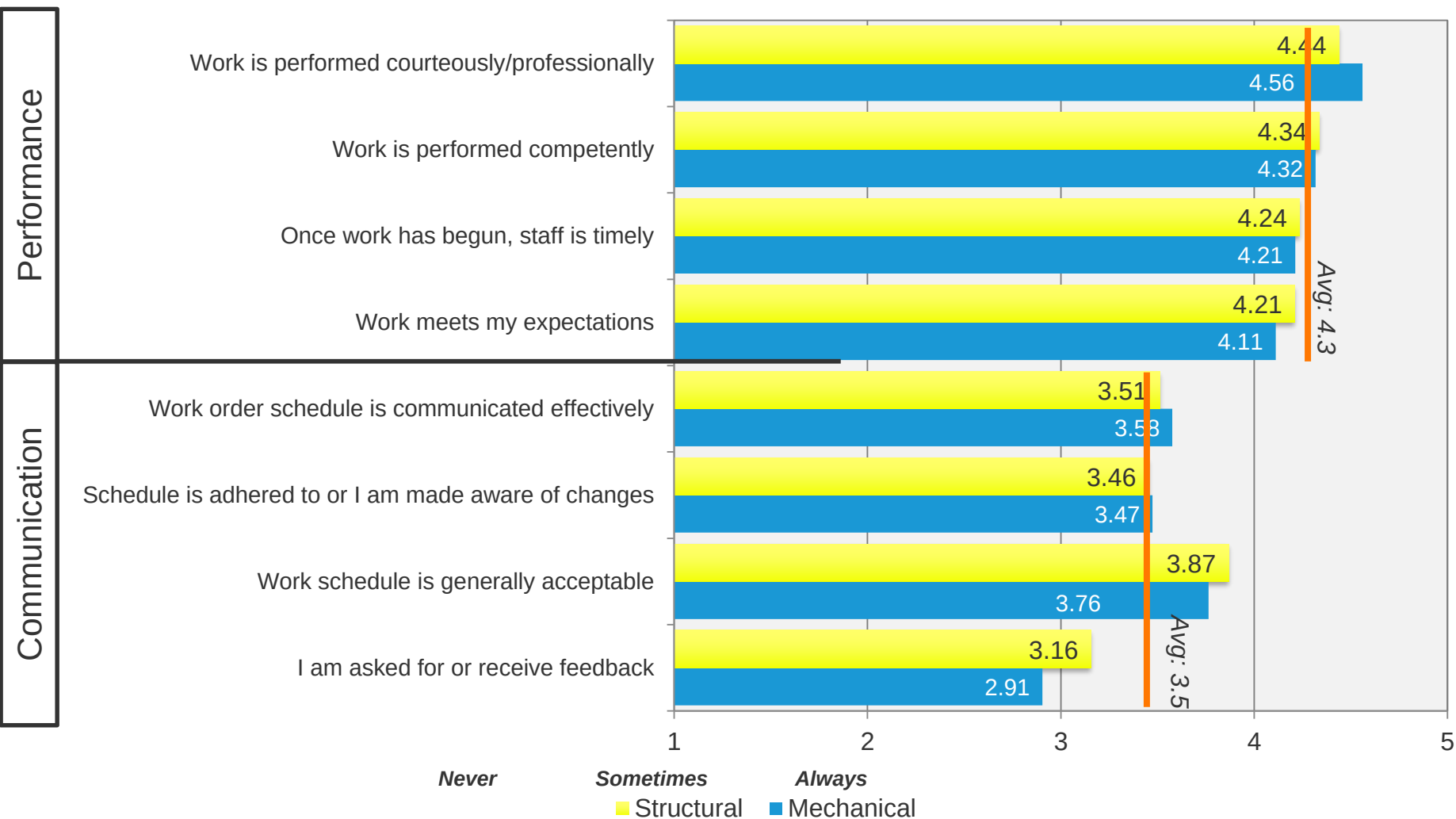
Maintenance Metrics – Medical School Only

Trades staff cover less space and are less supervised than at peer institutions

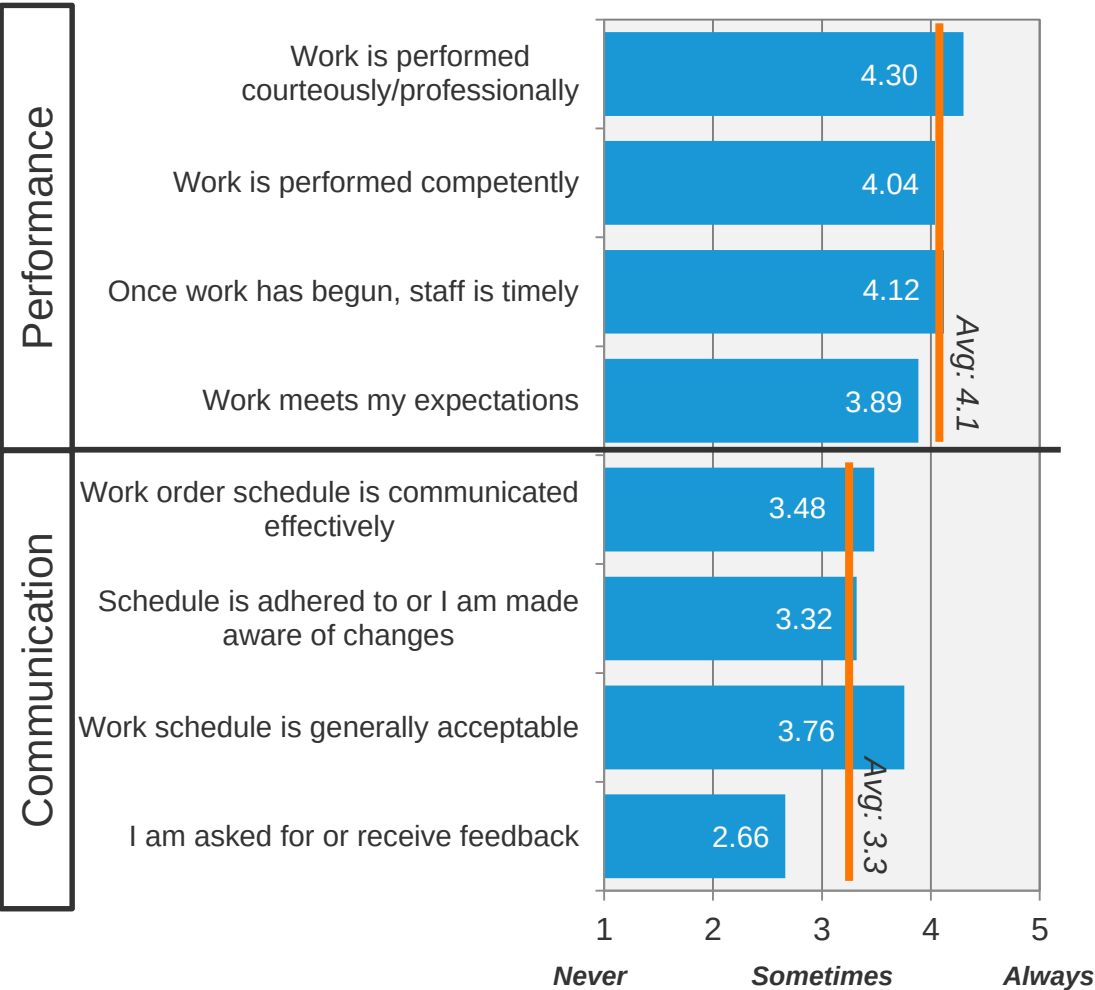


*Institutions arranged by
Tech Rating*

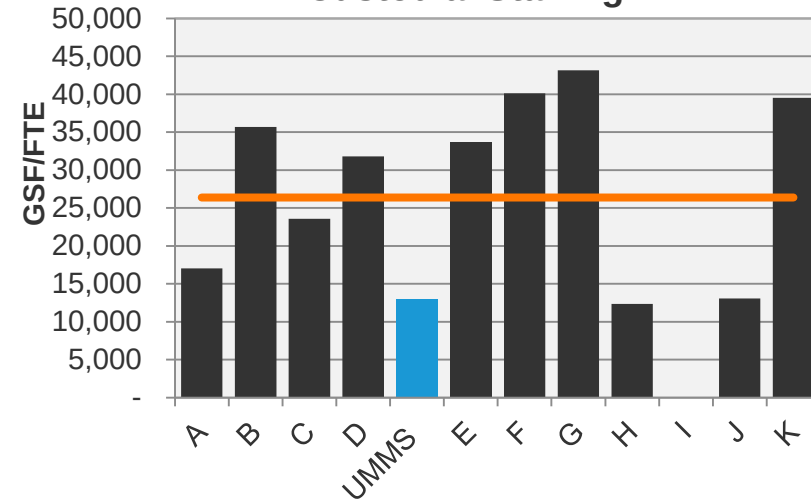
Customer Response to Trades Department



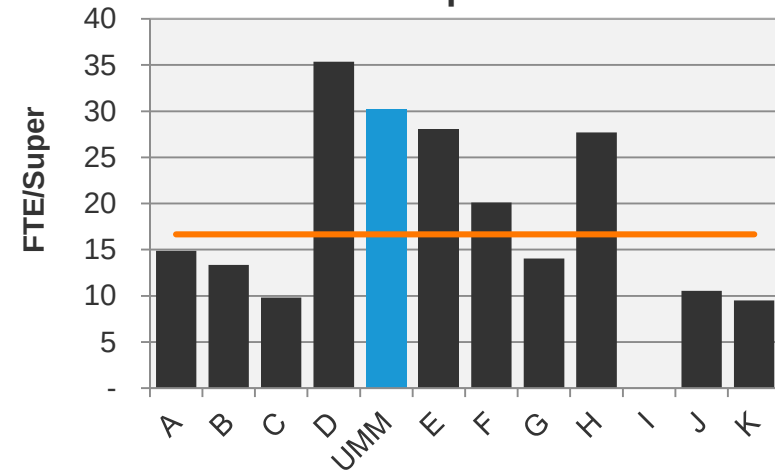
Customer Survey Response



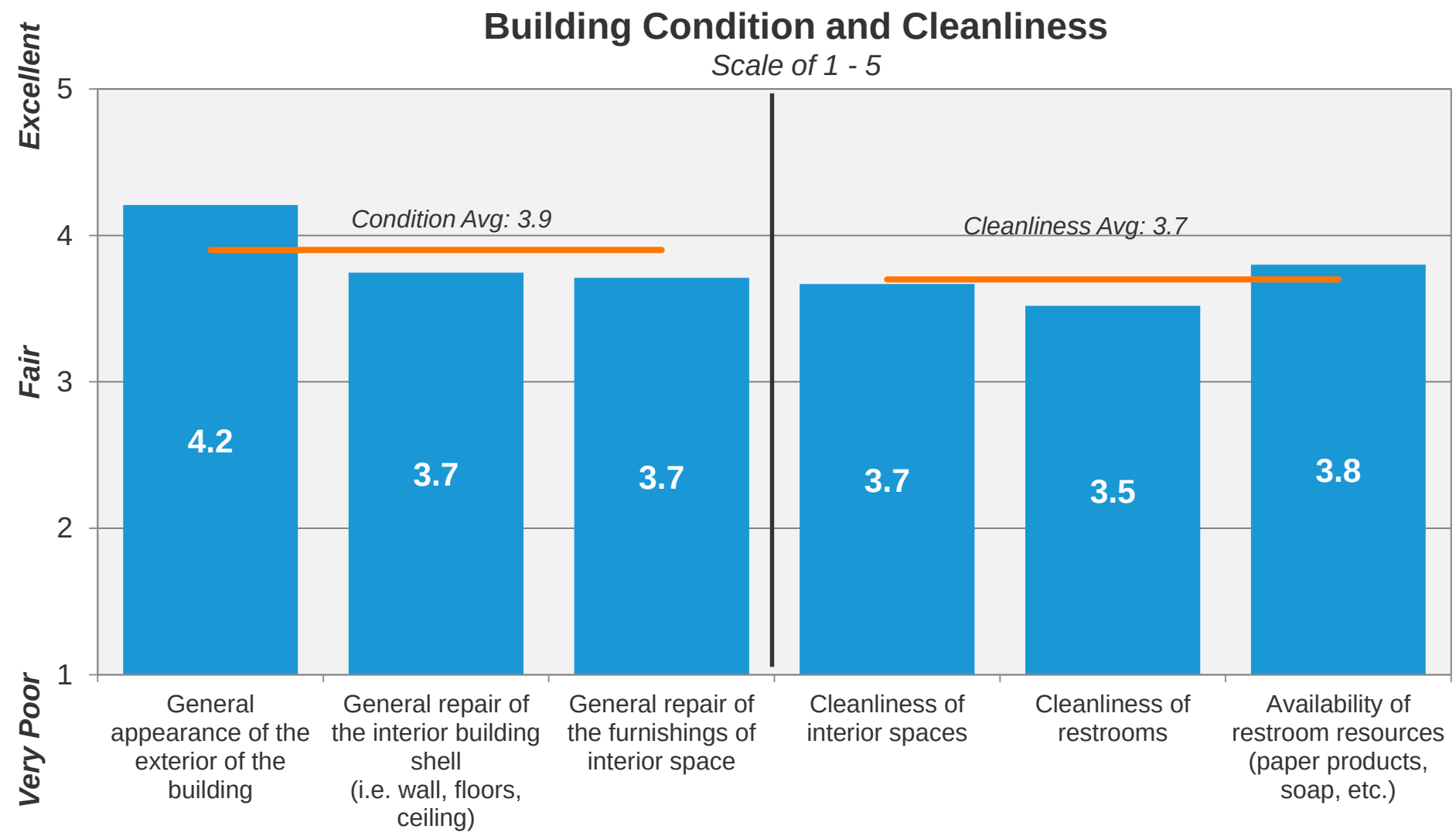
Custodial Staffing



Custodial Supervision



Building Condition & Cleanliness of Campus



- > While University of Massachusetts Medical School currently has a young age profile, it is important to consider the buildings constructed in the Post-War era that will continue to age if not addressed through strategic renovations. Continue to increase Planned Maintenance in younger space while focusing Asset Reinvestment funds on alleviating backlog in buildings such as the Medical School.
- > Historical funding has averaged \$3.30/GSF compared to peers at \$5.24/GSF. The difference between peers equates to nearly \$50M difference in investment over the past 8 years. Continuing at this investment level will further increase reliability needs on campus and create a scenario where “projects pick you” vs. picking your investments.
- > Despite having a higher technical complexity and lower operating resources, 81% of respondents thought facilities met or exceeded expectations. Given the historical investment levels and operating budget, this is great story for the facilities department.
- > The Mechanical and Structural departments of facilities received favorable responses from the customer satisfaction survey, where as the custodial feedback scored lower, specifically on the communication side. Consider setting up an educational opportunity for faculty and staff to learn about the schedule and processes to help improve communication.

Questions & Comments