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ASHE
Annual Conference &
Technical Exhibition
2014
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**Building the
Business Case**



For Space, Capital Renewal and
Energy Conservation Requirements



SURVIVAL
for **FITTEST**

Learning Objectives

- Describe new space management processes
- Apply industry standards to space management processes to foster collaboration across departments
- Establish benchmarks and budgets for capital expenditures and energy use
- Communicate and justify capital expenditures and energy conservation initiatives to senior leadership

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John Christodoulides, Ph. D., P.E.M.



- Director of Construction, Carilion Clinic
- Ph. D. Structural Mechanics, MIT
- VSHE Current Blue Ridge District Chair
- VSHE President 2011

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Who Is Carilion Clinic?

- Not-for-profit Regional Health System
- Serves Southwest Virginia
- Headquarters in Roanoke Virginia
- Owns and operates 7 hospitals
- Numerous primary care and specialty clinics, laboratories, ambulatory surgery, health clubs
- Partnerships: Virginia Tech, Jefferson College of Health Science, Radford University
- Approximately 200 practice sites

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Improving data accessibility, visualization, and communication

SPACE MANAGEMENT

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New Space Management Processes

- Standardize space classifications
- Tie classifications to BOMA space measurements
- Streamline CAD data management
- Integrate information through geospatial technology to improve data accessibility and quality
- Automate frequent reports

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Assess condition, forecast capital needs and justify capital budget

FCA AND CAPITAL PLANNING

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Condition Assessment Approach

- Systems & Major Components
 - Roofs, Elevators, Boilers, Chillers
 - Site Improvements
- Survey
 - Review Plans and Maintenance Data
 - Interview Maintenance Staff
 - Inspect Facilities and Collect Data
 - Visual Inspection of Accessible Systems
 - Representative Observations
 - Disregards de Minimis Conditions

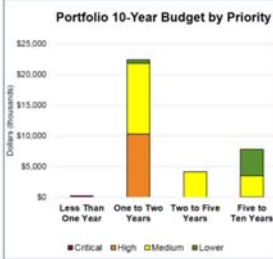


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Condition Assessment Approach

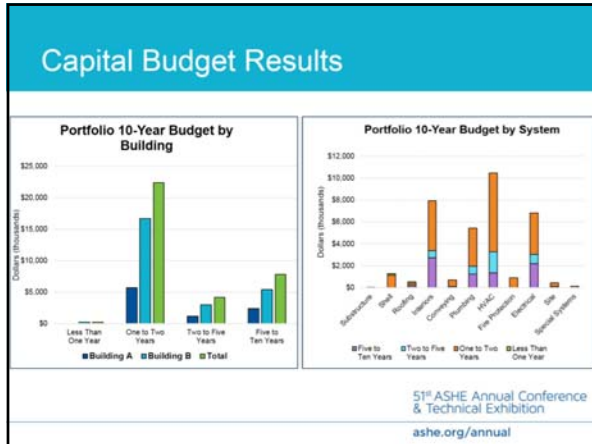
Cost Estimation and Reporting

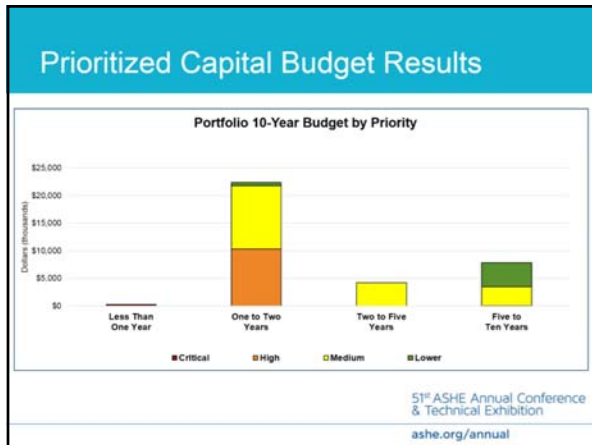
- Modeled Using R.S. Means
- Life Expectancies
- Condition Ratings
- Deferred Maintenance
- Capital Renewal Costs
- Key Performance Indicators
 - Facility Condition Index
 - Extended Facility Condition Index
- 10 Year Forecast
- 10 Year Budget
- Priorities



Time Period	Critical	High	Medium	Lower
Less Than One Year	0	0	0	0
One to Two Years	0	100,000	120,000	0
Two to Five Years	0	0	40,000	0
Five to Ten Years	0	0	0	60,000

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Building a Business Case – Summary

- **Data Now Available for Informed Decision Making and Proactive Planning**
 - Identified and Rated Conditions
 - Current and Future Costs
 - KPIs for Benchmarking
 - Budgeting and Prioritization
- **Data Visible in GoRPM**
 - Details
 - Badges on Maps
 - Automated Reports
 - Searchable

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Building a Business Case – Summary

- Track and Manage Energy
 - Track Use
 - Visualize Spikes
 - Analyze Trends
 - Compare Across Years
 - Compare Facilities
 - Identify Opportunities for Conservation
 - Determine Total Operating Costs
 - Establish Benchmarks




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Building a Business Case – Example

Building A Energy Savings

- Water use trends higher in warmer months, in part due to HVAC cooling towers
- Installing sub-meter for cooling tower makeup water could save \$17,000 per year in sewer costs

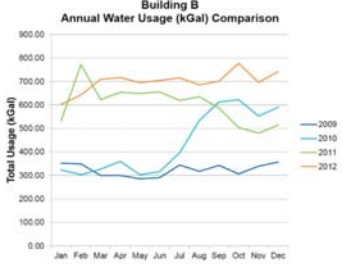


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Building a Business Case – Example

Building B Energy Savings

- Water use increased in 2010, due to change in radiation treatment equipment cooling
- Cooling system modification or replacement could save \$36,000 per year in water and sewer costs



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Overall Results and Return on Investment

CONCLUSION

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Summary of Results


Data now available in a single, widely accessible, user friendly, GIS-based platform to manage, analyze and report requirements and build business cases for:

- Space
- Capital Funding
- Energy Conservation

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Return On Investment

- **Manage Space More Effectively**
 - Optimize Use of Space (\$250/SF or More)
 - Support Compliance Activities and Reporting to Avoid Regulatory Citations and Fines
- **Plan Capital Improvements**
 - Preserve and Strengthen Capital Investments
 - Avoid Costly Unplanned Repairs
 - Plan Work to Maximize Benefits
- **Improve Energy Efficiency**
 - Verify Accuracy of Bills
 - Pinpoint Excessive Use
 - Identify Opportunities for Savings



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Building the Business Case
For Space, Capital Renewal and Energy
Conservation Requirements

For additional information:

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