


**Capital Renewal and Deferred Maintenance**

APPA Facilities Institute  
February 2020

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The University of Texas at Austin



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**Introduction**

- AIA Continuing Ed credits
- Class statistics
- Differences/similarities between maintenance and capital renewal
- CR/DM – It's not just about buildings



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**The Institutional Environment**

- How seriously is this issue viewed by your campus?
- How complex is a solution?
- Is lack of funding a major issue?
- What other factors impact on this issue?



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[ Your Internal Environment ]

- How do you view your facility condition?
- What don't you know about your facility condition?
- What do you know about your facilities that your campus would find useful?

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[ Your Internal Environment ]

- Definitions/descriptions – how do they impact perspectives?
- Do you have a “devil's advocate” role in your organization?
- How else can you impact this issue?

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[ Objective ]

Develop an Effective CRDM Program

- Communication
- Trust and Credibility
- Stewardship/Sustainability
- Prepare for Success
- Anything else that we should consider?

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## [ Communication Strategy ]

- Who are your key stakeholders?
- What's in it for them?
- Develop appropriate information
- Listen
- What's left out?



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## [ Establish Trust and Credibility ]

- Technically sound data and analysis  
D > I > K > W
- Transparency
- Well defined planning process
  
- How well have you done this?



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## [ Stewardship/Sustainability ]

- Demonstrate effective use of existing funding
- Maintain critical institutional programs and resources
- Identify and manage risk
  
- What else would be useful in this area?



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[ Prepare for Success ]

- Be more proactive than reactive
- Engage in critical thinking
- If you are “chasing the car” be prepared to catch it

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[ Data Examples ]

- Building age and size
- Type of construction
- Replacement value

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[ Examples of Data Sources ]

- Annual Financial Report
  - initial investment/reinvestment
  - construction date
- Institutional Research
  - building uses
- Registrar
  - classroom/lab utilization
- What are your data sources?

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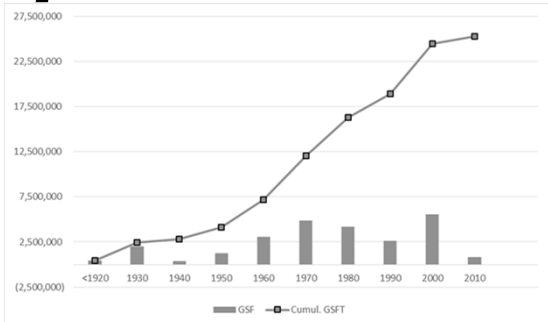
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## Changing Date Into Information




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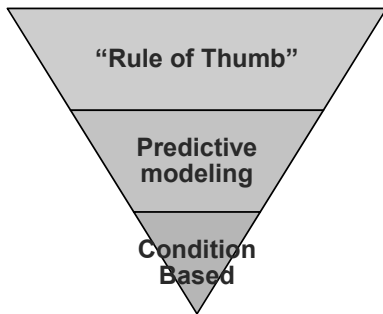
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## Assessing Capital Renewal Needs



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## Assessing Capital Renewal Needs

### "Rule of Thumb"

- based on a percentage of replacement value, primarily a funding model.

### Predictive modeling

- assessment of facility condition at the system level using observation combined with "statistical" analysis.

### Condition or Deficiency-Based

- comprehensive physical inspection performed on regular cycles, identifying observed deficiencies.



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**“Rule of Thumb”**

- Generally 1.5% to 3% of replacement value
- Used to establish a funding range.
- No capability to forecast future needs
- Very limited data regarding condition

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**Assessing Capital Renewal Needs**

**“Rule of Thumb”  
State of Texas**

<b>\$33.6 Billion</b>			
2% of EG CCIV (FY11)	\$508M		
Renewal Expenditures	\$151.3M		
% of EG CCIV (FY11)	0.5%		
Top 3 Institutions	1.1%	1.2%	1.9%

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**Assessing Capital Renewal Needs**

Statistical” method of determining or estimating long range capital requirements

- Focus is on primary building systems:
  - life span
  - system cost
- Applied to individual buildings or groups of buildings
- Provides, annual, average & total costs
- Can be used to estimate future costs

**Predictive modeling**

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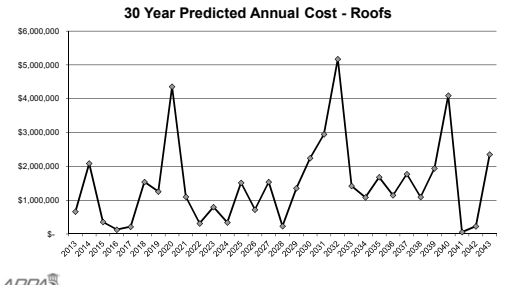
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## [ Example of Predictive Modeling ]



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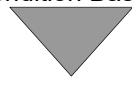
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## [ Assessing Capital Renewal Needs ]

### Condition Based



- Primary focus is on providing objective data on current facility condition
- Generally groups data into categories, i.e. priorities and systems
- Establishes a benchmark to evaluate changes in condition over time
- Can be used to project impact of spending levels on future condition



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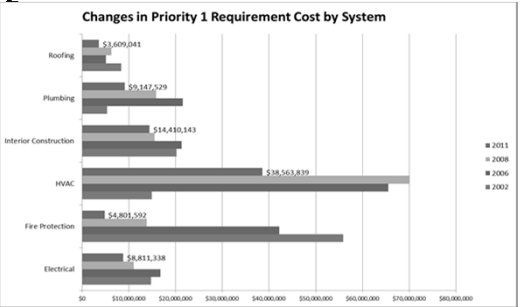
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## [ Using Assessment Data ]



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## Triangulation

Comparison of costs to maintain current UT Austin facility condition

Approach	Outcome \$M/year
Percentage of Value at 2.5%	\$55M
Predictive/Life Cycle	\$50M
Condition Assessment Requirements @ 20 yrs.	\$42M

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## FCI Discussion

Facility Condition Index

$\frac{\text{CR/DM Backlog}}{\text{Replacement Value}}$

Example:  $\frac{\$100 \text{ Million Backlog}}{\$1 \text{ Billion Replacement Value}} = .10 \text{ FCI}$

$\frac{\text{backlog}}{\text{Replacement Value}} = .10$

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## Condition Index Clarified

- It's not an indicator of operational capability
- It is a ratio of reinvestment vs. capital replacement cost
- It may be an indicator of risk

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## [ Use of FCI at UT Austin ]

FCI – groups of buildings

BCI – individual buildings

SCI – specific building system



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## [ Building A Successful Program ]

- Understand and Manage Your Reality
- Address Planning Challenges
- Develop Trust and Credibility
- Focus on Stewardship/Sustainability
- Establish Good Communication
- Plan For Success



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## [ Be This Dog That Caught The Car ]



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**Capital Renewal and Deferred Maintenance**

Questions, Comments, Observations

Please complete the evaluations


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**Comprehensive Capital Asset Management**



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## [ Course Description ]

Examine the basic principles related to the management of capital renewal and deferred maintenance programs. The presentation will introduce facility assessment programs including facility condition inspections, audits, estimating techniques, and reporting formats. Learn the business perspectives on capital renewal programs and an assessment tool for determining overall capital renewal needs. Discuss life-cycle planning.

*Faculty: Steve Kraal & Ana Thiemer*

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## [ Learning Objectives ]

- Discuss basic principles of capital renewal and deferred maintenance program management.
- Discuss facility assessment programs
- Learn business perspectives on capital renewal programs and assessment tools.
- Discuss life-cycle planning.

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