


[Plant Renewal – Capital Renewal]

APPA Facilities Institute

Steve Kraal
Senior Associate Vice President (retired)
Campus Planning and Facilities Management
The University of Texas at Austin




1

1

[Introduction]

- Brief History
- Challenges
- "Toolkit"
- Getting Started




2

2

[Brief History]

- Higher Ed enrollment grew 600 percent, from 1950 to 2016.
- During the same period, the number of institutions grew from 1,800 to more than 4,000.
- Many institutions have (as of 2016) as much as 75 percent of their facilities in the range of 30 to 40 years old beyond the first cycle of major renewal expenditures.



3

3

[Challenges]

Higher Ed intended to do 3 things:

- Instruction
- Research
- Public Service

CR funding not a "fixed" budget item

- other institutional priorities
- variances in funding level

APPA 4

4

[Capital Renewal Toolkit]

- Stewardship and Sustainability
- Credibility and Trust
- Communication

APPA 5

5

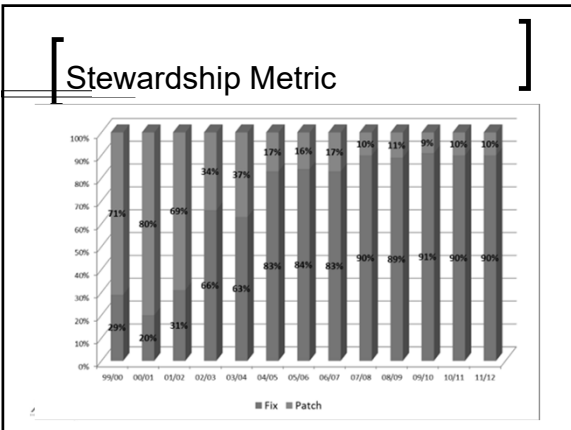
[Stewardship]

"The careful and responsible management of something entrusted to one's care"

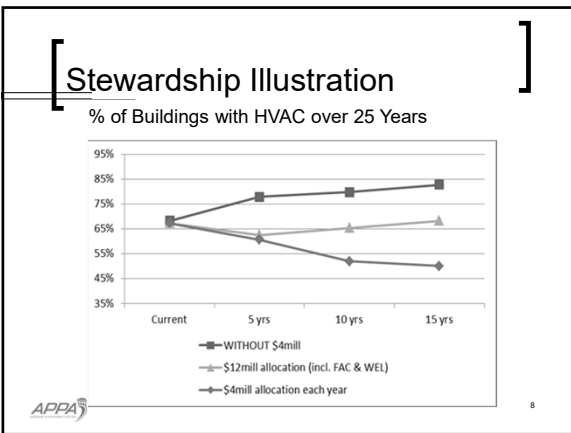
<u>Positive Traits</u>	<u>Not So Positive</u>
■ Innovation	■ Status Quo
■ Inclusive	■ Ownership
■ Team Player	■ Exclusive
■ Communication	■ Control

APPA 6

6



7



8

- ### Credibility
- Establish/maintain credibility/trust within your organization
 - Use the data that you have before gathering more
 - Determine what your institution wants/needs to know
 - Use data from institutional sources

9

[Data and Information]

What data do you need and have?

- Building age and size
- Type of construction
- Replacement value
- Initial investment and reinvestment
- Building systems
- Types of space - GSF/ASF/Aux

APPA 10

10

[Communication]

What can you tell me about your stakeholders?

- Faculty
- Students
- Finance/Budget Office
- Governing Board
- Facilities staff

APPA 11

11

[Communication Strategies]

- Be consistent in the message
- Use terms and definitions that make sense to your institution
- Focus message on specific audiences
- Identify how each audience will benefit
- Keep it simple, bumper sticker

APPA 12

12

Switching Gears

- Leaving the CR toolkit
- Moving to the basics of getting started

Any questions/clarification before we move on?

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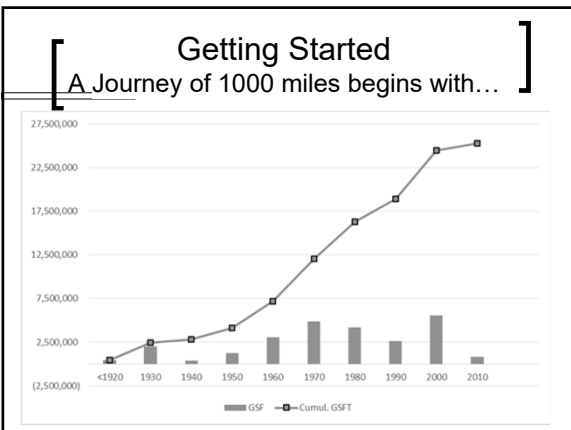
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Getting Started Questions

- What don't you know, or wish you knew more, about your facilities?
- What do you know that your campus would find useful?
- What do you and your audiences need to understand better?

APPA 14

14



15

Comparison of Construction and Replacement Value

UT Austin E&G Space = 10.5M GSF

- > Construction Value = \$790M
- > Replacement Value = \$1.8B

Main Building/Tower(1932) = 353,000 GSF

- > Construction Value = \$8.6M
- > Replacement Value = \$96.8M

APPA 16

16

Replacement Value

Possible Methods of Calculation:

- ❖ apply historical cost factor to original construction cost (ENR, inflation)
- ❖ find a comparable new facility and use same \$/sf
- ❖ use insured value
- ❖ develop cost model based on cost of building components

APPA 17

17

Condition Index

CR/DM Requirements
Replacement Value

Example:
\$100 Million
\$1 Billion Replacement Value

= .10 FCI

APPA 18

18

Condition Index Clarified

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

APPA 19

19

Assessing Capital Renewal Needs

Three basic approaches: All require a consistent approach to CRV

- “Rule of Thumb” – based on a percentage of replacement value(not capital value), primarily a funding model.
- Predictive modeling – determination of future funding requirements based on building system life primarily a statistical analysis
- Condition or Deficiency-Based – comprehensive physical inspection performed on regular cycles, identifying building system functionality and cost

APPA 20

20

“Rule of Thumb”

- Generally 1.5% to 3% of replacement value
- Used to establish an annual aggregate funding range.

APPA 21

21

[Predictive/Life Cycle Modeling]

- Focus is on building systems:
 - life span
 - system cost
- Can be applied to individual buildings or groups of buildings
- Provides, annual, average and total costs by system

APPA 22

22

[Predictive Modeling Data Requirements]

- System – Unifomat classification, level 3 or 4
- Expected life
- Cost – can be \$ or % of value
- Date of construction

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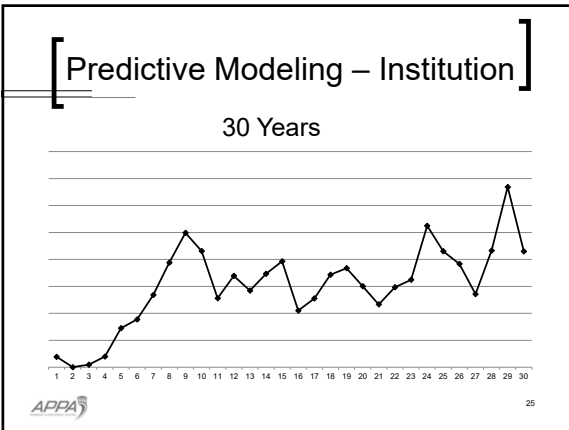
23

[Condition Assessment]

- Determines CRV based on individual building system cost
- Determines remaining life span for existing building systems
- Provides, annual, average and total costs and projects future costs
- Can determine impact of future spending on facility condition

APPA 24

24



25

[Comparison of Approaches]

University of Texas at Austin
Cost to maintain current facility condition

Approach	Outcome (\$ per year -50 yrs)
Rule of Thumb at 2.5%	\$55M
Condition Assessment	\$45M
Predictive Life Cycle	\$50M

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26

- ### [Why Do Condition Assessments?]
- “It’s not what I know that keeps me awake, its what I don’t know”
 - “What you’re telling me can’t possibly be true”
 - “Everything is broken and must be replaced right away”
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27

[Lessons Learned]

- Be skeptical, validate your data and analysis
- Take advantage of Pareto principle
- Don't drive using the rear view mirror, what's ahead is more important

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28

[Building A Successful Program]

- Trust and Credibility
- Stewardship/Sustainability
- Communication
- Prepare for Success

APPA 29

29

[Plant Renewal – Capital Renewal]

Questions, Comments, Observations

Evaluations


APPA 30

30

Resources

This topic is related to four APPA initiatives

- Total Cost of Ownership (TCO)
- Informatics (D-I-K-W)
- Facility Performance Indicators (FPI)
- Body of Knowledge (BOK)

 31

31


Resources

Stewardship

- ◆ <https://waywardjourney.com/2014/08/13/are-you-a-good-steward-or-a-bad-steward/>

Building Systems

- ◆ <https://arc-solutions.org/wp-content/uploads/2012/03/Charette-Marshall-1999-UNIFORMAT-II-Elemental-Classification....pdf>

 32

32


Resources

Informatics

- <https://www.appa.org/wp-content/uploads/2019/04/20160630APPACilitiesInformaticsMaturityMatrixTechnicalReport-4.pdf>

Facility Performance Indicators

- <https://www.appa.org/facilities-performance-indicators-fpi/>


 33

33

[Resources]

Body of Knowledge
 > <http://appa.org/BOK/index.cfm>

Total Cost of Ownership
 > <https://www.appa.org/facilities-manager/an-introduction-to-total-cost-of-ownership/>


 34

34

[Resources (APPA Bookstore)]

Campus Investment Package


- Strategic Capital Development: The New Model for Campus Investment
- Buildings...The Gifts That Keep on Taking: A Framework for Integrated Decision Making
- Planning & Managing the Campus Facilities Portfolio
- Charting a New Course for Campus Renewal (PDF)
- The Facilities Audit: A Process for Improving Facilities Conditions

 35

35

[Resources (APPA Bookstore)]

- 1996 Foundation to Uphold
- 1998 Charting a New Course for Campus Renewal
- The Decaying American Campus: A Ticking Time Bomb

 36

36