Energy Services Coalition
North Carolina Chapter

From Energy Waste to Capital Dollars

Transforming Savings Into Capital

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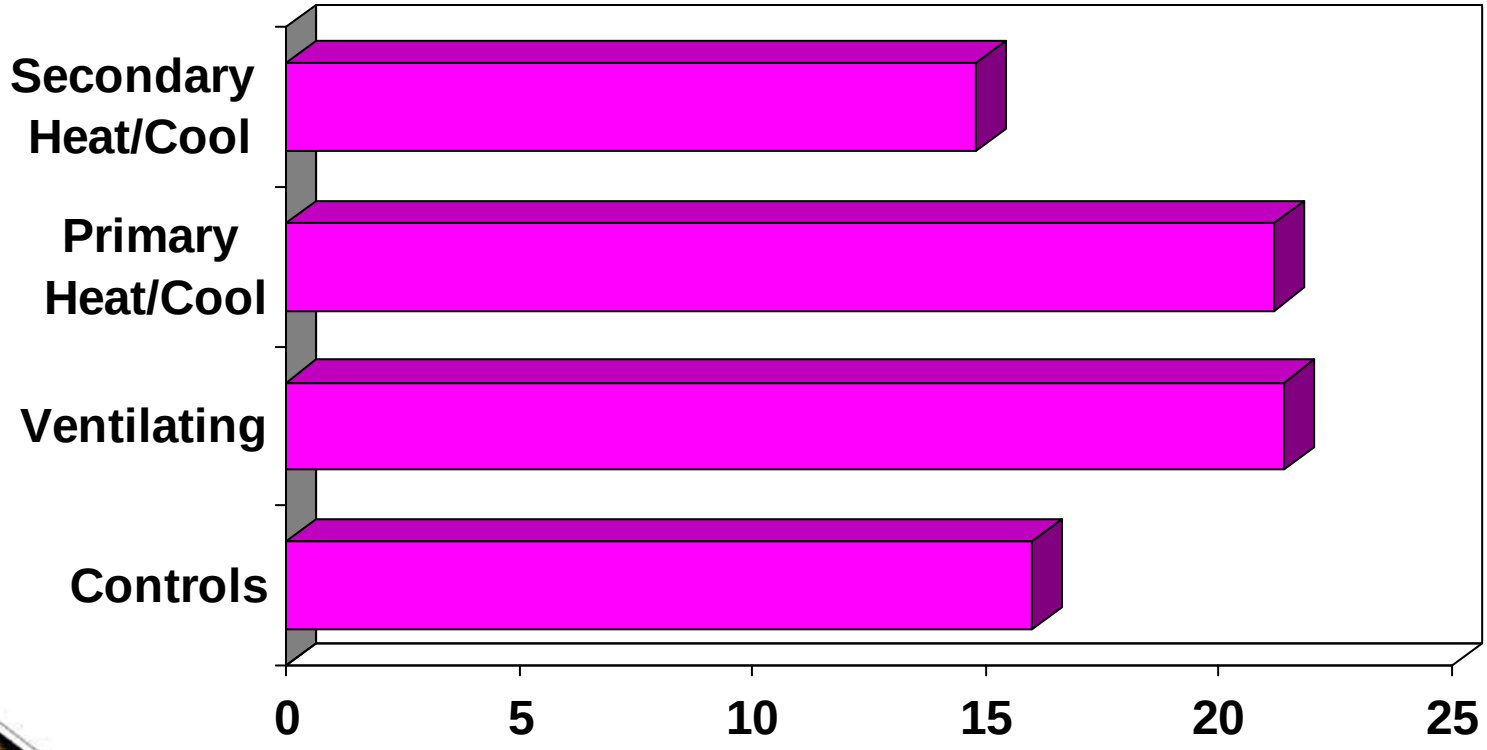
4/26/11

Equipment Service Life

ASHRAE National Survey



Options for Systems Replacement

- **Do nothing/fix on fail**
  - More expensive
  - Reactive
  - Emergency Funds
- **Capital Budget, R&R**
  - Typically short term strategy
  - Change out “like for like”
- **Performance Contracting**
  - Leverage operating budget into capital purchases
  - Comprehensive retrofits with performance guarantees

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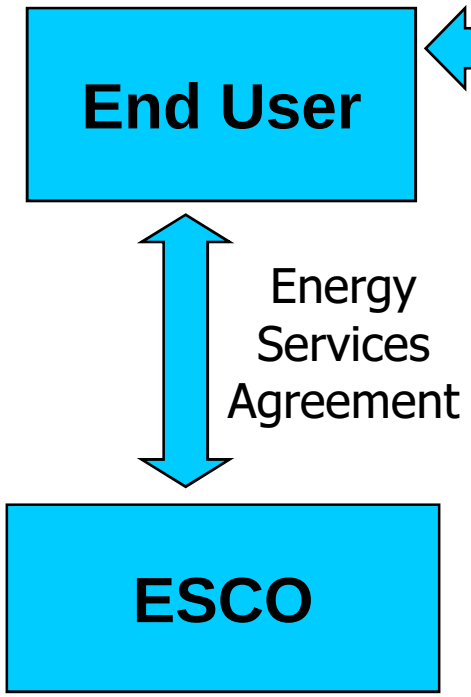
Performance Contract = ESA + Finance



- **Energy Services Agreement**
  - **Savings Guarantee**
  - **Financial Grade Backstop**
- **Finance Contract**
  - **Bank**

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Sources of Funds

Always About the Money

- **Traditional Sources of Funds**
  - Annual Appropriations, Bonds, Lottery, R&R
    - Limited capital-competing projects
    - Drying up - Never Enough
    - Informal & Formal Bidding

- **Alternative Sources of Funds**
  - Grants, Rebates, Tax Incentives
  - Performance Contracting

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Transforming Waste Into Capital

1. Use Wasted Energy to Leverage Capital
    1. *Guaranteed* Source of Funds
2. Bundle Fast & Slow Payback Measures
3. Financing
    1. Term, Rate, Escalation
    2. Use Rebates for Ongoing Services
4. PC and Traditional Procurement Methods
    1. Separate scope – Potentially Better Project
        1. Informal/Formal Bidding, Cooperative Purchasing
        2. Traditional Sources of Capital Required However

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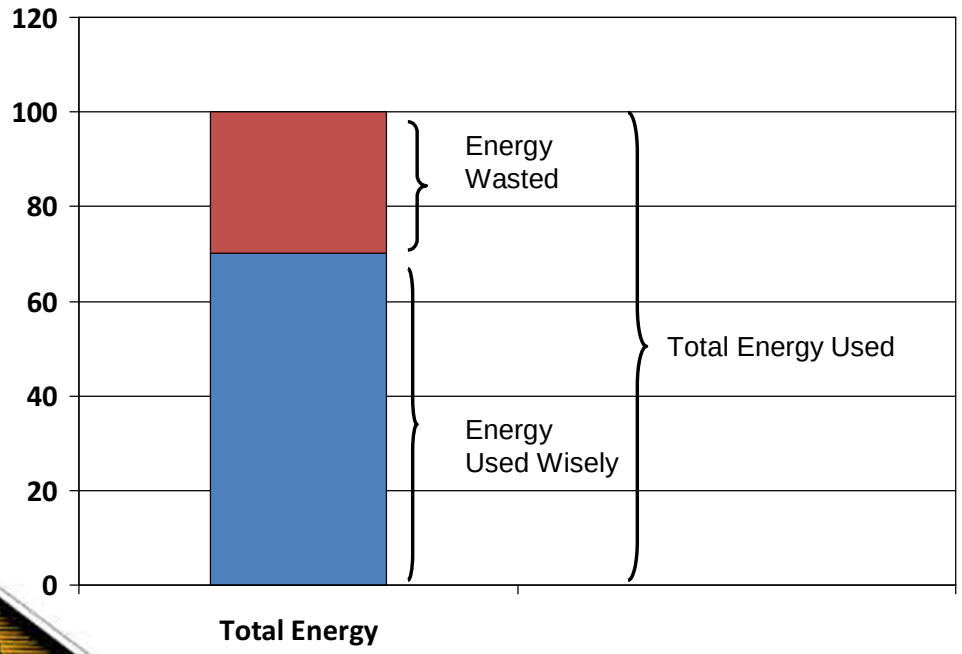
#1 Use Wasted Energy as *Source of Funds*

- Total Energy Consumption
  - Energy used wisely
  - Energy wasted



- If choose not to invest in efficiency, you choose to *continue to waste!*

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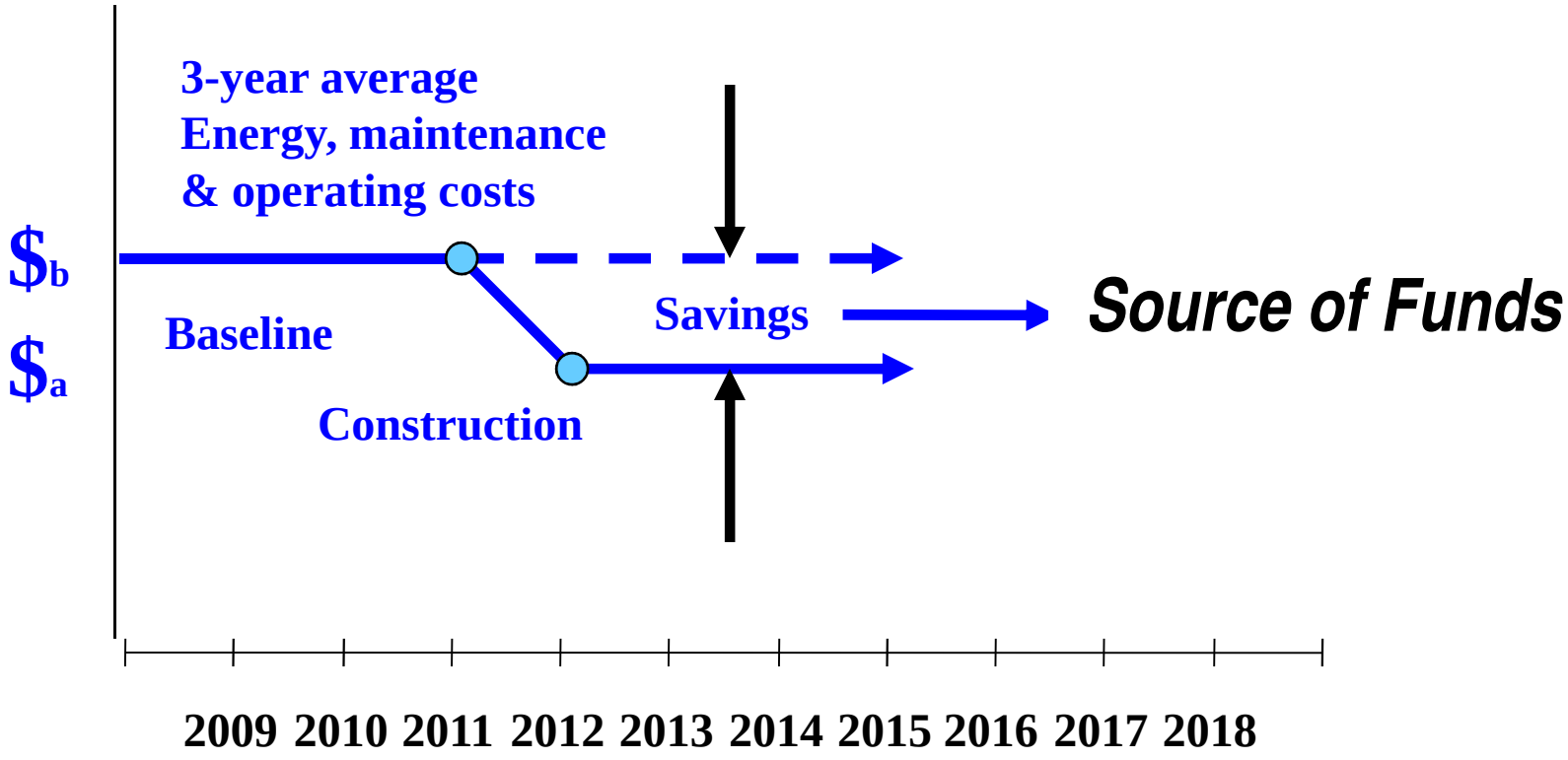
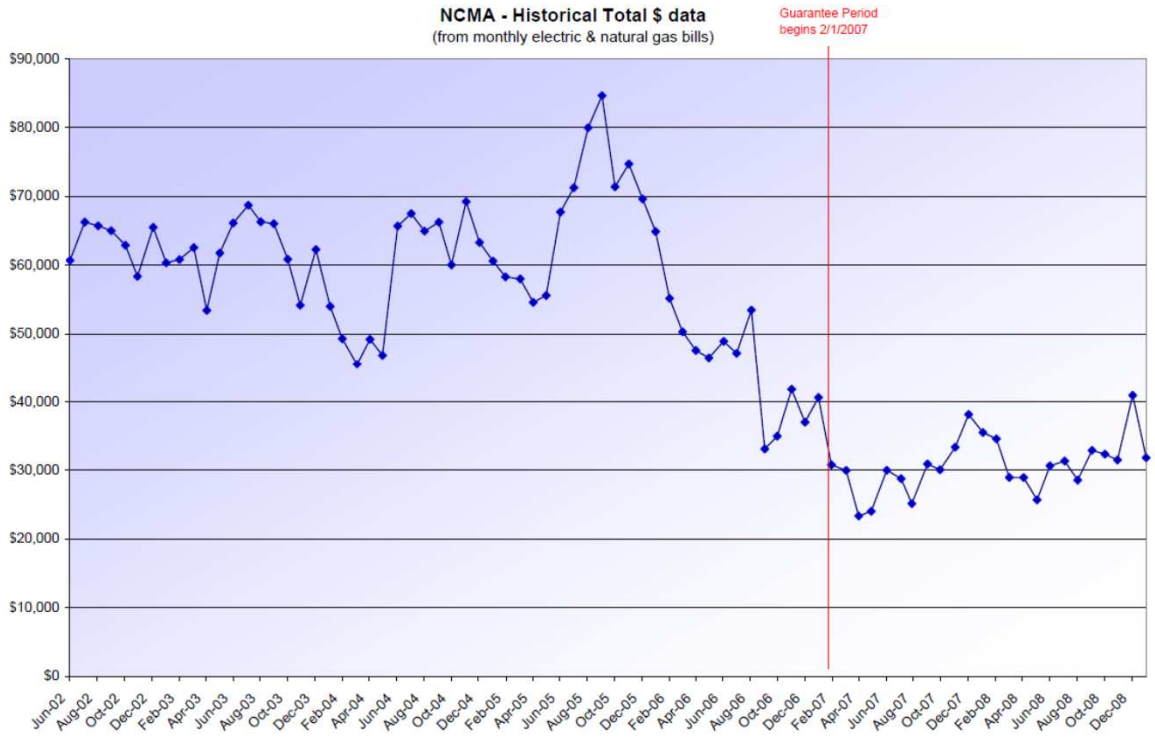
Your Wasted Energy Clock is Running!

#1 Use Wasted Energy as *Source of Funds*



North Carolina Museum of Art

Measured & Verified – 60% Savings



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Highest Museum Environmental Rating

ASHRAE - AA

#2 - Blend Fast & Slow Paybacks

Upgrade	Cost	SPB
Chiller System Upgrade	$1,250,000	17
Boiler Upgrade	$550,000	8
Insulation	$225,000	10
Underground Piping	$200,000	20
Windows	$500,000	40
Other HVAC	$350,000	20
Total	**$3,075,000**	**19.15**
Commissioning	$350,000	2
Controls Upgrade	$1,000,000	8
Lighting Upgrade	$2,000,000	4
Total	**$6,425,000**	**11.77**

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#3 –Finance Strategy – Example

		1	2	3	4	5	14	15
Net Annual Savings		$ 1,000,000	$ 1,020,000	$ 1,040,400	$ 1,061,208	$ 1,082,432	$ 1,293,607	$ 1,319,479
Annual Savings	$1M							
Interest Rate	5.00%							
Escallation	2.00%							
Term	15 Years							
Net Present Value	**$11,753,811**							

- $1M Annual Savings
  - More annual savings=larger project
  - Longer Term=larger project
  - Lower cost funds=larger project
- 2% Escalation/year
- 15 Year Term

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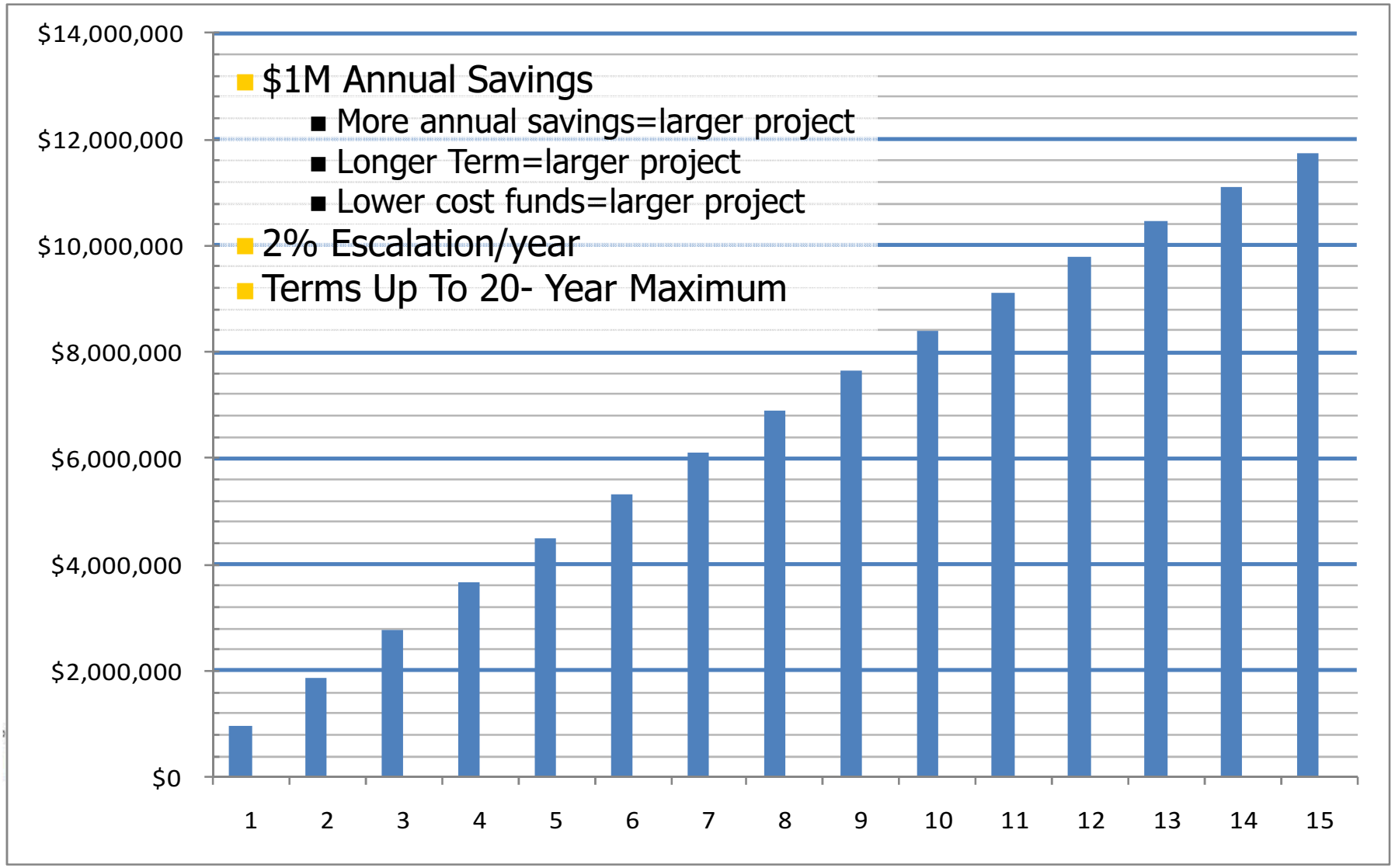
Wasted Energy Leveraged Into Capital

#3 –Finance Strategy –Term Leverage



#4 PC and Traditional Procurement Methods

Hybrid Approach

- Separate Scopes & Contracts
  - Traditional – Fund Slow/No Payback Measures
  - PC – Fund Measures with Paybacks
  - Informal/Formal Bidding, Cooperative Purchasing
    - Traditional Sources of Capital

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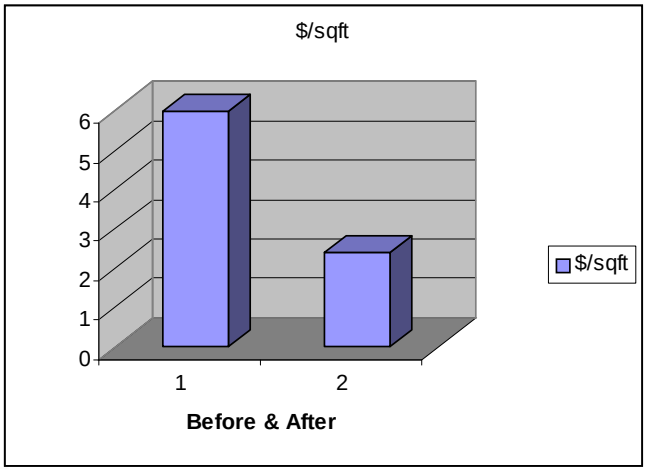
PC + Traditional Methods = Better Project

North Carolina Museum of Art

- First NC PC Project – State Agency
- $5M contract
- HVAC infrastructure renewal
- Critical environment control
- Over $1B in artwork
- 58% guaranteed energy reduction



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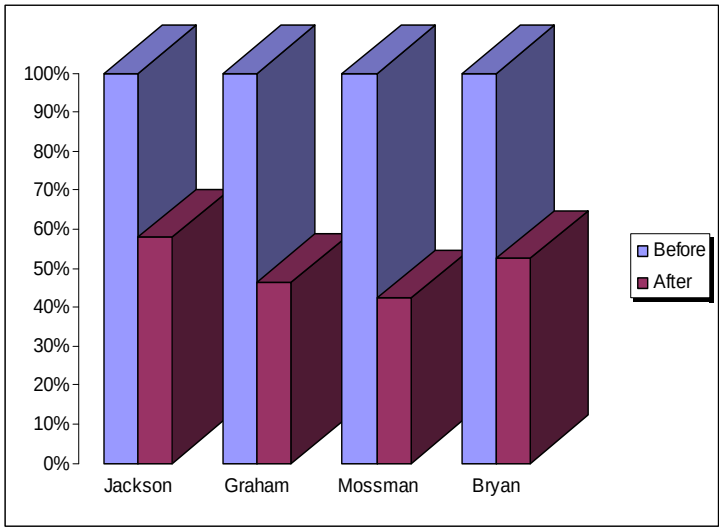
University of North Carolina at Greensboro

- 1st UNC PC Project
- $5.8M
  - HVAC Systems
  - Lighting
  - Commissioning
  - Water Conservation
- Savings 40-50%

THE UNIVERSITY of NORTH CAROLINA
GREENSBORO
Inspire. Change.



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UNC Pembroke – Deferred Maintenance

- Current R&R backlog: $21,700,000
- Typical annual R&R funding: $1,600,000
- Campus inventory
  - 52 buildings on 151 acre campus; 1.4 million GSF
- 2008 R&R
  - No funds from State
- 2009 R&R:
  - Received roughly half of typical R&R funding = $700,000
- 2010 R&R
  - No funds from State

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UNC Pembroke – Deferred Maintenance

- UNCP Performance Contract:
  - Oxendine Science Complex, Old Main (academic), Livermore Library, and Jones Health & PE Complex.
- Guaranteed Total Cost savings: $7,499,720
- Total Financed Project Costs: $4,500,000
  - Including third party consulting
- Total Value of Hard Costs: $3,464,352
- 27+ ECM's
  - Lighting Upgrades, Lighting Controls, Water Conservation, Building Envelope/Weatherization, DDC System upgrades, Boiler Plant Upgrades, HVAC Upgrades, Retro-commissioning

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Summary

1. Convert Wasted Energy to Leverage Capital
2. Bundle Fast & Slow Payback Measures
3. Financing Strategy
4. Use Rebates for Ongoing Services
5. Combine PC and Traditional Methods
6. Create Green Jobs

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From Wasted Energy to Capital Investment!