Procurement & Project Financing Made Easier

EE NOW Summit

Anchorage, AK

March 4, 2015

Introduction

- Procurement recommendations
- Contract mechanisms
- Cost of delay
- Financing and funding options

Learning objective – An awareness of procurement considerations, financing and funding options for energy efficiency projects and the cost of waiting.

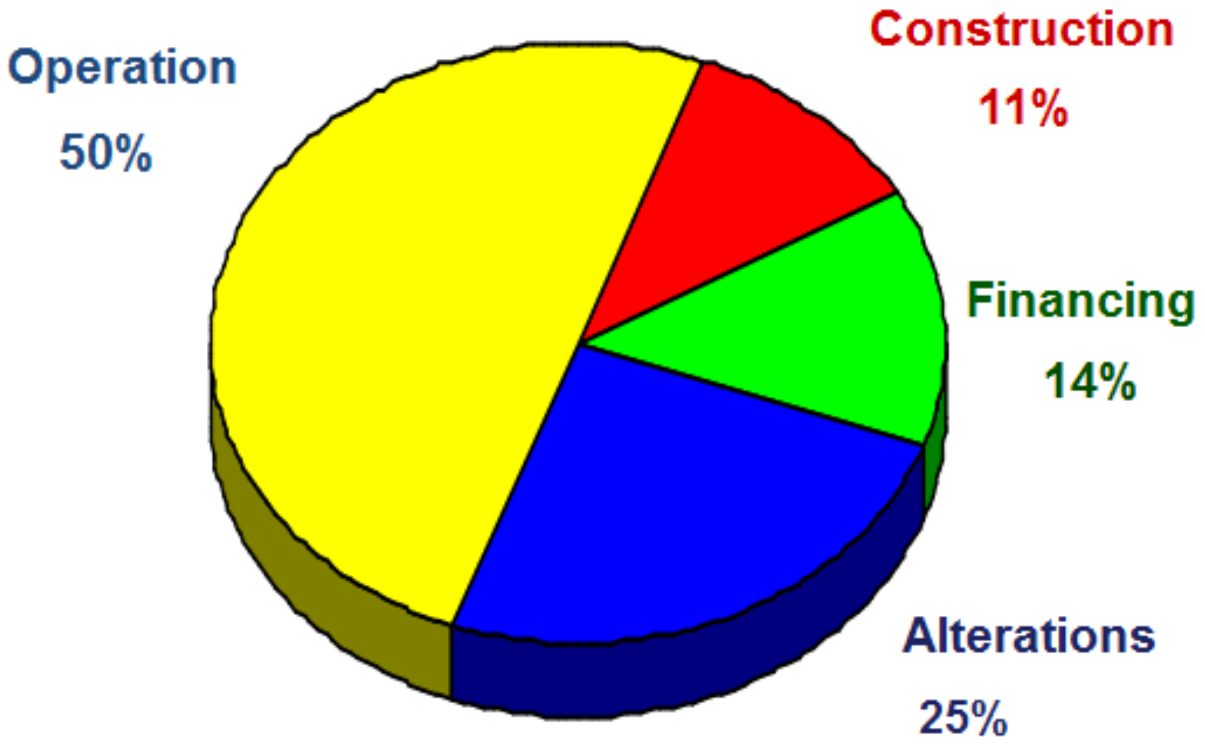
Introduction

- Three questions:
  - What is your organization's mission?
  - Is the procurement of efficiency a hurdle for you?
  - Do you know where to go to get a project funded or financed?

Affordability

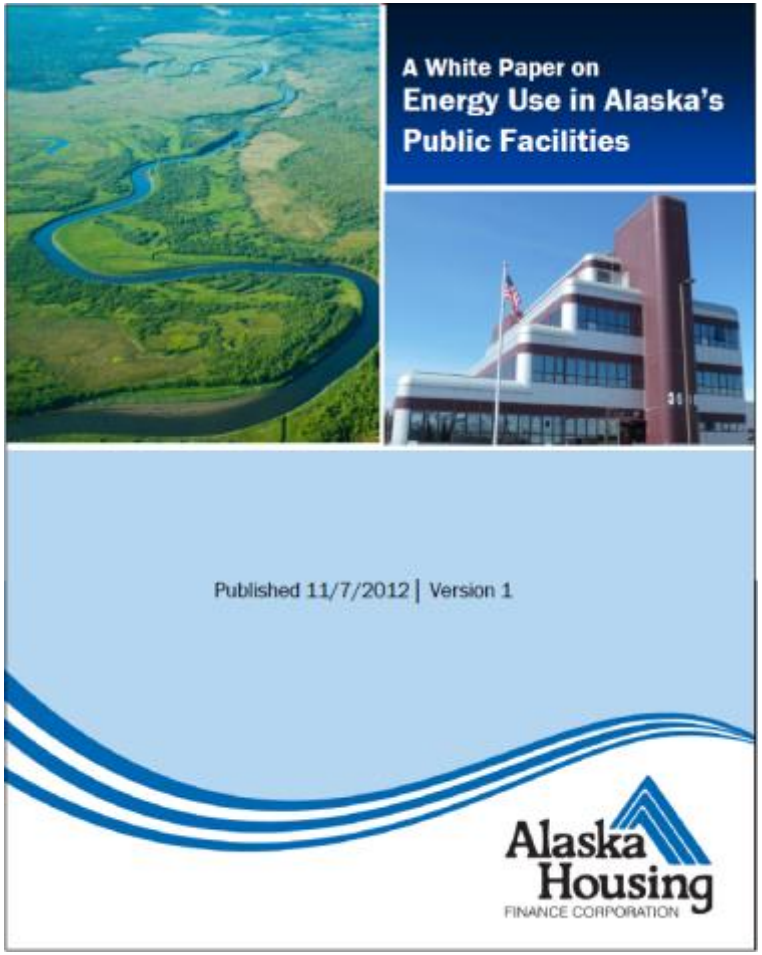
The Big Picture: Lifecycle Costing

A buildings' costs over 40 years



Source: ASHRAE

AHFC Energy Audits



www.ahfc.us

- >1,200 buildings benchmarked
- 327 buildings, 13.6 M sf audited
- Avg. building size - 41,864 SF, **avg. building age 33 years**
- Electric costs varies from $.08/kWh to $.80/kWh
- $641 million (est.) for all public commercial buildings statewide
- **$125 million (est.) potential annual savings**

Alaska Housing FINANCE CORPORATION

Work Flow

Procurement Recommendations

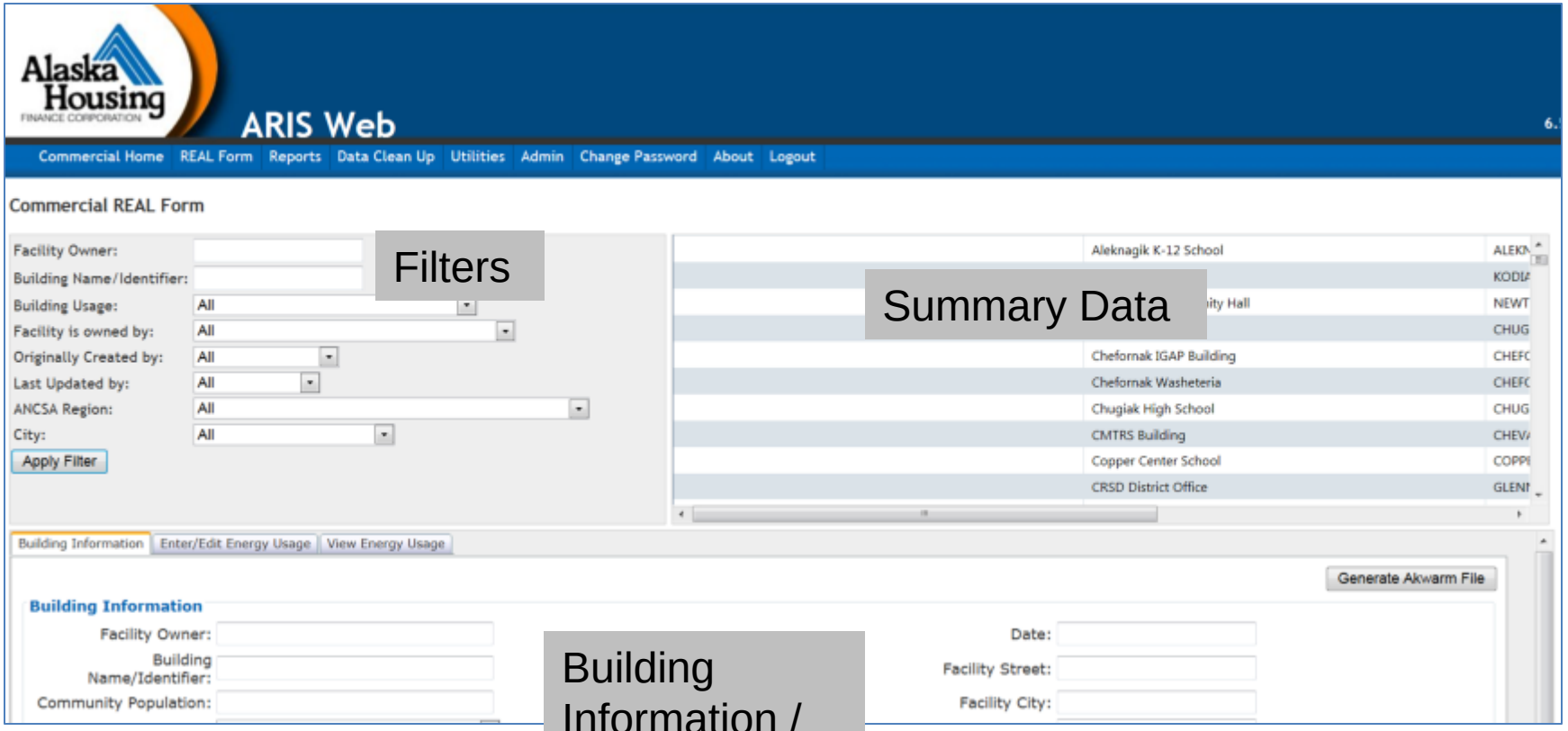
- Benchmark your facilities
  - Track energy use and cost over time
  - Compare your facility to other facilities

<u>Concept</u>

Cannot manage what you do not track

Procurement Recommendations

- Benchmark your facilities



Procurement Recommendations

- Get an Energy Audit
  - ASHRAE Level 1
    - Brief on-site survey of building
    - Identifies no-cost/low-cost changes
    - Identifies potential capital improvements for consideration

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  - ASHRAE Level 2
    - More detailed building survey
    - Breakdown of energy use
    - Savings and cost analysis on all EEMs
    - Identification of capital intensive EEMs requiring more through data collection and analysis

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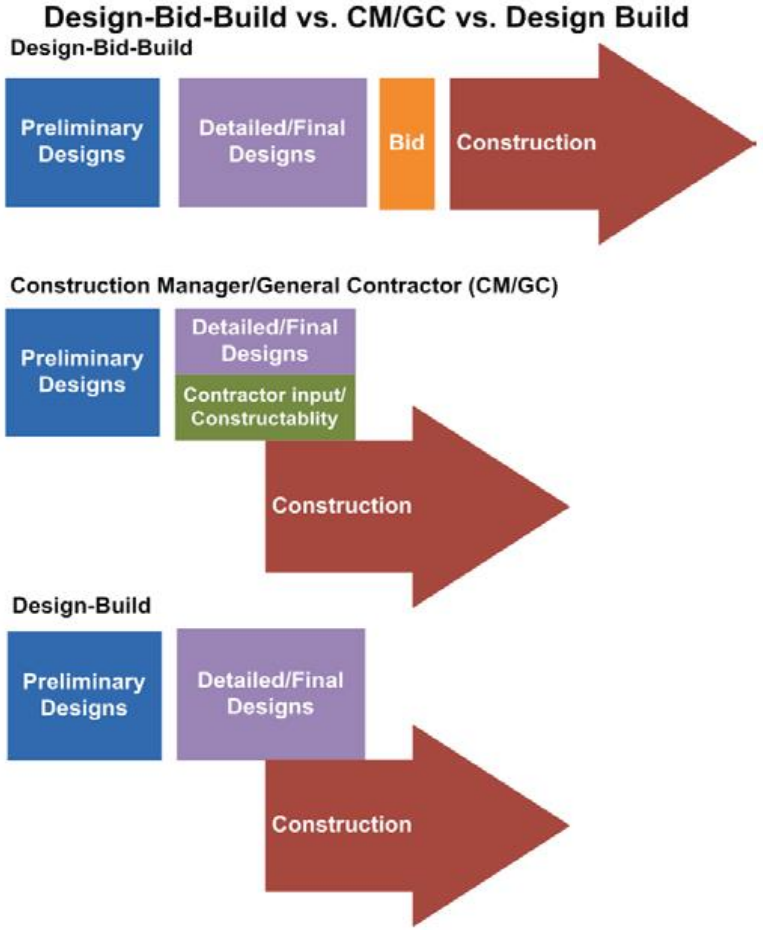
    - Breakdown of energy use
    - Savings and cost analysis on all EEMs
    - Identification of capital intensive EEMs requiring more through data collection and analysis
  - ASHRAE Level 3
    - More rigorous analysis and engineering for major capital improvements

Procurement Recommendations

- Scope
  - Informed by IGA recommendations
  - Cross checked with:
    - Preventative Maintenance Schedule
    - Capital Improvement Plan
    - Code deficiencies list
  - Discussed with Operations and Maintenance team

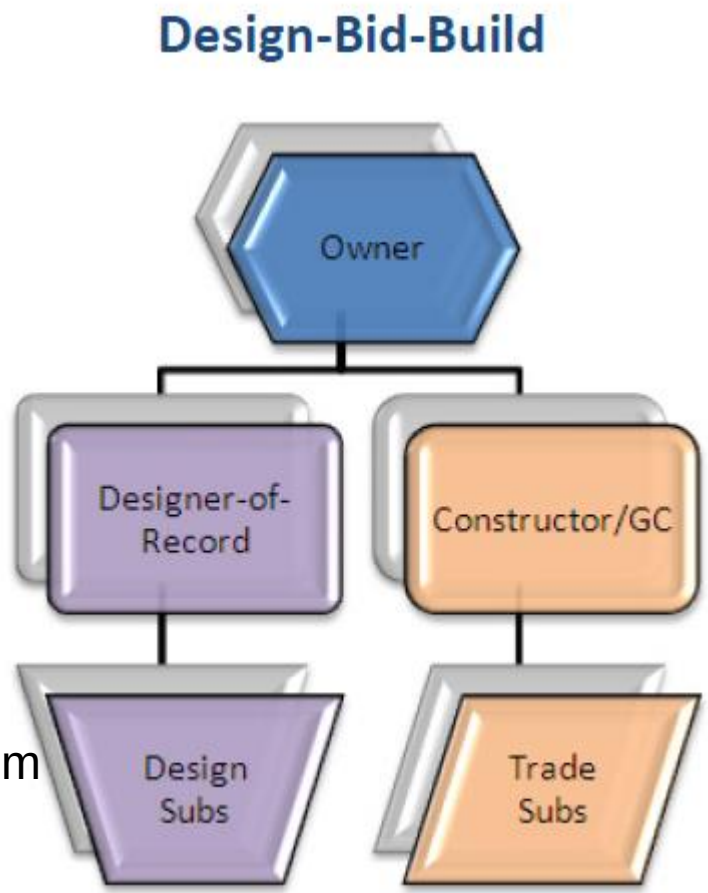
Contract Types

- Choose the contract type that improves project delivery and helps achieve sustainability goals



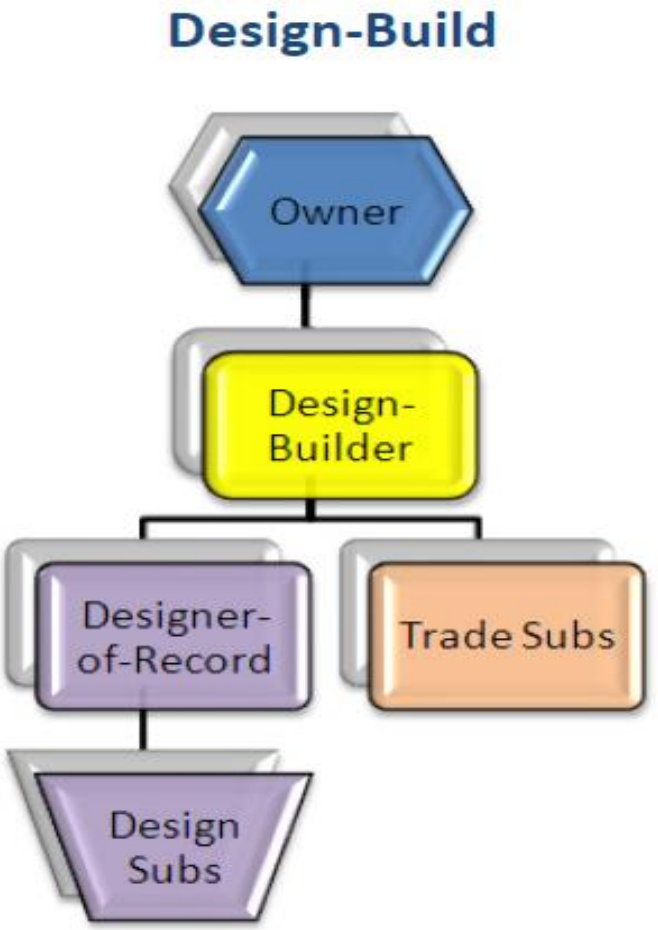
Contract Types

- Design-Bid-Build
  - Pros
    - Commonly used
    - Roles are clear
    - Easy to manage
    - Defined requirements & fixed price
  - Cons
    - Slow & can be more $$$
    - Design suffers from lack of input from contractors
    - Split accountability



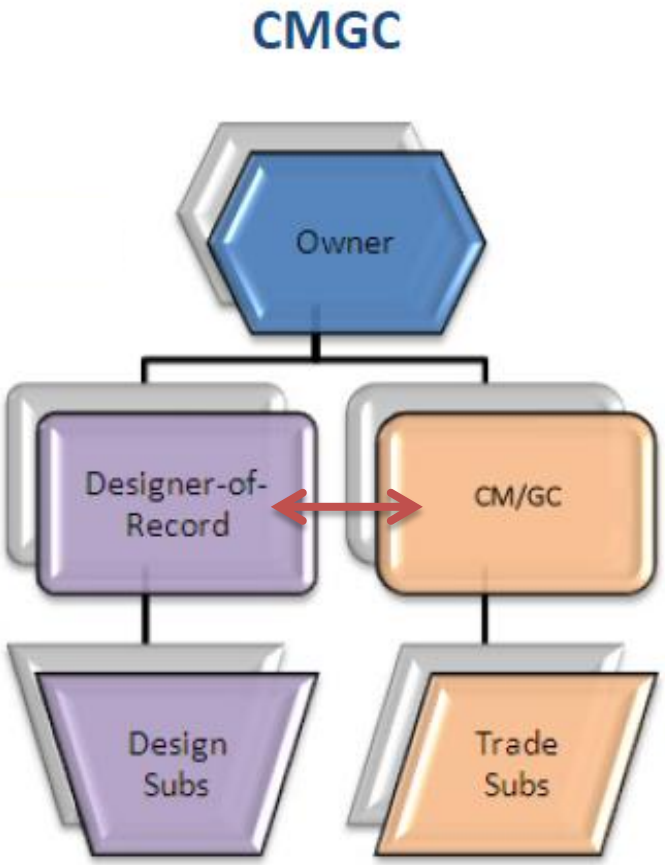
Contract Types

- Design-Build
  - Pros
    - Shortened Timeframe
    - Applied Innovation
    - Performance Guarantee possible
    - Increased Certainty of Final Cost
    - Increased Quality (DB Team has design & construction responsibility)
    - Reduced Owner Staffing
    - Less Management Effort
    - Less Conflict
  - Cons
    - A/E not acting as owners agent
    - Owner has less control over design
    - Potentially less competition



Contract Types

- Construction Management & General Contractor
  - Pros
    - Greater cost certainty due to collaboration
    - Performance Guarantee possible
    - Risk reduction
    - Applied innovations
    - Front end value engineering
  - Cons
    - CM has normal GC conflict of interest
    - No normal CM advocacy



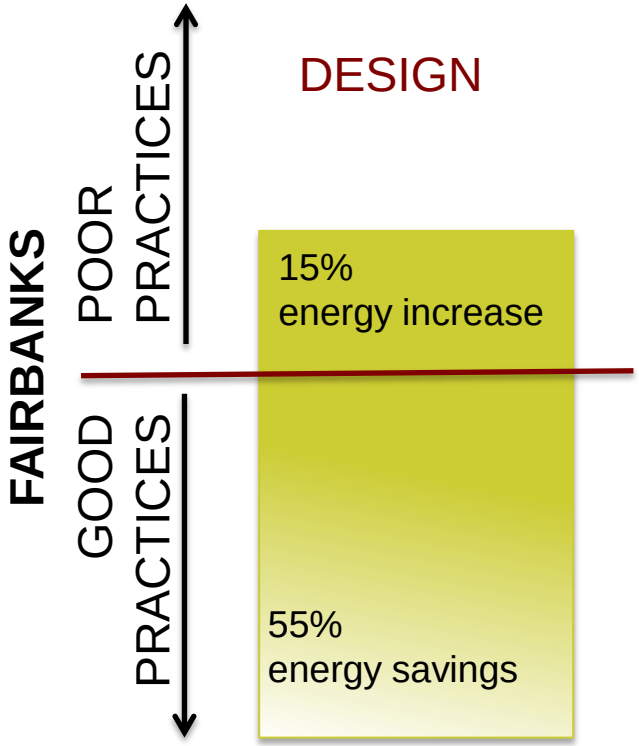
Procurement Recommendations

❑ Design

- In solicitation, specify:
  - Facility objective, size, location and user requirements
  - Maintainability, access and operational requirements
  - Temperature, humidity, ventilation, acoustics, pressure relationships
  - Sustainability and efficiency goals, **include specific design standard**
  - Occupancy/operations schedules
  - **Training requirements**
  - Project Schedule
  - Project Budget
  - **Performance Guarantee** or other Special requirements

Procurement Recommendations

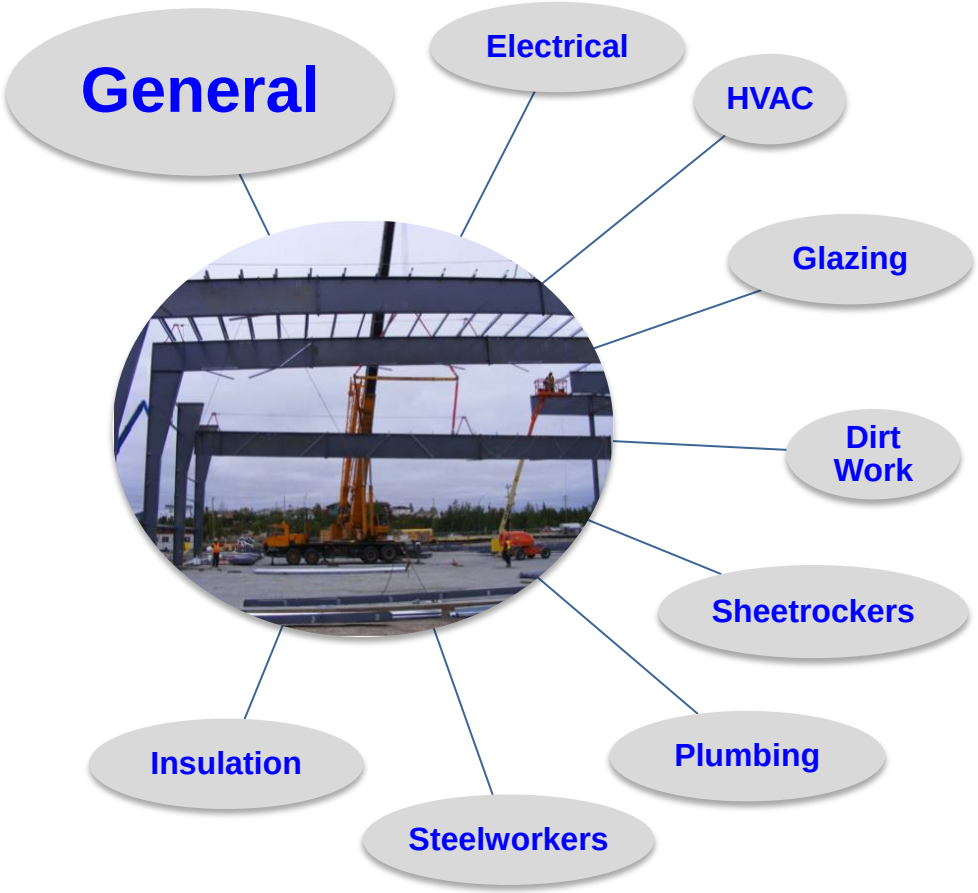
- Design



Sensitivity Analysis, New Buildings Institute. 2011
http://newbuildings.org/sites/default/files/NBISensitivityReport.pdf

Procurement Recommendations

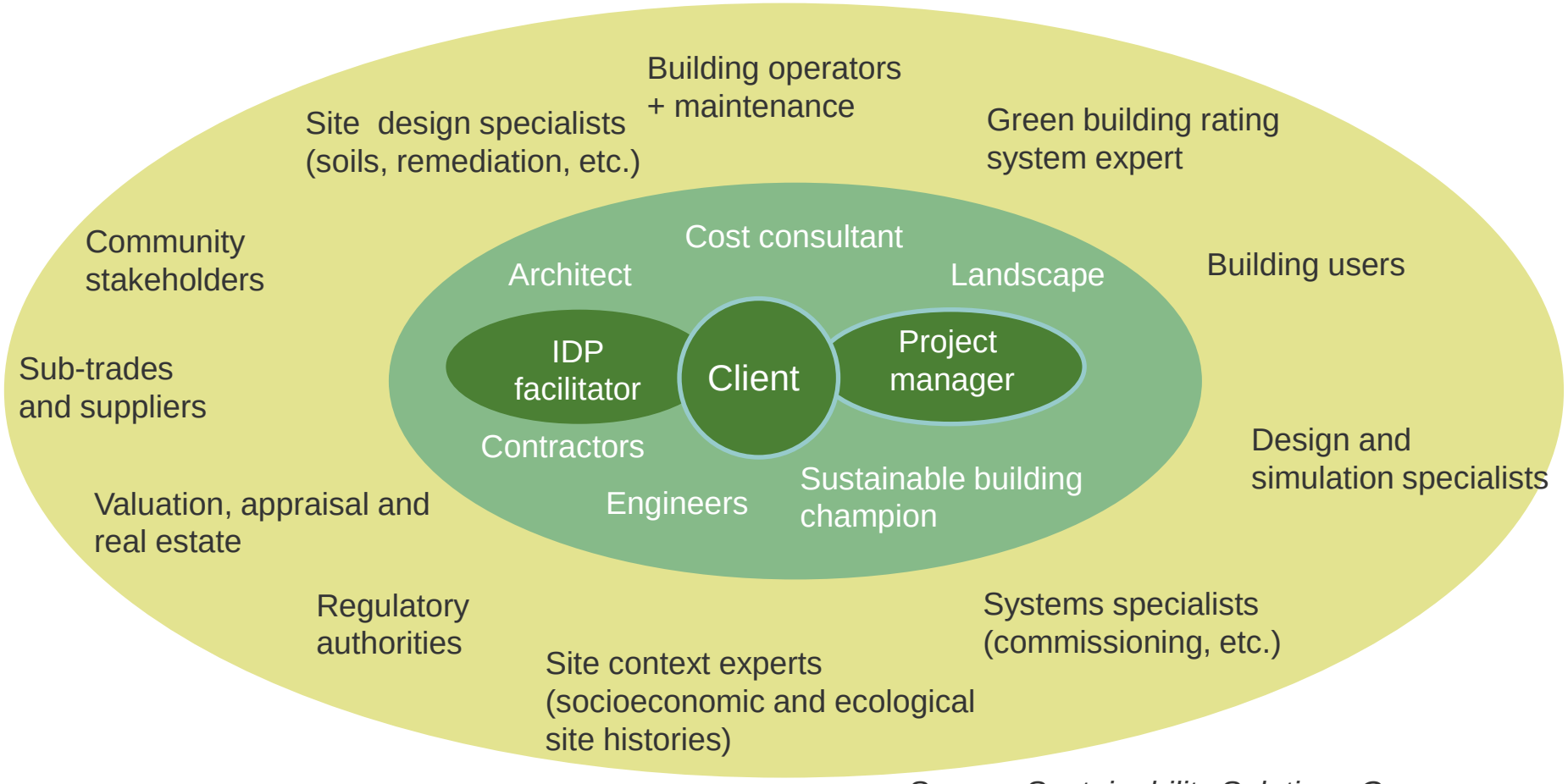
- Construction Management



***ALL* contractors play a critical role in building efficiency!**

Procurement Recommendations

- Integrative Design Process

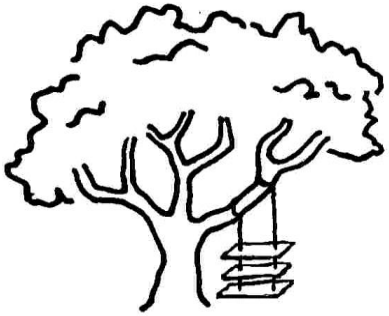


Source: Sustainability Solutions Group

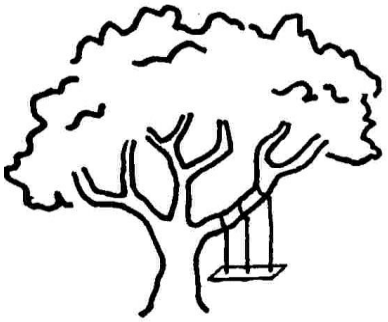
Procurement Recommendations

- Integrative Design Process
  - Avoids this

Getting what you wanted through design and construction…

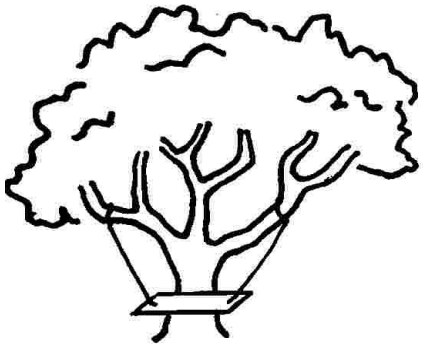


WHAT MARKETING SUGGESTED

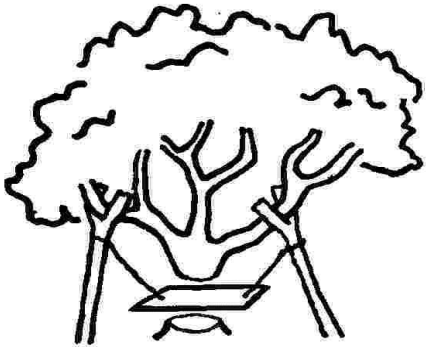


WHAT MANAGEMENT APPROVED

AS DESIGNED BY ENGINEERING



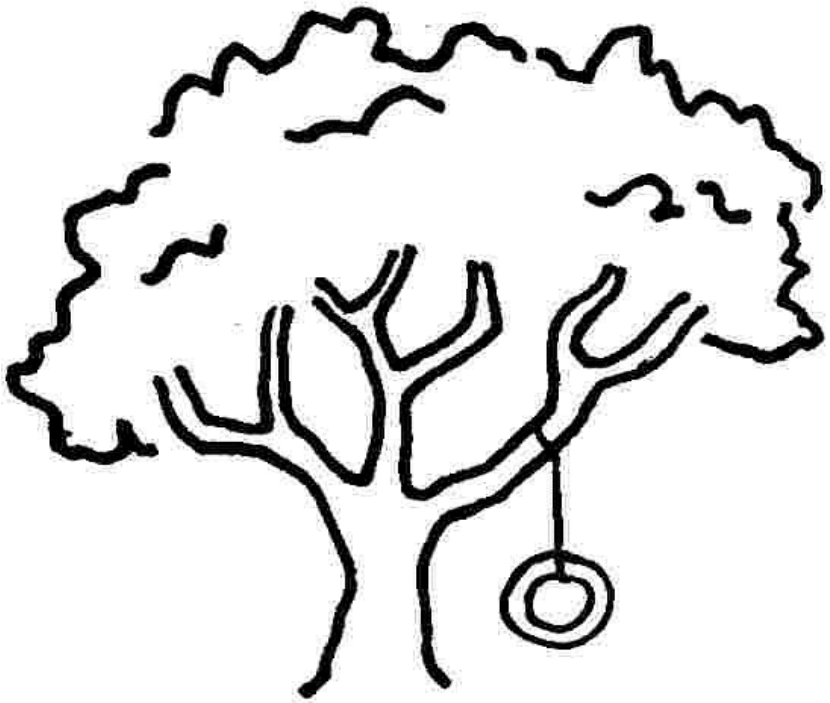
AS MANUFACTURED



AS INSTALLED

Procurement Recommendations

- Integrative Design Process
  - And helps get you this



WHAT I REALLY WANTED !!

Procurement Recommendations

❑ Commissioning

Average results from over 560 buildings across the country.

Reduction in energy consumption	16% Savings
Annual energy cost savings	$0.29 per square foot
Simple payback	1.1 year
Cash-on-cash returns (First Year Savings / Project Cost)	91%
Benefit-cost ratio (Project Lifetime Benefits / Project Cost)	4.5

-Lawrence Berkeley National Laboratory (2009)

"Simple payback for a retro-commissioning project is typically less than two years and often less than one year." *-Portland Energy Conservation, Inc. (PECI) and EPA*

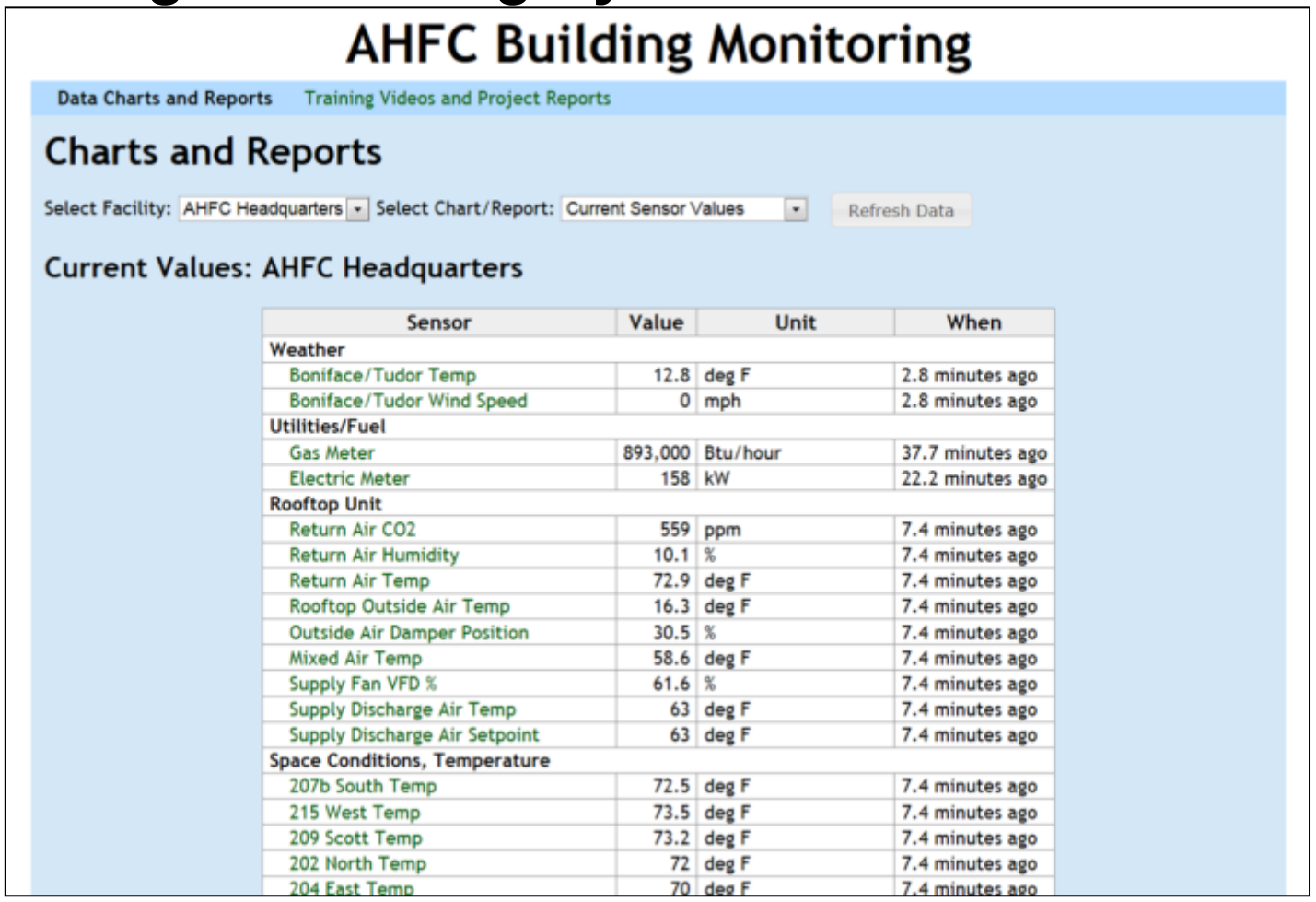
Procurement Recommendations

- Measurement and Verification (M&V)
  - Establishes impact of efficiency measures
  - Mechanism to confirm Performance Guarantee
  - M&V should be balanced with project size/complexity

Verifying flow at a boiler.

Procurement Recommendations

❑ Building Monitoring System



AHFC Building Monitoring

Data Charts and Reports | Training Videos and Project Reports

Charts and Reports

Select Facility: AHFC Headquarters | Select Chart/Report: Current Sensor Values | Refresh Data

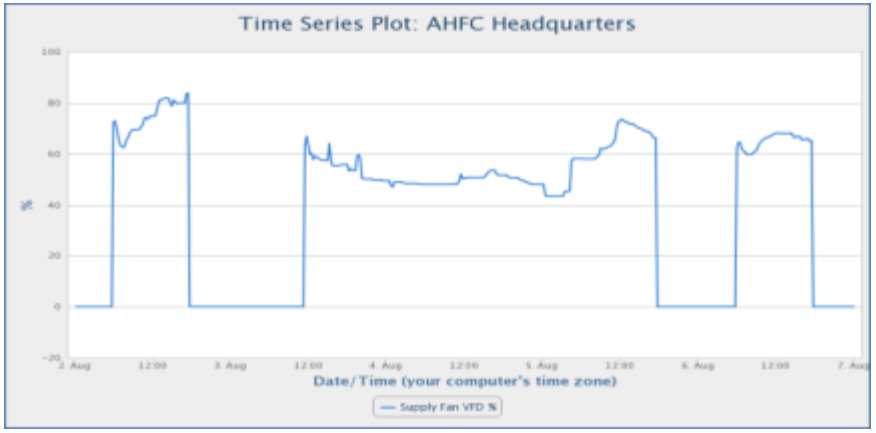
Current Values: AHFC Headquarters

Sensor	Value	Unit	When
Weather			
Boniface/Tudor Temp	12.8	deg F	2.8 minutes ago
Boniface/Tudor Wind Speed	0	mph	2.8 minutes ago
Utilities/Fuel			
Gas Meter	893,000	Btu/hour	37.7 minutes ago
Electric Meter	158	kW	22.2 minutes ago
Rooftop Unit			
Return Air CO2	559	ppm	7.4 minutes ago
Return Air Humidity	10.1	%	7.4 minutes ago
Return Air Temp	72.9	deg F	7.4 minutes ago
Rooftop Outside Air Temp	16.3	deg F	7.4 minutes ago
Outside Air Damper Position	30.5	%	7.4 minutes ago
Mixed Air Temp	58.6	deg F	7.4 minutes ago
Supply Fan VFD %	61.6	%	7.4 minutes ago
Supply Discharge Air Temp	63	deg F	7.4 minutes ago
Supply Discharge Air Setpoint	63	deg F	7.4 minutes ago
Space Conditions, Temperature			
207b South Temp	72.5	deg F	7.4 minutes ago
215 West Temp	73.5	deg F	7.4 minutes ago
209 Scott Temp	73.2	deg F	7.4 minutes ago
202 North Temp	72	deg F	7.4 minutes ago
204 East Temp	70	deg F	7.4 minutes ago

Procurement Recommendations

❑ Building Monitoring System

- ❑ Consider Building Monitoring System in Scope
- ❑ AHFC Headquarters Case Study
- ❑ Observers noted an anomaly with Supply Fan run times and capacity
- ❑ Actions taken as a result of observations result in $9,270/yr.

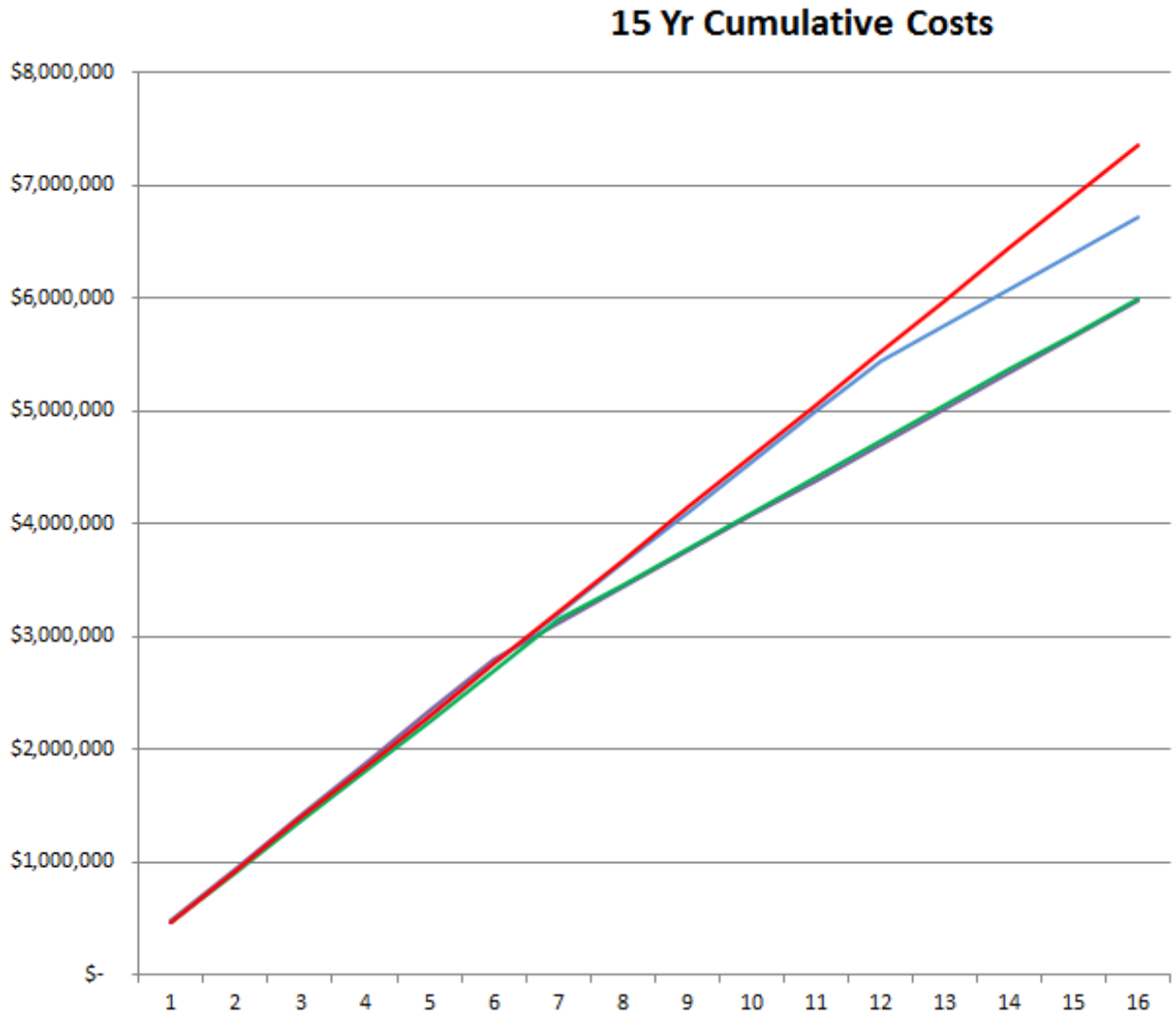


Cost of Delay – Case Study

Cost of Delay – Case Study

Pre-Retrofit Annual Energy Expenditure	$ 460,000	Cost for Improvements	$ 563,000	Loan Term (yrs.)	6	Closing Costs*	$ 6,103
Post Retrofit Annual Energy Cost Savings	$ 143,000	Design/Eningeering	$ 84,450	Interest Rate	2.500%	Loan Amount	$ 726,743
Post Retrofit Annual Energy Savings %	31%	Project Management	$ 16,890	Number of Payments per year	12	Interest on Loan Amount	$ 56,623
Energy Cost Annual Escalation Rate	0.0%	Contingency	$ 56,300	Down Payment	$ -	Total Paid (Loan Payments + Down Payment)	$ 783,366
		Project Costs - Down Payment	$ 720,640			*Loan Fee (with Commitment fee applied) + Document Prep/Legal $2,500. Adjust Closing Costs formula in J6 to reflect project costs above $1M	

Cost of Delay – Case Study

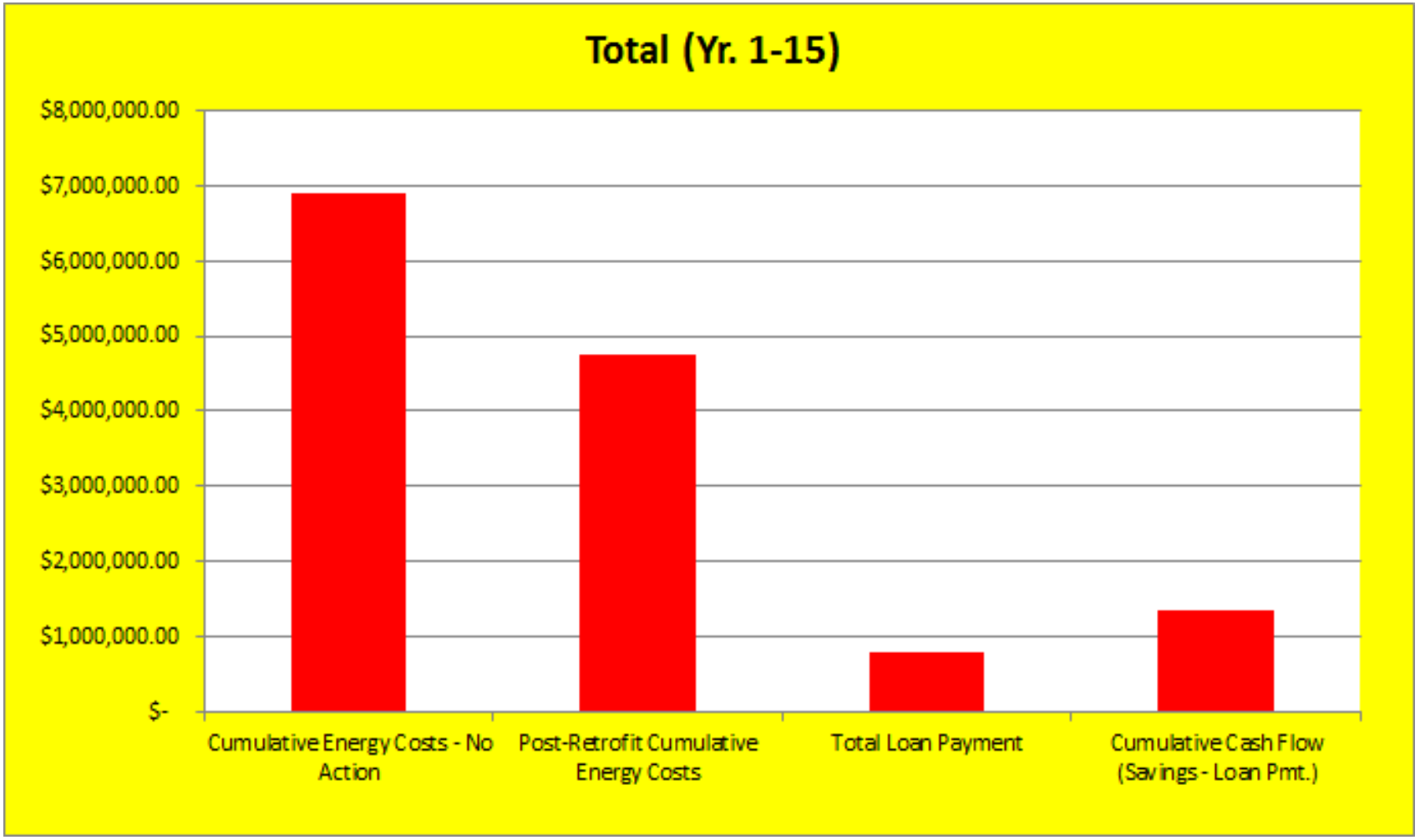


Appropriation Awarded Year 5:
$1,387,500

Loan, Immediate Action:
$1,361,634

Loan, 5 Year Delay:
$646,634

Cost of Delay – Case Study



Financing Options

How do I pay for all of this?

The State of Alaska has been very supportive of energy conservation efforts

Financing Options

- Alaska Energy Authority
  - Commercial Building Energy Audit Program (CBEA)
    - Reimburses cost of level II audit
    - For privately owned buildings
      - Includes non-profits
    - Competitive award

Financing Options

- Alaska Energy Authority
  - Village Energy Efficiency Program (VEEP)
    - Population under 8,000
    - For energy efficiency improvements
      - Municipalities, cities, school districts, unincorporated villages, Native regional and village corporation, 501(c)3 tribal consortiums, regional housing authorities, and traditional councils
    - Competitive award
    - Public and community buildings and infrastructure in small, high energy costs areas

Financing Options

- Alaska Industrial Development and Export Authority
  - Loan participation for Qualified Energy Developments
    - Commercial buildings
    - Originated by bank or credit union
    - AIDEA funds 90% of the project, lender funds 10%

Financing Options

- Alaska Industrial Development and Export Authority
  - Sustainable Energy transmission and Supply (SETS)
    - Projects that transmit, generate, conserve, store, or distribute heat or electricity
    - Provides one third funding of project costs

Financing Options

- Alaska Housing Finance Corporation
  - Alaska Energy Efficiency Revolving Loan Program (AEERLP)
    - Local governments, school districts, the University
    - Energy efficiency improvements as identified in an ASHRAE level II audit
    - Unsecured
    - Energy savings used to pay back the loan

Financing Options

- Community Commerce and Economic Development
  - Alternative Energy Conservation Loan Fund
    - Purchase, construct, install alternative energy systems
    - Must produce alternative energy or conserve energy
    - Alaska residency requirement
    - If over $30,000, need financial institution decline letter

Financing Options

- Commercial Lenders
  - Lender originated to lender standards
  - Offers commercial financing
  - May be more restrictive than state programs

Financing Options

- USDA Rural Energy for America (REAP)
  - Agricultural producers and rural small business
  - Purchase & install renewable energy systems or energy conservation improvements
  - Loan guarantees and grants
  - REAP funding limited to 75% of project costs

Alaska Housing FINANCE CORPORATION

Financing Options

- Rural Community Assistance Program (RCAC)
  - Non-profits, public bodies and tribal governments
    - Must provide public benefit
  - For-profit business loans
    - Must provide employment opportunities
  - Housing loans, community facility loans, small business and green lending loans

Financing Options

- Government Appropriation
  - Through legislative process
  - Not a loan
  - Limited resources
  - Determine cost of delay

Financing Options

- AEERLP and OMB
  - November 21, 2014 memo outlining the process for third party financing
  - Directly addresses energy efficiency projects and the state budget process
  - SB220 authorized agencies, school districts and the university to borrow funds.
  - Provides forms to obtain OMB approval

Thank You

Alaska Housing Finance Corporation

http://www.ahfc.us/efficiency/energy-programs/

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