

## 14<sup>th</sup> National Conference on Building Commissioning

San Francisco

The Fairmont

April 19 – 21, 2006



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## CSU Energy & Sustainability Policy

- Energy Conservation Goal –15% by 2009/10
- Purchase of Renewable Energy –20% by 2010
- On-site Generation – 50 MW by 2014
- Efficient & Sustainable Building Design
  - Exceed Title 24 by 15% (new), 10% (existing)
  - Develop Self Certification Sustainability Measurement System
  - Training

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The  
California  
State  
University  
Office of the Chancellor

## Commissioning Guideline for CSU Capital Projects

[http://www.calstate.edu/cpdc/ae/guidelines/commissioning\\_guidelines.pdf](http://www.calstate.edu/cpdc/ae/guidelines/commissioning_guidelines.pdf)

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**Process Case Study UC/CSU/IOU  
Partnership MBCx Program**

- ✓ Common Steps
- ✓ Site-Specific Steps
- ✓ Common Steps

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**Common Steps**

- Install/Augment/Calibrate/Monitor
  - Verify Baseline

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**Site-Specific Steps**

- ✓ Monitor 2 Days Warm Weather
  - ✓ Identify CW Loop Imbalance
- ✓ Adjusted Controls
- ✓ Observe Fan Speed Reduction 40%

? Could this measure have been identified by other means? Probably

? Prior to MBCx No

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## Common Steps

- ✓ Document Post Measure Energy Use
- ✓ Continue Trend Evaluation
  - ✓ Ensure Savings Persistence with Operational Savings

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## Common Steps

- ✓ Install/Augment/Calibrate/Monitor
  - ✓ Upgrade Power & Gas Meters
- ✓ Verify Baseline
  - ✓ Add EIS

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## CSU Results

MBCx Project Name	GSF	Baseline Energy (MBTU/GSF)	MBCx Results (MBTU/GSF)	% Efficiency Improvement
Long Beach – Lab	91,390	79.691	77.526	3%
East Bay – Classroom	362,200	59.337	58.126	2%
San Marcos – CP	700,000	14.623	11.512	21%

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## The Commissioning Conundrum

# I can't afford it

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## 'E' Speak

- Commissioning in Engineering Terms
  - A systematic process of ensuring that building systems perform interactively according to the contract documents, the campus objectives and operational needs.
  - The objective of commissioning is to provide documented confirmation that a facility fulfills the functional and performance requirements of the building, campus, occupants, and operators.

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## 'E' Speak

- Commissioning in Economic Terms
- *"If the NPV of the avoided cost isn't greater than the asset value of the equipment you're fixing I'm not interested"*
- *Today's \$\$*
- *Cost Savings*
- *Equipment Useful life*
- *Life-cycle cost*

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## Decision Matrix

To Commission	Win	Type 1 Failure Loss limited to Cost of Cx
or Not	Type 2 Failure Unlimited loss Cost of doing nothing	Win

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## Selling Commissioning

- State Commissioning Plan 10 words or less
- Know what is important to your stakeholders
- Direct your statement(s) or text to the stakeholders
- Make them part of the solution

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Questions/ Comments

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