The Art of the Possible:
Linking Efficiency to Liquidity in Higher Education

May, 2010
Pressure

For Colleges and Universities, Cost Control Is Critical
By Editorial Board
December 6, 2008

University of Texas System Fund Down $2 Billion
By Eric Nicholson
November 17, 2008

Cost of College Rising Too Fast
By Amy Rolph
December 3, 2008

University of Michigan Hopes Green Computing Will Cut Costs, Emissions
By Katherine Yung
November 30, 2008

U.S. Colleges' Green Grade: C-
By Bryan Walsh
August 24, 2008

Students Looking for Green Practices When Choosing Colleges
Beata Mostafavi - January 28, 2009

KY Universities Fight Rising Utility Costs
By Ryan Alessi
November 26, 2008

Rising Utility Costs Increase College Housing Expenses
By Matt Kreitzer
November 20, 2008

EIU Steam Plant May Die At Any Time
By Emily Zulz
December 1, 2008

Fee Increases to Help Cover Utility Costs
By Andrew Maloney
December 10, 2008

Campuses Find Going Green Can Be Tough
By Stacy Khadaroo
October 26, 2008
Questions toward Outcomes

<table>
<thead>
<tr>
<th>Economic</th>
<th>Sustainability Impact</th>
<th>Image &amp; Reputation</th>
</tr>
</thead>
</table>
| ▪ How do we take out lots of cost…fast?  
  ▪ How can existing facilities be more productive?  
  ▪ What should we prioritize under shrinking budgets?  
  ▪ How do we generate high quality jobs?  
| ▪ We want to go green, but how?  
  ▪ How can we shrink our carbon footprint?  
  ▪ What’s our sustainability plan?  
  ▪ How do we capitalize on convergence of technology and energy to drive savings, improve productivity, and impact economic development?  
| ▪ What will attract talented students and faculty?  
  ▪ How can we spread the message that our college is a great place to study, work, and live?  
  ▪ How can we demonstrate thought leadership, social responsibility, and innovation?  
  ▪ How do we leverage technology to differentiate & compete |
An Answer for Higher Ed

Increase Liquidity by:

- Holistically improving building efficiency
- Leveraging technology & sustainability
- Showcase thought leadership
Why is Efficiency & Liquidity the potential answer?

- **Economics**
  - Wasteful energy and real estate spend is ripe for wringing out cost quickly
  - It's cheaper to save fuel than to buy it
  - Efficiency frees up labor resources for reallocation, increasing productivity

- **Sustainability Impact**
  - Efficiency is the most cost effective way to reduce carbon and environmental footprint
  - Saving energy is the core sustainability strategy

- **Image & Reputation**
  - Efficient buildings are comfortable and productive
  - Efficiency is fast--first movers will gain a self-reinforcing leadership position
Some of the Challenges to Implementation

- **Strategy**
  - Where do we start?
  - How do we achieve the best results fastest?
  - How can we prioritize efficiency investments?

- **Visibility**
  - Can we see how we are doing in real time?
  - Can we measure and compare buildings?
  - Can we communicate our progress?
  - Have we enabled smart decisions?

- **Accountability**
  - How can I hold people accountable for performance?
  - Can we identify leaders and laggards?
  - Can we prove the results?
Traditional Approaches to linking efficiency to liquidity

- Control Equipment in Smarter Ways
- Tune-Up & Repair Equipment
- Retrofit Key Assets
- Change The Way People Use Energy
- Use Less Space

One Building

Groups of Buildings

Total Portfolio

Performance Contracting

Demand-Side Energy Mgmt

Retro-commissioning

Energy & Sustainability Campaigns

Capital Planning

Real Estate Management

[Image: Diagram showing various strategies for linking efficiency to liquidity.]
A Holistic approach focuses on understanding the intersections of a typical Budget box.
The how is “Putting it together” to deliver Results

- Thought Leadership
- Economic Development
- Technology Convergence
- Leveraging Sustainability mega trend
- Proactively Managing Energy
- Guaranteed Results
- Performance & Contracting
- Operational & Real Estate Management
- Risk Mitigation & Management
- Performance Metrics
- Budget Integrity
- Enhanced Liquidity
Outcomes

**Strategy**
- A defined efficiency strategy
- Data-driven capital investment decisions
- Awareness of largest savings opportunities
- Permanent tool for ongoing improvement

**Visibility**
- Knowledge of how much space you own, how much energy you use, where facilities $$ going
- Ability to manage trends and progress
- Sustainability data for public reporting

**Accountability**
- New objective performance metrics
- Management tool to compare performance and progress by department, by manager
- View of relative vendor effectiveness
Actualizing & Capturing the opportunity

1. Understand Customer Concerns
2. Survey Systems, Audits
3. Analyze Data
4. Prioritize Integration Needs
5. Architect System Solution
6. Deploy & Test System
7. Act to Realize Savings
Possible Approaches

1. **IT Solution Only**
   - **2-4 weeks**
   - Survey IT landscape:
     - data systems and devices to connect to ESM
   - Sign Prime Job
   - **Preliminary Opportunity Assessment**

2. **PC for ESM only**
   - **8-12 weeks**
   - Develop detailed projections of guaranteed savings for each facility improvement measure (FIM)
   - Sign PDA
   - **Detailed Engineering**

3. **PC w/ ESM**
   - **Ongoing**
   - Deliver operational efficiency improvements and capital projects
   - Sign PC
   - **Execute Project**

4. **Ongoing Analysis, M&V**
   - Execute PSA?
   - Ongoing systems maintenance, measurement, and verification

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- Possible Approaches:
  - **Survey IT landscape:**
    - data systems and devices to connect to ESM
  - **Survey buildings:**
    - utility bills
    - equipment condition
    - load profiles
  - **Architect, build, and commission**
  - Enterprise Sustainability Manager
  - **2-4 weeks**
  - **8-12 weeks**
  - **Ongoing**

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- 1. **Preliminary Opportunity Assessment**
  - **2-4 weeks**
  - Survey IT landscape:
    - data systems and devices to connect to ESM
  - Sign Prime Job
  - **Preliminary Opportunity Assessment**

- 2. **Detailed Engineering**
  - **8-12 weeks**
  - Develop detailed projections of guaranteed savings for each facility improvement measure (FIM)
  - Sign PDA
  - **Detailed Engineering**

- 3. **Execute Project**
  - **Ongoing**
  - Deliver operational efficiency improvements and capital projects
  - Sign PC
  - **Execute Project**

- 4. **Ongoing Analysis, M&V**
  - Execute PSA?
  - Ongoing systems maintenance, measurement, and verification
  - Execute PSA?
Transition to Lone Star

Introduce Lone Star and Case Studies