

Utility Savings Initiative *Retro-Commissioning*

December 7, 2015
New Hanover County
Board of Education



N.C. DIVISION OF
ENVIRONMENTAL ASSISTANCE
AND CUSTOMER SERVICE

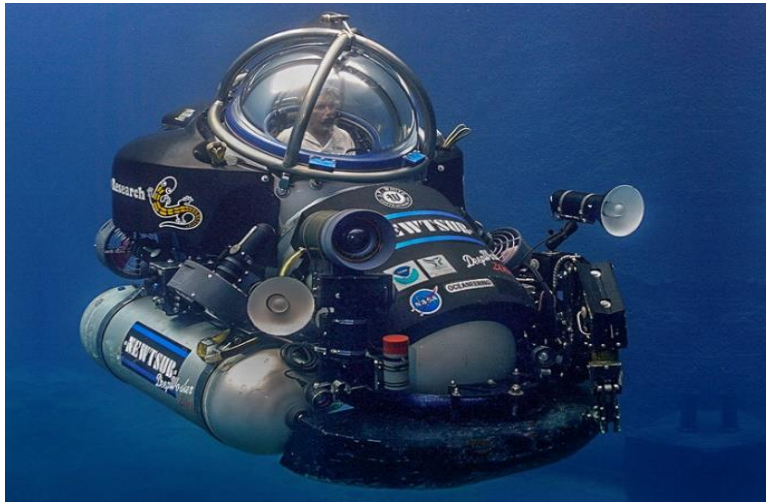


The Conservation of Energy... by Snorkeling

Chris Martin Jr., PE



Different Varieties of Retro-Commissioning



The Deep Dive



The Snorkel

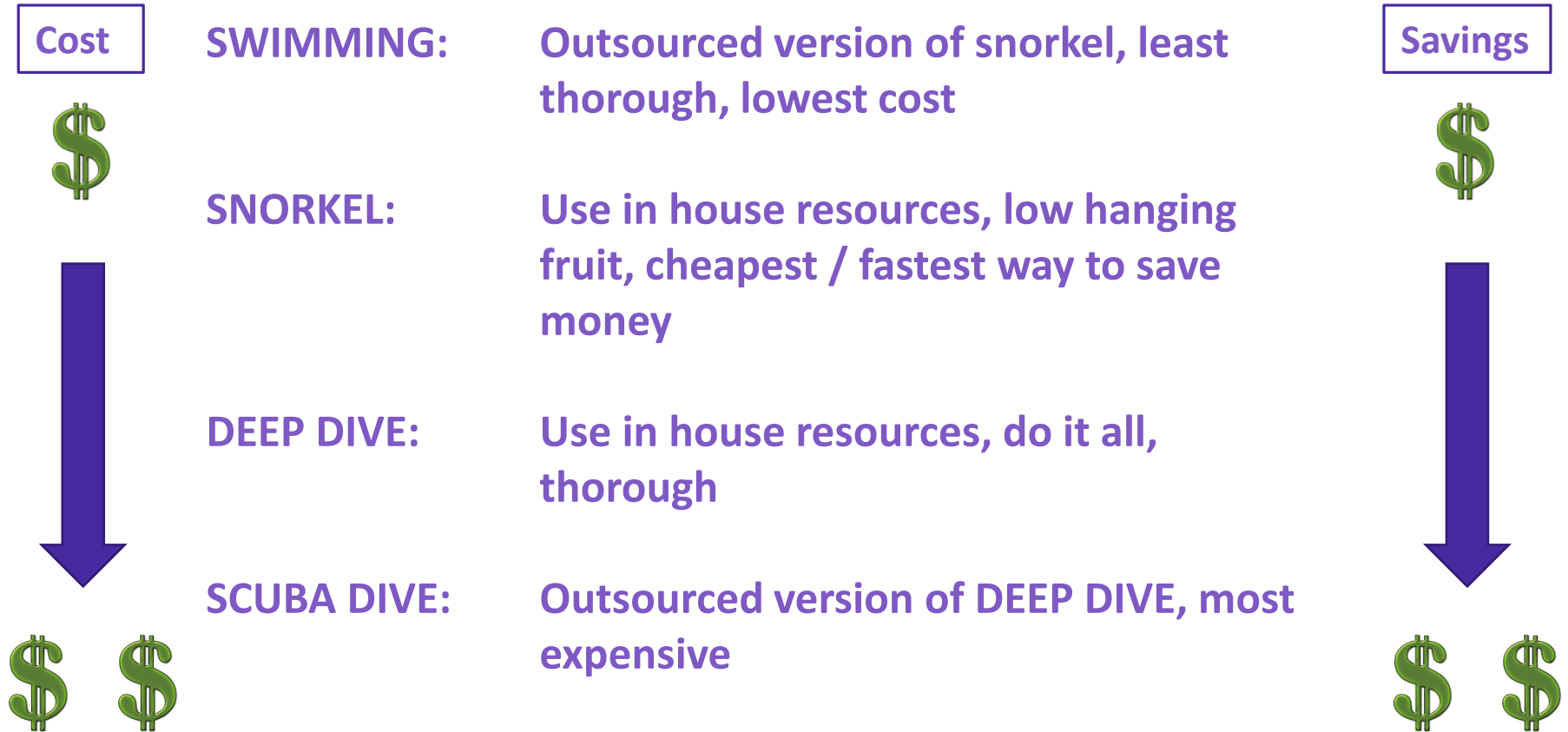


The Swim



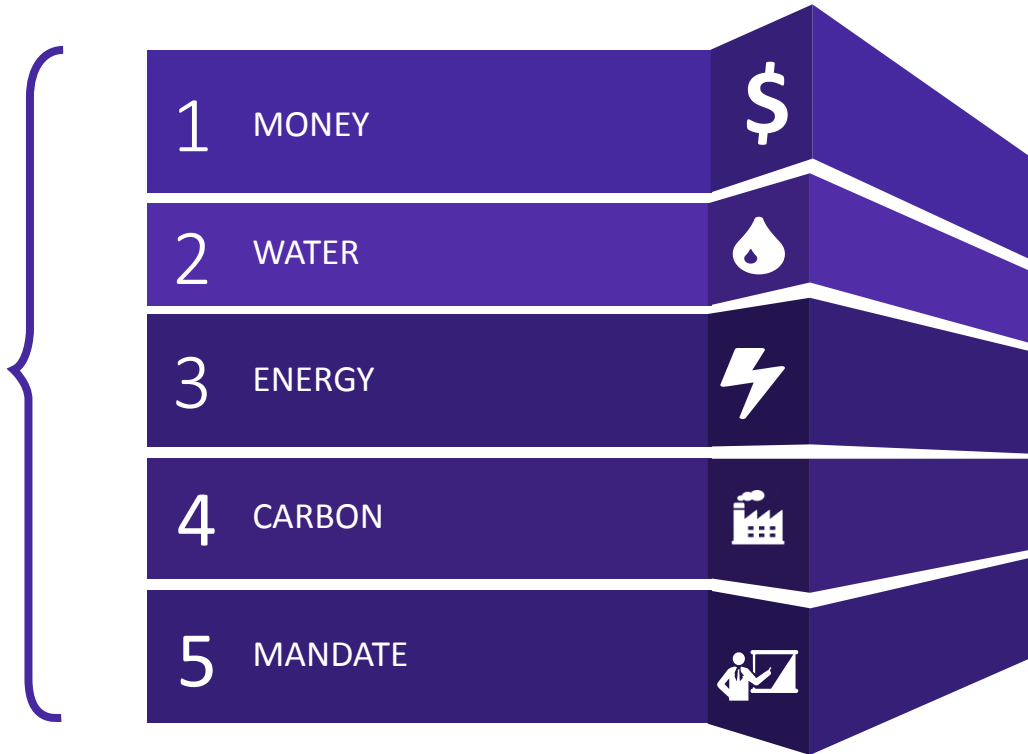
The Scuba Dive

Comparing Retro-Commissioning Options

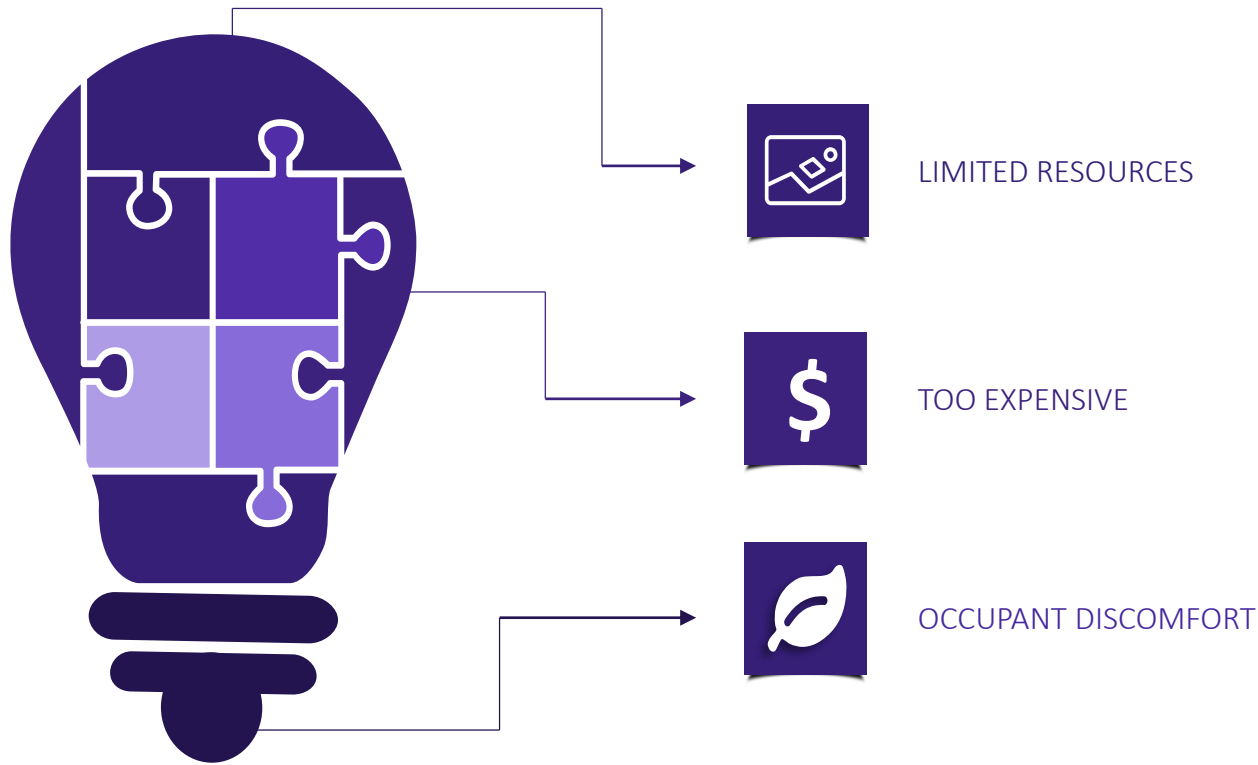


What We Want

WHAT'S YOUR
MOTIVATION?



| The Quandary



Sustainability drives **efficiency** which drives **complexity** which **taxes** occupants and O&M staff



OPTIMIZE WHAT YOU
HAVE

THE SOLUTION

Focus on HVAC

Typical costs allow use of ASA

**PAYBACK LESS THAN 1
YEAR**

SAVINGS up to 60%

AVERAGE 25%

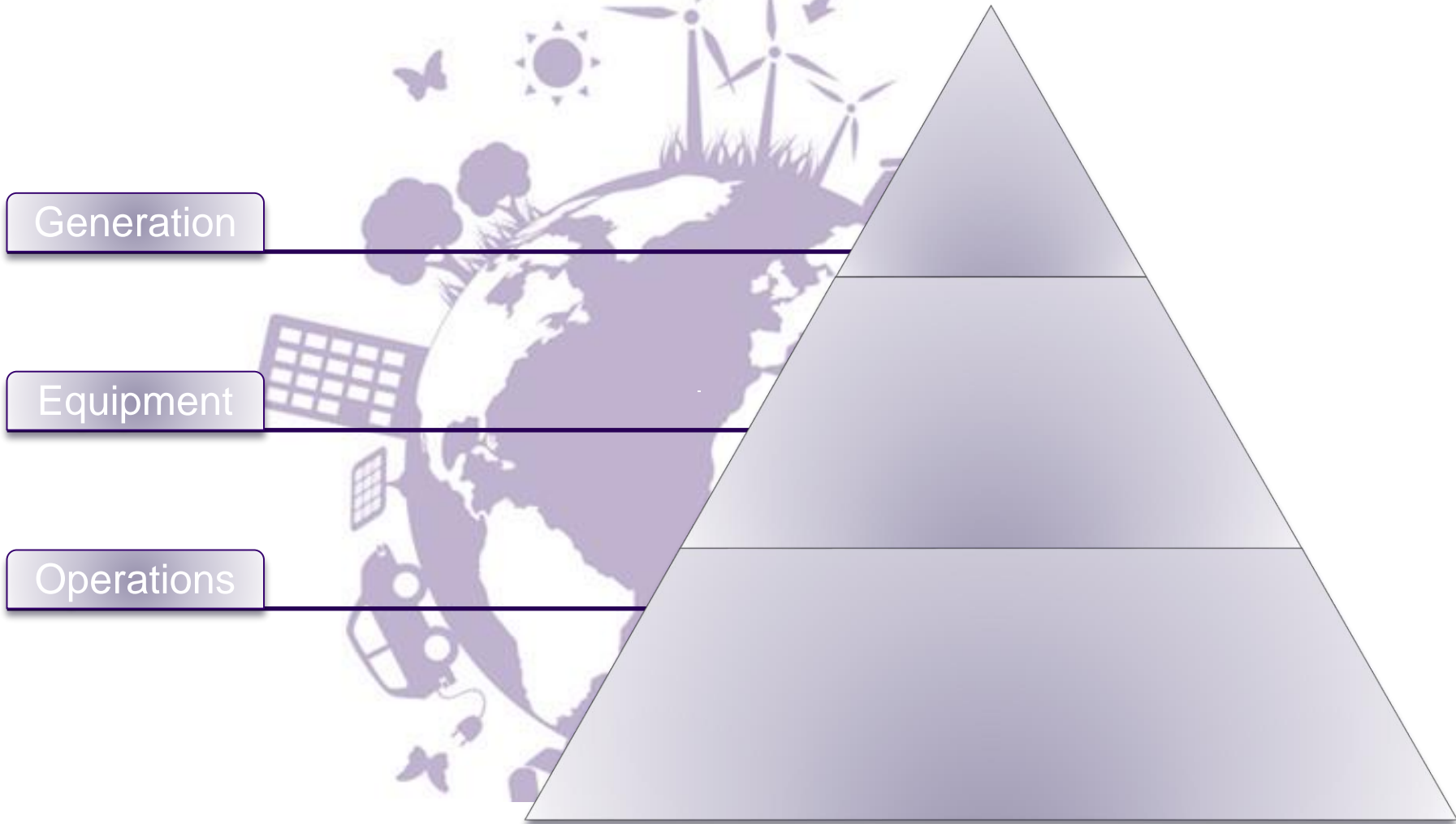
Capital Driven

Generation

Equipment



Operations Driven



Traditional Approach vs. Snorkeling

Traditional Options

Design

New building commissioning

Existing building commissioning

Individual project implementation

Performance Contracting

Snorkeling

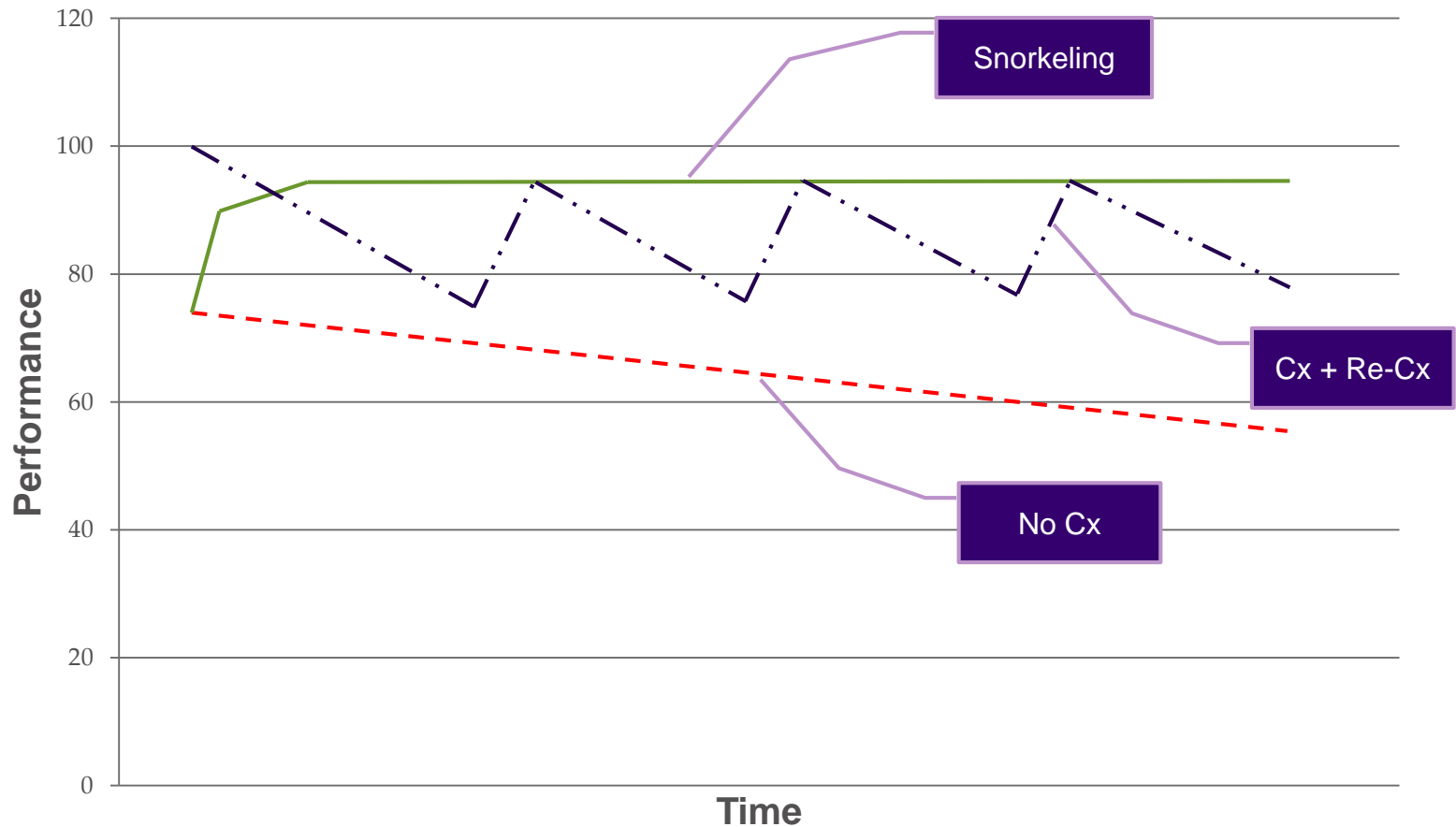
Focuses on operations & maintenance

Low cost = low risk

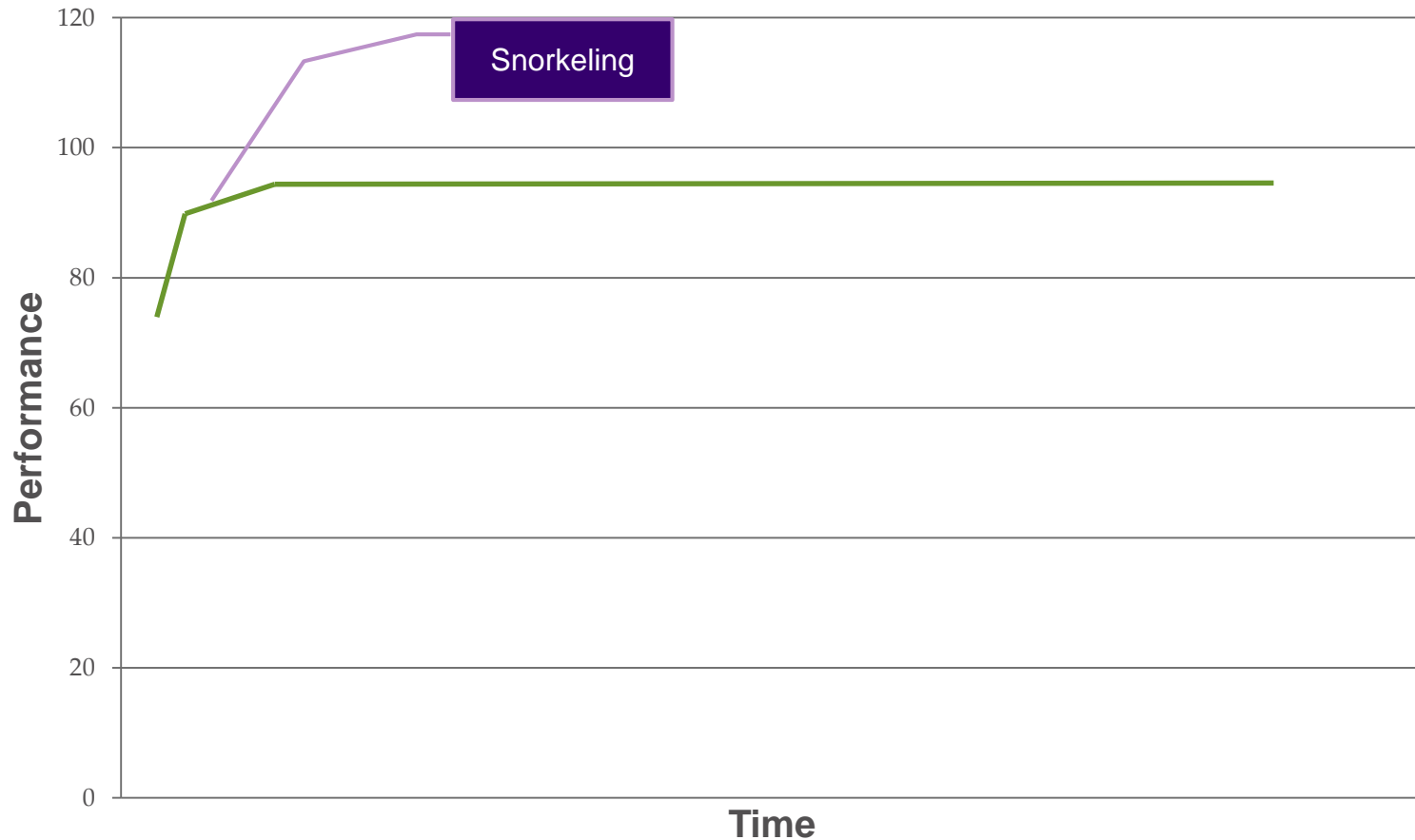
Rapid implementation

Fastest payback option available

Performance over time



Performance over time



Performance over time



Performance over time



What it takes...

01

PASSION

Passion for the work

02

OPERATIONS

HVAC operations expertise

03

ENDURANCE

Tracking and follow-up

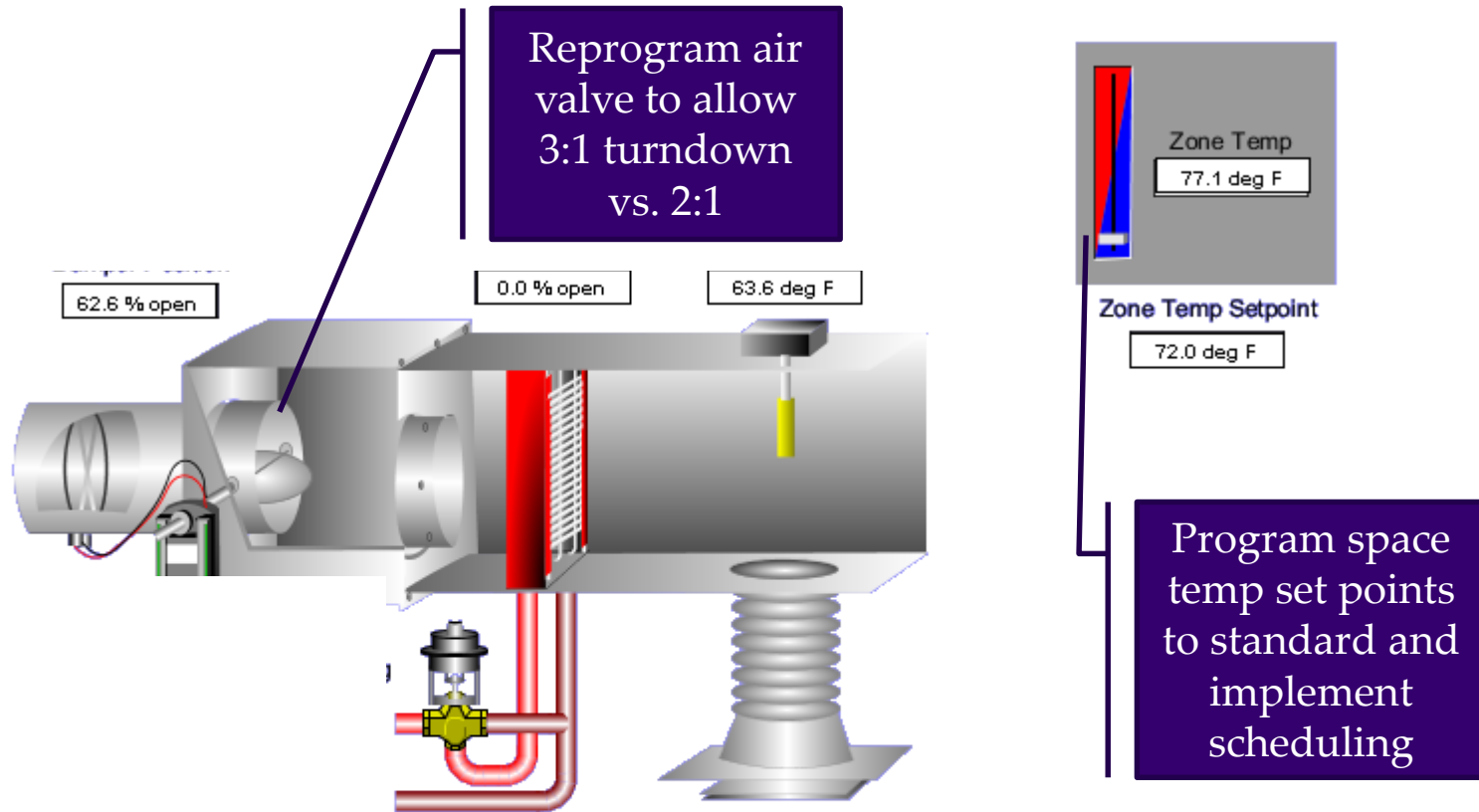


What it is...

Applying select corrective maintenance and building control sequences targeted at:

Low cost
Fast payback

System Tuning

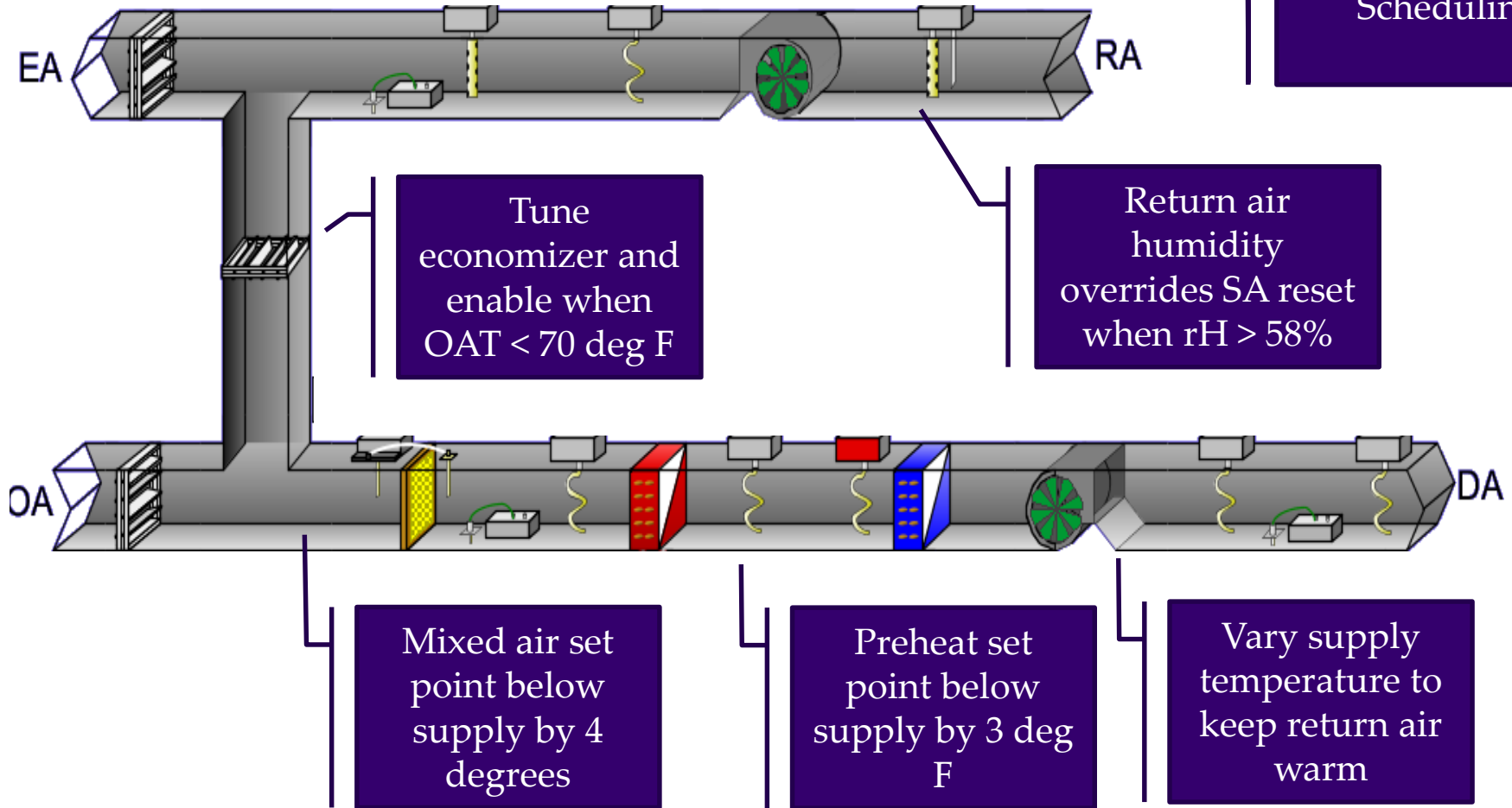


Emergency Command	Normal
Terminal Load	100.0 %
HW VLV Override	Normal
Zone Temp Effect Stpt	72.6 deg F
Flow Setpoint	400.5 cfm

Applic. Mode	Auto
Unit Status Mode	Cooling only
Unit Status Alarm	Normal
Occupancy Command	Occupied
Occupancy Status	Occupied

System Tuning

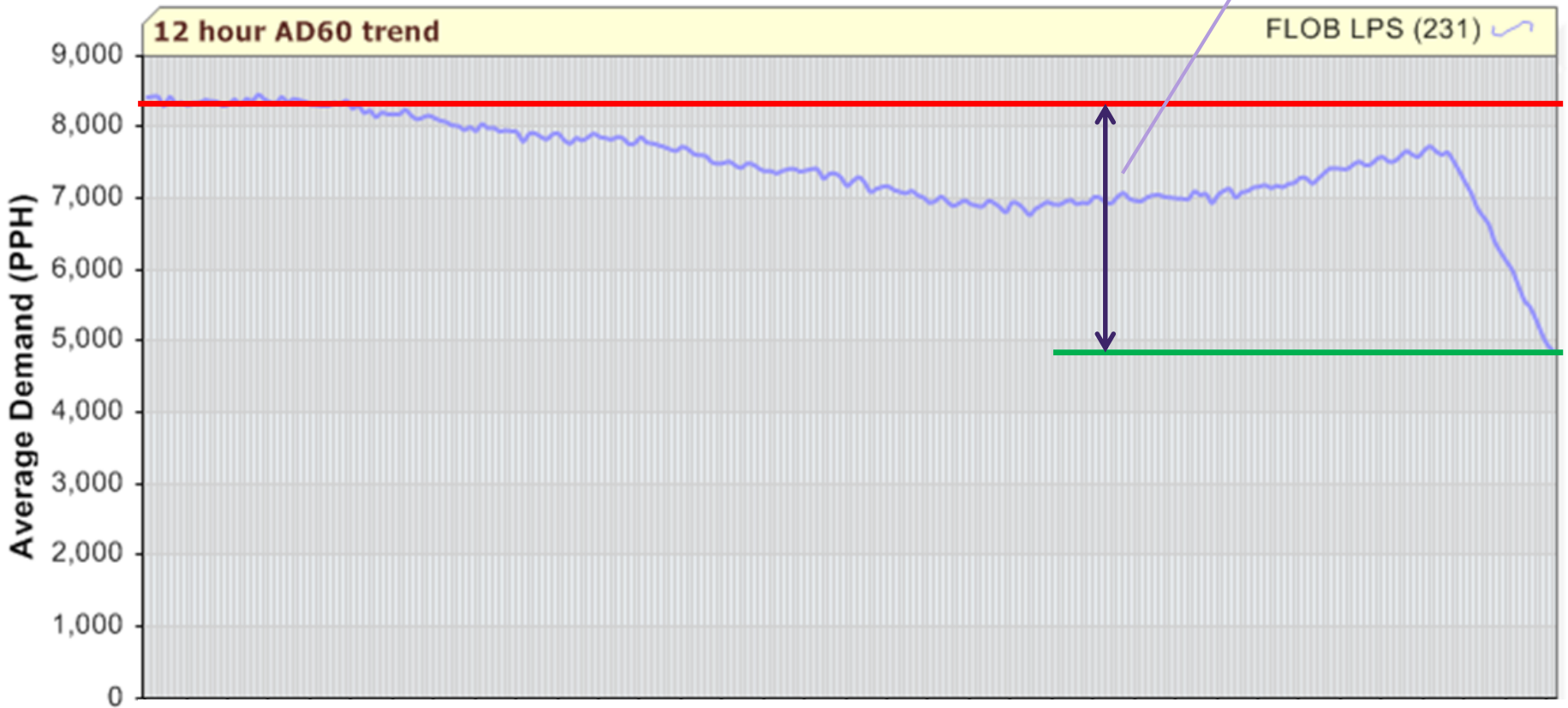
Occupancy Scheduling



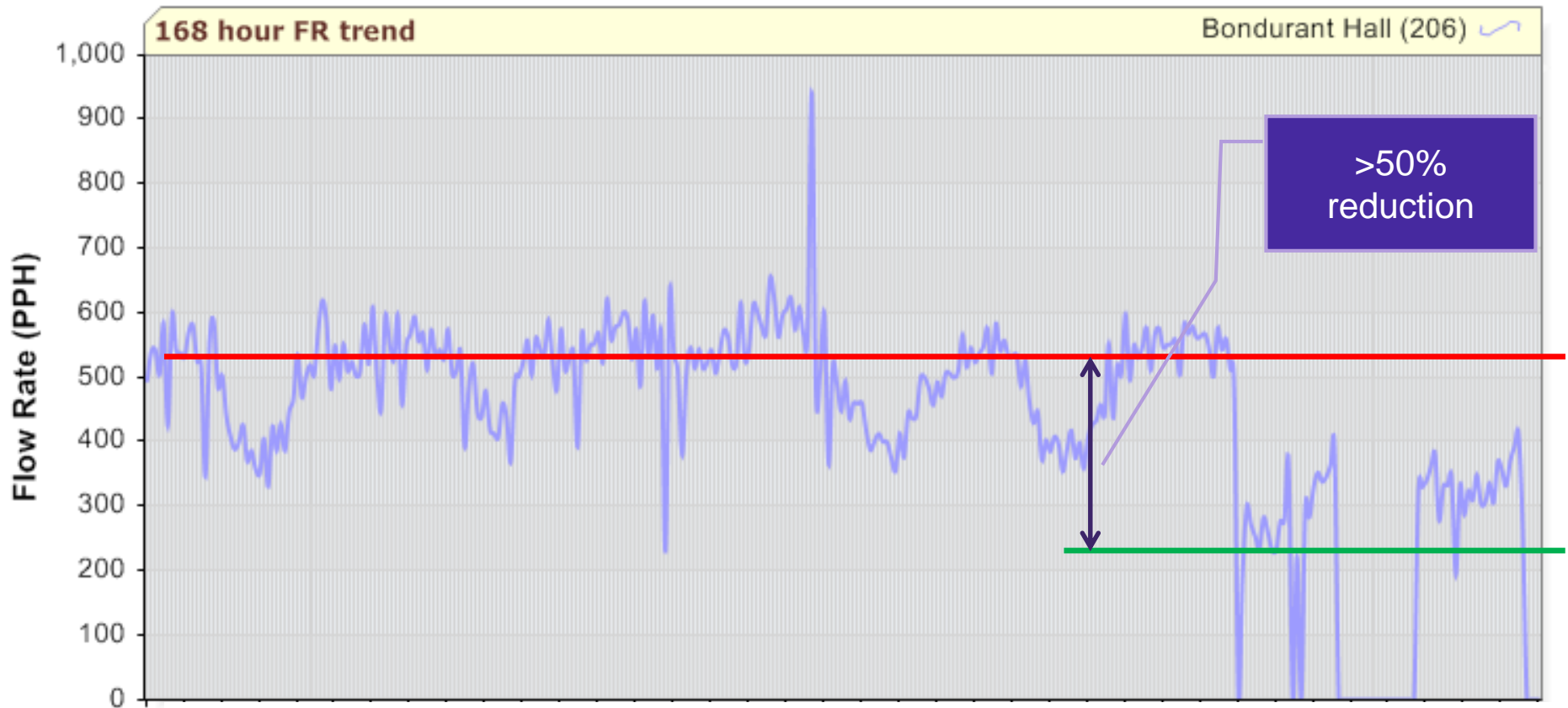
Advantages

- Achieve many of the benefits of traditional Cx:
 - fewer too hot/cold calls,
 - less maintenance,
 - higher occupant comfort,
 - improved IAQ
- In house staff have skin in the game
- Fastest and least expensive way to success
- Maximize cash flow

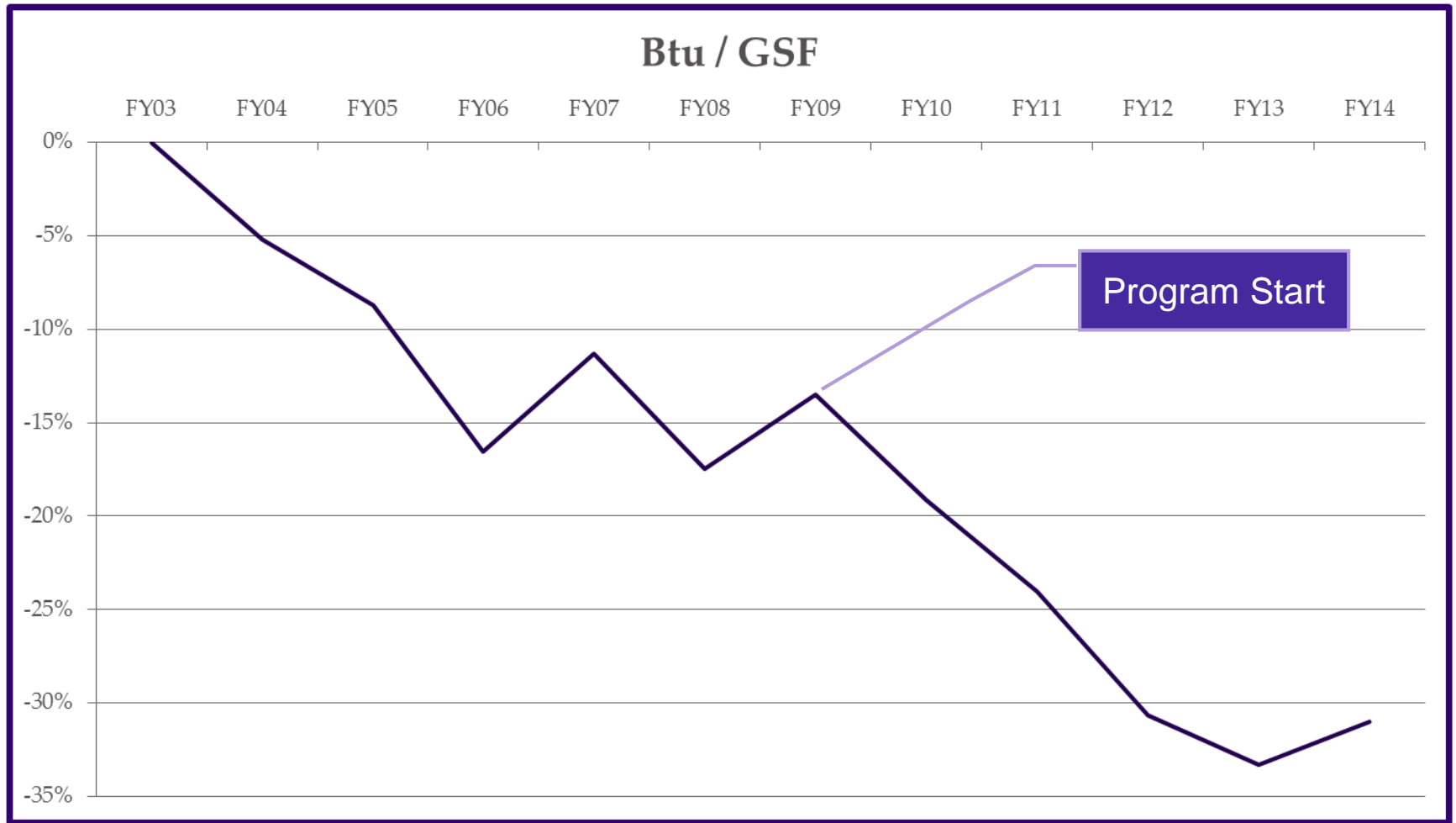
Results Day 1



Results 1 Week



Programmatic Results



Key Points

Do it now! What would you be doing with the money currently wasted on inefficiencies?

Build a partnership between maintenance & engineering

“...And, remember when planting a new lawn... **It still needs to be mowed!!!**”



t h i n k i n g



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