

# CU Boulder Performance Contracts 8th Annual ESC Market Transformation

August 22, 2019



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# Energy Management Program

## “Three Legged” Approach

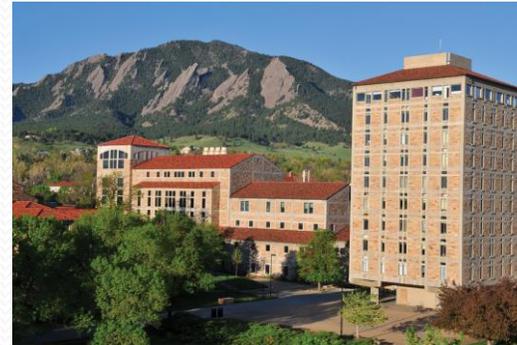
### ➤ Conservation and Optimization

Conservation Projects, Audits, Assessments, Energy Performance Contracts  
Re-Commissioning – Optimize, Identify Opportunities  
Deferred Maintenance / Capital Renovation



### ➤ Intelligent Energy Management Controls

Fault Diagnostics  
Predictive Analytics  
Continuous Commissioning



### ➤ Renewable Energy

On Site Campus Solar Development  
Large Scale Renewables  
Résilieny



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# Performance Contracting

## ➤ 2013

RFP for External 3<sup>rd</sup> Party Performance Contracting

Deferred Maintenance Backlog

## ➤ 2014

One ESCO selected, 2 more added

“Budget Relief”

MacAllister and Wilderness



## ➤ MacAllister

Older existing building, empty

Built in 1991, purchased in 2012

Major renovation as part of SEEC Complex

Mac 291,037 SF

SEEL 142,345 SF

## ➤ Wilderness

Off Campus Lab Facility

Built in 1983

63,191 SF

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# “Budget Relief”

## ➤ SEEC

JE Dunn \$73m Complex - \$112m Final Cost  
ESCO PC \$11m, \$550k annual savings  
M&V period started 8/1/2016



### Measures:

Water conservation  
LED lighting upgrades  
Controls upgrade to DDC  
New Boilers, chillers  
Insulated piping

## ➤ Wilderness

Whiting Turner \$10.5m renovation budget  
ESCO PC \$6.5m, \$384k annual savings  
M&V period started 6/1/2017

### Measures:

Lighting upgrade to LED  
Lighting controls  
Controls Upgrade to DDC  
Boiler replacement  
RTU replacement  
Energy recovery



# Lessons Learned

## Existing Project

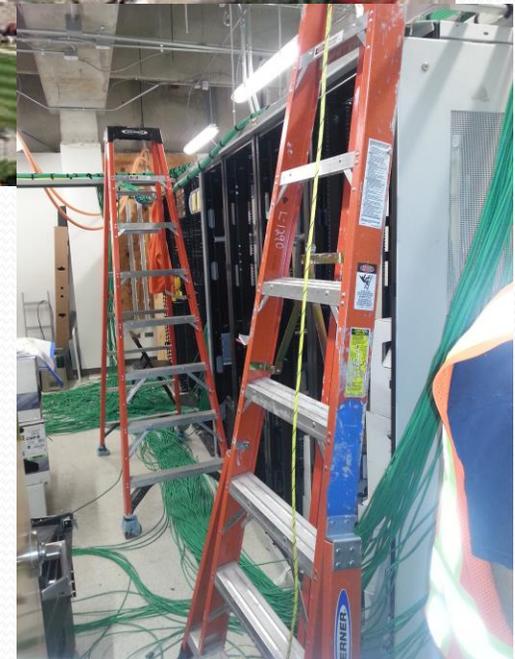
GC already on site  
Scope Responsibility  
Scheduling Concerns



## Internal Discord

Commissioning  
Engineering vs PM vs ESCO

# Combine PC and GC from the Beginning



# Thank you!

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