BUILDINGENERGY NYC

OCTOBER 15, 2015 AT TKP NEW YORK CONFERENCE CENTER

AIA Provider: Northeast Sustainable Energy Association

Provider Number: G338

Airsealing and Firestopping: Smart Science

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October 15, 2015

Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

Course Description

Air leaks cause comfort, energy, fire, durability, and vermin problems throughout buildings. Recent studies have shown that: stack effect losses in high rise buildings leak large amounts of treated air; airsealing as part of new construction helps meet performance standards and increase comfort; and airsealing individual apartments as part of retrofit projects saves occupants money and increases comfort in those units. Listen to three diverse presentations on methods and results in airsealing projects.

Learning Objectives

At the end of the this course, participants will be able to:

1. Learn about real airsealing results in real buildings

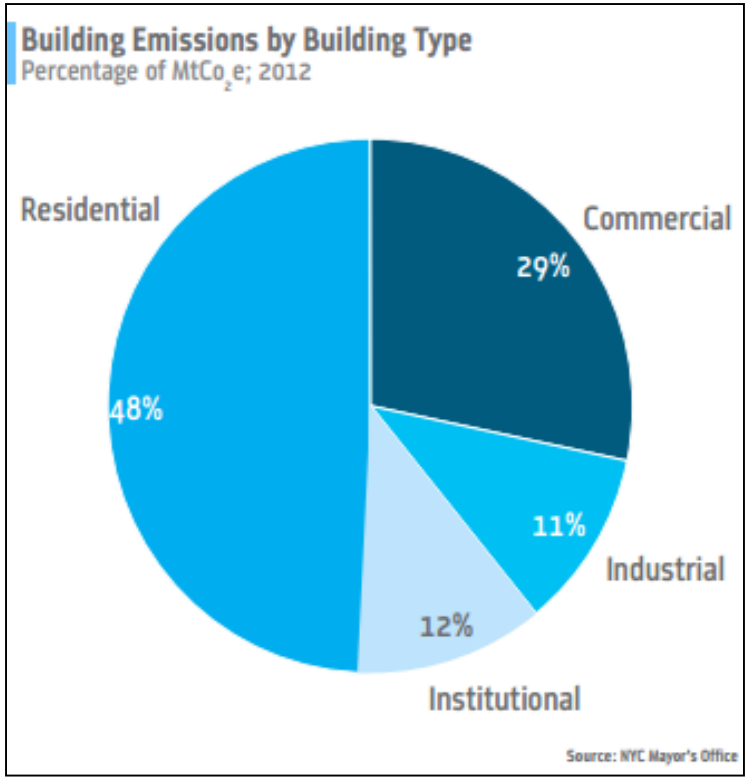
2. Understand advanced airsealing in large commercial, new construction, and retrofit applications

3. Hear results about direct savings, comfort, and retrofit ingenuity in multifamily retrofit

4. See methods and results in new construction airsealing

plaNYC: 80x50

- **Reduce NYC emissions 80% by 2050**
- **Buildings = 75% of baseline emissions**
- **Roof & Envelope improvements hold a 4.7% sector wide carbon abatement reduction potential (2nd largest GHG reduction potential next to high efficiency heat pumps)**



CLEAResult

Unit Compartmentalization

What, why, and how?

Margo Valdes, Project Manager

We change the way people use energy™

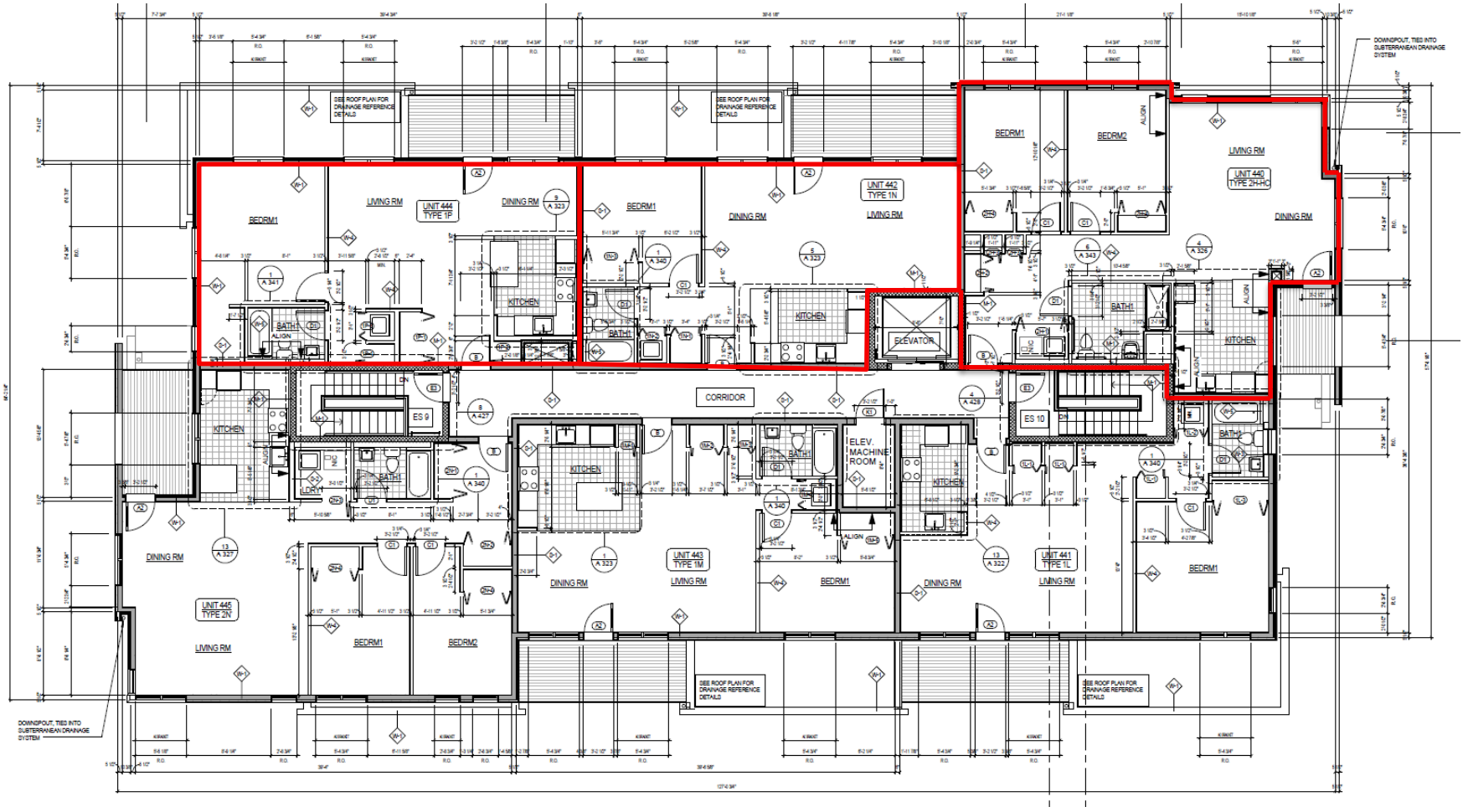
With 2,700 employees in more than 40 cities across the U.S. and Canada, **CLEAResult** delivers comprehensive energy programs and demand-side management strategies and solutions that lower load requirements for utilities, reduce energy bills for end users and lessen the environmental burden on our communities

CLEAResult's **Building Performance Consulting** team works with owners, architects, and engineers to provide design review, inspection, testing, and commissioning on new and existing buildings.

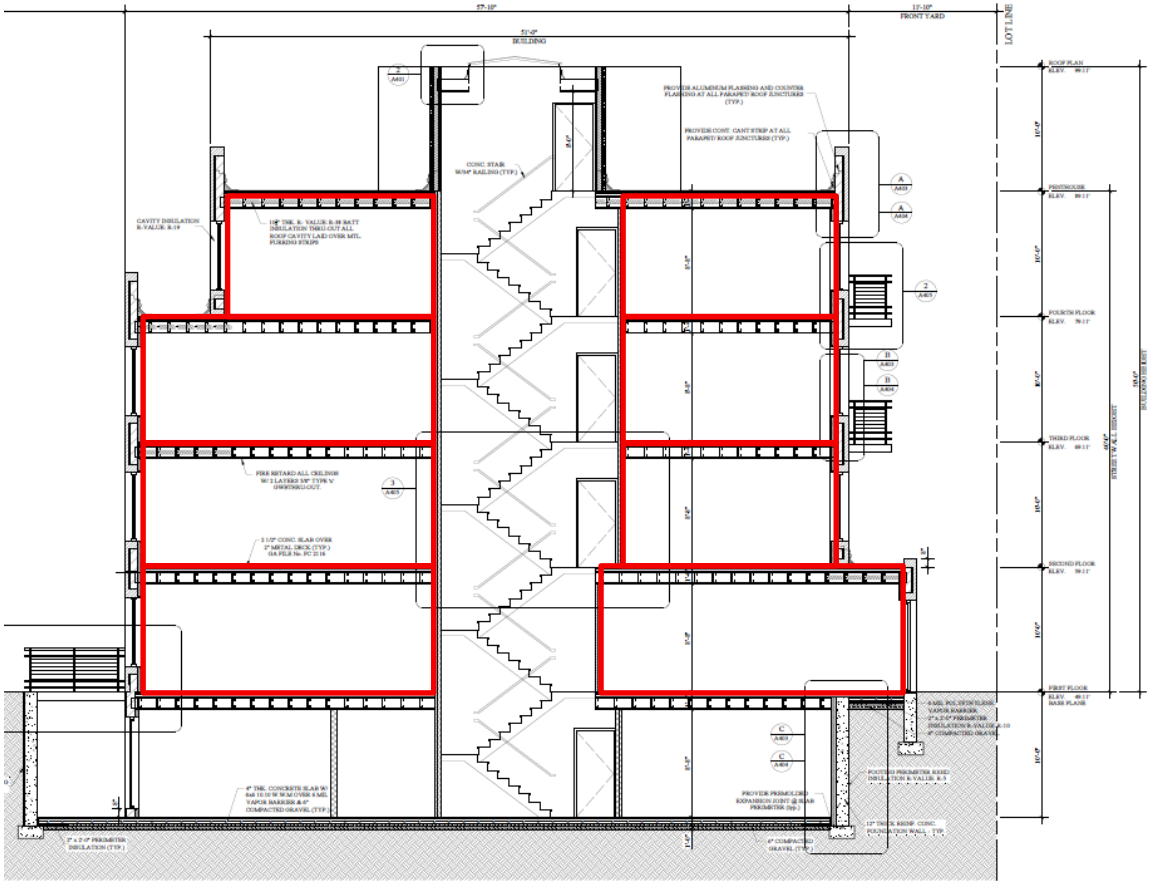
CSG merged with **CLEAResult** in April 2015

What is Compartmentalization?

Airsealing between apartments



Airsealing between apartments



Why compartmentalize?

Compartmentalization = Savings

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“pulaw” by Pinamalham CC BY 2.0

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“Smoke on Sunday” by Julie CC BY 2.0

“Field Mouse” Dawn Beattle CC BY 2.0

CLEAResult

- Identify project goals
- Set a performance target
- Design for success
- Train the installers
- Observe/Inspect regularly
- Verify

Compartmentalization: Steps to success

Identify project goals

Program compliance?

Occupant health, safety, and comfort?

Overall building performance?

Set a performance target

Standard
ENERGY STAR MFHR
LEED for Homes Midrise
Draft Passive House MF
ASHRAE 62.2 2013 Section 8.4.1

CFM50/ssf =cubic feet per minute at 50 Pascals per square foot of shell

Set a performance target

Standard	Prerequisite
ENERGY STAR MFHR	0.30 CFM50/ssf
LEED for Homes Midrise	
Draft Passive House MF	
ASHRAE 62.2 2013 Section 8.4.1	0.20 CFM50/ssf

CFM50/ssf =cubic feet per minute at 50 Pascals per square foot of shell

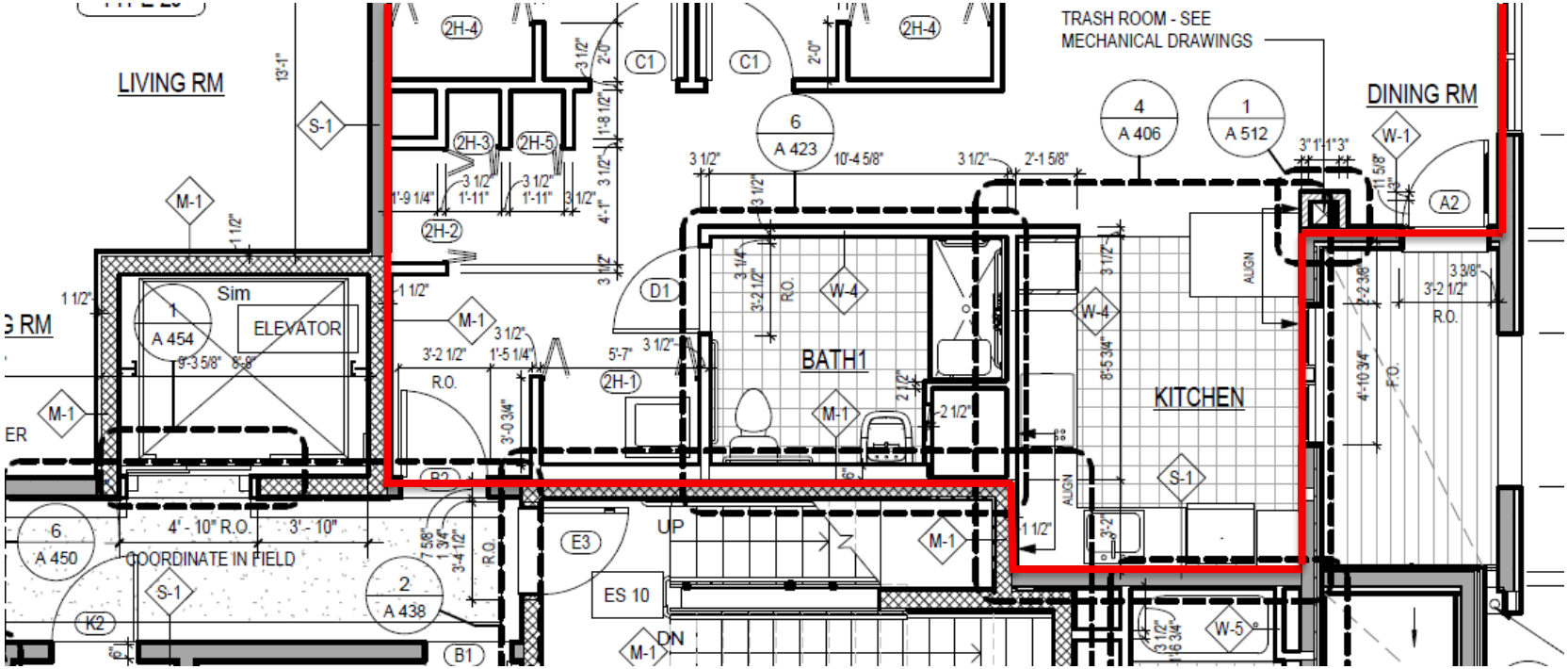
Set a performance target

Standard	Prerequisite	Exemplary
ENERGY STAR MFHR	0.30 CFM50/ssf	N/A
LEED for Homes Midrise		0.225 CFM50/ssf 0.135 CFM50/ssf
Draft Passive House MF		N/A
ASHRAE 62.2 2013 Section 8.4.1	0.20 CFM50/ssf	N/A

CFM50/ssf =cubic feet per minute at 50 Pascals per square foot of shell

Design for Success

Design for success



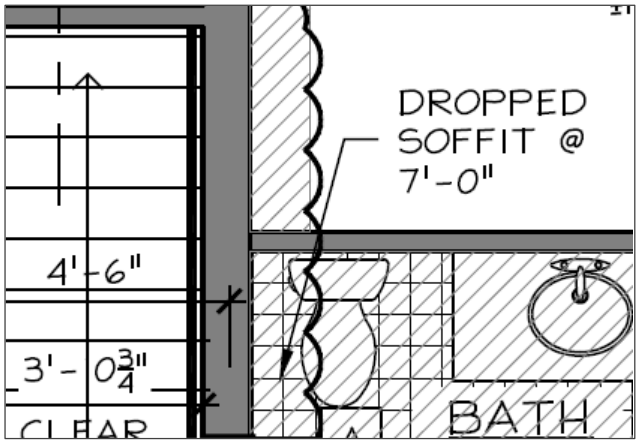
Design for success

Photo © Clearesult

Determine the optimal air barrier plane

Design for success

Seal soffits while accessible



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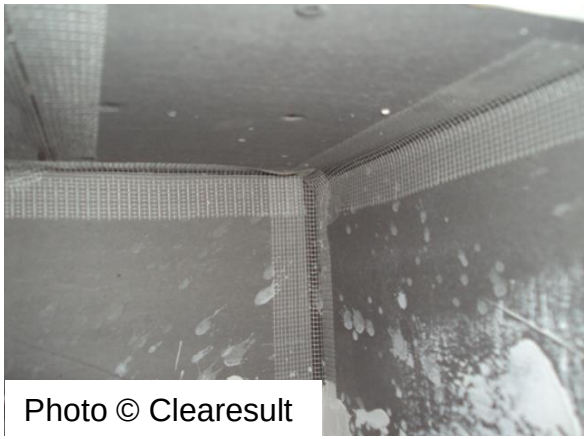

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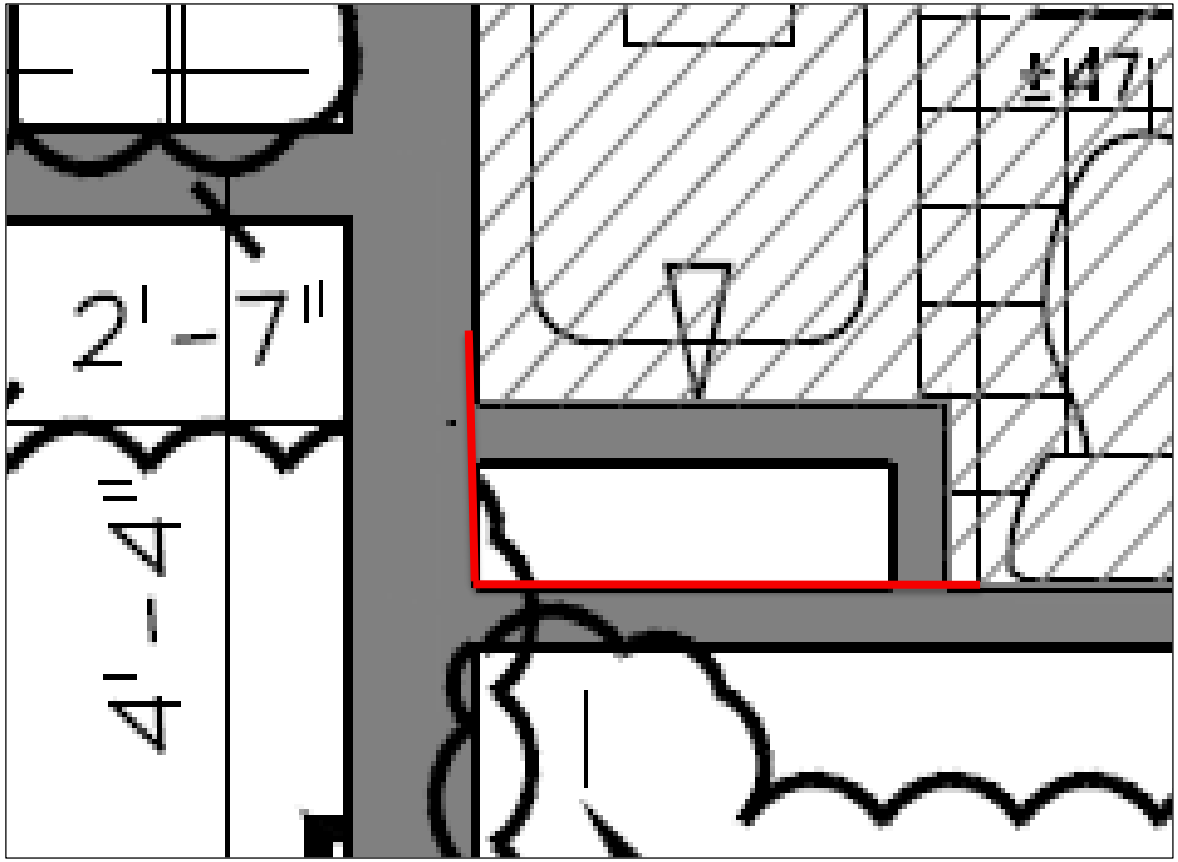
Design for success

Seal chases



Train the installers

Photo © Clearesult

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Train the installers

Photo © Clearesult

Train the installers

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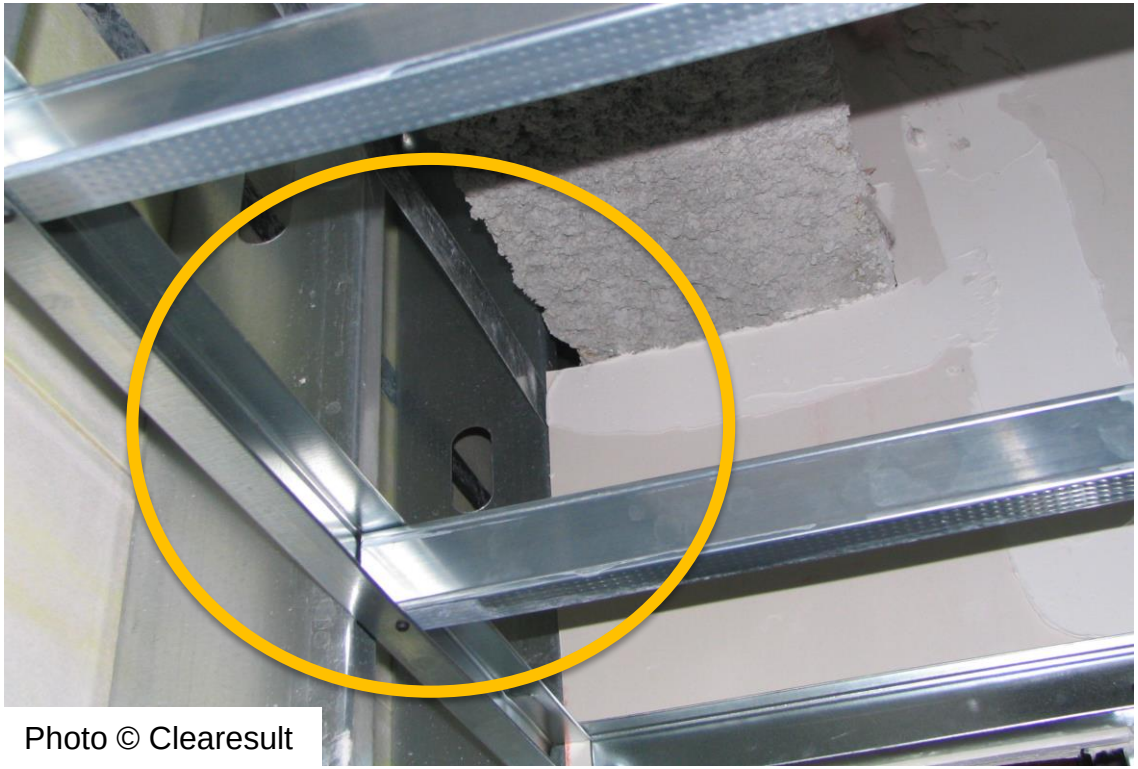
Observe/Inspect regularly

Observe/Inspect



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Identify Discontinuities

Observe/Inspect

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Verify Performance

Test early with the Team

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Verify performance

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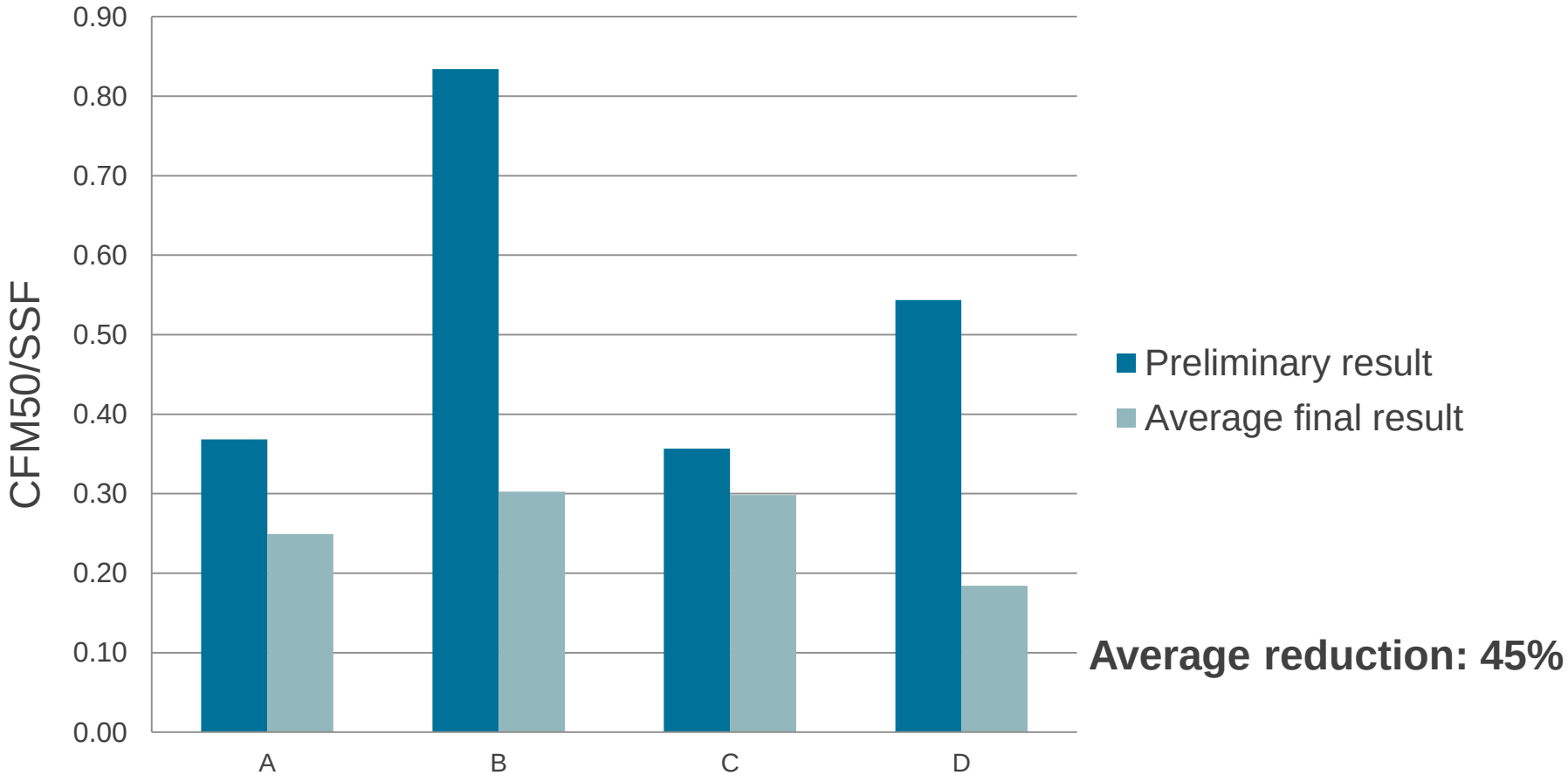
Test Results: 4 Projects
MA MFHR Incentive Program



Average reduction: 45%

Compartmentalization: Steps to Success

- Identify Project Goals
- Set a Target
- Design
- Train
- Inspect
- Verify

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Thank you

