

26<sup>TH</sup> ANNUAL



26<sup>TH</sup> LCI CONGRESS  
OCTOBER 22-25, 2024

# Riding the Waves of Safety and Efficiency

Jesus 'Jesse' Hernandez, Jr., Depth Builder LLC  
with Liên Randle, Mitsubishi Electric US, Inc.

**SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION**  
**TRACK: NAVIGATING FLOW FOR EXCELLENCE: FIELD EXECUTION**

THURSDAY, OCTOBER 24, 2024



# Riding the Waves of Safety and Efficiency

- Eliminate the Hard Work to Optimize the Whole
- Learn to “Sea” the Oceans of Improvement Opportunities
- Cultivate Buy In to Make the Improvements Stick

Humanize to Optimize



Collaboration



Removal of  
Waste



Act | Safety



Respect for  
people | Team



Optimize the  
Whole



Process  
and Flow

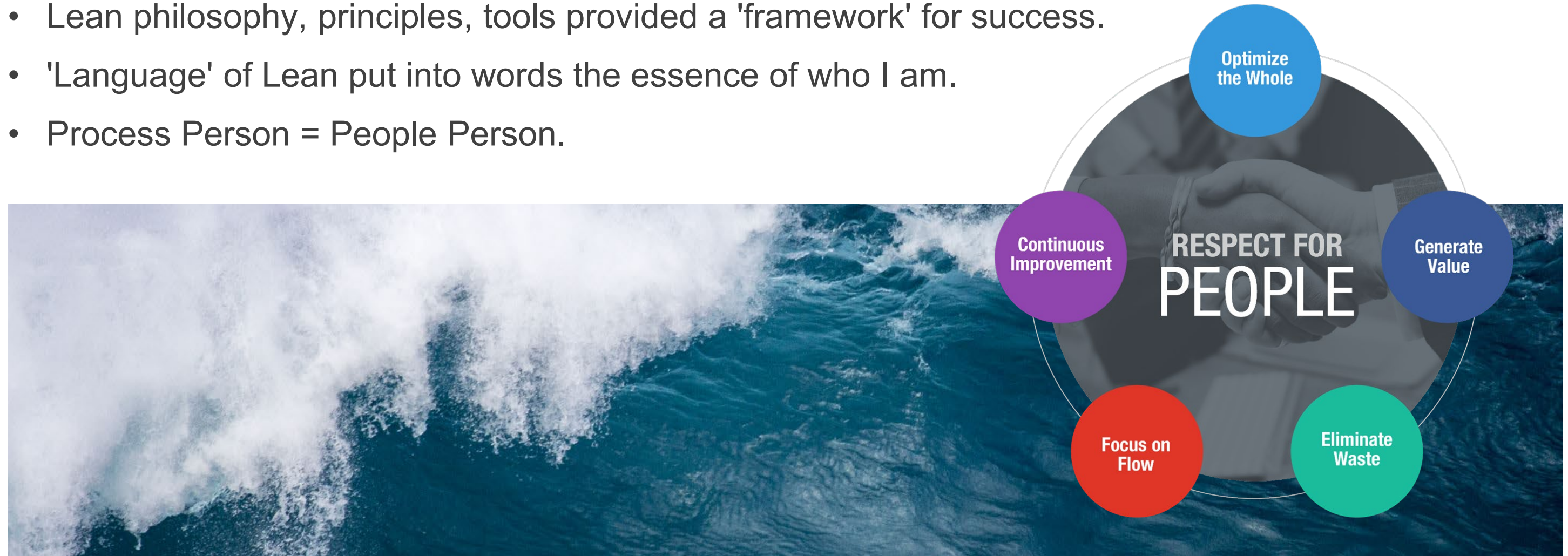


Continuous  
Improvement



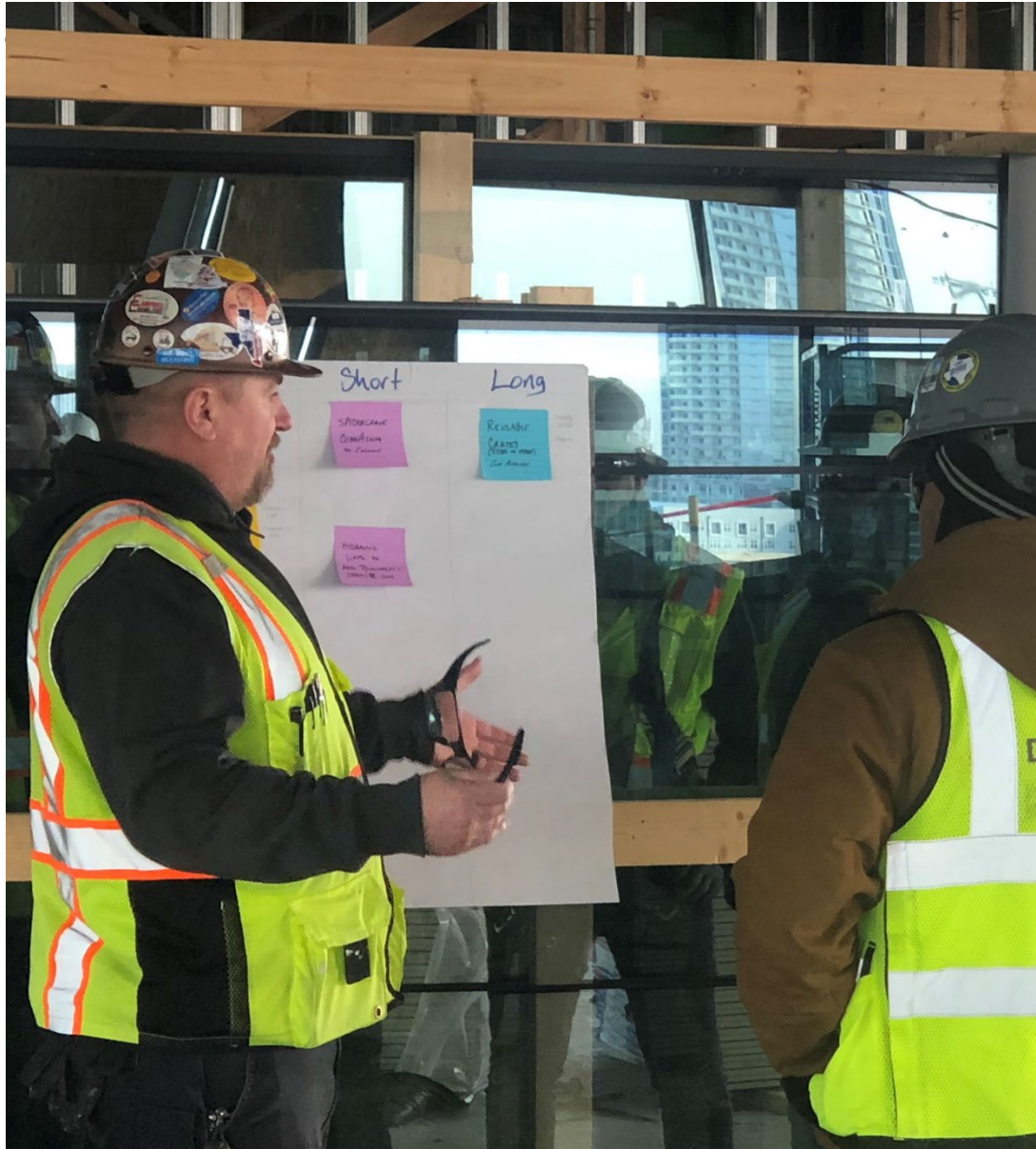
# Riding the Waves of Safety and Efficiency

- Lean 'Transformation' at Mitsubishi Electric US, Inc. began 3 ½ years ago.
- Lean philosophy, principles, tools provided a 'framework' for success.
- 'Language' of Lean put into words the essence of who I am.
- Process Person = People Person.





# Riding the Waves of Safety and Efficiency



- Agency
- Quality of Life
- Relationships





# Riding the Waves of Safety and Efficiency

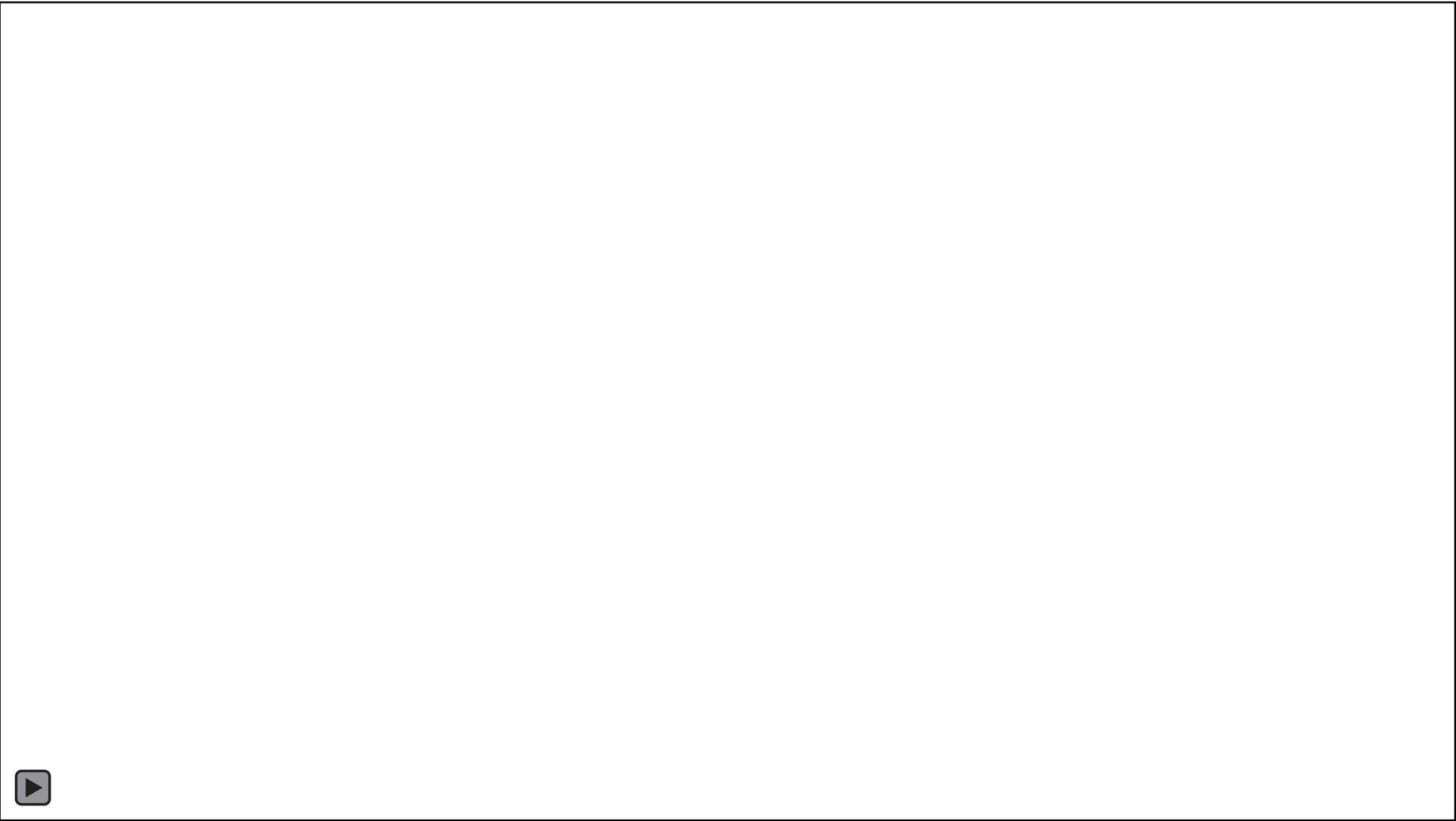
# WORK STUDY CHART

Steps of Work	W	INC	VA	H	0:00:00	C	P	A

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# Riding the Waves of Safety and Efficiency



Write Down all the steps you see

A 'WORK STUDY CHART' form tilted at an angle. The title 'WORK STUDY CHART' is written in red at the top. Below it, the text 'Steps of Work' is written in black. The form has a grid of columns and rows. The columns are labeled: W, INC, VA, H, 0:00:00, C, P, and A. The rows are labeled 'Steps of Work'. The form is set against a background of a dark, textured surface with a white diagonal line.

# How many steps did you write down?

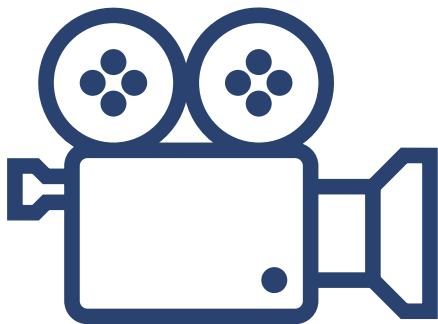




# Riding the Waves of Safety and Efficiency

	Steps of Work
2	
3	pull strap
4	measure & mark strap
5	grab tin snips from under left arm
6	cut strap
7	drop strap on floor
8	Pull strap
9	put tin snips back under left arm
10	measure & mark strap
11	grab tin snips from under left arm
12	cut strap
13	put tin snips back under left arm
14	drop strap on floor
15	pull strap

Here’s what’s hidden



What stands out to You?

15	pull strap
16	measure & mark strap
17	grab tin snips from under left arm
18	cut strap
19	bend over to grab strap
20	move the cut strap over into the pile
21	grab uncut strap from floor
22	stand up
23	drop uncut strap on floor
24	walk over to cut pile
25	bend down to pick up cut straps
26	pick up the cut straps
27	stand back up
28	walk to tool cart
29	place cut pieces on tool cart

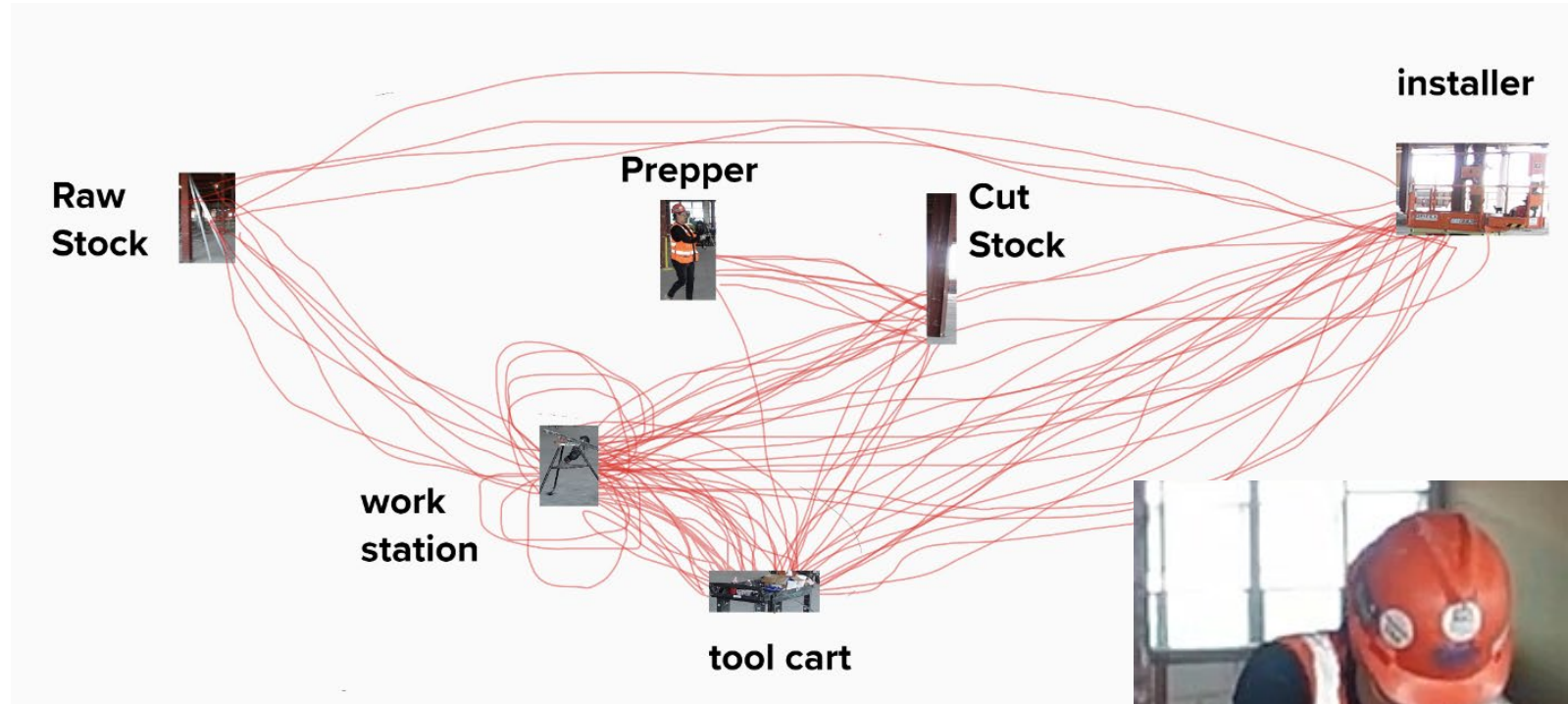


# Lets Talk about Hard Work?



# Riding the Waves of Safety and Efficiency

Hard Work is the Stuff that steals life ...



- Bending
- Kneeling
- Reaching



- Poor Ergonomics
- Difficult
- Stressful
- Confined



# Cultivating Buy In





# Riding the Waves of Efficiency and Safety

What can we do to make the work better?

- Do It Now Improvements
- Short Term Improvements
- Long Term Improvements







These are Actual Improvements to the Work!





# Riding the Waves of Safety and Efficiency: Lessons Learned

<u>Clean rails = Smooth ride</u>						
Description of the Task:		Clean Elevator Guide Rails (Prep for Installation)				
Resources Required:		Clean, dry, protected, well-lit work area. Standard PPE, solvent, large sponge or clean rags, appropriate disposal per MSDS, heavy-duty visqueen, if needed.				
Supporting Information:		IIPP including MSDS, FESH, completed JHA				
Important Steps		Key Points		Reason for Key Points		Training Aid:
	Important Steps	Key Points	Important steps that will: 1. make or break the job 2. make the work easier 3. ensure safety	Reasons	List the reasons for each key point	(Insert hand sketches, diagrams, links, layouts or pictures, if available, here)
1	Designate and appropriate clean-down area.	1) 10' x 10' for 8' rails or 20' x 20' for 12' rails. 2) Allow 5' clear space between rail stack and laydown area. 3) Locate within 20' of hoistway at bottom landing		1) Provide adequate laydown area for the length of the rail. 2) Prevent trip hazard when moving rails to laydown area. 3) Reduces distance to point installation.		
2	Make sure work area is clear of any debris or other materials.	1) Check contract requirements regarding floor protection. If required, laydown heavy-duty 6mil visqueen (or equivalent) in laydown area for cleaned rails. 2) Ensure barricades are in place.		1) Heavy duty (6 Mil) visqueen rolls are easy to store & handle 2) Prevent trip and fall hazards.		
3	Position rails in cleandown area on forklift	1) Move no more than (1) bundle or (10) 8ft/15lbs rails at once. 2) Position load at waist height 3) Position fork lift perpendicular to hoistway		1) Prevents possible pinch points when cleaning or moving rails. 2) Eliminates bending; back strains 3) Makes installation easier.		  Note how rails are hoisted into hoistway: Rail is in line with front of hoistway and hoisted in.

Clean Rails = Smooth Ride

- Picked hard task, nobody wants to do.
- Picked a task that was repeatable / repeats often
- Intentionally crafted process name to cause a shift in mindset.



# Riding the Waves of Safety and Efficiency: **Lessons Learned**



# Riding the Waves of Safety and Efficiency

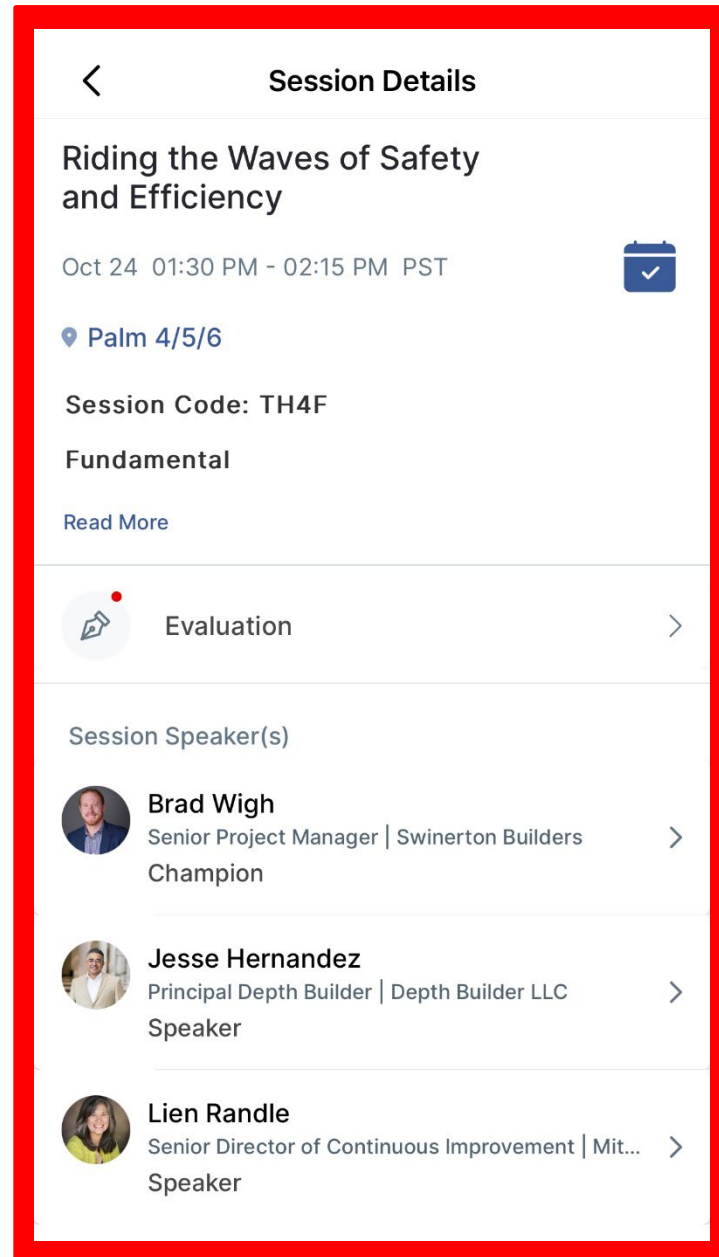


## Job Instruction

Important Steps	
<i>Important Steps</i>	A logical segment of the operation that advances the work.
Key Points	
<i>Key Points</i>	Things in important steps that will: 1. make or break the job 2. make the work easier 3. insure safety
Reason for Key Points	
<i>Reasons</i>	List the reasons for each key point



# Riding the Waves of Efficiency and Safety



**Important Steps**

**Provide Feedback on Today's Experience**

**Key Points**

- 1) Take out Your phone
- 2) Click on the App
- 3) Fill out the Evaluation for this Session

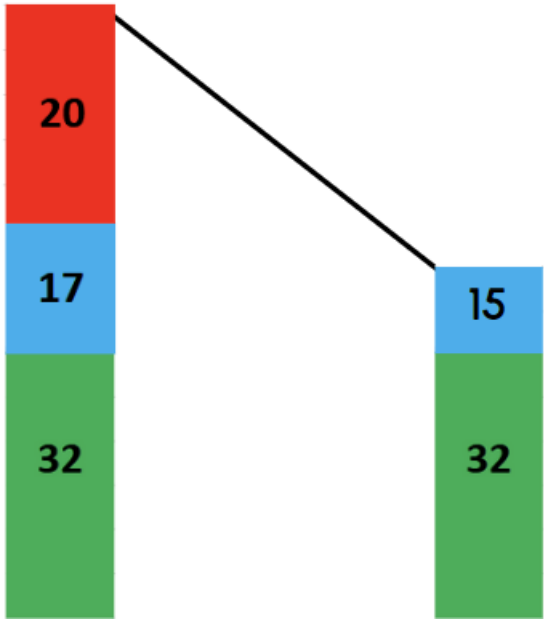
**Reason for Key Points**

- 1) Cell phone is the best tool for the job
- 2) We ain't just taking selfies
- 3) Help Lien & I get better

# Riding the Waves of Efficiency and Safety

## CURRENT STATE

Steps of Work	H	W	INC	VA	Seconds	C	P	A
pull strap	X		X		6		X	
measure & mark strap	X		X		8	X		
grab tin snips from under left arm	X	X			1			X
cut strap				X	2	X		
drop strap on floor		X			2			X
Pull strap	X		X		3		X	
put tin snips back under left arm	X	X			1			X
measure & mark strap			X		9	X		
grab tin snips from under left arm	X	X			1			X
cut strap				X	5	X		
put tin snips back under left arm	X	X			1			X
drop strap on floor		X			0			X
pull strap	X		X		3		X	
measure & mark strap			X		5	X		
grab tin snips from under left arm	X	X			2			X
cut strap				X	3	X		
bend over to grab strap	X	X			3			X
move the cut strap over into the pile	X	X			1			X
grab uncut strap from floor	X		X		1			X
stand up	X	X			1		X	
drop uncut strap on floor		X			1			X
walk over to cut pile		X			1		X	
bend down to pick up cut straps	X	X			2			X
pick up the cut straps	X	X			1			X
stand back up	X	X			3			X
walk to tool cart		X			1			X
place cut pieces on tool cart				X	3		X	
	52%	59%	26%	14%				



## TARGET STATE

Steps of Work	H	W	INC	VA
pull strap			X	
measure & mark strap			X	
cut strap				X
Pull strap			X	
measure & mark strap			X	
cut strap				X
pull strap			X	
measure & mark strap			X	
cut strap				X
place cut pieces on tool cart				X
	0%	0%	60%	40%

## JOB INSTRUCTION

Important Steps	
Important Steps	A logical segment of the operation that advances the work.
Key Points	
Key Points	Things in important steps that will: 1. make or break the job 2. make the work easier 3. insure safety
Reason for Key Points	
Reasons	List the reasons for each key point

- Cyclical: Normal work that occurs to complete the cycle
- Periodic: Work that occurs in intervals
- Abnormal: Work that deviates from Standard

- HUMANIZE
- OPTIMIZE
- SCALE



# Contact Us



**Jesus 'Jesse' Hernandez, Jr.**

Depth Builder LLC

Jesse@depthbuilder.com



**Liên Randle**

Mitsubishi Electric US, Inc.

Lien.Randle@meus.com





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In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.





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**Thank you for attending this presentation.**  
**Enjoy the rest of the 26<sup>th</sup> Annual LCI Congress!**