Trade Partner Handbook of Lean Construction Methods

Join the conversation through

Field Crew Huddle

Presented by:

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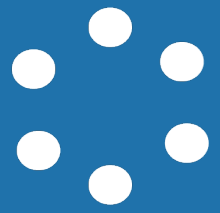
Objectives



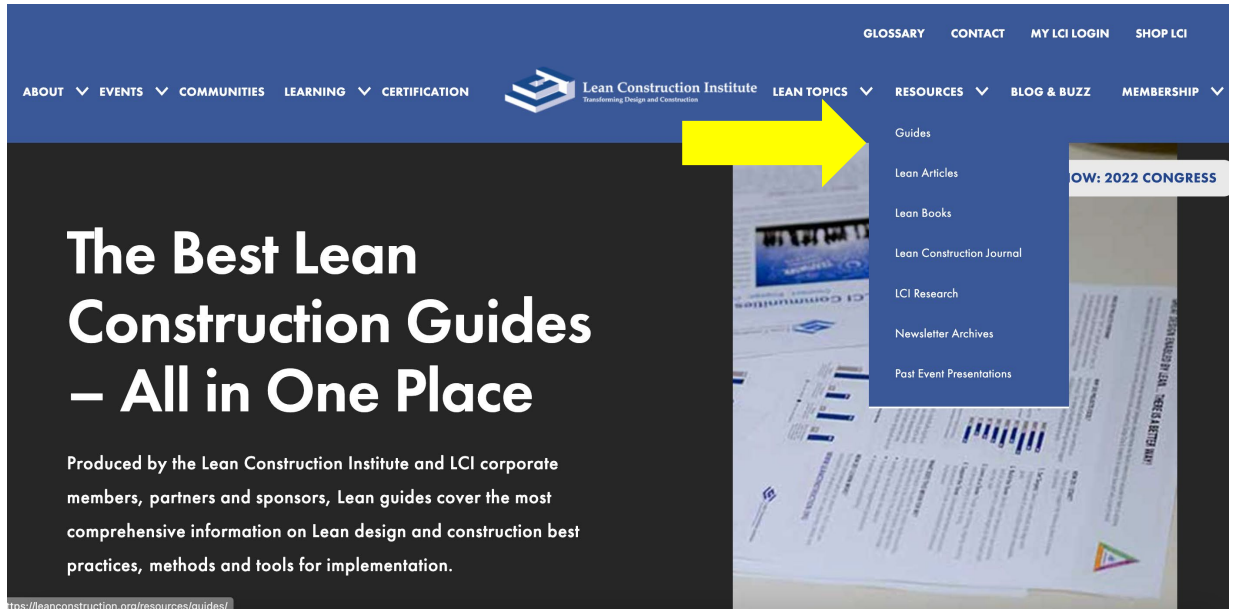

01.
Participants will understand the benefits of lean adoption specific to trade partners

02.
Participants will learn about the process and resources in the Trade Partner Handbook of Lean Methods

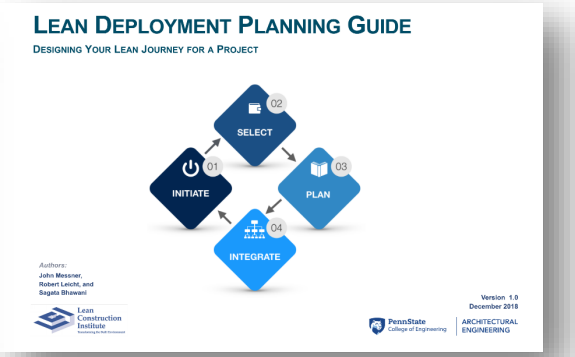
03.
Participants will learn through a case study how to incorporate best practices for adoption of lean methods.

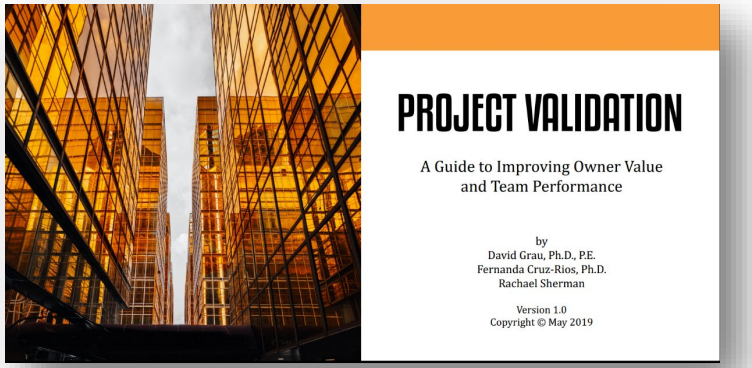
04.
Participants will walk away with ideas and methods they can apply immediately in their work as trade partners.

Trade Handbook is part of LCI's Research Portfolio



https://leanconstruction.org/resources/guides/





Background – Lean methods for Trade Partners

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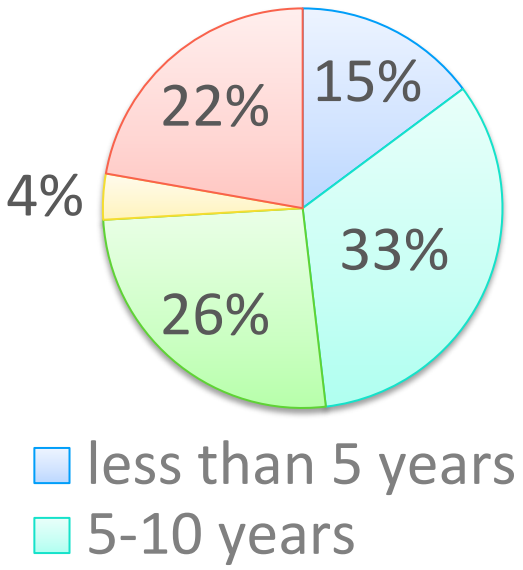
Lean Construction Institute
Transforming Design and Construction

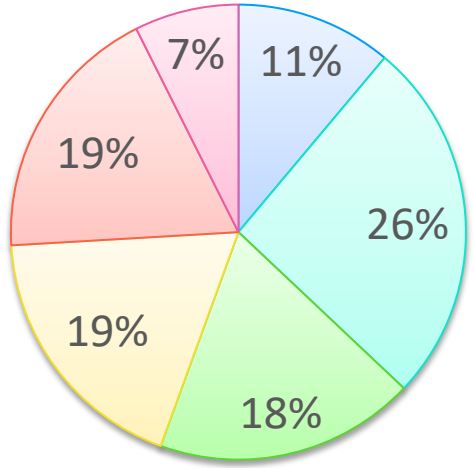
Diverse pool of interview participants

Years of Lean Engagement



Years of lean engagement	Number	Percentage
less than 5 years	4	15%
5-10 years	9	33%
11-15 years	7	26%
16-20 years	1	4%
more than 20 years	6	22%
Total	27	100%

Specialty



Specialty	Number	Percentage
Lean Consultant	3	11%
Trade- Mechanical	7	26%
Trade- Electrical	5	19%
Trade- Finishing	5	19%
CM/GC	5	19%
Industry Representative	2	7%
Total	27	100%

17 trade respondents

Geographic Distribution

(The dots are representative of that state not the location of interviewees)

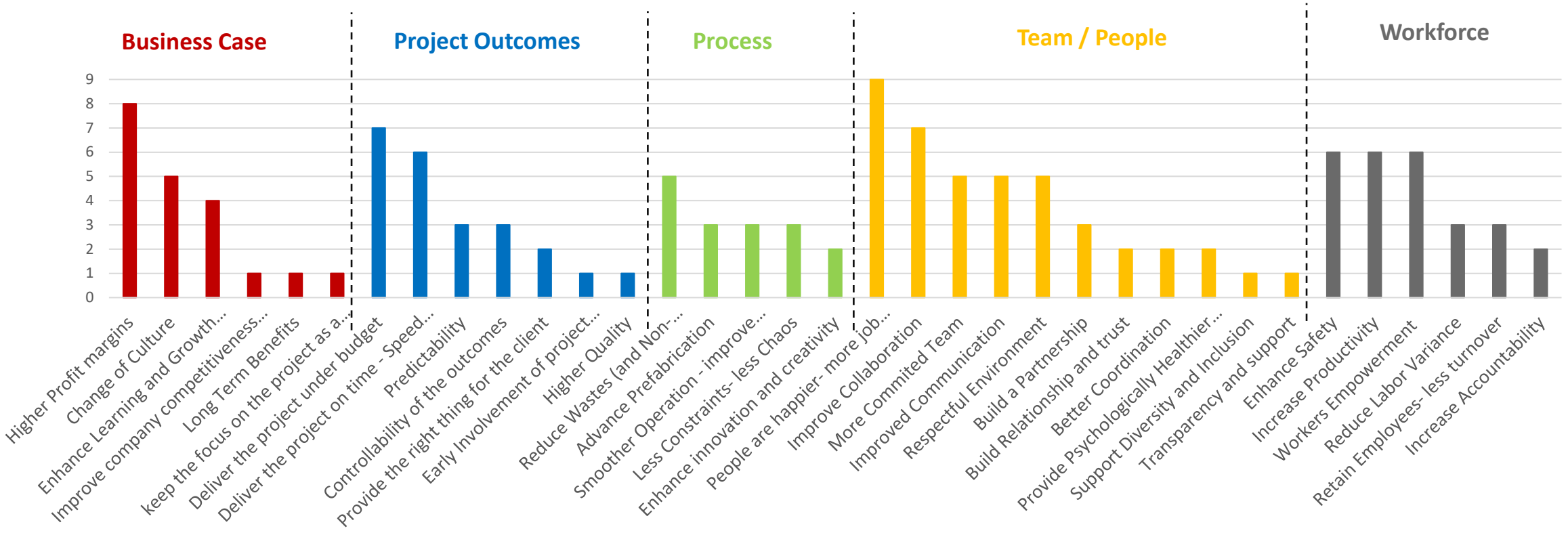
Total # of Interviewees = 27

Trade Partners = 64%

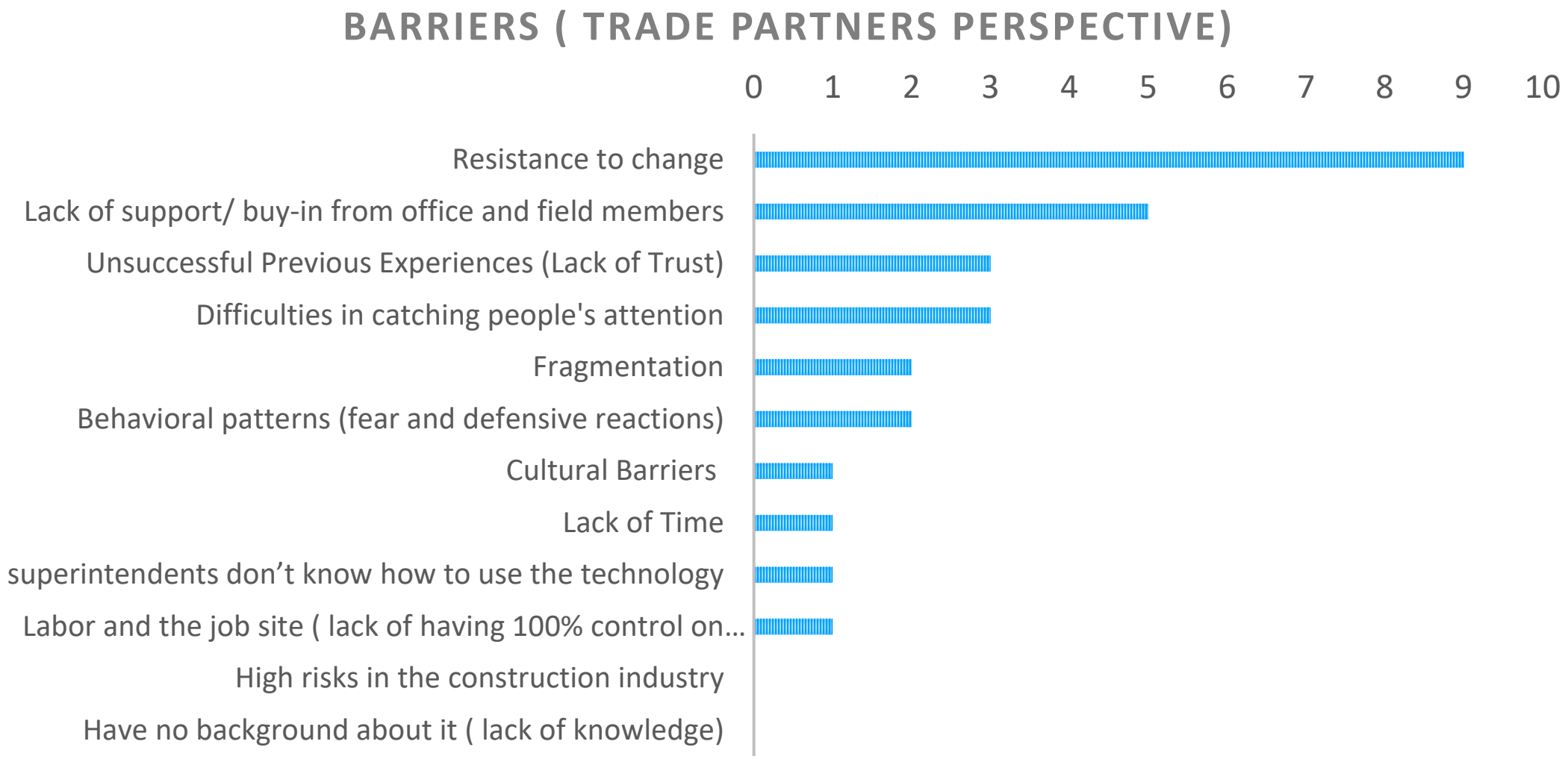
Benefits of Lean specific to Trade Contractors

Most cited benefits (by Trades):

1. **Happier people/employees**
2. **Improved collaboration**
3. **Enhance safety**
4. **Increased productivity**
5. **Worker empowerment**
6. **Deliver project on time**



Barriers to trade adoption of lean



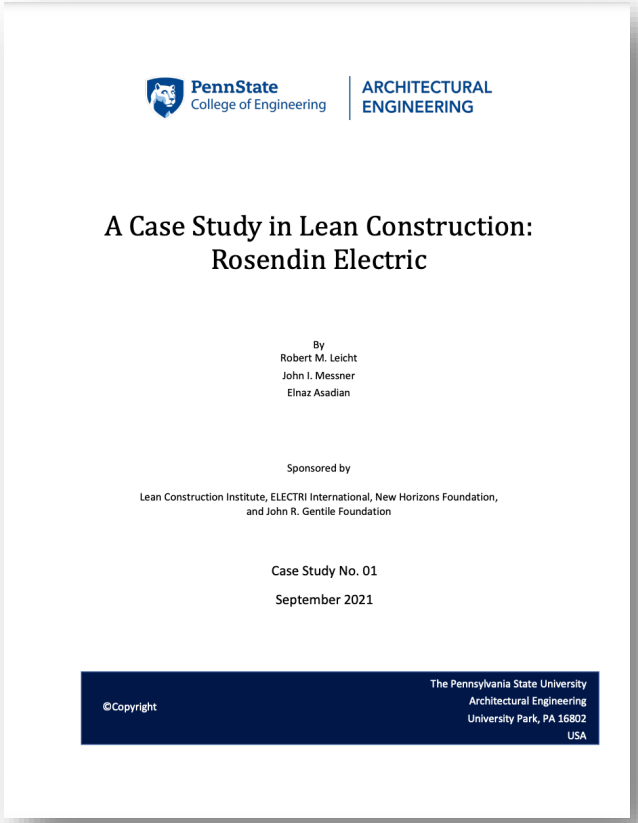
Good to Great

Focus on People - Training extended into mentoring and coaching

Focus on process - using standards and visual communication to make work easier

Focus on Continuous Improvement - Empowering people toward CI through the alignment of values, goals, and methods

Case Studies – Industry Leaders



PennState College of Engineering | ARCHITECTURAL ENGINEERING

A Case Study in Lean Construction:
Rosendin Electric

By
Robert M. Leicht
John I. Messner
Elnaz Asadian

Sponsored by

Lean Construction Institute, ELECTRI International, New Horizons Foundation, and John R. Gentile Foundation

Case Study No. 01

September 2021

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Architectural Engineering
University Park, PA 16802
USA

workers do cut down their need to handle and carry heavy materials. The carts can be easily shifted between areas to keep them close at hand, and they are wheeled and easily movable – so if they happen to be in the way of another trade or group, it does not take much time or effort to move them.

Organization of material storage and visual management
They organize and store typical or prefabricated parts, such as Unistrut cut to typical lengths. This helps the materials to be sorted at their shop facility in a more organized manner and ease the delivery process to the sites.
Their job boxes are usually organized, which are combined with visual management technique. Different parts are sorted under categories, making the finding process much easier for the installer.
They also establish a "Grab and Go" kits for the installation process on the job site. Under this strategy, all necessary tools and small parts for a specific electrical task, such as running ¾" conduit, will be sorted in a kit so that workers on a given task can grab the corresponding kit and have all the necessary items.

Trello as a virtual Kanban board: The shop uses the Trello board to manage the day-to-day production. The prefab shop receives orders through email and posts them to the Trello board so that the people engaged in the process can see what parts have been done, what parts are currently being assembled with specific dates. They also include pictures, drawings, and any other data related to each prefabricated part in the Trello platform to have complete info on each part. The board further serves as institutional memory with past examples of prefab requests, examples, and scopes.

Leicht, R. M., Messner, J. I., and Asadian, E. (2021). A case study in lean construction: Rosendin Electric. Case Study No. 01, Architectural Engineering, The Pennsylvania State University, Univ. Park, PA.

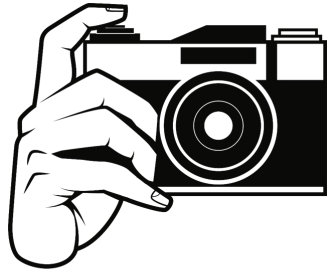
9

Job Site(s)

Office

Shop Facility

Personnel Interviews



Capture Short Videos

Results

Implementation Status

Status	Mark	Explanation
Not Observed		Evidence of adoption was not noted or directly observed during the case study.
Partially Implemented		Evidence of the approaches was noted in some interviews or partially observed – suggesting some use but not standard across operations.
Fully Implemented		The approaches were commonly noted in interviews and/or observed as standard elements in company operations.

Culture and Organizational Values – it starts at the top

Common Approaches in Culture and Organizational Values

Approaches	A	B	C	D	E	F	G
Align continuous improvement principles with **organizational values**	●	●	●	●	◡	◡	◡
Adopt continuous improvement approaches in **long-term goals**	●	●	●	●	●	●	◡
Create an **organizational environment** that enables continuous improvement	●	●	●	◡	●	◡	◡
Empowering everyone to pursue continuous improvement	●	◡	◡	●	◡	◡	◡
Develop a **continuous improvement culture** in all divisions/ departments	●	●	●	●	○	◡	○
Consider employees as **internal customers**	●	●	●	◡	◡	○	○

*Note – company order changes for each table to re-order from highest to lowest observed adoption

Image courtesy of Rosendin Electric

- Embedding lean principles with company core values allows methods to be easily grounded in how each firm operates.
- Empowering their employees to engage in the CI process.

Mentor and Cultivate Field Leaders

Common Approaches in Mentoring and Cultivating Field Leaders

Approaches	A	B	C	D	E	F	G
Empowering people through guidance, standards, and flexibility	●	●	●	●	●	◒	◒
Courses for training **field leaders**	●	●	●	●	●	◒	○
Develop and **promote people** into leadership roles	●	●	●	●	●	◒	◒
Emphasis on both **technical and leadership training**	●	●	●	●	●	●	●
Different mentoring programs to **develop leaders and grow coaches**	●	◒	◒	◒	◒	○	○

*Note – company order changes for each table to re-order from highest to lowest observed adoption

Leadership coming from the field

Images courtesy of KHS&S

- Mentoring- companies' culture, processes, methods and standards
- Promote from within
- Inclusion of craft

Better tools & equipment - Making the field tasks easier and safer

Common Approaches in Access to better tools/equipment

Approaches	A	B	C	D	E	F	G
Unbundling of complex methods to **simple and easily understood** concepts.	●	●	●	◒	○	◒	◒
Use better tools or equipment to **facilitate field operations**	●	●	●	●	●	◒	◒
In parallel with standardization, they **match their tools and equipment with their operations**.	●	●	●	●	●	◒	◒
Allocate a specific budget for providing better tools, which is **separated from the project costs**	◒	◒	◒	◒	○	○	○

*Note – company order changes for each table to re-order from highest to lowest observed adoption

Image courtesy of Thompson Electric

Image courtesy of KHS&S

- Unbundling
- Better tools

Visual Management – make information visual and easy to understand

Common Approaches in Visual Management

Approaches	A	B	C	D	E	F	G
Apply VM **across operations** to support simple, effective **communication or tracking**.	●	●	●	◡	◡	◡	◡
VM is **built into the inventory management** system and processes.	●	◡	●	●	●	◡	◡
Extensive use of **color-coding**	●	●	◡	◡	◡	◡	◡
Use VM for **information sharing**, such as productivity reports and project standards	◡	●	●	◡	●	◡	◡
Use VM for **communication and raising awareness**	●	●	◡	◡	○	○	○

*Note – company order changes for each table to re-order from highest to lowest observed adoption

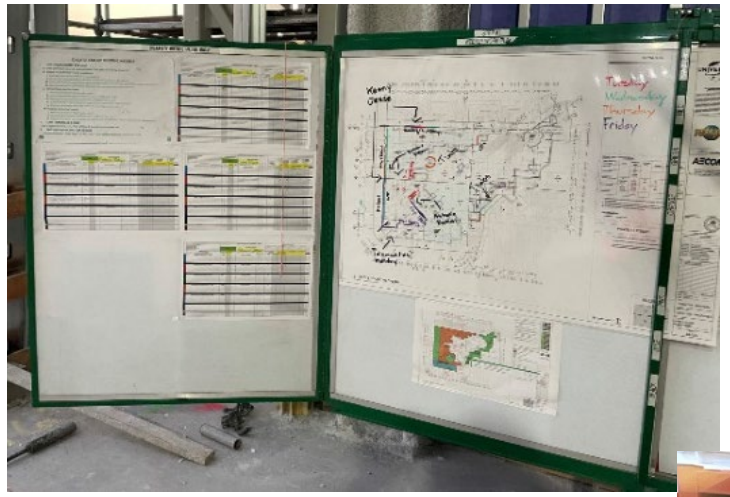


Image courtesy of KHS&S

- Raise awareness
- Information sharing
- Identify problems

Image courtesy of Rosendin Electric

Standardize the easy stuff, so the craft can focus on the complex work

Common Approaches in Standardization

Approaches	A	B	C	D	E	F	G
The standardization of **work processes**	●	●	●	●	◡	◡	◡
Reduce variation whenever possible	●	●	●	●	◡	◡	◡
Track, share, and display key metrics that result from production standards and common work practices	●	●	◡	◡	●	◡	◡
Tactics for standardization embody the **nature of the work**	●	●	●	●	●	●	◡

*Note – company order changes for each table to re-order from highest to lowest observed adoption

Balancing autonomy and standardization

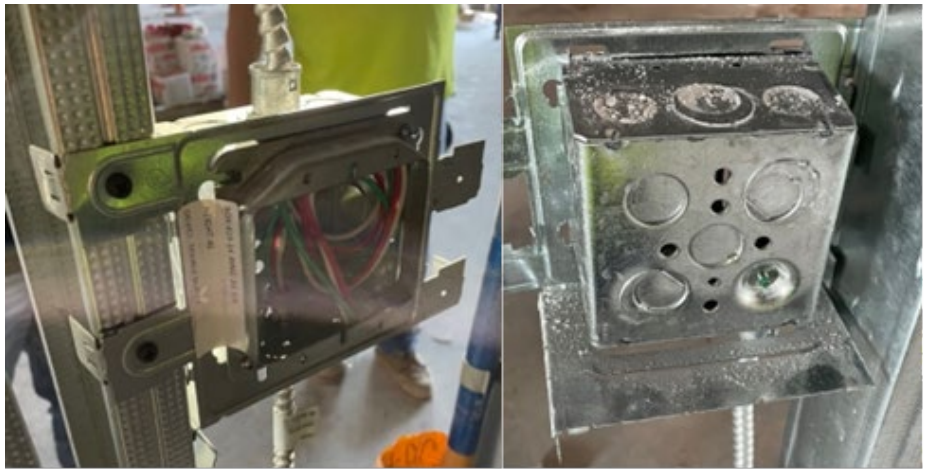


Image courtesy of Thompson Electri

- Use standard to make work easier
- Transparency

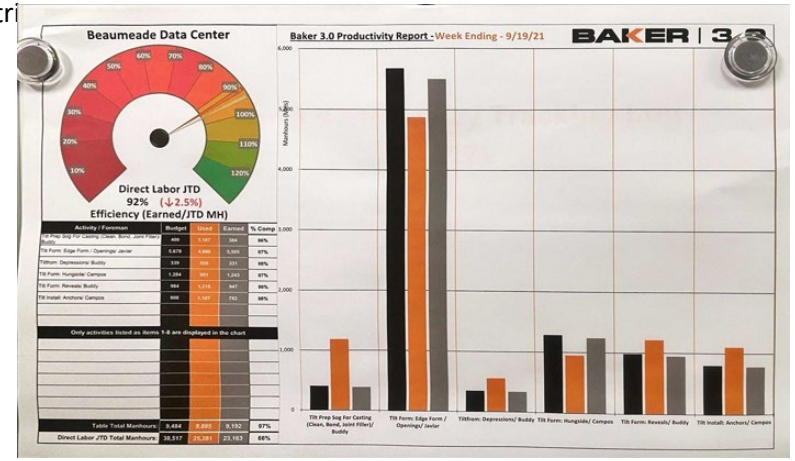


Image courtesy of Baker Concrete

Cultivate problem-solving mentality – encourage continuous improvement

Common Approaches in Systematic Processes (Empowering problem-solving mentality)

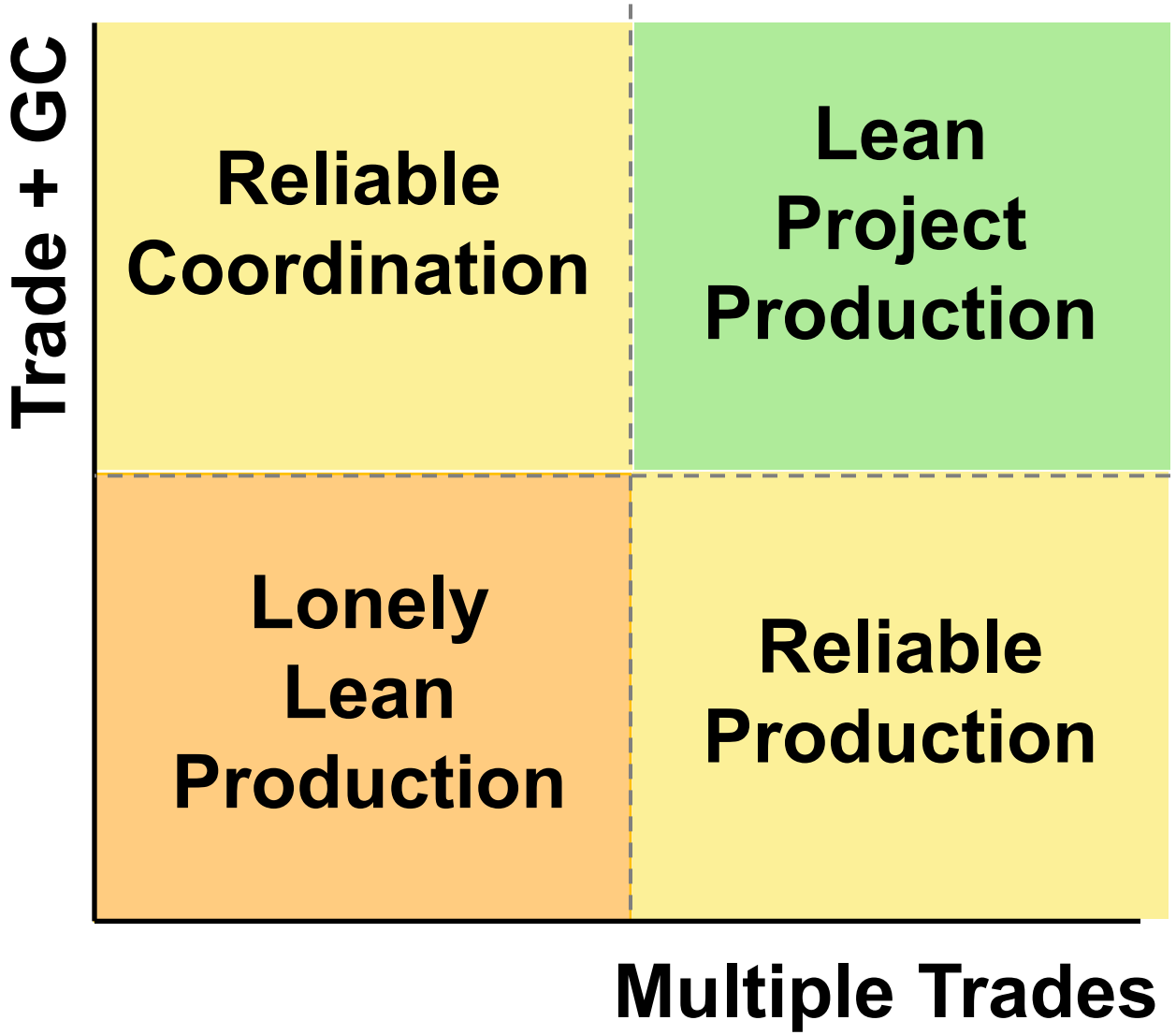
Approaches	A	B	C	D	E	F	G
Sustaining improvements to processes through **frequent reviews and coaching** to ensure they are being implemented.	●	●	◒	●	◒	◒	◒
Gathering **input from all company stakeholders** to agree upon or refine processes and methods	●	●	●	◒	◒	○	○
Focus on **small improvements and appreciate new ideas** for improvement from the workforce	●	◒	●	◒	◒	○	○

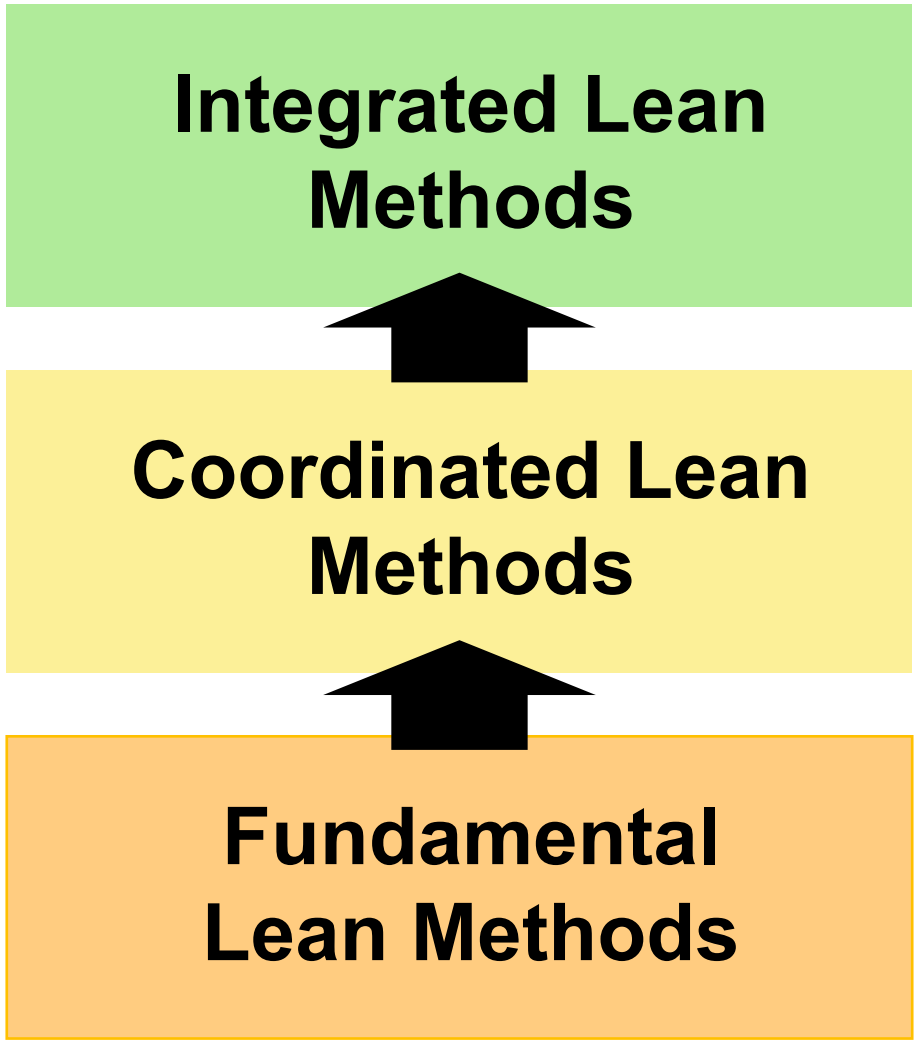
*Note – company order changes for each table to re-order from highest to lowest observed adoption

"Fix what bugs you"

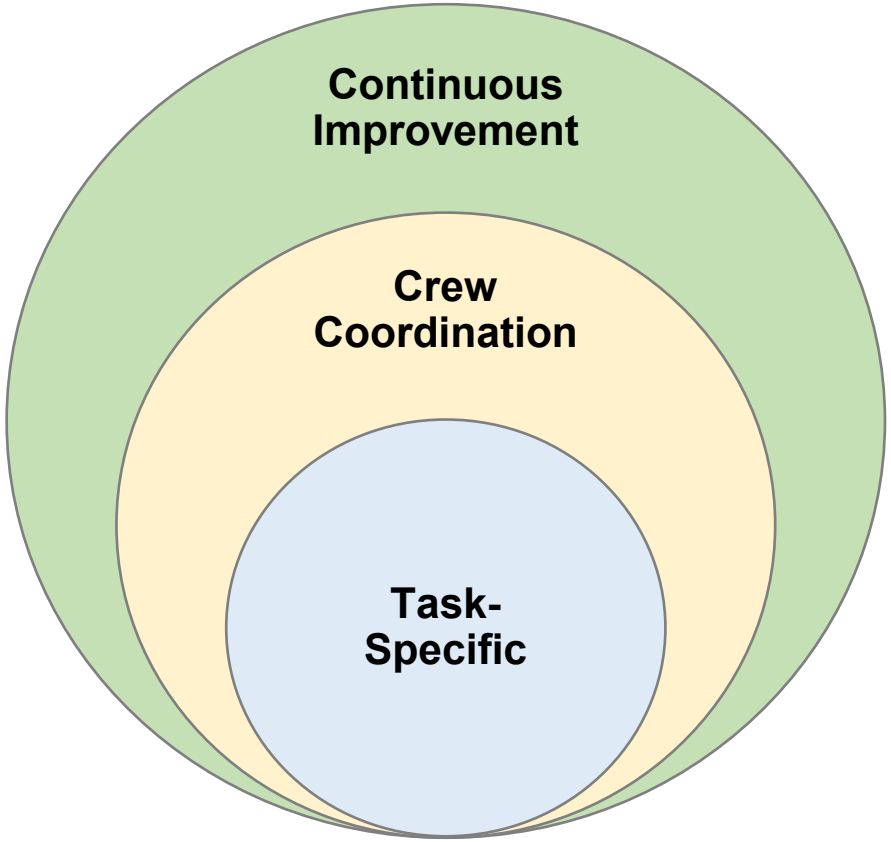
Image courtesy of Parsons Electric

Organizing & Prioritizing Lean Methods for Trades





Identifying your Lean Methods by your Sphere of Influence



Task-specific

8 Wastes

A simple method to introduce the idea of recognizing waste effort and resources that detract from producing value in work that is performed.

Standard Work

Creating consistent processes and techniques for how work is performed based upon best practices.

5S

An approach for workplace organization and maintaining visual control. The "S" stands for: Sort, Set-in-order, Standardize, Shine, and Sustain.

Kitting

Sorting, grouping and packaging separate but related items together to reduce packaging and waste at the workface.

Crew Coordination

Weekly Work Plans

Method within the Last Planner System that supports collaborative and commitment-based planning and control that helps develop a reliable workflow.

Daily Huddle

A structured daily check-in for briefly highlight key plans, emerging constraints or safety concerns, changes, and team accomplishments.

Visual Management

A way to manage information visually such that it enables collaboration, open communication, helps track progress and notice disruptions quickly.

Prefabrication

Strategies employed in production to develop assemblies or components off-site to streamline work on- site.

Continuous Improvement

A3 Thinking

Documentation approach for problem- solving and reporting on project-related critical decisions using the Plan - Do - Check - Adjust. (PDCA) method for continuous improvement.

Value Stream Mapping

Mapping the process by including value and non-value add work activities to identify areas of improvement in the delivery process.

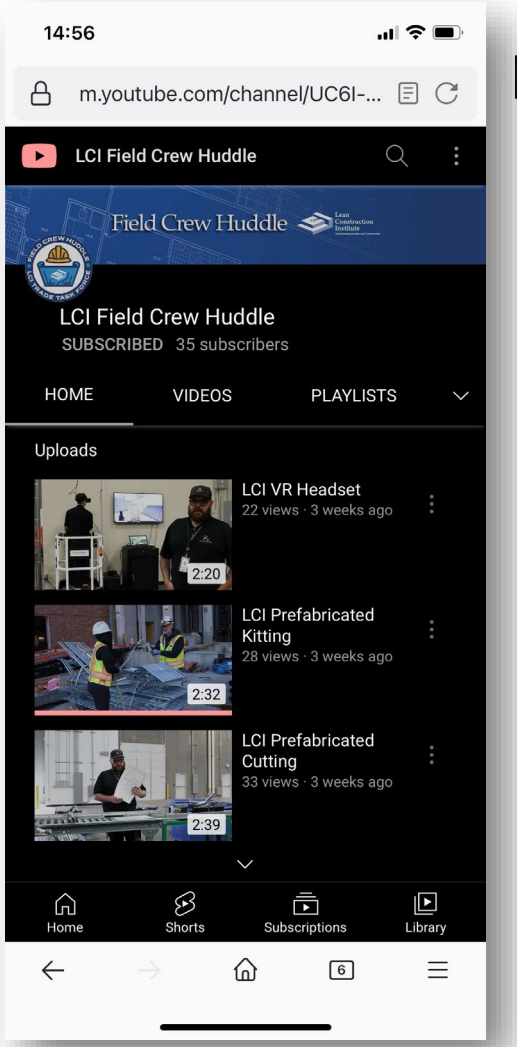
Gemba Walk

Means "Going to the work" or walking the job site where the actual work is done to identify waste elimination opportunities.

5 Whys

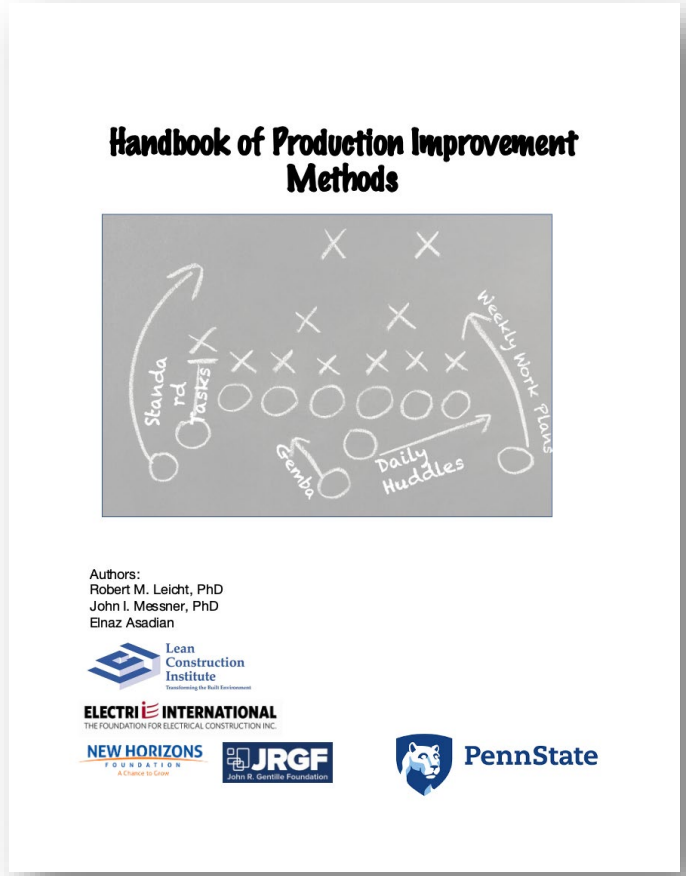
Problem solving technique to determine root cause by diving deeper into the "why" five times.

Accessing the methods and resources



Mobile-friendly website

https://fieldcrewhuddle.leanconstruction.org/



Downloadable Handbook

Field Crew Huddle – Industry Leader Case Studies

How Crew Coordination Improves Outcomes at KHS&S Contractors

DOWNLOAD CASE STUDY

Background

KHS&S Contractors – an international design-assist specialty building company – uses a standard process for coordinating the work across crews. The focus of trade work occurs in weekly cycles, breaking large milestones down to manageable scopes of work to hand out to crews or individual workers. Balancing and leveling this work, along with the necessary equipment, tools, and materials, requires detailed weekly work plans to define all of these activities and match them to the project plan and budget.

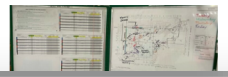
Weekly Work Plans (WWP)

Beyond the training and understanding of all elements, KHS&S takes the weekly work plan as a key element for engagement with field personnel. The planning builds from standard Last Planner System (LPS) activities. Still, it is used to align budget information to field activities, plan detailed crew and location assignments, and map work areas and material deliveries.

The tasks for each crew member are laid out for the week. This includes the areas of work and day, using color coding as a visual management strategy. The tasks are broken down to match the budget, so the tracked hours are easily linked back to progress, productivity, and billing. Color-coding the daily tasks within the weekly work plan creates a quick visual link between the crew, task, area, and materials across the different visuals used to plan and coordinate work. Each morning, the plan is discussed as part of each crew's daily huddle.

Daily Huddles

Daily huddles are conducted each morning before work begins to track the progress and activity of each crew. Using a standard work agenda, the group spends time discussing each crew's production goal, identifying any current or



the simple change they made to how the job box doors open; in an earlier version, a worker needed to stop his coworker to access items below, but could not open the door. However, by simply changing the order of closing, there is no longer a need to stop ongoing activities to access equipment or tools in the lower portion of the job box. This empowerment of workers and willingness to continue to iterate and improve was seen extensively throughout the c

KHS&

Balancing intention with training

The core to KHS&S' success appears to stem
leadership, in lean principles and a shortlist of
projects. The training is defined into three le
fundamental training that is targeted for all emp
Plan (CIP) an employee engages in when startin
tasks, and mastery items each employee mu
Approximately half of these items are addres
several further are assessed through their demo
such as consistency in leading stand-up meet
completing their certification are performed th
that is to be presented back to the lean trainers

The training for the bronze, in class, consists of s
that are focused on application and reflection, a
training is not limited to their in-house personne
on what they have found in years of their lean
broadly expanding the use of lean for the benef

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Case Study No. 03
October 2021

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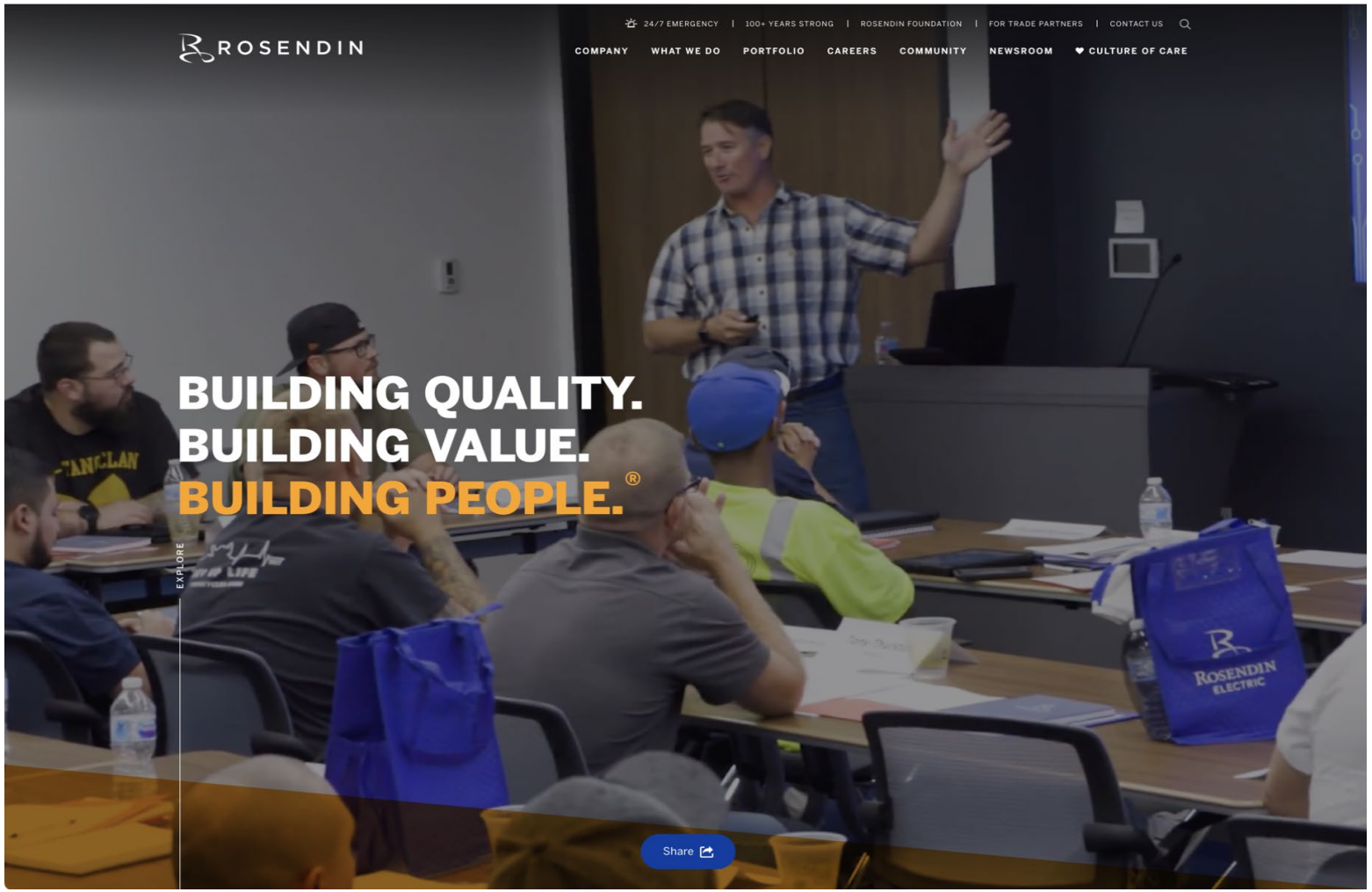
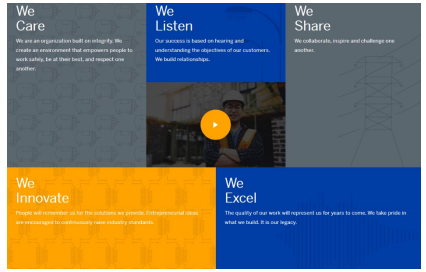

24/7 EMERGENCY | 100+ YEARS STRONG | ROSENDIN FOUNDATION | FOR TRADE PARTNERS | CONTACT US
ROSENDIN
COMPANY WHAT WE DO PORTFOLIO CAREERS COMMUNITY NEWSROOM CULTURE OF CARE
BUILDING QUALITY.
BUILDING VALUE.
BUILDING PEOPLE.®
EXPLORE
ROSENDIN ELECTRIC
Share


We Care
We Listen
We Share
We Innovate
We Excel

Lean at Rosendin:

- Two pillars
- Focus on where we add value

Focus on where we add value (electrical work)

- Simple, standard, easy-to-use forms
- Make it easy to **Plan** (fundamentals):
  - Work/crew locations
  - Material needs & placement
  - Resource/equipment needs
  - Constraints

3 WEEK PLAN

Date: 02/13/20 | Job Name: Best One Yet | Job Number: 654321 | Purchasing Agent: Spunky Brewster | Project Manager: Chip Block | Prepared By: Schaefer | Superintendent: Stu Pedeso

Description of Work	Name(s)	1/2 M	1/3 T	1/4 W	1/5 TH	1/6 F	1/7 Sat.	1/8 Sun.	1/9 M	1/10 T	1/11 W	1/12 TH	1/13 F	1/14 Sat.	1/15 Sun.	1/16 M	1/17 T	1/18 W	1/19 TH	1/20 F	1/21 Sat.	1/22 Sun.	Resources Needed On The Job: Tools, Equipment, Material, Notes
Wall rough room 212		2	2																				Prepackaged A
Wall rough room 214		2	2	2																			Prepackaged B
Wall rough room 216				2	2	2																	Prepackaged A
Wall rough room 218					2	2			2														Prepackaged B
Wall rough room 220									2	2	2												Prepackaged A
Wall rough room 222										2	2	2											Prepackaged C
Roof Penetrations and racks													4			4	4	4					Core Driller. Deck Flanges
Level 3 seismic																			4	4			ISAT kits XZ
Totals:		4	4	4	4	4	0	0	4	4	4	2	4	0	0	4	4	4	4	4	0	0	

Task-specific	Crew Coordination
8 Wastes *A simple method to introduce the idea of recognizing waste effort and resources that detract from producing value in work that is performed.*	**Weekly Work Plans** *Method within the Last Planner System that supports collaborative and commitment-based planning and control that helps develop a reliable workflow.*
Standard Work *Creating consistent processes and techniques for how work is performed based upon best practices.*	**Daily Huddle** *A structured daily check-in for briefly highlight key plans, emerging constraints or safety concerns, changes, and team accomplishments.*
5S *An approach for workplace organization and maintaining visual control. The "S" stands for: Sort, Set-in-order, Standardize, Shine, and Sustain.*	**Visual Management** *A way to manage information visually such that it enables collaboration, open communication, helps track progress and notice disruptions quickly.*
Kitting *Sorting, grouping and packaging separate but related items together to reduce packaging and waste at the workface.*	**Prefabrication** *Strategies employed in production to develop assemblies or components off-site to streamline work on- site.*

5S & VM – Organize resources to make it easy for craft to be efficient

Task-specific

8 Wastes

A simple method to introduce the idea of recognizing waste effort and resources that detract from producing value in work that is performed.

Standard Work

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Standard work – make it easy to put work in place

Task-specific

8 Wastes

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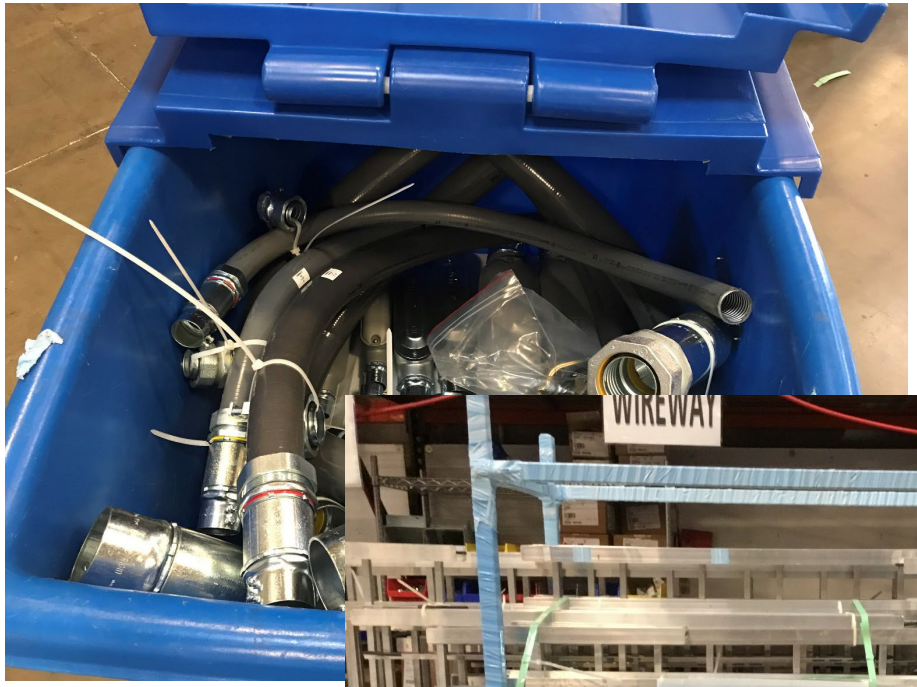
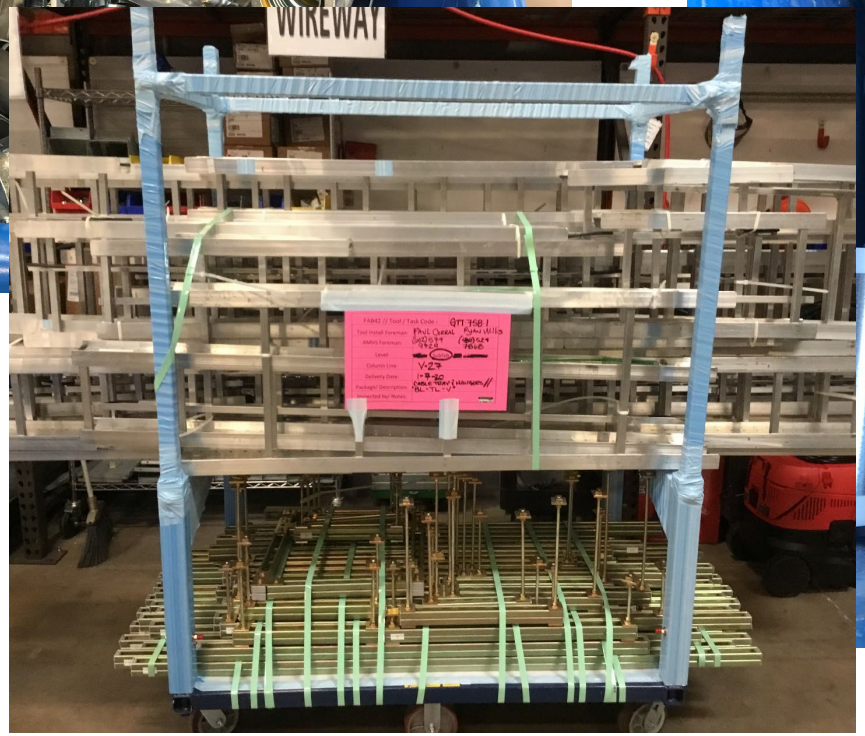
Kitting

Sorting, grouping and packaging separate but related items together to reduce packaging and waste at the workface.

Kits – make it easy to transport & find the right materials





Task-specific

8 Wastes

A simple method to introduce the idea of recognizing waste effort and resources that detract from producing value in work that is performed.

Standard Work

Creating consistent processes and techniques for how work is performed based upon best practices.

5S

An approach for workplace organization and maintaining visual control. The "S" stands for: Sort, Set-in-order, Standardize, Shine, and Sustain.

Kitting

Sorting, grouping and packaging separate but related items together to reduce packaging and waste at the workface.

Crew Coordination

Weekly Work Plans

Method within the Last Planner System that supports collaborative and commitment-based planning and control that helps develop a reliable workflow.

Daily Huddle

A structured daily check-in for briefly highlight key plans, emerging constraints or safety concerns, changes, and team accomplishments.

Visual Management

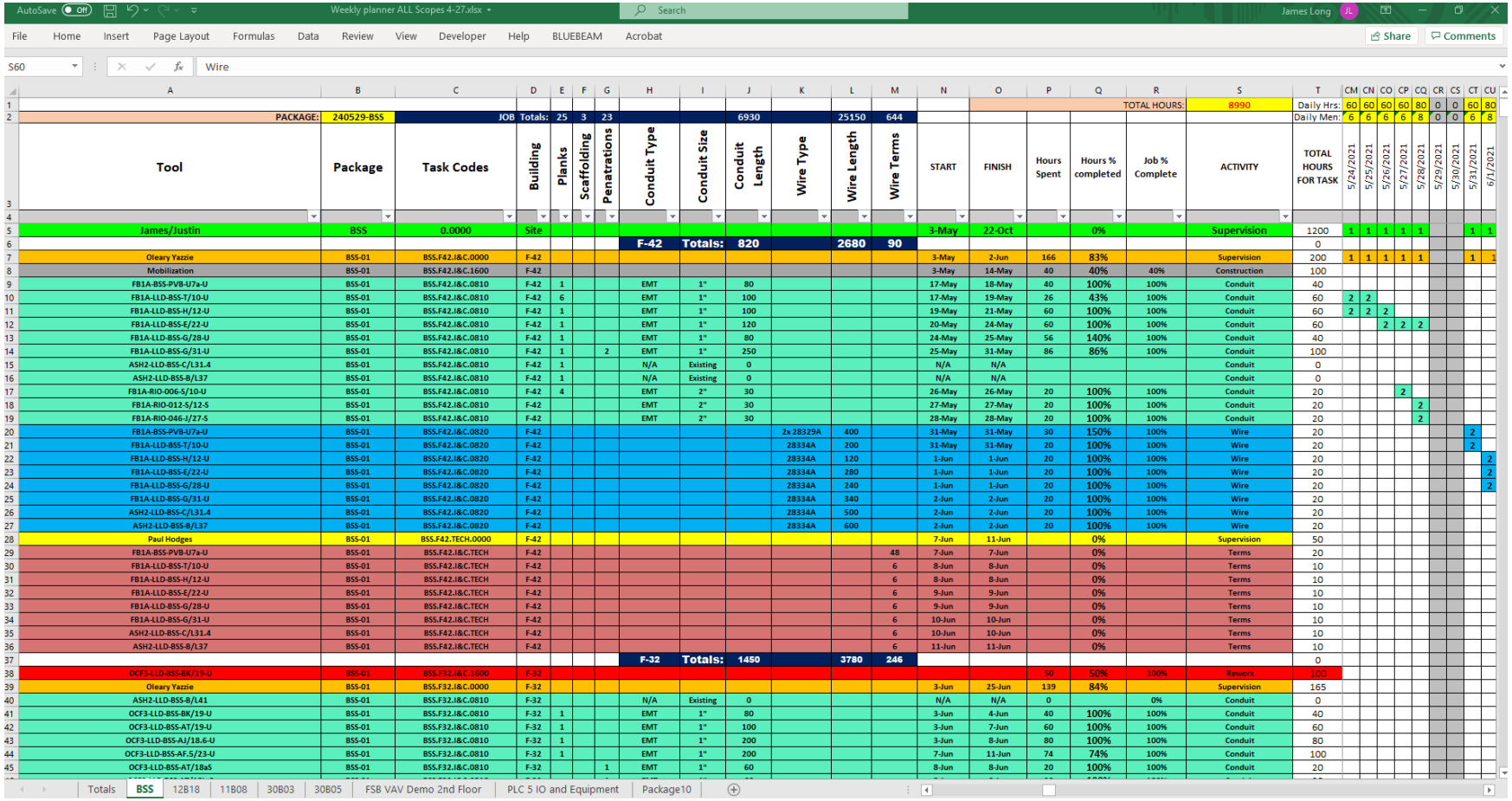
A way to manage information visually such that it enables collaboration, open communication, helps track progress and notice disruptions quickly.

Prefabrication

Strategies employed in production to develop assemblies or components off-site to streamline work on- site.

Weekly work planning – **Improve** your work

- Empower foremen and crew leads
  - OK to color outside the lines
- Visual (color)
- Automated



Weekly planner ALL Scopes 4-27.xlsx

Tool	Package	Task Codes	Building	Planks	Scaffolding	Penatrations	Conduit Type	Conduit Size	Conduit Length	Wire Type	Wire Length	Wire Terms	START	FINISH	Hours Spent	Hours % completed	Job % Complete	ACTIVITY	TOTAL HOURS FOR TASK	5/24/2021	5/25/2021	5/26/2021	5/27/2021	5/28/2021	5/29/2021	5/30/2021	5/31/2021	6/1/2021
PACKAGE:	240529-BSS	JOB Totals:	25	3	23				6930		25150	644					TOTAL HOURS:	8990	Daily Hrs:	60	60	60	60	80	0	0	60	80
																			Daily Men:	6	6	6	6	8	0	0	6	8
James/Justin	BSS	0.0000	Site										3-May	22-Oct		0%		Supervision	1200	1	1	1	1	1			1	1
							F-42	Totals:	820		2680	90							0									
Oleary Yazzie	BSS-01	BSS.F42.I&C.0000	F-42										3-May	2-Jun	166	83%		Supervision	200	1	1	1	1	1			1	1
Mobilization	BSS-01	BSS.F42.I&C.1600	F-42										3-May	14-May	40	40%	40%	Construction	100									
FB1A-BSS-PVB-U7a-U	BSS-01	BSS.F42.I&C.0810	F-42	1			EMT	1"	80				17-May	18-May	40	100%	100%	Conduit	40									
FB1A-LLD-BSS-T/10-U	BSS-01	BSS.F42.I&C.0810	F-42	6			EMT	1"	100				17-May	19-May	26	43%	100%	Conduit	60	2	2							
FB1A-LLD-BSS-H/12-U	BSS-01	BSS.F42.I&C.0810	F-42	1			EMT	1"	100				19-May	21-May	60	100%	100%	Conduit	60	2	2	2						
FB1A-LLD-BSS-E/22-U	BSS-01	BSS.F42.I&C.0810	F-42	1			EMT	1"	120				20-May	24-May	60	100%	100%	Conduit	60			2	2	2				
FB1A-LLD-BSS-G/28-U	BSS-01	BSS.F42.I&C.0810	F-42	1			EMT	1"	80				24-May	25-May	56	140%	100%	Conduit	40									
FB1A-LLD-BSS-G/31-U	BSS-01	BSS.F42.I&C.0810	F-42	1		2	EMT	1"	250				25-May	31-May	86	86%	100%	Conduit	100									
ASH2-LLD-BSS-C/L31.4	BSS-01	BSS.F42.I&C.0810	F-42	1			N/A	Existing	0				N/A	N/A				Conduit	0									
ASH2-LLD-BSS-B/L37	BSS-01	BSS.F42.I&C.0810	F-42	1			N/A	Existing	0				N/A	N/A				Conduit	0									
FB1A-RIO-006-S/10-U	BSS-01	BSS.F42.I&C.0810	F-42	4			EMT	2"	30				26-May	26-May	20	100%	100%	Conduit	20				2					
FB1A-RIO-012-S/12-S	BSS-01	BSS.F42.I&C.0810	F-42				EMT	2"	30				27-May	27-May	20	100%	100%	Conduit	20					2				
FB1A-RIO-046-J/27-S	BSS-01	BSS.F42.I&C.0810	F-42				EMT	2"	30				28-May	28-May	20	100%	100%	Conduit	20					2				
FB1A-BSS-PVB-U7a-U	BSS-01	BSS.F42.I&C.0820	F-42							2x 28329A	400		31-May	31-May	30	150%	100%	Wire	20								2	
FB1A-LLD-BSS-T/10-U	BSS-01	BSS.F42.I&C.0820	F-42							28334A	200		31-May	31-May	20	100%	100%	Wire	20								2	
FB1A-LLD-BSS-H/12-U	BSS-01	BSS.F42.I&C.0820	F-42							28334A	120		1-Jun	1-Jun	20	100%	100%	Wire	20									2
FB1A-LLD-BSS-E/22-U	BSS-01	BSS.F42.I&C.0820	F-42							28334A	280		1-Jun	1-Jun	20	100%	100%	Wire	20									2
FB1A-LLD-BSS-G/28-U	BSS-01	BSS.F42.I&C.0820	F-42							28334A	240		1-Jun	1-Jun	20	100%	100%	Wire	20									2
FB1A-LLD-BSS-G/31-U	BSS-01	BSS.F42.I&C.0820	F-42							28334A	340		2-Jun	2-Jun	20	100%	100%	Wire	20									
ASH2-LLD-BSS-C/L31.4	BSS-01	BSS.F42.I&C.0820	F-42							28334A	500		2-Jun	2-Jun	20	100%	100%	Wire	20									
ASH2-LLD-BSS-B/L37	BSS-01	BSS.F42.I&C.0820	F-42							28334A	600		2-Jun	2-Jun	20	100%	100%	Wire	20									
Paul Hodges	BSS-01	BSS.F42.TECH.0000	F-42										7-Jun	11-Jun		0%		Supervision	50									
FB1A-BSS-PVB-U7a-U	BSS-01	BSS.F42.I&C.TECH	F-42									48	7-Jun	7-Jun		0%		Terms	20									
FB1A-LLD-BSS-T/10-U	BSS-01	BSS.F42.I&C.TECH	F-42									6	8-Jun	8-Jun		0%		Terms	10									
FB1A-LLD-BSS-H/12-U	BSS-01	BSS.F42.I&C.TECH	F-42									6	8-Jun	8-Jun		0%		Terms	10									
FB1A-LLD-BSS-E/22-U	BSS-01	BSS.F42.I&C.TECH	F-42									6	9-Jun	9-Jun		0%		Terms	10									
FB1A-LLD-BSS-G/28-U	BSS-01	BSS.F42.I&C.TECH	F-42									6	9-Jun	9-Jun		0%		Terms	10									
FB1A-LLD-BSS-G/31-U	BSS-01	BSS.F42.I&C.TECH	F-42									6	10-Jun	10-Jun		0%		Terms	10									
ASH2-LLD-BSS-C/L31.4	BSS-01	BSS.F42.I&C.TECH	F-42									6	10-Jun	10-Jun		0%		Terms	10									
ASH2-LLD-BSS-B/L37	BSS-01	BSS.F42.I&C.TECH	F-42									6	11-Jun	11-Jun		0%		Terms	10									
							F-32	Totals:	1450		3780	246							0									
OCF3-LLD-BSS-BK/19-U	BSS-01	BSS.F32.I&C.1600	F-32												50	50%	100%	Rework	100									
Oleary Yazzie	BSS-01	BSS.F32.I&C.0000	F-32										3-Jun	25-Jun	139	84%		Supervision	165									
ASH2-LLD-BSS-B/L41	BSS-01	BSS.F32.I&C.0810	F-32				N/A	Existing	0				N/A	N/A	0		0%	Conduit	0									
OCF3-LLD-BSS-BK/19-U	BSS-01	BSS.F32.I&C.0810	F-32	1			EMT	1"	80				3-Jun	4-Jun	40	100%	100%	Conduit	40									
OCF3-LLD-BSS-AT/19-U	BSS-01	BSS.F32.I&C.0810	F-32	1			EMT	1"	100				3-Jun	7-Jun	60	100%	100%	Conduit	60									
OCF3-LLD-BSS-AJ/18.6-U	BSS-01	BSS.F32.I&C.0810	F-32	1			EMT	1"	200				3-Jun	8-Jun	80	100%	100%	Conduit	80									
OCF3-LLD-BSS-AF.5/23-U	BSS-01	BSS.F32.I&C.0810	F-32	1			EMT	1"	200				7-Jun	11-Jun	74	74%	100%	Conduit	100									
OCF3-LLD-BSS-AT/18a5	BSS-01	BSS.F32.I&C.0810	F-32			1	EMT	1"	60				8-Jun	8-Jun	20	100%	100%	Conduit	20									

Totals | BSS | 12B18 | 11B08 | 30B03 | 30B05 | FSB VAV Demo 2nd Floor | PLC 5 IO and Equipment | Package10

Training (electricians) to improve workforce and communication

Resources and Path Forward

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Good to Great

Focus on People - Training extended into mentoring and coaching

Focus on process - using standards and visual communication to make work easier

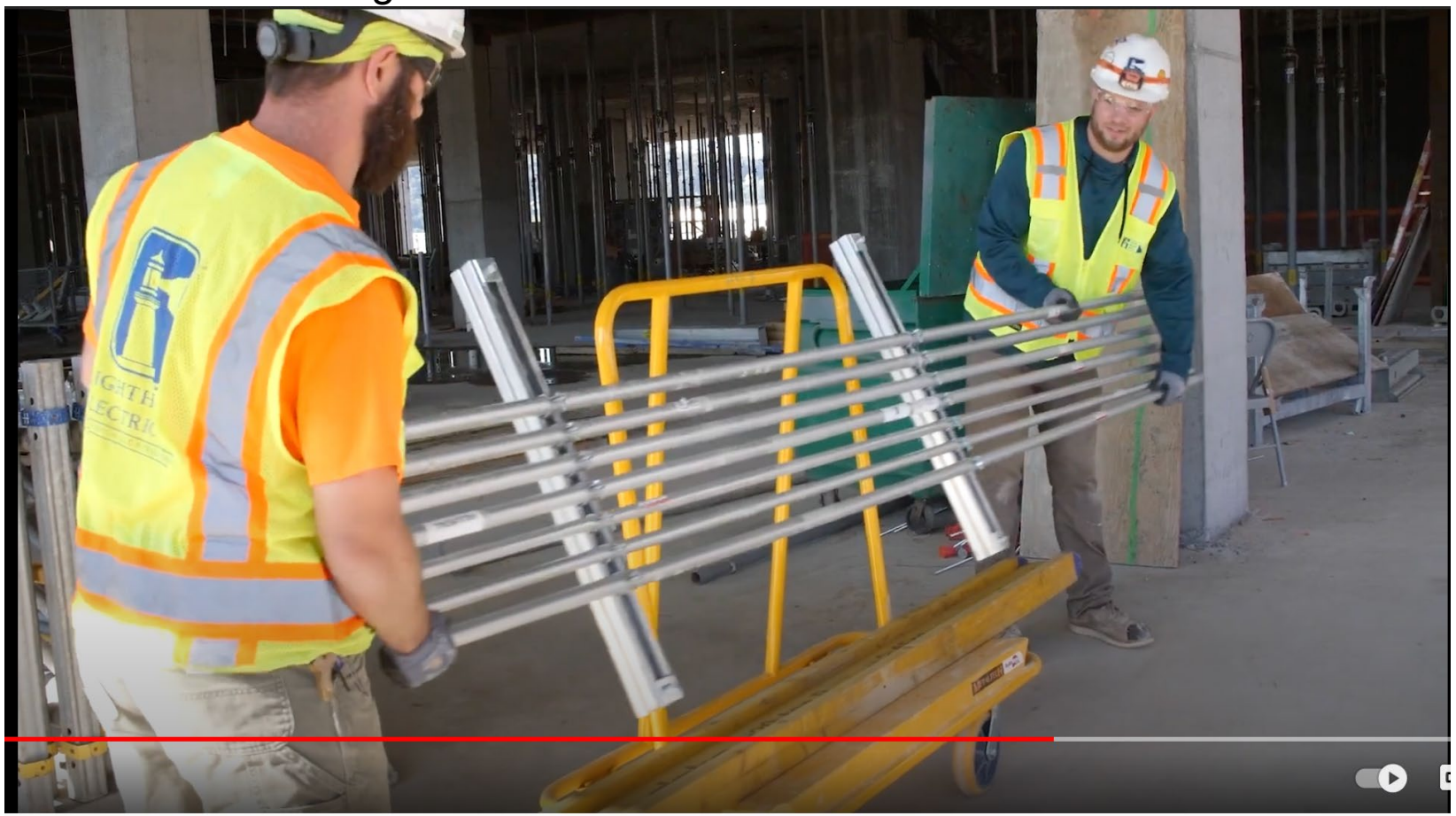
Focus on Continuous Improvement - Empowering people toward CI through the alignment of values, goals, and methods

Insights & Takeaways

- **Fundamentals**: Plan your work, organize your tools / materials
- **Discipline**: training and ongoing emphasis to embed lean thinking into routines and habits
- **Start small:** Focus on where crews lose time -> moving materials, collecting tools, finding equipment – a few minutes per day add up!
- **Empower Craft:** More improvements from empowering the workforce, than waiting for the boss to see a problem and fix it
- **Risk (cost) is in the field**: Everyone should be focused on helping craft focus on their tasks
- **Incentives vs penalties**: acknowledgement goes a long way!

Field Crew Huddle website

Prefabricated Kitting

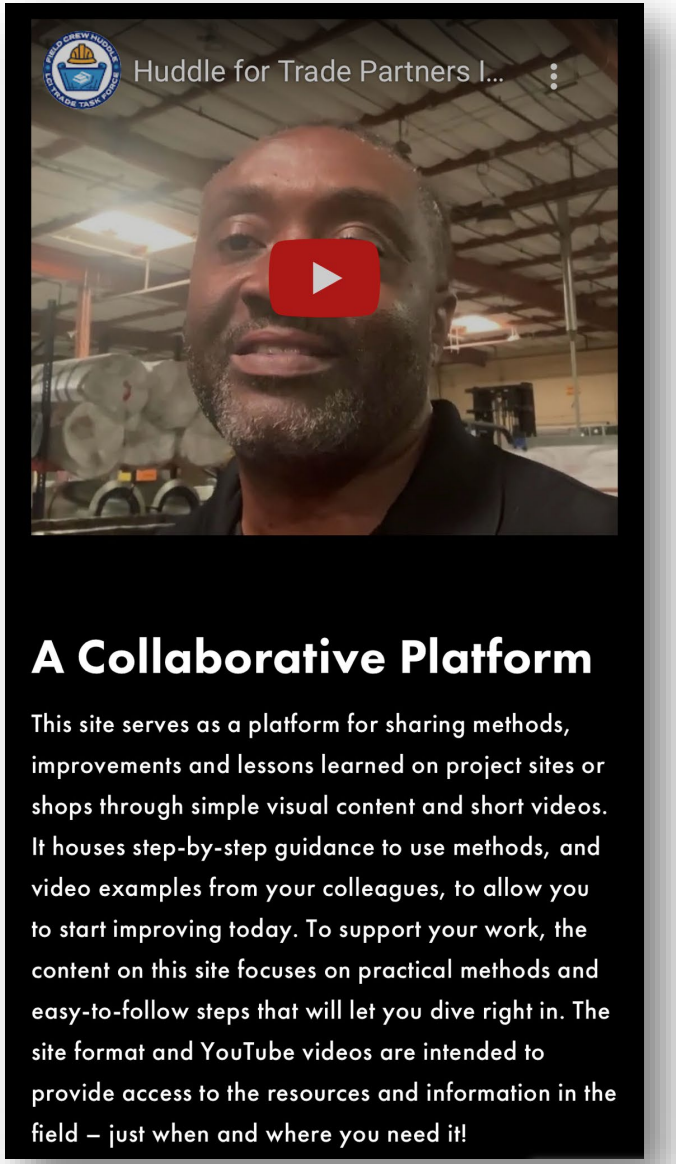


In-wall Assembly Standards

Waste – Site Inventory

Field Crew Huddle

https://fieldcrewhuddle.leanconstruction.org/



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26TH LCI CONGRESS
OCTOBER 22-25, 2024

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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