LCI Carolinas Community of Practice

presents

Lean Trade Partner Best Practices
Shop
Before LEAN
Quality At The Source

Tech Air Mantra

Catch all mistakes at the earliest possible point

Mistakes are waste that get magnified exponentially as product moves closer to field operations

Eliminating waste
MEASURE

“You can’t manage what you don’t measure”

STATS

● Price PER LB
● LBS PER DAY
● PIECES PER HOUR
● LBS PER DAY

SHOP
SHOP
FIELD
FIELD

TOOLS

● VIDEOS
● STOPWATCH
● PEDOMETER
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>SHOP MEASUREMENTS</strong></td>
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</tr>
<tr>
<td>Before LEAN</td>
<td>$1.04/LB</td>
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<tr>
<td>2016 Year End</td>
<td>$0.86/LB</td>
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<tr>
<td>2017 Year End</td>
<td>$0.78/LB</td>
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<td>2018 Year End</td>
<td>$0.70/LB</td>
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<td>2019 YTD</td>
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<tr>
<td><strong>Annual Production</strong></td>
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<tr>
<td>% Increase on Production</td>
<td>25%</td>
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<td>Best Week YTD</td>
<td>$0.53/LB</td>
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You can’t manage what you don’t measure
Are you really too busy to improve?
BIM Impact - Good model
Download Drawings - Scheduling by Pieces

87 pieces / 2.6 pcs/hr = 33.4 / 8 hour work day = 4 Men Crew
Daily Project Management - Team Huddle

Benefits Include

- Promotes a feeling of total team engagement - being an important part of a team.
- Reinforces the previously goals set for the day.
- Identifies strengths and weaknesses identified from past production numbers and allows team to identify processes that can be improved.
- Readys team leaders for morning stand up meetings with their individual crews.
- Increases accountability to team.
- Promotes friendly competition.
- Helps identify and sustain the customer value added goals set forth at start of project.

The benefits of morning team leader meetings
First Run Studies

- General Contractor Review
- Owner Review
- Lessons Learned for Remainder of the Project
Daily Stand up meetings

Pre-Assembly

JIT Delivery

Some basic requirements of truly LEAN job site
Pre-Hanger Process

Project requirements determined at Project Planning Meeting
Hanger group receives drawing from CAD department
Foreman break out areas based on CAD drawing
Drawing has point layout sequence established by areas as required by field foreman
Foreman schedules Trimble layout team with Hanger department Manager
Points are located and marked by hanger team on existing floor or pre-pour on deck above (preferred method - shown)
Hanger team installs hangers in advance of duct delivery
Material handlers unload truck and place duct under hangers (JIT)
Prefabrication

Enables Better quality control

Greatly reduces error orders shipped to field

Allows for a efficient field install and helps eliminate field rework

More efficient manpower distribution
Benefits Include

- Improved project safety
- Increased field efficiency
- Decreased waste
- Reduced cost overruns

A neater, cleaner more organized work site

JIT Delivery
Some basic requirements of truly LEAN job site
You can’t manage what you don’t measure

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<th></th>
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<th>2016 Year End</th>
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<th>Delta</th>
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<td></td>
<td>1.64 Pieces per Duct/Hr.</td>
<td>1.72 Pieces per Duct/Hr.</td>
<td>1.84 Pieces per Duct/Hr.</td>
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**Production Board**

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<th>Responsible Party</th>
<th>Area</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
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<th>Fri</th>
<th>Sat</th>
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"Knowledge is the most powerful engine of production"
Production Tracking

Average: 2.61 pc/hr
LEADERSHIP

Embedding the capacity for greatness in the people and practices of an organization, and decoupling it from the personality of the leader.

https://www.youtube.com/watch?v=pYKH2uSax8U&t=11s
A BAD SYSTEM WILL BEAT A GOOD PERSON EVERY TIME.

EDWARD DEMING
Group Discussion