A True Paradigm Shift in Lean Construction Methods
Introductions

Kevin Rucinski

Kevin Rucinski is President of Sci-Pro.org, LLC, a company he founded in 2012 to bring innovative product and system solutions to the commercial door market.

- He holds a Bachelor Degree in Mechanical Engineering, a Masters Degree in Business Administration, is a Registered Professional Engineer and a Six Sigma Black Belt and Operational Excellence Champion.

- Mr. Rucinski is the past President of Michigan Commercial Door Group, a commercial door distributor in the upper mid-west.

- He can be reached at Kevin.Rucinski@Sci-Pro.org.

Don Maybee

Don Maybee is President of Contract Sales Support Services, Inc. (CS3), a company established in 2006 to provide product sales and distribution services for manufacturers.

- He holds a Bachelor of Business Administration Degree.

- For over 20 years, he has designed and installed Lean Manufacturing Cells in Automotive OEM’s including Ford Motor Company, as well as for many Tier 1 suppliers to the auto industry.

- In addition to Qwikinstall, CS3 is marketing the Jamb Patch product patented by Sci-Pro through www/doorinnovation.com.

- He can be reached at dmaybee@doorinnovation.com.
Paradigm Shift Definition

“An important change that happens when the usual way of thinking about or doing something is replaced by a new and different way.”

Merriam-Webster Dictionary

8 Wastes of Lean

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“Work structuring means developing a project’s process design while trying to align engineering design, supply chain, resource allocation, and assembly efforts. The goal of work structuring is to make work flow more reliable and quick while delivering value to the customer.”

Cynthia C. Y. Tsao – Case Study for Work Structuring: Installation of Metal Door Frames
“Work structuring means developing a project’s process design while trying to align engineering design, supply chain, resource allocation, and assembly efforts. The goal of work structuring is to make work flow more reliable and quick while delivering value to the customer.”

Cynthia C. Y. Tsao – Case Study for Work Structuring: Installation of Metal Door Frames
Current Construction Process:
Door frame installation is done as the wall frame is built.
Door Installation Value Stream

- Install Frame
- Electrical & Drywall Installation
- Paint and Finish Wall & Frame
- Repair Damage
- Install Door & Hardware
- Inspect & Accept

Rework
Door Installation Value Stream

**WAITING**

- Install Frame
- Electrical & Drywall Installation
- Paint and Finish Wall & Frame
- Repair Damage
- Install Door & Hardware
- Inspect & Accept

**W**aiting

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**TOTAL TIME** – **MULTIPLE DAYS TO MULTIPLE WEEKS**
### Welded Frame Installation

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Frames are bulky and can occupy premium storage space on the site.
Frames sit in storage waiting for door openings to be constructed.

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**Welded Frame Installation**

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Frames sit in storage waiting for door openings to be constructed

Frames are bulky and can occupy premium storage space on the site

Coordination and Timing very important – Door Opening can’t be completed without the frame being present.
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Once the frame is installed, other construction activities must be completed before doors & hardware are installed. Coordination and Timing very important – Door Opening can’t be completed without the frame being present.

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The frame is vulnerable to damage during this time.

Once the frame is installed, other construction activities must be completed before doors & hardware are installed.

Coordination and Timing very important – Door Opening can’t be completed without the frame being present.

Frames sit in storage waiting for door openings to be constructed.

Frames are bulky and can occupy premium storage space on the site.
Doors and hardware are probably delivered at the same time, but not necessarily together as a kit.

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Doors and Hardware sit in storage waiting for construction to be finished

Doors and Hardware become separated or Hardware is lost causing delays
Door and Hardware Installation

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Coordination and Timing very important – If Door and Hardware don’t arrive together, project timeline delayed

Doors and Hardware sit in storage waiting for construction to be finished

Doors and Hardware become separated or Hardware is lost causing delays
Doors and Hardware Installation

**PROCESS** | Value Added | Non-Value Added
---|---|---
Receive Door & Hdwe to Job Site & Place in Inventory | 3 hrs. | 1 day to Many wks.
Wait Time in Inventory | 1 hr. | 1 day to Many wks.
Deliver to Install Location | 1/2 hr. | 1 day to Many wks.
Install Door & Hdwe in Frame Time = 2 workers | 2 days to Many wks.
Wait for Finish Paint | 4 1/2 hrs. | 2 days to Many wks.
Total Time Calculation | 2 days to Many wks.

Doors and Hardware are one of the smallest costs in a project, but they are the #1 cause for payments being delayed. Coordination and Timing very important – If Door and Hardware don’t arrive together, building owner delayed.

Doors and Hardware sit in storage waiting for construction to be finished. Doors and Hardware become separated or Hardware is lost causing delays.
### Door and Hardware Installation

**PROCESS** | Value Added | Non-Value Added
--- | --- | ---
Receive Door & Hdwre to Job Site & Place in Inventory | 3 hrs. | 1 day to Many wks.
Wait Time in Inventory | 1 day to Many wks. | Many wks.
Deliver to Install Location | 1 hr. | 1 day to Many wks.
Install Door & Hdwre in Frame Time = 2 workers | 1/2 hr. | 2 days to Many wks.
Wait for Finish Paint | | 2 days to Many wks.
Total Time Calculation | 4 1/2 hrs. | 2 days to Many wks.

**Finally, repair damage to frame & door.**

Doors and Hardware are one of the smallest costs in a project, but they are the #1 cause for payments being delayed. Coordination and Timing very important – If Door and Hardware don’t arrive together, building owner delayed.

Doors and Hardware sit in storage waiting for construction to be finished.

Doors and Hardware become separated or Hardware is lost causing delays.
This process is being driven by one inflexible activity

The Welded Frame **MUST** be installed at the time the Door Opening is constructed.

**CONSTRUCTION SCHEDULING**

**PRODUCTION SUPERVISOR**

- **CUSTOMER ACCEPTANCE**

---

**FRAME SUPPLIER**

- **RECEIVE AT JOB SITE**
  - QTY FOR ENTIRE JOB
  - 2 DYS
  - 1 HR
  - 1 HR
  - 2 HRS
  - 1 WEEK OR MANY WEEKS

**DOOR & HDWE SUPPLIER**

- **DOOR & HDWE SUPPLIER**
  - INSTALL
  - 1 WEEK OR MANY WEEKS

**REWORK**

- **BONDO & REPAIR**
  - PAINT
  - CHANGE CORES

**ERROR**

**This process is being driven by one inflexible activity**

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**ERROR**
The Welded Frame **MUST** be installed at the time the Door Opening is constructed.
QWIKINSTALL
DEMONSTRATION VIDEO CLIPS
Locate the High Side of the Opening

START HERE
Install Mounting Plates

The door opening is now plumb and square ready to lock in the welded frame in the correct position.
Install Active Frame

This is the design feature that does all the work.
Watch closely...
If you blink, you will miss it.
Lock Active Frame to Opening

In addition to the studs on the mounting plates, this simple angle bracket screws into the door opening and adds one more locking device to secure the frame to the wall of the door opening.
Remove Spreader Bar

- The frame is now locked in place.
- It is plumb, square and spacing for hanging the door is exactly right.
- The Spreader Bar has done its’ work, it can now be removed and discarded.
Install Trim Frame

This unique locking tab will lock the active and trim frame together. The slots are designed to accept any drywall thickness combination.

- 1/2” – 1/2”
- 1/2” – 5/8”
- 5/8” – 5/8”
Just in case you missed it – This is what you just witnessed

• A door opening with
  – Finished wall, including paint
  – Electrical work completed

• One man
  – Locates the “high side” of the opening
  – Installs the first mounting plate on the high side
  – Locates the top of the mounting plate on the opposite side
  – Installs the second mounting plate
  – Pushes active frame onto mounting plates
  – Installs locking tabs on opposite side
  – Pushes and locks opposite frame into active frame section

• Total Time - < 6 minutes
HOW DOES THIS RELATE TO LEAN CONSTRUCTION?

| D | Defects    |
| O | Overproduction |
| W | Waiting |
| N | Not engaging all |
| T | Transportation |
| I | Inventory |
| M | Motion |
| E | Extra processing |
Qwikinstall Door Installation Value Stream

Who Benefits?

- The Building Owner (Customer)
- The General Contractor (Lower Cost)
- Skilled Trades (Efficiency, Competitiveness)
  - Drywall Installers
  - Electricians
  - Painters
  - Door Installers

Less than 1 hour

ALL WAITING ELIMINATED

who benefits?

The Building Owner (Customer)
The General Contractor (Lower Cost)
Skilled Trades (Efficiency, Competitiveness)
- Drywall Installers
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Defects
Overproduction
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Not engaging all
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CURRENT STATUS

Fire Rating Testing Planned 4th Quarter 2016
Production Parts Available For Sale – 1st Quarter 2017
Frames can be purchased with Doors and Hardware Kitted together
Finish Options – Prime Coat or White Paint. Custom Colors can be Quoted
Established Door Frame Manufacturers can contact Contract Sales Support Services, Inc. to apply for a license to manufacture the patented Qwikinstall Frame system.

Diamond Y Door Solutions is being licensed to begin production in early 2017

MARKET STRATEGY AND PRODUCT AVAILABILITY
Contact Information

Technical Questions
• Kevin Rucinski – 734-216-0048
  kevin@doorinnovation.com
• Don Maybee – 517-861-0473
  dmaybee@doorinnovation.com

Patent Licensing
• Don Maybee – 517-861-0473
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Qwikinstall Frame Quote
• Brett Curtis
  President
  Diamond Y Door Solutions
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CONTACT US
Diamond Y Door Solutions, Inc. provides custom door openings throughout North America, Hawaii and the Caribbean. Contact us today for an estimate or for more information. We always enjoy hearing from our customers, whether they are current or new and we look forward to earning your business and trust.

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Phone: 248-545-6800
Fax:  248-545-6801
Email – info@dydoorsolutions.com
Renovate Corroded Door Frames

Don’t Replace
Renovate the Frame

http://www.doorinnovation.com/

P.O. Box 1025
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810-227-7111

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Order online

OTHER PATENTED DOOR PRODUCTS

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Come and Talk to us
Booth 22
See a live demonstration of the Qwikinstall Frame
Try to do it yourself