

23RD ANNUAL



23RD LCI CONGRESS
OCTOBER 19-22

Implementing Lean Construction at CBI's Largest Brewery

Jose Serrano / Constellation Brands, Inc.

Jose Garcia, Manuel Zepeda, Brett Friedel / Gilbane - Alberici Mexico

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October 21, 2021

Health precautions to keep everyone as safe as possible at Congress:

- Wear masks at all times in indoor events.
- Complete your daily health screening on your phone and bring it with you when you enter the center each day.
- Practice social distancing to the extent possible. Seating at plenary sessions is structured to help with this.
- If you feel ill at any time, please leave the conference and return to your room/consult a physician as necessary.
- Ultimately, our collective health and safety at Congress is up to all of us. Thanks for your support!



Presenters



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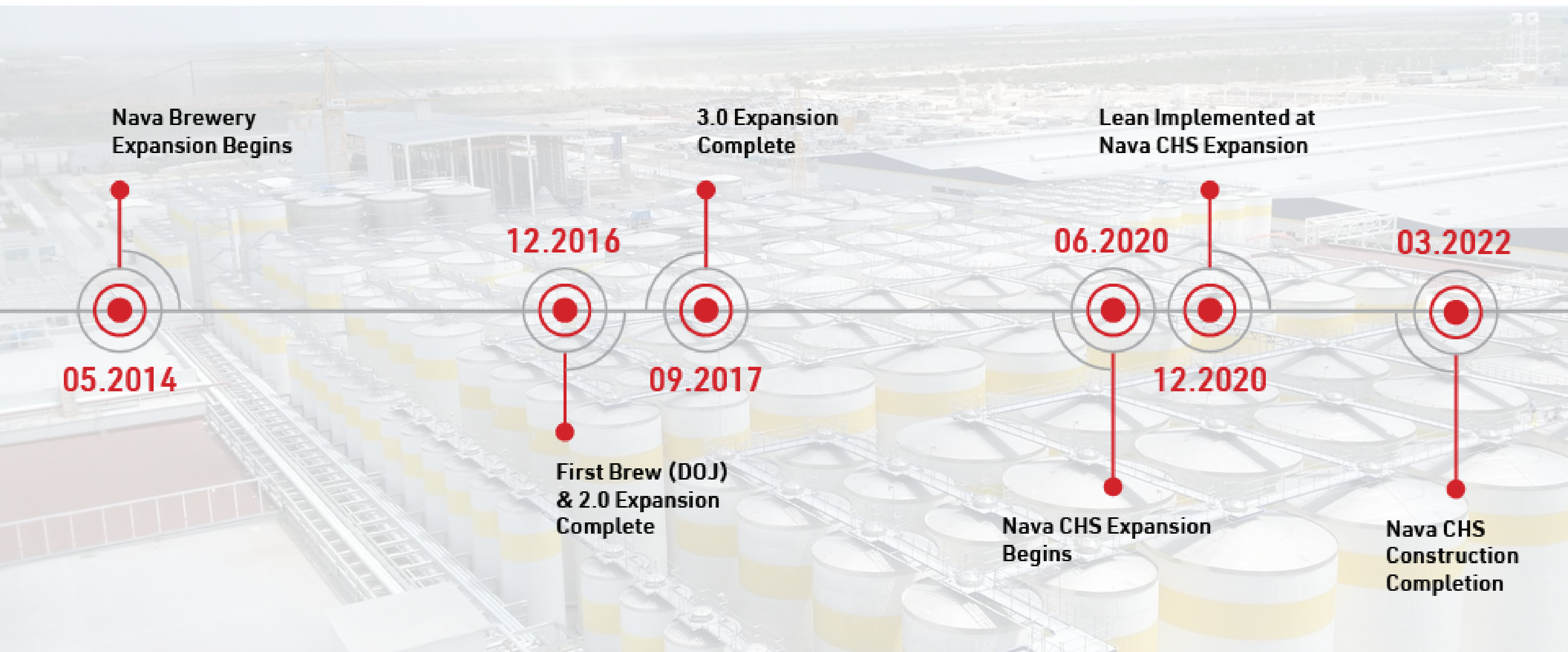


The Background





Nava Project Timeline



INSTALLED BREWERY CAPACITY

30MHL

(Annual Capacity)

16

Packaging Lines
(4 Cans, 2 Kegs, 10
Bottles)

26,000

Bottles per Minute
at Capacity
(2,600 per line)

3,200

Cans per Minute
at Capacity
(800 per line)



CONSTRUCTION SAFETY

Peak On-Site
Labor

Nava 5143
Mexicali 1900
Obregon 2820

Total Work Hours
41.3M

Nava 26.6M
Mexicali 8.9M
Obregon 5.8M

Lost Time Incidents
17

Nava 8
Mexicali 5
Obregon 4

LTIR
.082

LTIR is ranked among
the top performers in
the industry



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The Opportunity



The Opportunity

- After 7 years of successful construction projects, including building CBI's largest brewery, the Team wanted to continue to push the envelope of what's possible in terms of safety, quality, schedule and cost:
 - Avoid Complacency
 - Continue to Innovate
 - Continue to Improve



Brewery Expansion – Nava, Coahuila, Mexico



Seltzer Process Building

Packaging Expansion

New BBT's

Our Approach

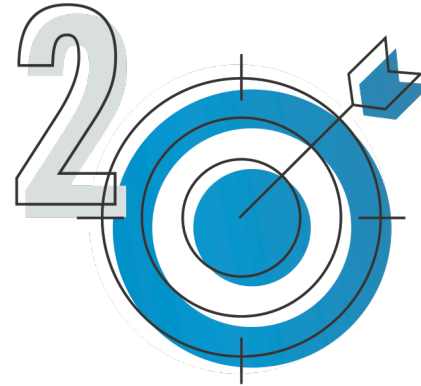


The Lean Edge Program

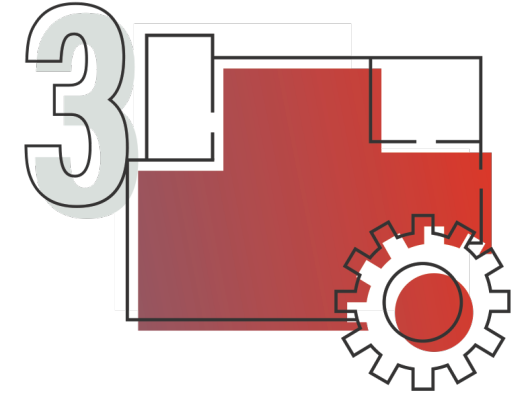
LEAN**EDGE**>



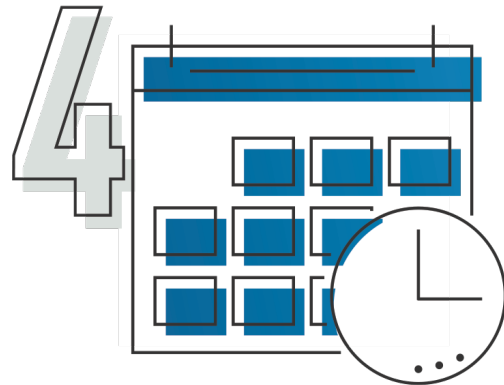
Team Building
& Alignment



Conditions of
Satisfaction (CoS)



Big Room



Last Planner®
System



Facilitation,
Coaching & Training

1 | Team Building & Alignment

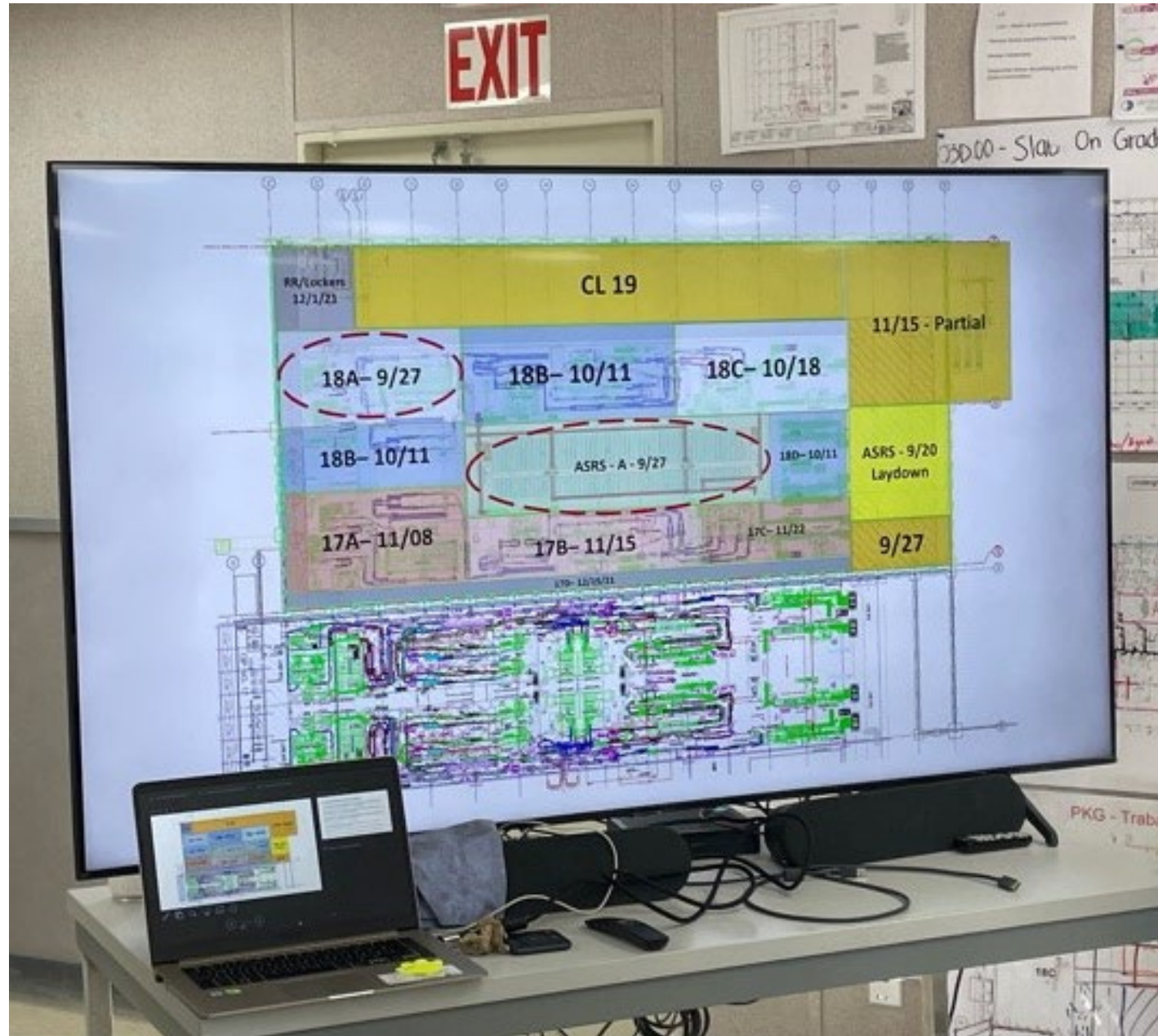


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Team Building & Alignment



Team Building & Alignment



Team Building & Alignment



2 | Conditions of Satisfaction



NAVA CHS PROJECT

CONDITIONS OF SATISFACTION**• SAFETY**

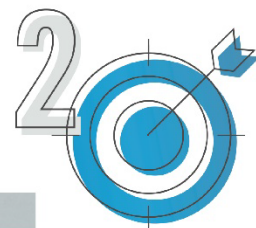
- » Zero recordable incidents
- » Streamline process for personnel access - 2 days vs. 7 days or more. Review and communicate the process.

• ONE TEAM

- » Take at least one team satisfaction survey per quarter
- » Have a common understanding of expectations

• RFIs

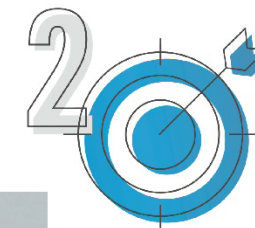
- » Submit all RFIs with clear priority information (not ALL can be highest priority)

**• COMMUNICATION / INFORMATION SHARING**

- » Strong communication: we are all on the same page to enable efficient workflow. Clear and open communication between safety, superintendents, and PM's.
- » Immediately communicate changes to the whole team – daily field handoff of information.

• SCHEDULE

- » Everyone is committed to being on time every day to reduce impact on each other's schedules and the overall project productivity
- » Make reliable promises – commit to tasks
- » Work as a team to overcome schedule challenges, regardless of where they originated



3 | Big Room



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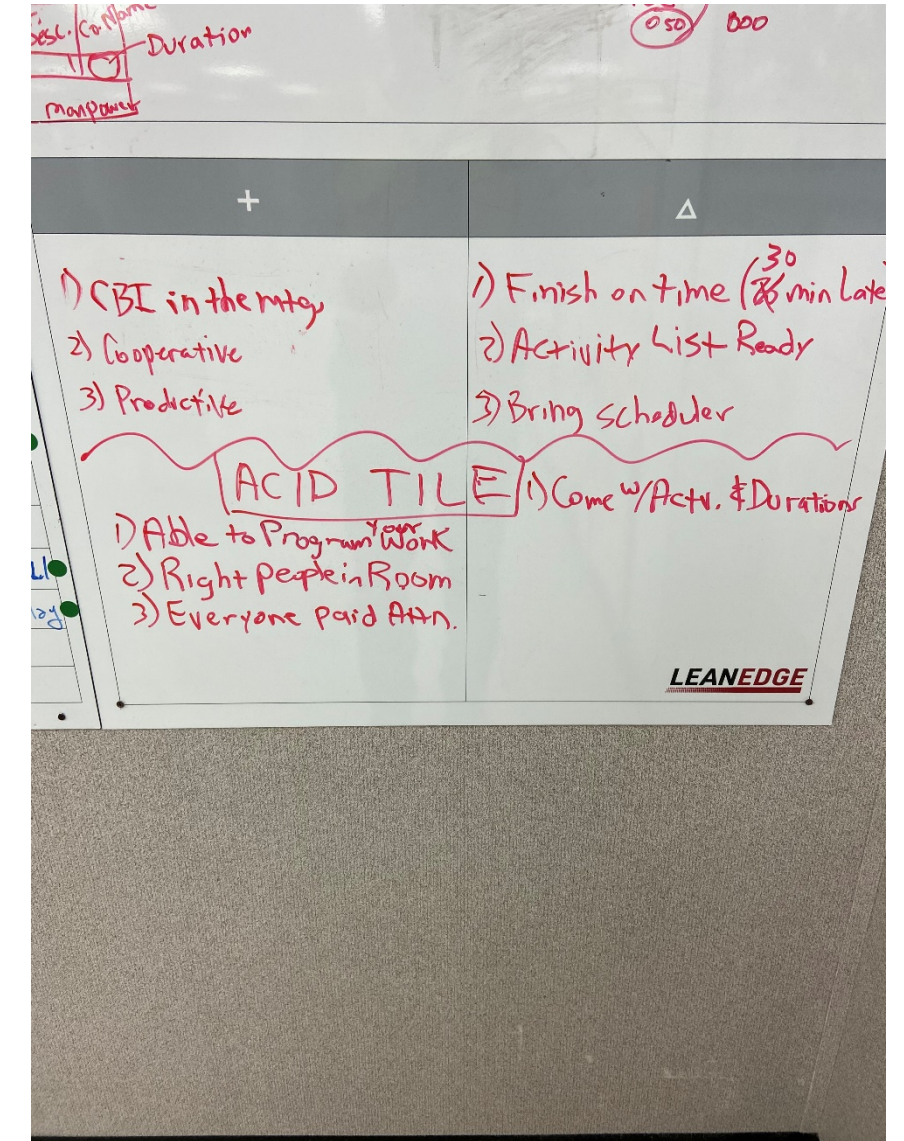
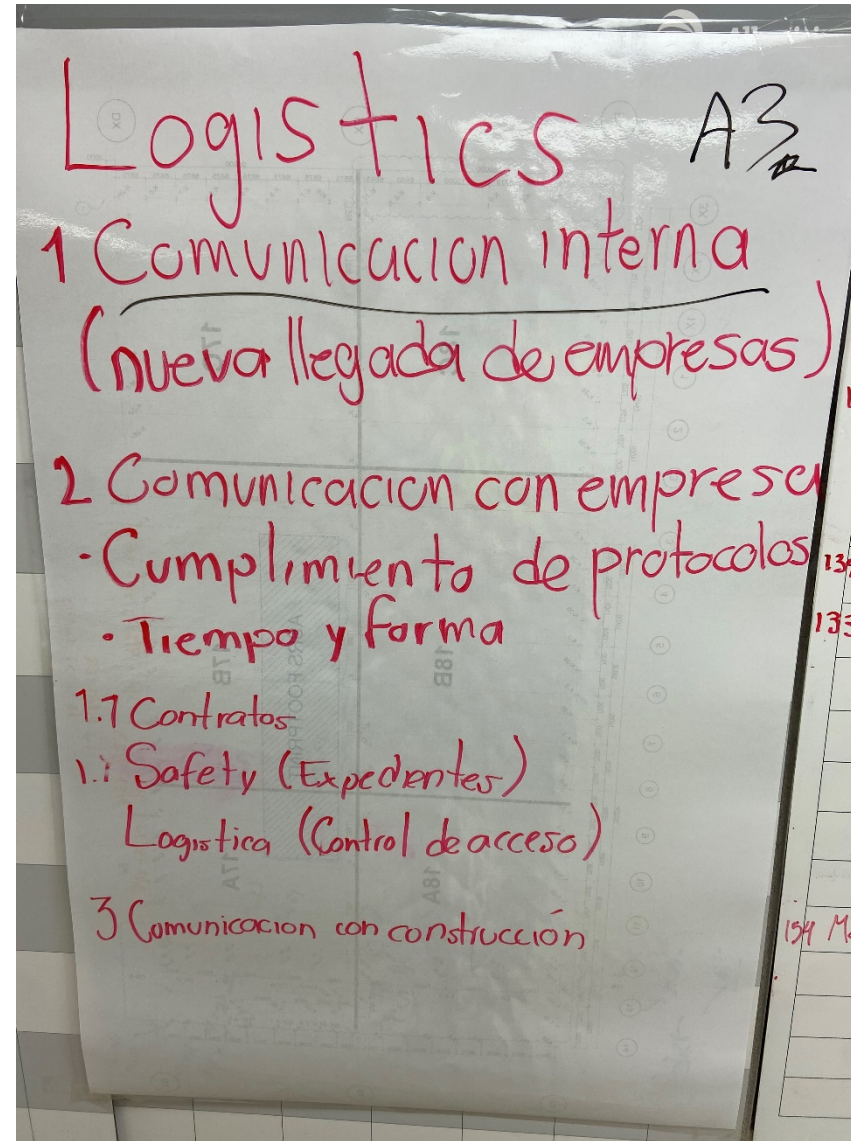
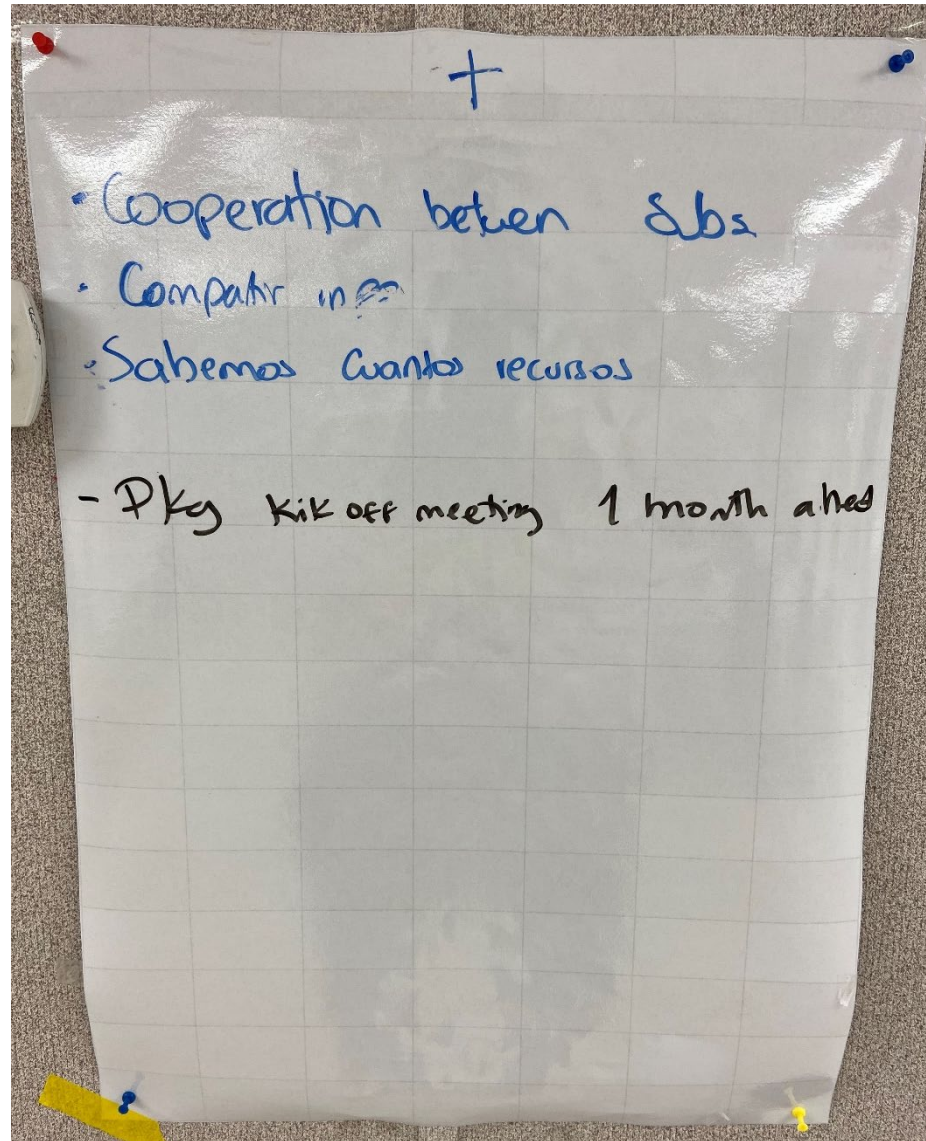
Big Room



Big Room



Big Room



4 | Last Planner® System



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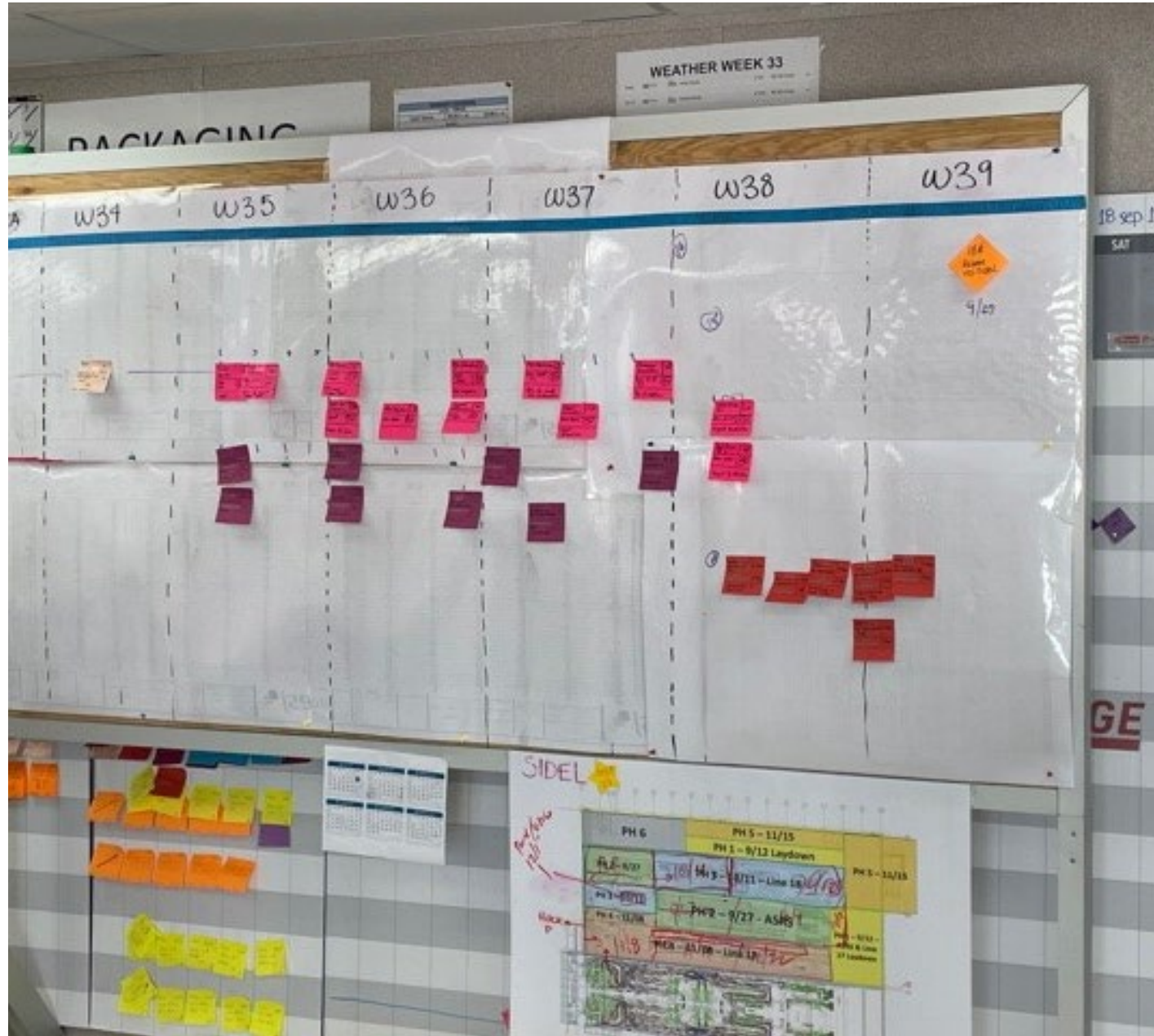
Last Planner® System



Last Planner® System



Last Planner® System



Last Planner® System



Last Planner® System





Last Planner® System

Start

Weekly LEAN Report

X

Lightbulb icon

Constraints

ID	Corte	Fecha identificada	Edificio	BP	Tipo Restriccion	Descripción	Description	Empresa/Solicita	Nombre Solicitante	Fecha Necesaria	Empresa Responsable	Nombre Responsable	Fecha promesa	Notas	Fecha liberacion	Status
408	W39	11-Sep-21	UTILITIES	26A.01	Contrato	Definir realización y asignación de trabajos transición del Rack B a Canalización Sub	Define realization and assignment of jobs transition from Rack B to Sub Pipeline	GRICO	Ricardo	1-Oct-21	GAJV	DC	1-Oct-21	Espera liberación de diseño Vestal,		En tiempo
416	W39	13-Sep-21	UTILITIES	26B.02	Información	Recibir shop drawings de downspout de MC y MCC	Receive MC and MCC downspout shop drawings	GAJV	Magda Flores	14-Sep-21	HERMOSILLO	Nadia Aranda	20-Sep-21	Espera de respuesta por Hermosillo, fecha: 06/Octubre		En tiempo
437	W39	22-Sep-21	UTILITIES	26B.02	Diseño	Recibir diseño para bases del HVAC en edificios MC y MCC, afecta la colocación de los equipos	Receive design for HVAC bases in MC and MCC buildings, affects equipment placement	HERMOSILLO	Melissa Carrillo	22-Sep-21	GAJV	Magda Flores		Verificar con Magda		En Proceso
307	W39	19-Jul-21	UTILITIES	26A.00	Información	Recibir detalles de instalación de charolas en Rack S2, afecta energización de MCC-CHS	Receive details of installation of trays in Rack S2, affects energization of MCC-CHS	GRICO	Salvador Ixta	15-Aug-21	GAJV	José García	29-Jul-21	Se tuvo una reunión con Vestal-GAJV-Grico, Grico enviará propuesta para aprobar las alturas de entrada al cuarto eléctrico		En tiempo
323	W39	7-Aug-21	UTILITIES	26A.01	Información	Recibir estudio de protecciones de CBI/Vestal, afecta la energización de la subestación	Receive CBI / Vestal protection study, affects substation energization	GAJV	Chris Newsham	14-Aug-21	CBI	Jesús Vaquera	28-Sep-21	Se habló con el Ing. Jesús Vaquera y comentó que para el 28 de Sep. Tendría dicha información		En tiempo
461	W40	5-Oct-21	UTILITIES	05C.01	Campo	Instalar cerco de metal clad (will affect metal clad power on)		GAJV	Magda Flores	25-Oct-21	HERMOSILLO	Everardo Valenzuela	15-Oct-21	Recibir entrega de submittals por Hermosillo		En tiempo
460	W40	5-Oct-21	UTILITIES	26A.05	Información	Recibir confirmación de fecha de entrega del registro RRO		GAJV	Magda Flores		VOLTRAK	Aglaee Cuéllar		Revisar fechas promesa		En Proceso
462	W40		UTILITIES			Liberar modulo 10 y 11 para poder continuar con torque COREY										En Proceso

A JOINT VENTURE


Constellation Brands

Last Planner® System

Start

Weekly LEAN Report




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Hot items & Focus points

- There is a week of delay caused by engineering, an answer has already been obtained but the provider gives an estimated delivery time of the record of 8 weeks.
- The rack F1 will begin to be installed in week 41 and the contractor plans to finish the rack without paint in week 43, taking 1 more week to finish painting activities.
- Delivery of Rack R1 in week 42 already with paint, in week 40 and 41 no painting work will be carried out because they do not have enough painters for all fronts
- The delivery of the teflon plates will arrive on October 11th , they will allow to finish the works of Rack F and Rack S (bridge) to give continuity to the installation of Ziemann and Grico pipes.
- Rack P is projected to be completed in week 40 without paint

◆	202139	UTILITIES	26A.05	VOLTRAK	There is a week of delay caused by engineering, an answer has already been obtained but the provider gives an estimated delivery time of the record of 8 weeks.
◆	202139	UTILITIES	05C.01	RECAL	The rack F1 will begin to be installed in week 41 and the contractor plans to finish the rack without paint in week 43, taking 1 more week to finish painting activities.
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A JOINT VENTURE
Constellation Brands



5 | Facilitation, Coaching & Training




Facilitation, Coaching & Training



Facilitation, Coaching & Training


Lean Edge

[START COURSE](#)[DETAILS](#) 









LEAN**EDGE**>

Course Duration - 2.5 hours







Welcome to Lean Edge Training. In this course, we will discuss the concepts of Lean Construction, an overview of the Lean Edge Program and the additional tools that aid in Lean implementation.

 Proprietary Information Acknowledgement



-  Introduction
-  Introduction to Lean Construction
-  Lean Edge
-  Team Building & Alignment
-  Conditions of Satisfaction
-  Big Room
-  Last Planner System®
-  Facilitation, Coaching & Training

ADDITIONAL TOOLS

-  Additional Tools
-  5S
-  Gemba Walk
-  Off-Site Construction
-  Plus / Delta
-  Conclusion



Facilitation, Coaching & Training



Facilitation, Coaching & Training



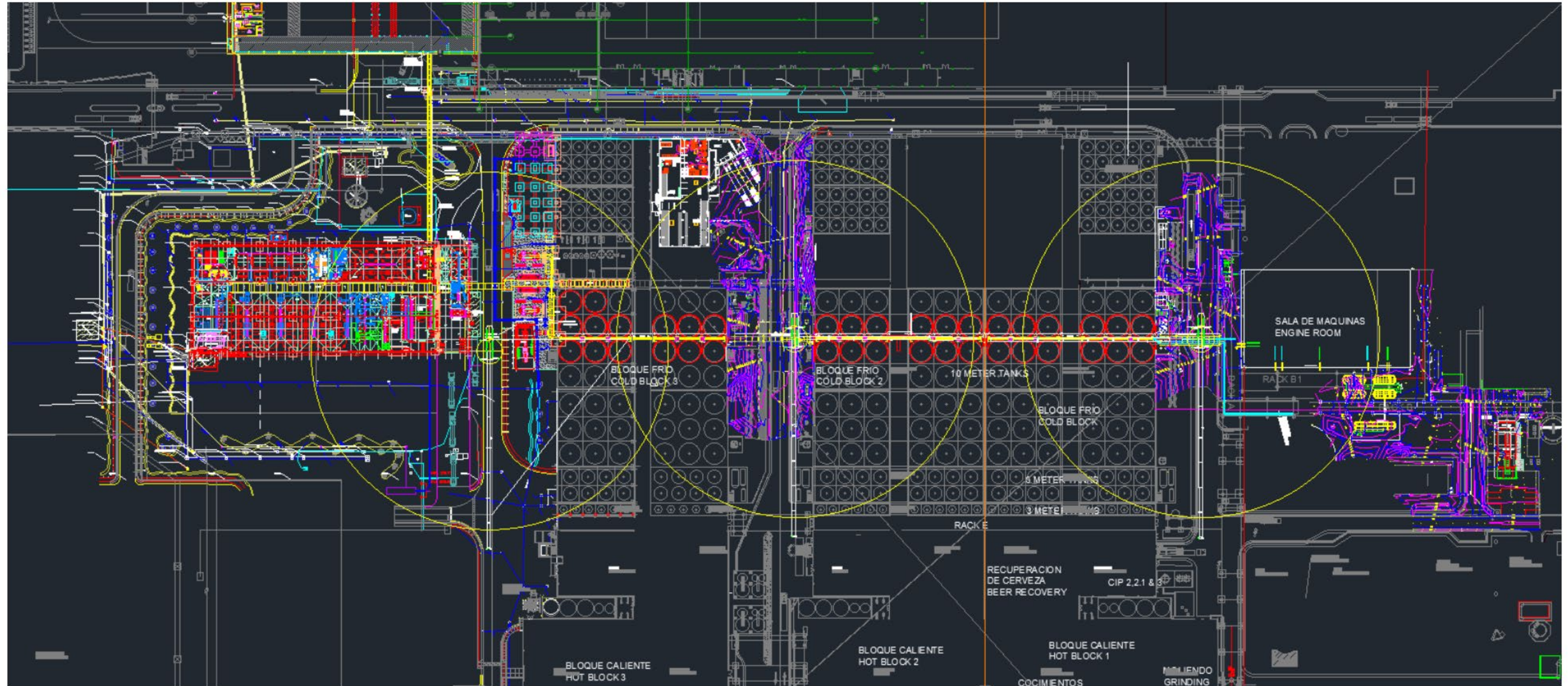
Lean Edge Program | Additional Tools: Prefabrication Case Study



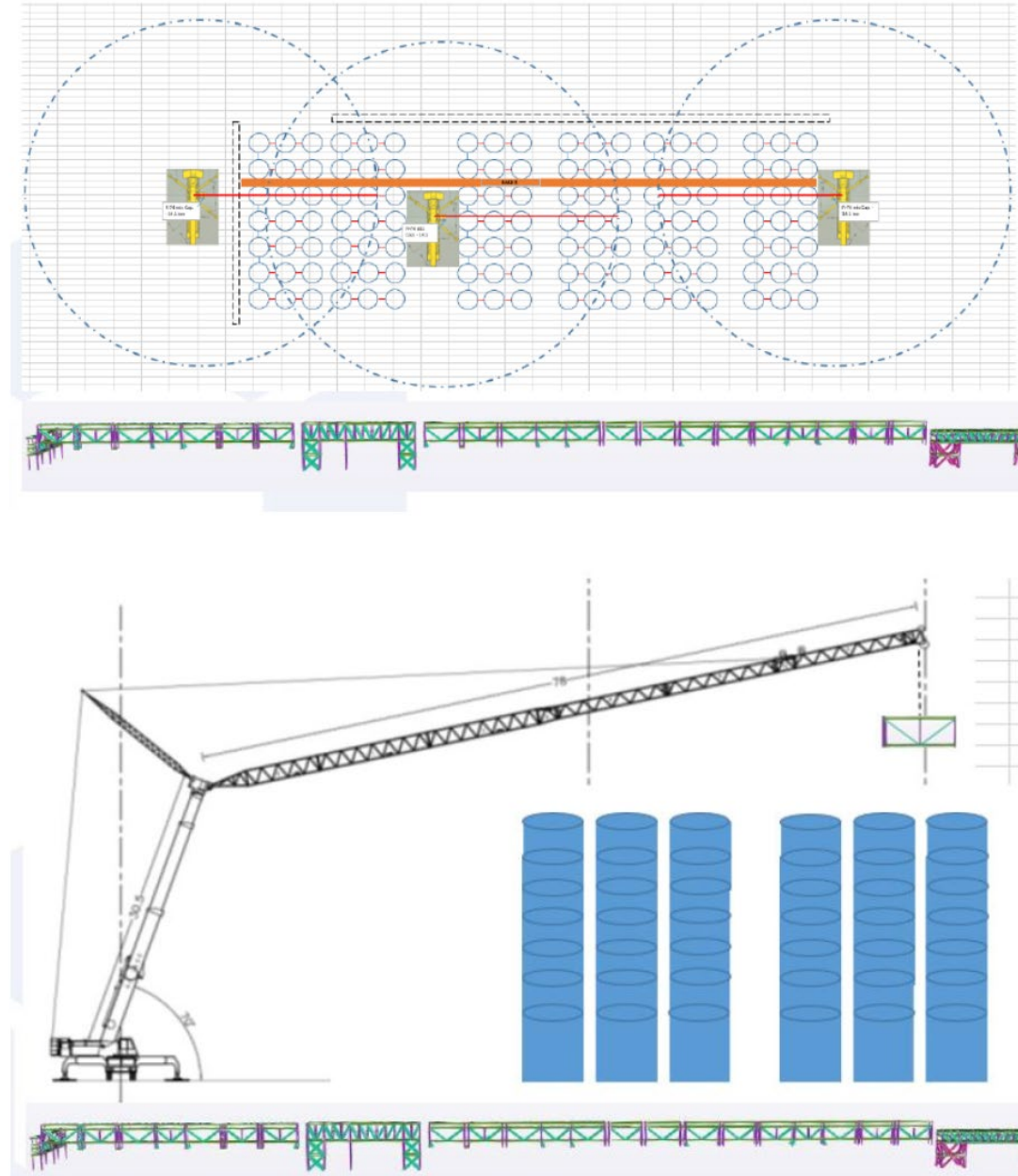
Prefabrication



Prefabrication

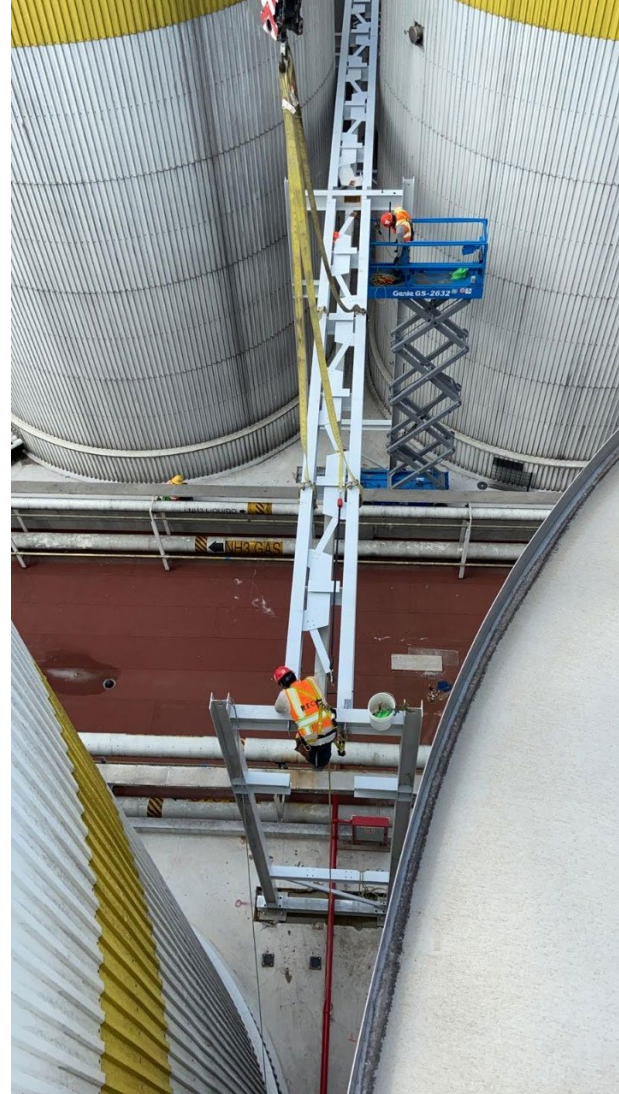


Prefabrication



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Prefabrication



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Prefabrication

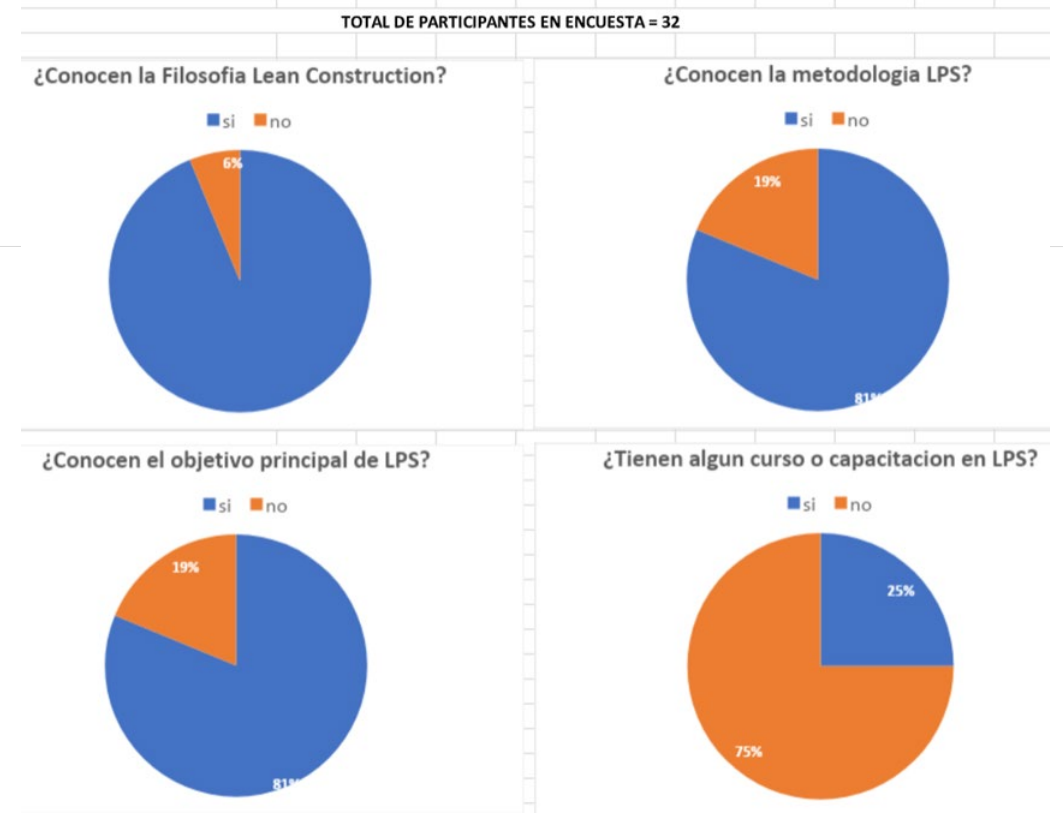
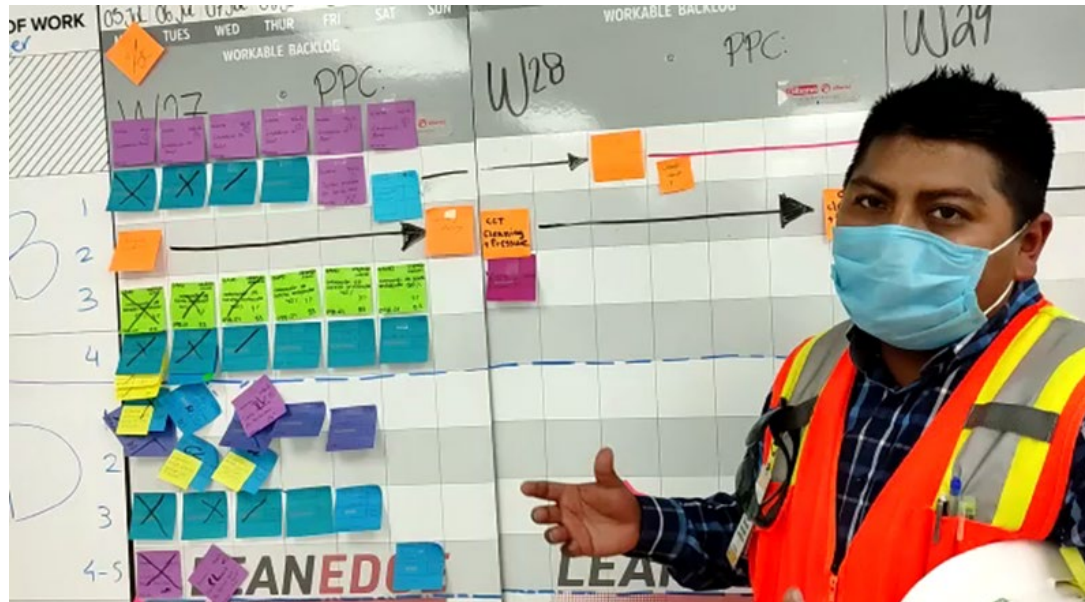


Our Lean Journey



Trade Partners Stepped Up

- Despite little previous experience, trade partners embraced LPS by “doing” it.
- Encourage ownership: it’s their meeting.
- Daily Huddles got quicker & better by letting them establish their own rules (e.g. hold meetings in the field).



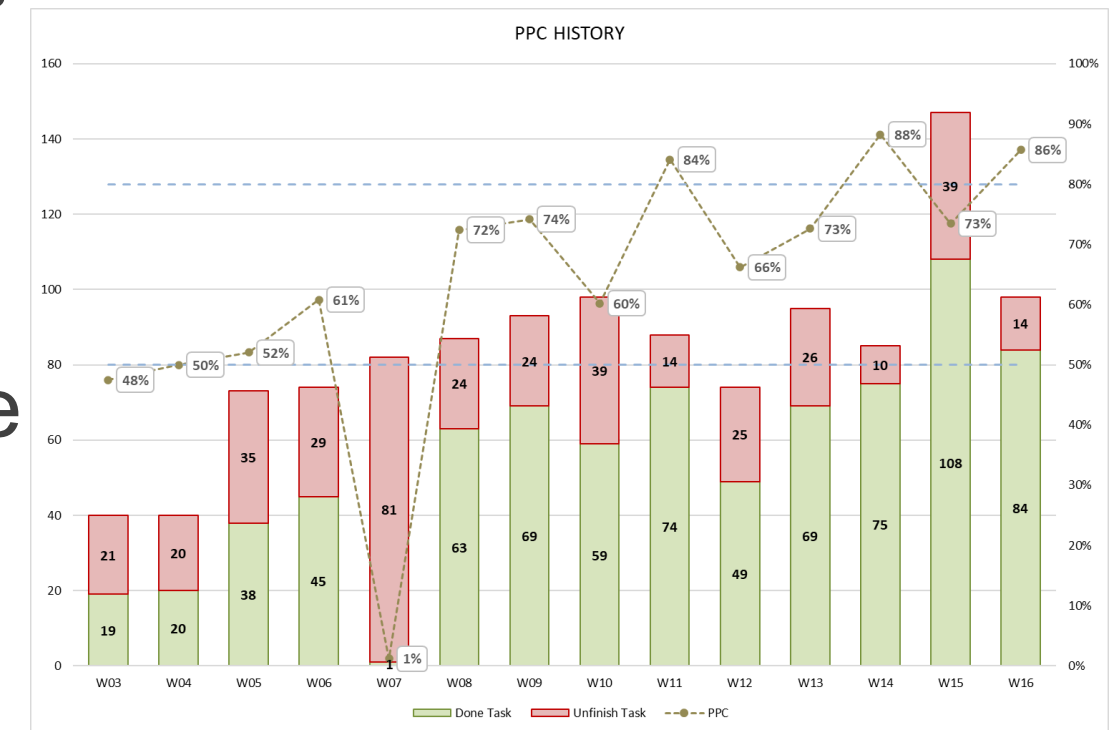
The Sooner the Better

- Engage trade partners in pull sessions as soon as they're contracted on the project (don't wait for them to mobilize onsite to do actual work for the planning to begin).



PPC Reports: Focus on Coordination

- At first, when trades reported information different than what was previously committed, the team spent more time checking and comparing the information than coordinating the work.
- We created a dynamic data base tool to make updates easier and faster and have information available for weekly and monthly reports and make decisions about trade partner status.



Pluses



What Went Well

- Project is on track and on budget with outstanding safety performance
- Owner's commitment and support
- GAM executive sponsorship - support from top down
- Virtual Lean trainings & kickoffs (Covid)
- Consultants on site to support implementation
- Effective Big Room set-up
- LPS implementation – daily huddles
- Subcontractor buy-in – receptive to Lean practices
- Reliable field results
- Flexibility to adjust for better outcomes

Deltas



What Can be Improved

- Establishment of a Lean Culture and Mindset
- Team building & alignment – intermediary milestones, procurement, critical path vs non-critical path activities
- Conditions of Satisfaction – development / implementation
- Facilitation, coaching & training
- Too few were involved - need to spread the workload
- Better English/Spanish communication – bilingual teams
- Trade partners' executive support
- Better integration between P6 scheduling and LPS
- Celebrate success more!

What's Next?



What's Next?

- New CBI Phase of Construction in Obregon, MX
- We're Doubling Down:
 - Onsite Project Lean Steering Committee
 - Digital Pull Planning
 - Updated Training – Virtual and In-Person
 - More Frequent Feedback and Adjustments (Surveys, Plus/Delta, etc.)



How Can You Apply This Tomorrow?



How Can You Apply This Tomorrow?

- Secure Commitment and Support at the Highest Level
- Early engagement – Start Early
- Have a Program – Get external help if need to develop one
- Include the right people – Lean Champions: passionate and influencers
- Lean out Your Practices: Less in More – Focus on What Adds The Most Value
- Consider unique cultural settings: language, culture, union/non-union, etc.
- Highly Dynamic Project – Be Flexible
- Expect the Unexpected & Adapt – COVID
- Leverage Technology – Virtual meetings, online training, digital tools
- Patience: it's a journey! Expect skepticism. Don't Give Up.



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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.

Contact Us



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Thank you for attending this presentation. Enjoy the rest of the 23rd Annual LCI Congress!