Smartapp.com®

Turning Scheduling Chaos into Smooth Planning, Field Visibility and Seamless Execution

Pepper Construction
Tomorrow Transformed℠

Project Spotlight

TURN YOUR JOBSITE INTO A SMARTSITE™

Introductions

Pepper Construction
Tomorrow Transformed℠

Pete McMillan
Senior Project Manager,
Operations Pepper Construction®

ROEHRENBECK ELECTRIC INC.

Rick Roehrenbeck
President,
Roehrenbeck Electric Inc.

Smartapp.com®

James Norris
Vice President of Strategy,
Smartapp.com®

Session Outline

- Introduction to Smartapp.com®
- The Project
- The Challenge
- The LEAN Strategy
- The Project Execution Strategy
- The Future

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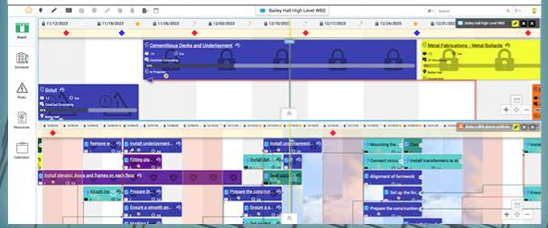
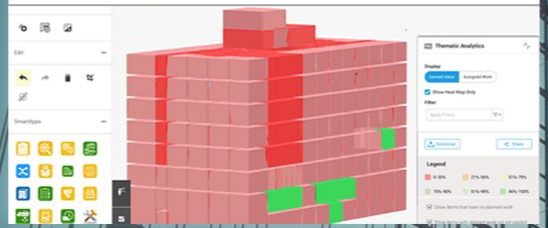
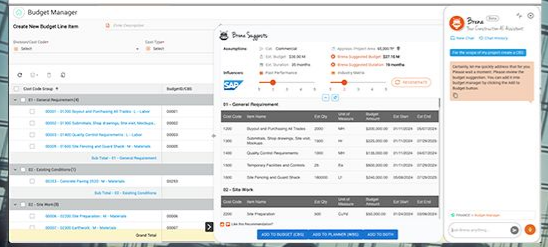
Smartapp **PLANNER™**



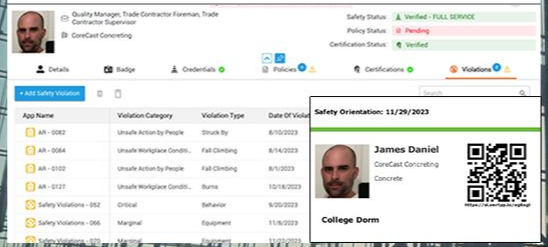
Smartapp **FIELD™**



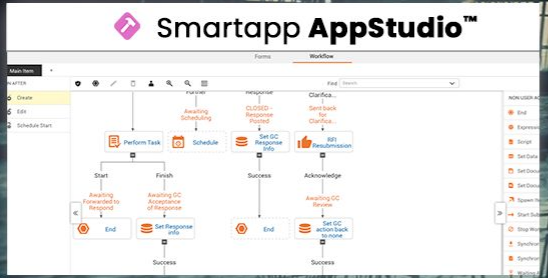
Smartapp **FINANCE™**



Smartapp **SAFETY™**



Smartapp **AppStudio™**



Smartapp.com®

TURN YOUR JOBSITE INTO A SMARTSITE®

Everything you need to build & operate in ONE unified place.

The Big Creators Build & Operate with Us.

Gilbane · SKANSKA · Consigli (Est. 1905) · Pepper Construction (Tomorrow Transformed) · Canon

HENSEL PHELPS (Plan. Build. Manage.) · nationalgrid · STAPLES · conEdison · RAY BUILDERS INC (Where Professionalism and Quality Meet)

The Americas

Asia-Pacific

AECOM · BAM DIGITAL REALTY · Hines · BRIGADE Group · DrReddy's · SUZLON · PVR Developers · LANDBASE CONSULTING

$300+ Billion Operations

75k+ Automated Projects

100k+ Active users

ABC TECH ALLIANCE — Associated Builders and Contractors

AGA American Gas Association

Northeast GAS ASSOCIATION

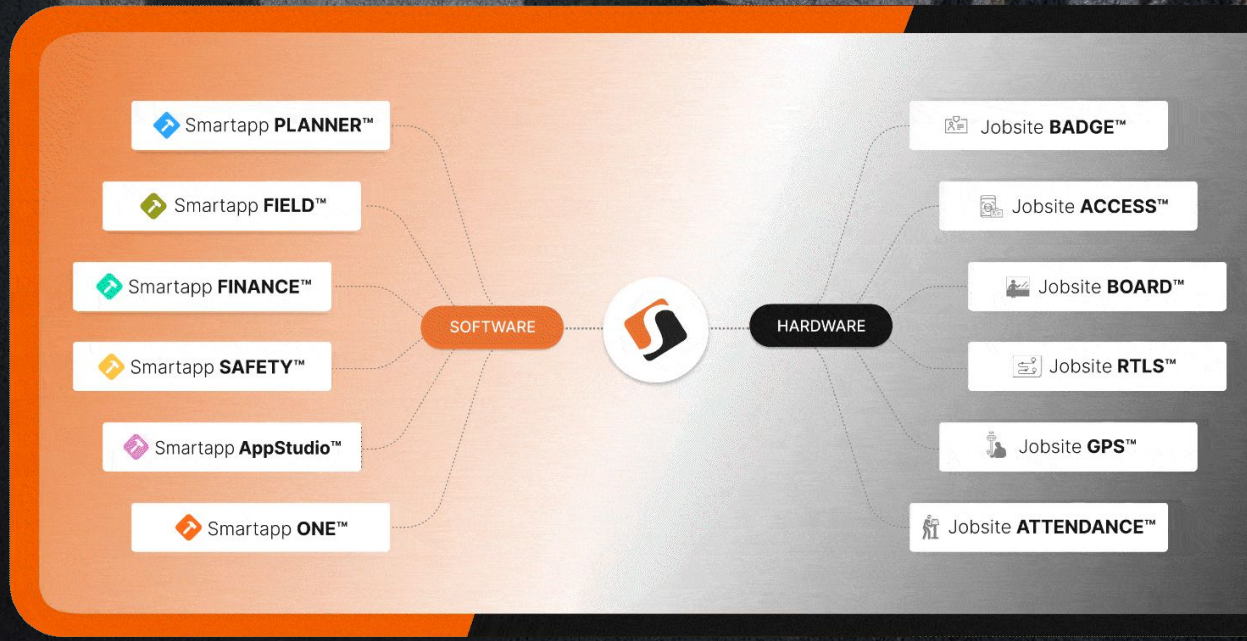
Smartapp.com® is a first-of-its-kind **Platform** that **Consolidates & Connects** all your construction & operations automation **Software** (**PLANNER, FIELD, SAFETY & FINANCE**) & **Hardware** for the jobsite in **ONE** unified place.

"Built for the Field by Field experts"

Co-innovation Partners

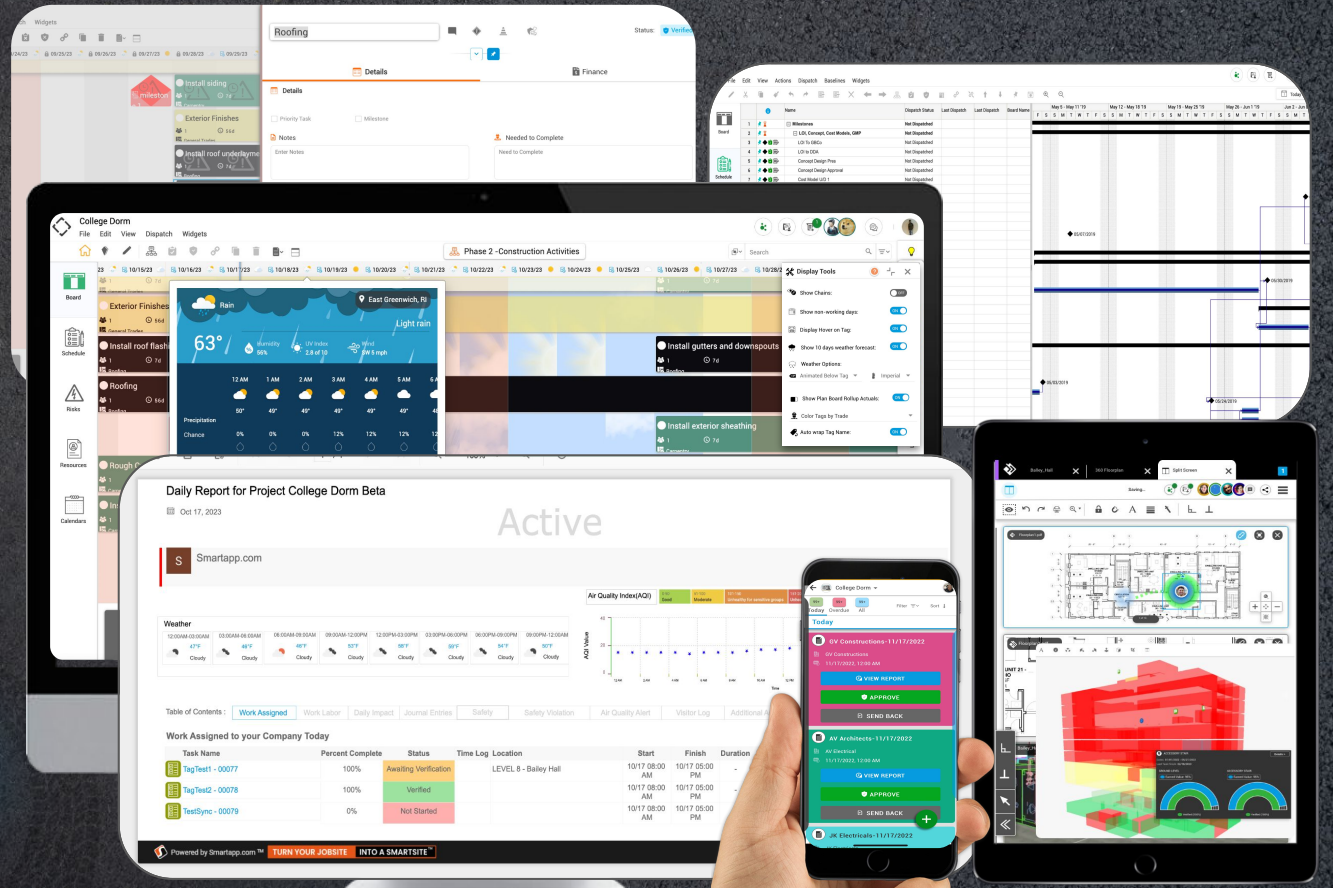
SAP Certified

Google



PLANNER™ - Full Planning & Scheduling Suite

- Automatically Aligned LEAN **LPS Boards to CPM schedules**
- Read & Write **Oracle P6 files**
- **Multi-party** real-time editing
- Fast **Mobile** Progress Updates
- Phone/tablet - Android/iOS - **online/offline**
- Auto-generated **Daily Reports**
- Embedded Live **10-day Weather Forecast**
- Complete STAFF & Trade **Time Tracking** System
- **BRENA™** - Construction AI Assistant:
  - Generate 2-week Lookahead
  - Analytic Reports
  - And more...



The Project

And why it was unique

An Overview

- **1.2 million square foot** build-to-suit **industrial facility** in New Albany, Ohio
- **Precast wall panels** with conventional steel structure
- **120** fully equipped dock positions with heavy duty dock levelers
- Construction Started July of 2023 and scheduled for early completion in December of 2025
- **Primx Slab System** - Jointless, chemically pre-stressed concrete
  - Reduced slab thickness, elimination of rebar
  - ‘Armor’ joint ILO sawcut joints
- Building designed to be solar panel ready for future installation

The Challenge

Learn what obstacles the job faced

Phased design

- **Pepper Construction**
  - Full tenant scope was not established at time of design commencement.
  - Permit documents had been submitted and construction underway before “Enabling” items were understood and able to be implemented.
  - Primx Slab Coordination
  - **Construction never stopped, but had to identify key dates when information/input was required to prevent delay to critical path.**

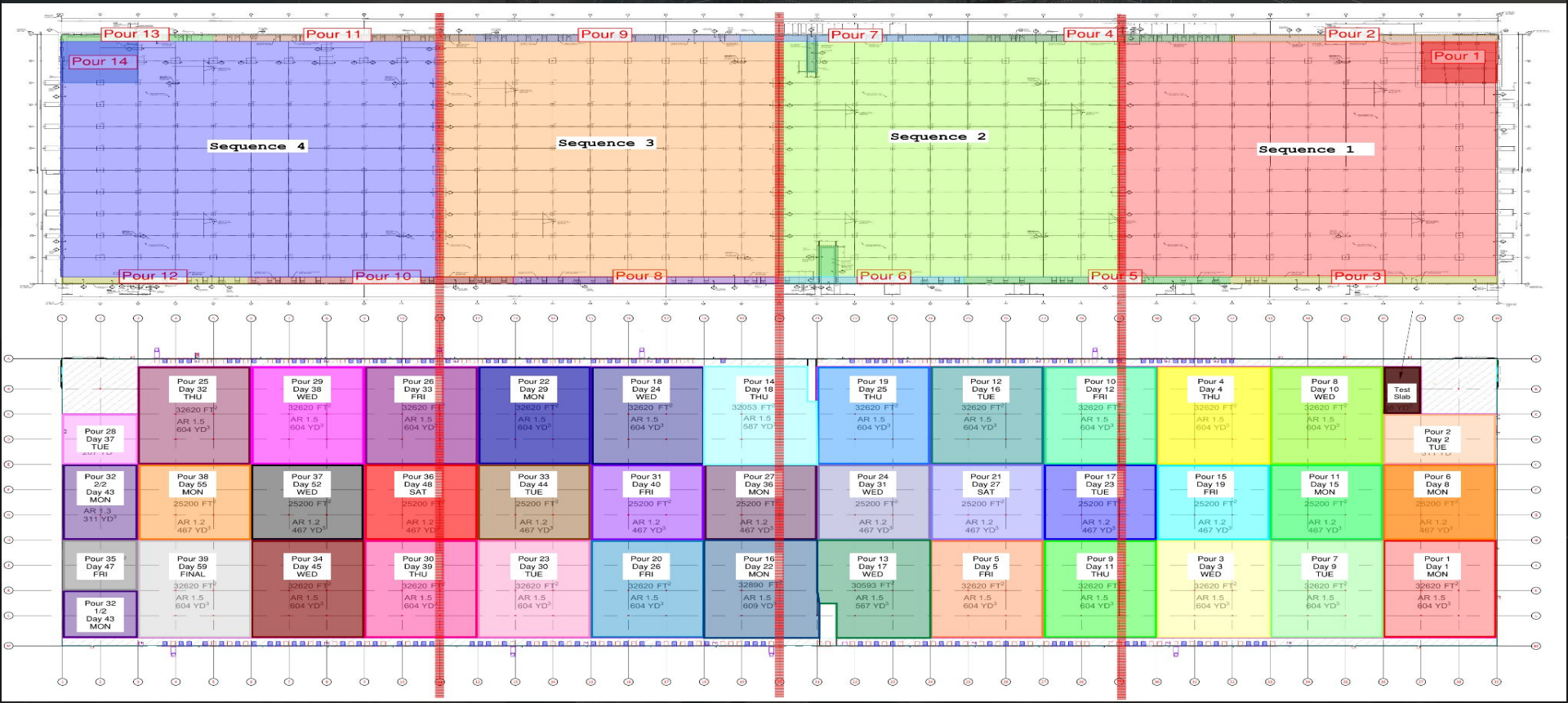
- **Roehrenbeck Electric**
  - Coordinating electric work tasks within this construction sequence
  - Sequence Coordination: Precast Wall, UG, Primx Slab, Conventional Slab, Steel Structure, Roofing
  - Most importantly, **establishing a repeatable workflow** to create efficiencies.

Let’s look at some of the details

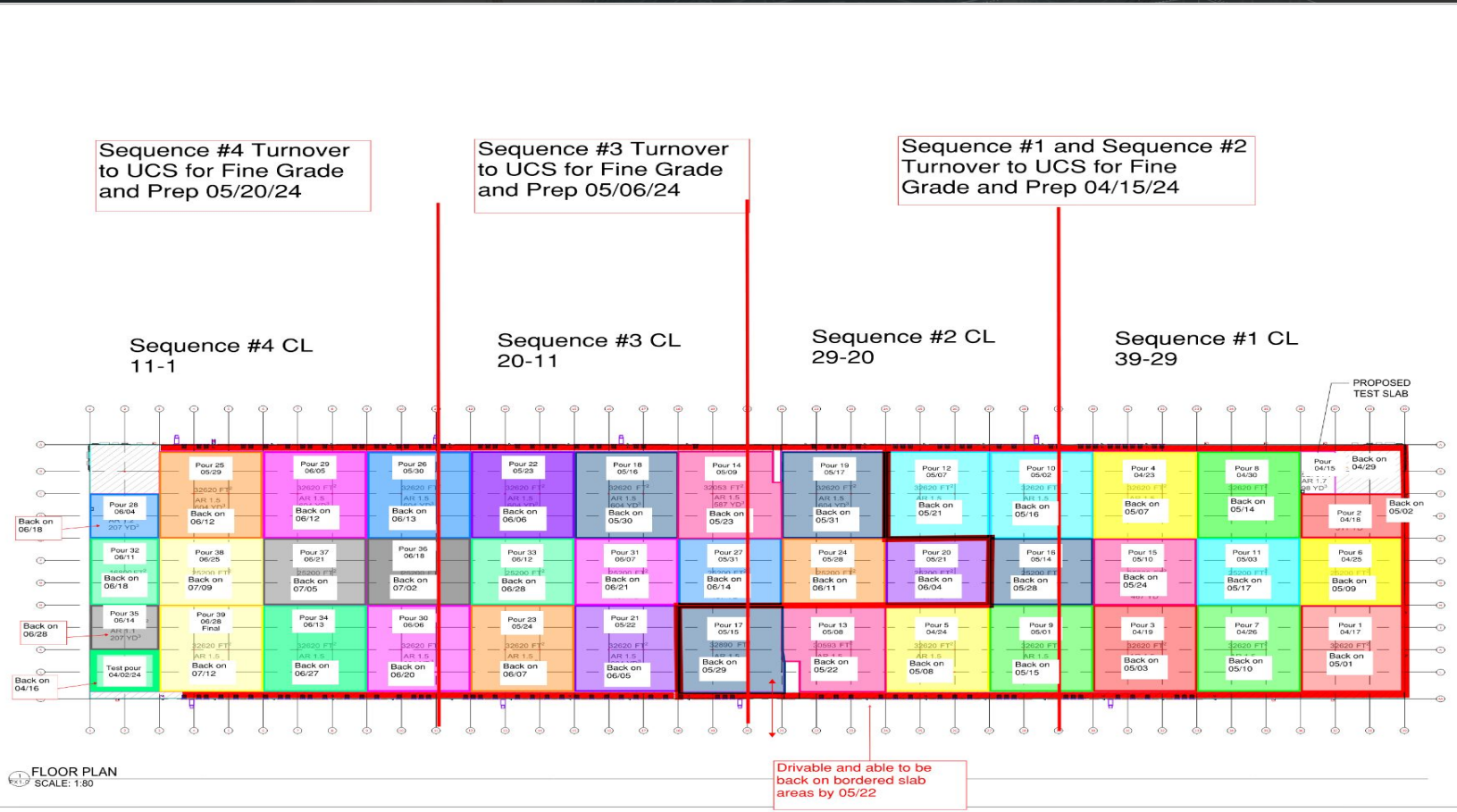
Phased design

Core & Shell	Core / Shell Enabling	Tenant Fit-out	Primx Slab Coordination	Pour Sequence
Sitework	Precast opening for specialty overhead doors	Office areas with high-end finishes	Building enclosure required prior to starting Primx	Pour plan had to hopscotch in a checkerboard pattern to allow cure time
Precast & Steel Structure	Foundation changes to accommodate proposed mezzanines	Additional air handling units and associated structural changes	120 dock positions needed infilled and closed off	Fine grade operation prior to placement required extensive fine grading & quality control testing
Electrical distribution & basic lighting	Underslab sanitary & electrical had to be established PRIOR to commencement of SOG activities	Site concrete changes	15’ conventional pour strip was installed as design modification to create runway on long sides of building to facilitate dock enclosure & windows	Armor-joint system required precise setting/welding of construction joints
Basic air handling & plumbing				

Challenge: Phasing & Sequencing



Challenge: Phasing & Sequencing



PRIMX UCS
UNLIMITED CONTRACTING SOLUTIONS, LLC

ISSUE/REVISION

23.12.28 Rev 4 90% FOR REVIEW
23.10.18 Rev 3 90% FOR REVIEW
23.10.06 Rev 2 90% FOR REVIEW
23.09.22 Rev 1 90% FOR REVIEW
23.09.18 90% FOR REVIEW

ALL SHEETS ARE SAME REVISION LEVEL

BETON CONSULTING ENGINEERS L.L.C.

SIZE D

Beton Consulting Engineers LLC
2535 Pilot Knob Road, STE 168
Mendota Heights, MN 55120
betonconsultingeng.com

DRAWING NUMBER
POUR LAYOUT

SHEET PX1.1

The LEAN Strategy

Establishing the goals and executing the strategy

High Level Goals - Execute the Basics!

Communication

Maintaining open and transparent communication between design-built partners, trade contractors, client and end user.

>> **Keenly understand implications of design adjustments**

>> **Be able to work as a team to pivot quickly**

Collaboration

Create a team consisting of design partners, design-build partners, develop, end user, and the Pepper Construction team

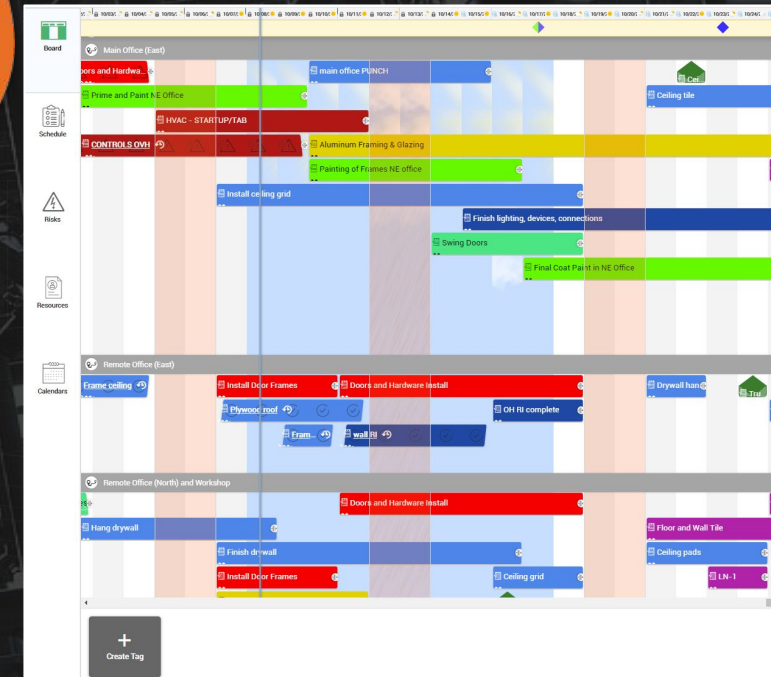
>> **Create a living schedule that grows & adapts in real time**

Visibility

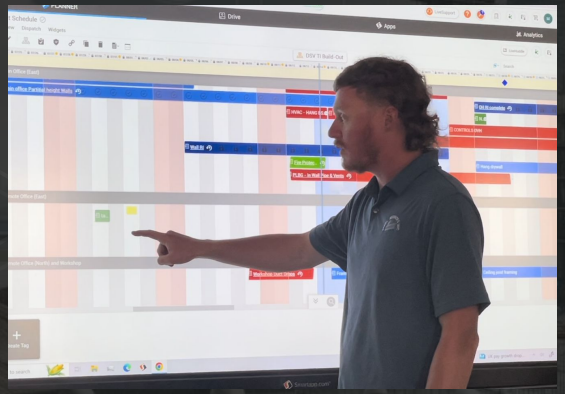
Ensure that everyone always knows what the plan is

>> **Concise communication of requirements**

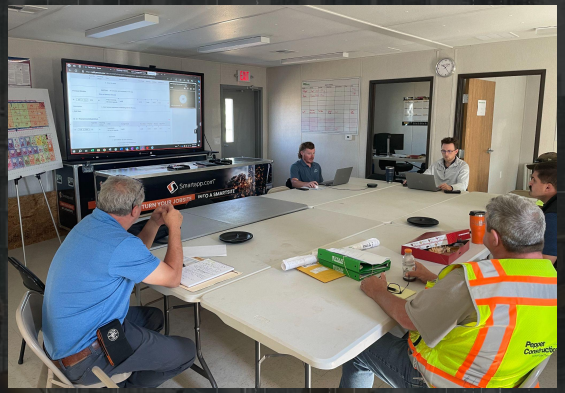
The LEAN Project Execution Strategy



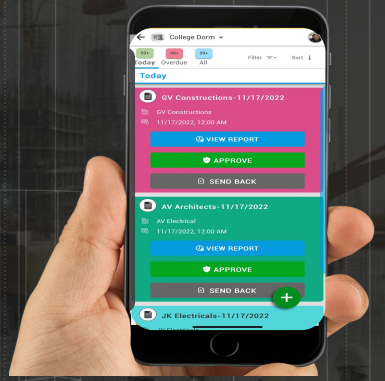
How we executed LEAN - Remember the 3 high level goals?



Communication



Collaboration



Visibility

How we executed LEAN - Roehrenbeck Electrical's Perspective

›› Electric work tasks needed to be defined for each sequence

›› Established an electric task workflow within each sequence, under slab, overhead rough in, overhead finish

›› As the tenant improvement work was being planned, we were able to add those tasks into the workflow and crew planning, created efficiencies for the crew, no surprises

›› Pepper Construction ran collaborative sessions with all trades! It's all about buy-in from those executing the work

›› Pepper Construction setup the "command and control" center (Smartapp Touchboard) for all trades to see the schedule/planboard live whenever they needed

Benefits – Roehrenbeck Electrical's Perspective

›› Field crews worked within the project plan

›› Not only were the task dates met but we also picked up time in each sequence, created a dynamic effect on the entire project

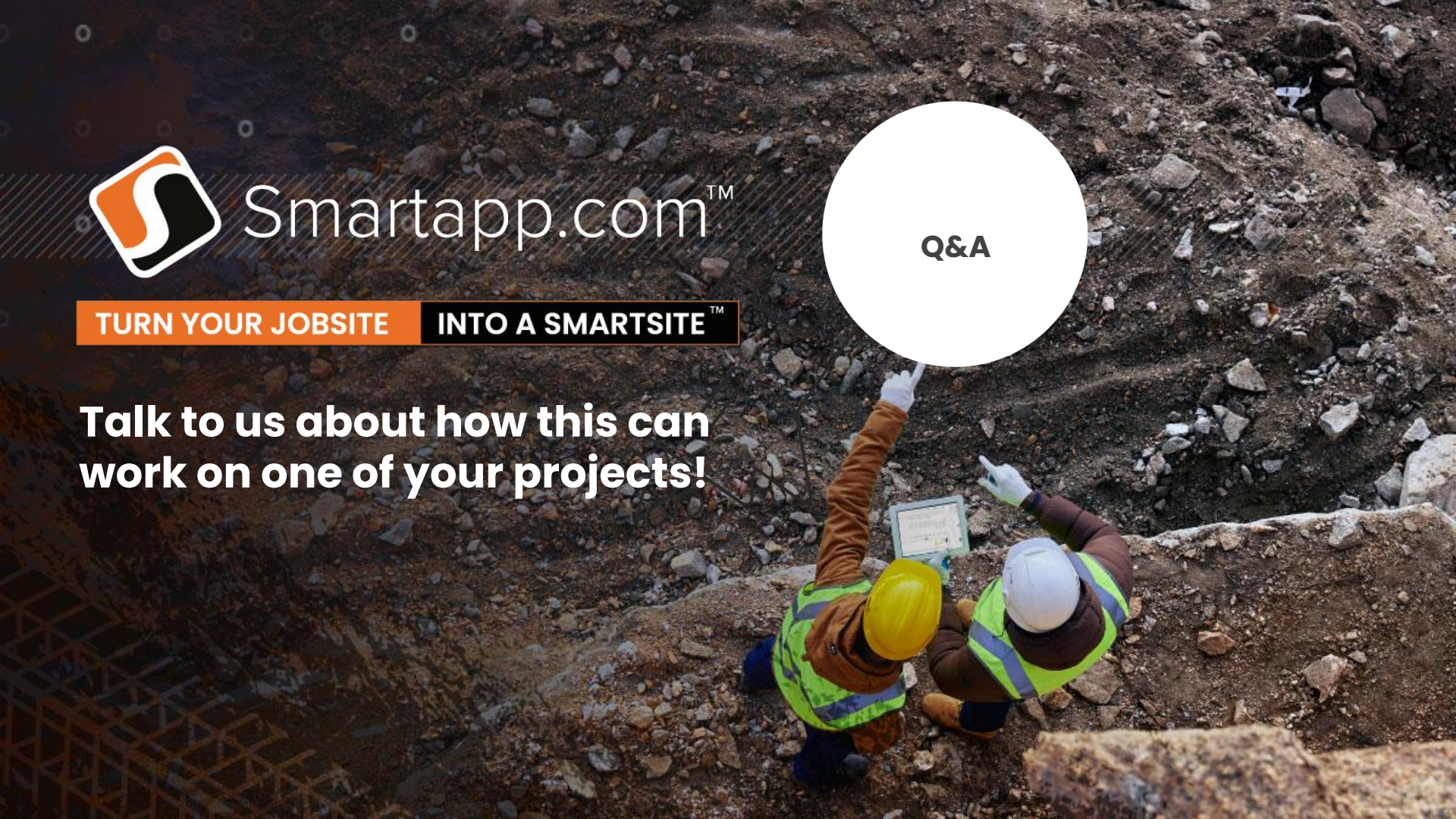
›› Field crew became stakeholders, winning was the expectation and the result. Everyone worked to help everything run smoothly. Happiest work crew ever!

"The one great thing was the project plan was easy to access and visible for EVERYONE on the job!" - The Project Team

The Future

The Future: Pepper and Roehrenbeck's LEAN Improvements

- **Lessons Learned**
  - **Training & Onboarding of Trade Partners** - Jobsite wide pre-meeting before work really gets going.
  - Be prepared for a pull session **before it starts**
- **Improvements**
  - Making sure the **Pull Plan Board and CPM tools talk together effectively would be ideal**. It matters that the CPM and Pull Plan Board are linked together. Why?
    - Effective creation of living Master CPM Schedule from pull plan sessions pushing directly into CPM Master and vice versa.
    - Easier to manage both the CPM and Pull Plan
    - Save a ton of time updating the schedule & pull plan from project changes to plan which will occur.
  - Building out templates/milestones before work starts
  - Establish Design and Procurement Milestones **as early as possible**
  - Finding a way to improve visibility of schedule look-ahead printouts (**by area** etc…)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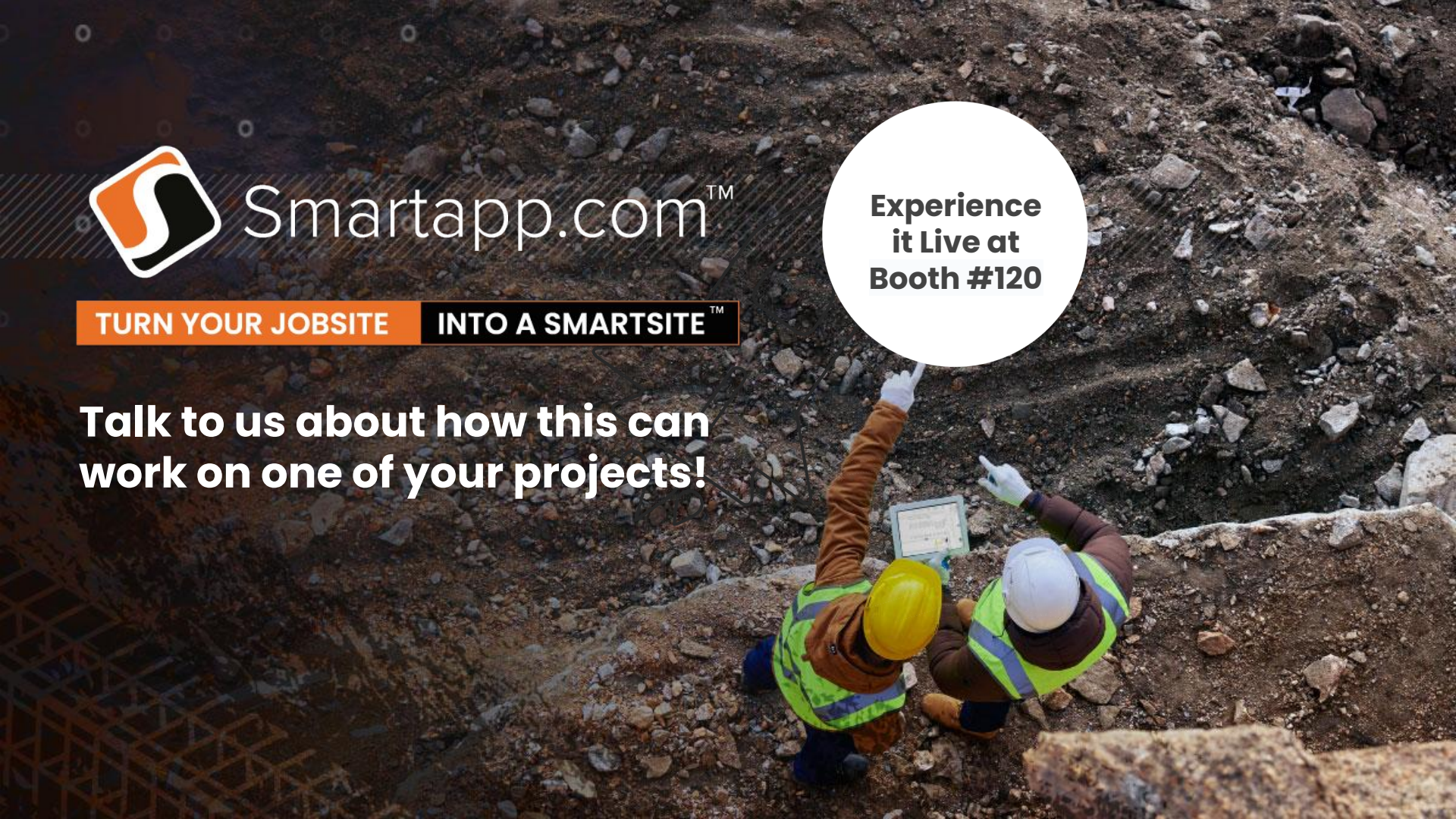
Q&A
Talk to us about how this can work on one of your projects!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Experience it Live at Booth #120
Talk to us about how this can work on one of your projects!