PlanGrid

How Embracing Software Can Boost Productivity for Concrete Subcontractors

The Concrete Contractor's guide to Construction Productivity Software and how it can empower them on the project site.

What's Inside?

Introduction

For the first time, the construction world is embracing a large-scale adoption of technology in the field. This will impact everyone in the industry—from individual Concrete Subcontractors to the large General Contractors (GCs) they so often collaborate with. While those in the field have been hesitant to adopt new technology due to the cumbersome nature of early electronic devices (amidst many other challenges), easy access to modern mobile devices that are lightweight and simple to use have changed that perspective entirely.

The need for Concrete Subcontractors to adopt modern digital technologies comes from many factors, including industry demand for alternatives to drive business, a desire to increase efficiency and a need to be nimble in the modern business environment. Additionally, these subcontractors face a multitude of changes in the field on a daily basis. This can include end-user driven changes to specifications, or unexpected site conditions associated with a concrete pour. Technology can help subcontractors quickly and easily respond to those changes.

Fortunately, a new category of software exists that is proven to increase building efficiency at scale. It's called Construction Productivity Software. It streamlines document control and distribution, provides construction teams with easy access to all relevant information from any device and enables seamless collaboration within teams. With the development of modern mobile devices, software is easier to roll out to the field than ever before.

This e-book will focus on how embracing the right construction software tool can impact:

- Meeting project schedules and deadlines
- Collaborating with GCs and other trades
- Managing sheets, blueprints, versions
- Preventing costly errors and rework
- Effective project closeouts
- Attracting talent as the workforce ages
- Scaling as your organization grows

Time savings in the field

Most Concrete Subcontractors still connect with other trades via telephone, in person and through email. This makes it hard to track each decision or change that has been made. With the right software tool, you no longer have to search through files, emails, handwritten notes or binders for answers.

For example, Concrete Subcontractors can't pour their concrete until the rebar contractor has completed and inspected their rebar installation. Armed with the knowledge of what has been completed means your team can more efficiently execute their portion of work. The right tool also allows field teams to easily manage their own work and collaborate with the other subcontractors. Removing the ambiguity surrounding your own progress versus that of the other trades gives you the confidence to plan and ultimately saves time.

Software also allows you to manage the offsite prefabrication and precast concrete processes more effectively. The tool should centralize your drawings, data sheets and other project information. This allows you to make changes and markups on the fly while remotely monitoring the work. If your onsite team makes changes to the drawings, the tool should automatically push this data to your offsite precast or prefabrications team and vice versa. This is especially critical if the facility is located miles away from the project site.

All the project documentation such as slab-on-grade concrete submittals and cut sheets should be available via that same software tool. Ideally, it will also let your team work from any device, whether they are connected to the web or working offline.

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> "I am able to stand at each column and snap pictures of the deck before the concrete is placed. If an issue should arise down the road and a hole must be drilled or cored into any of the decks, I will be able to look at pictures based on location so there is no question where I took the picture. Having pictures organized on the architectural sheet and not in a mass folder make it friendly to any team member on the job."
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> **— Brandon Voto, Moss Construction Management**

Reducing costly errors and rework

Construction sites are always changing. Subcontractors and GCs need to closely coordinate so materials are installed to meet the site conditions. Changes need to be communicated back to the home office and project trailers so they are distributed immediately. This is critical to ensure field modifications and change orders aren't needed later. It's important for Subcontractors to recognize that the use of technology can achieve these goals, and delivers ROI too. These tools help reduce the frequency of rework, creating a benefit in the cost of the mistakes you don't make.[1]

When software tools provide a central location to collaborate–one that easily manages your own work, while providing the ability to link up the home office, project trailer, field workers and other subcontractors–it reduces both the amount of time spent on inefficient communications and the risk of installing concrete work to outdated specifications.

Cloud technology makes collaboration easier

Concrete Subcontractors frequently collaborate with General Contractors and other design team professionals. Fortunately, today's software tools positively impact collaboration workflows when working on markups to blueprints and during RFIs. This mobile cloud-based collaboration applies when working with GCs or any other trade that may be at the project site. It means your work flows more smoothly–with teams spending less time waiting and more time doing. The best tools allow teams to easily document key pour locations, pour sequences and foundation details while you're working by simply pinning photos and marking up your plans.

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"PlanGrid has allowed our company to become completely integrated in construction drawings. PlanGrid allows us to update current drawings and review past drafts to see what has changed. This helps us determine pricings changes and keeps the team in the field constantly updated. There is no more printing and flipping through voided drawings. Everything is up to date and you can rest easy knowing you are building off the most current sets."

— Tom Behr, Concrete Strategies LLC

Your whole team can work off the master set anywhere, anytime

Drawings are constantly updated. It can be tricky to keep up with all the changes and how they impact your work and schedule. It's especially tough when you're working alongside other specialty contractors. Software tools empower you with fast and seamless coordination. This helps your team stay on track, while ensuring everyone on the jobsite is accountable for their part of the work.

The importance of coordination becomes clear when using precast concrete on a project. Precast concrete requires extensive pre-planning to ensure the delivery and installation is properly timed and correct.[2] If a Concrete Subcontractor doesn't know exactly when to deliver their concrete elements for installation, much of the cost savings typically generated will be lost. Additionally, if laydown area space is limited, poorly timed deliveries can cause big headaches for the whole project when there isn't enough space to store the materials.

Construction Productivity Software gives you workflows with better insight into a project, helping schedule just-in-time delivery.

Software also allows you to capture productivity data with access to measurement and overlay tools. For example, this allows you to calculate and compare how much concrete you've poured on a project.

Additionally, you should be sure to select a tool that stores all your project data within it. Your mantra should be "If it doesn't live in the tool, it doesn't exist!" This will ensure your teams have one place they're looking to for information. Centrally locating your documents removes the need for duplicate entry of data or an extensive and confusing search to find information.

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"PlanGrid provides an excellent office to field interface. Real time updates and changes help streamline the flow of information and make our team efficient and in turn successful."

— Austin Gary, TAS Commercial Concrete

Effective project closeouts and seamless as-builts

Traditional closeout packages have been insufficient for project owners. Typically, 30% of data associated with a project is lost during turnover.[3] A digital drawing set lasts for the lifetime of the building. When all the documentation is stored electronically, it creates an easy package to turn over at project completion. This ensures a happy owner and helps secure future projects with them. When using the right software tools, substantial data loss at turnover becomes a thing of the past. This also helps owners, facilities/maintenance teams, GCs, and subcontractors when warranty issues arise after project closeout.

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"It used to take four to five people at least a week or more to get all final redlines and as-builts put together at turnover. With PlanGrid it only takes a couple of hours for us to ship our turnover package, but equally important is the fact that we're confident in the quantity and quality of the data we're sharing."

— **Kalen Wallace, Mechanical Engineer, VEC Inc.**

Tech attracts younger talent as the existing workforce ages

The median age of construction workers in 2000 was 37.9, while in 2010 it was 40.4.[4] This means that the average age of concrete workers is also increasing.

As a large part of the workforce moves toward retirement, it's increasingly important to attract young talent. Ensuring that cutting-edge technology is available to them is one way of drawing in that much-needed cohort. Adopting a best-in-class software tool is one way for your company to attract this younger tech-driven part of the workforce. Software tools can also facilitate the transfer of knowledge from your experienced employees through a platform that younger workers understand.

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> "For the health of our [concrete] industry, it's crucial we find a means and a mechanism to come together as a whole – contractors, material manufacturers, ready-mix producers and so on. In other words, every concrete construction-related industry must do its part so we can effectively and with a united voice reach out to a rising generation of untapped potential superstars with the message that our industry is worth considering as a career."
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> **— Greg Lannone, Concrete Decor Show/Solomon Colors[5]**

Scaling as your organization grows

When business is booming, organizations often rapidly increase in size to accommodate the new work. Growing from a small organization to a larger one can make problems in existing processes painfully obvious. This is no different for Concrete Subcontractors. Leveraging Construction Productivity Software is one way to influence company growth and scale successfully. You can rely on paper drawings and memory for a small projects, but that's a recipe for disaster as projects get more complex and teams grow.

Mechanical Case Study - VEC, Inc.

T.B. Penick & Sons, Inc. provides design-build, general contracting, construction management and concrete services across the United States. As construction manager for T.B. Penick, Paul Sandoval oversaw the building of the sanctuary for the St. Thomas More Catholic Church. Taking around 16 months, it was complete in December, 2015 and finished with a construction cost of $11M+.

Construction of the sanctuary was a unique project for T.B. Penick. The structure, all concrete and steel with no wood (except for decorative millwork), required a large quantity of cast-in-place concrete. It also called for an air plenum under the sanctuary floor with ductwork coming up through the pew legs–providing climate control while keeping the legs in position.

RFI's and submittals

T.B. Penick's relationship with the architect for this project was new to Sandoval. Rather than a design-build model with a more relaxed relationship, this project adopted the more formal design-bid-build model. Using PlanGrid to facilitate and standardize communication between parties was key to the project's operational success.

When discussing how his team got the most value from PlanGrid in managing RFI's and submittals, Sandoval said, "There was a lot of emphasis on the architecture being done with precision, so the quantity of RFIs was extensive and kind of unseen for this firm. The architect, due to personal preference, wanted to use another program for RFIs. We extracted that information and put it into PlanGrid so that I could more easily share it with my own team. When you have almost 600 RFIs and a submittal process that is growing at an exponential rate because of differences of opinion, you want to have one place to have a master. Whether that be construction drawings or RFIs submittals, it was great to have everything in one spot."

Time savings

Two Project Engineers and one Superintendent used PlanGrid on the project. Over the course of 69.5 weeks, they collectively saved 18-23 hours per week.

As primary Construction Manager, Paul was excited about time savings due to automation of annotations and plan distribution. "Before PlanGrid, our process involved printing everything and then inserting it into the drawings accordingly. This had to be done in one, two, or three sets of plans, which involved printing, cutting out details, writing on the plans, trying to be neat, erasing or covering mistakes, and then distributing the plans to everyone who needed them–not to mention pages would then get ripped or damaged and potentially the process had to be repeated. It was grossly inefficient. PlanGrid helped the field crew save time in their day-to-day work activities. It assisted in avoiding long, drawn out days or weeks of overtime pay and the need for extended shifts or additional manpower. There was no final push involving 16 hour days, 7 days a week."

Paper savings

Compared to a similar project within 10% of the value of St. Thomas More, Sandoval says he spent 75% less on paper costs, saving around $15,000. "I relied on PlanGrid exclusively and did not print any plans or documents for my own use. I almost always chose to use PlanGrid instead of printing."

While some printing was still necessary, PlanGrid let Sandoval print smaller, letter-sized documents from the office trailer (rather than relying on a reprographics company). The ability to create and send reports and plans directly from the iPad was particularly beneficial.

"A large portion of the cost savings seen between the two projects (with regards to printing costs) came from being able to very quickly and cleanly provide a consultant with accurate and precise information. I have sent very detailed plan sections to them for their review and using this platform reduces the quantity of billable hours on their end," said Sandoval.

Return on investment (ROI)

Sandoval purchased three licenses, as well as tablets for his team–a total investment of around $1,700. Paper and labor savings combined came to $104,029, resulting in an ROI of 6,019%.

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"With the structural challenges–as well as trying to eliminate visible ductwork–when you start to put into place all those different elements, and you're dealing with concrete; especially vertical concrete walls that are upwards of 30 feet tall, you don't get second chances."

— Paul Sandoval, Construction Manager, T.B. Penick

Subcontractors using PlanGrid

References

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Rosecrance. Epidemiologic Reviews. January 2012.
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Where Have All The (Skilled) Workers
Gone? Concrete Decor Show

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PlanGrid's Construction Productivity Software is the easiest and most cost-effective way to get substantial return on your investment in construction mobile apps. By using PlanGrid you will:

- **Complete projects faster:** 90% of project costs occur in the field and not in the office. This includes wasted time and project delays. With PlanGrid, you can reduce wasteful trips to the trailer and time delays, while eliminating costly rework. PlanGrid also allows for faster collaboration and communication.

- **Reduce costs:** PlanGrid allows you to optimize productivity in the field, which eliminates time waste that causes project overruns. By completing projects early or on time with PlanGrid, contractors will benefit from reduced costs.

- **Win more bids:** The best way to bid more competitively is not just to track costs so you can provide more accurate estimates — it's to improve your overall productivity. PlanGrid's Construction Productivity Software will allow you to increase productivity so you can reduce costs and win more bids.

Try PlanGrid for Free

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There is a reason why PlanGrid is not only the #1 construction app, but also the highest rated. With PlanGrid construction productivity software, you can streamline document management, access all project information from any device, and seamlessly collaborate within teams.
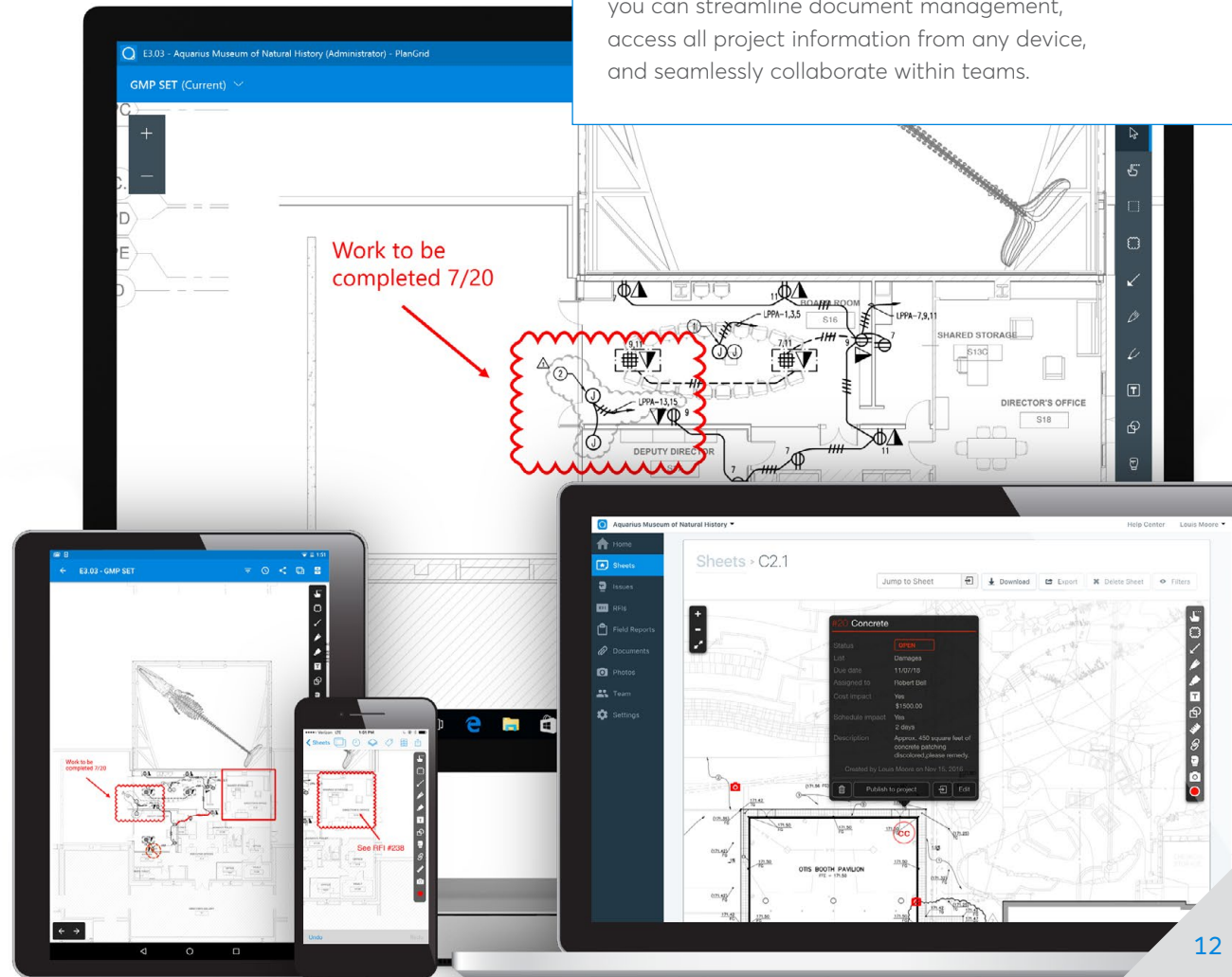
PlanGrid

Used on more than 1,000,000 projects around the world, PlanGrid is the first construction productivity software that allows contractors and owners in commercial, heavy civil, and other industries to collaborate, collect, and share project information from any desktop or mobile device through the entire project lifecycle.

PlanGrid increases project efficiency by streamlining document management, providing construction teams with easy access to all project information from any device, and enabling seamless collaboration within teams.

Guide Author:
Eric Thomas
Content Marketing Manager, PlanGrid

Connect with PlanGrid

United States
+1 (415) 963-4088
www.plangrid.com

Australia
AUS 1800 316 406
www.plangrid.com/au

United Kingdom
+44 (0) 20 3695 0292
www.plangrid.com/gb

Canada
(800) 646-0796
www.plangrid.com/ca-en
www.plangrid.com/ca-fr

Hong Kong
+852 5808 3598
www.plangrid.com/zh
apac@plangrid.com