

+ White Paper

BUILD SMARTER

How Tech is Helping Construction
Face Five of its Biggest Pain Points



NOT SURE WHERE TO START WITH TECHNOLOGY?

DISCOVER HOW CONSTRUCTION TECH IS BREAKING NEW GROUND

Managing construction projects is never easy, and when unexpected delays and unforeseen errors create bumps in the road, the buck stops with you – the project managers and directors working to keep everything running smoothly.

You might have heard all about the ways that construction technology like BIM, AI, IoT, and robotics promises to lift some of the weight from your shoulders. About better decision-making backed by data. Spotting human errors early to avoid costly delays and improve health & safety. Scheduling tasks and coordinating contractors with pinpoint precision.

But finding a tool that fits your business – and that makes a real, noticeable improvement day-to-day – takes time. So, how can you figure out which technology is right for you and your project?

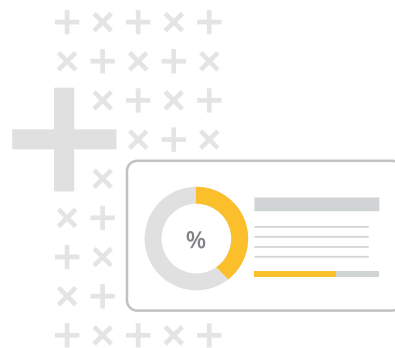
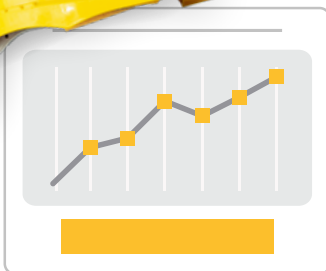
“77% OF CONTRACTORS AND OWNERS RATED TECHNOLOGY AS A KEY CAPABILITY IN DEALING WITH DISRUPTIVE EVENTS.”

KPMG 2021 GLOBAL
CONSTRUCTION SURVEY

Reading this white paper is a good start, because it clarifies which types of construction tech truly make a difference. In it, we'll:

- + Take a look at the technology transforming five key areas of construction.
- + Break down how different types of tech could help you reduce the time and effort spent on information-gathering tasks, site visits, and errors.
- + Consider the types of technology that act like your right-hand man – reducing anxiety so that you regain and retain that all-important sense of control and confidence.

Technology can convert frustration to fulfillment. So before your next project, take a look at some smart tech that delivers on its promises. These bright ideas will help you work smarter.



CONSTRUCTION AREAS COVERED

Talk of transformational technology in construction is nothing new.

But it has evolved at breakneck speed thanks to the Covid-19 crisis – making 2.6 years' worth of progress in the space of a year according to Virgin Media Business/CEBR research.

This whitepaper will help you stay ahead of the curve. It's packed with digestible insights on:



SUPERSTRUCTURE

Smart tech like AI crane sensors and smart concrete sensors takes monitoring and efficiency to new levels.



INTERIOR FIT-OUTS

Technology that monitors progress and spots errors in near real time, plus robots that take on difficult and labor-intensive tasks.



HEALTH & SAFETY

Sensors, beacons, and reporting systems with real-time monitoring that radically minimize risk.



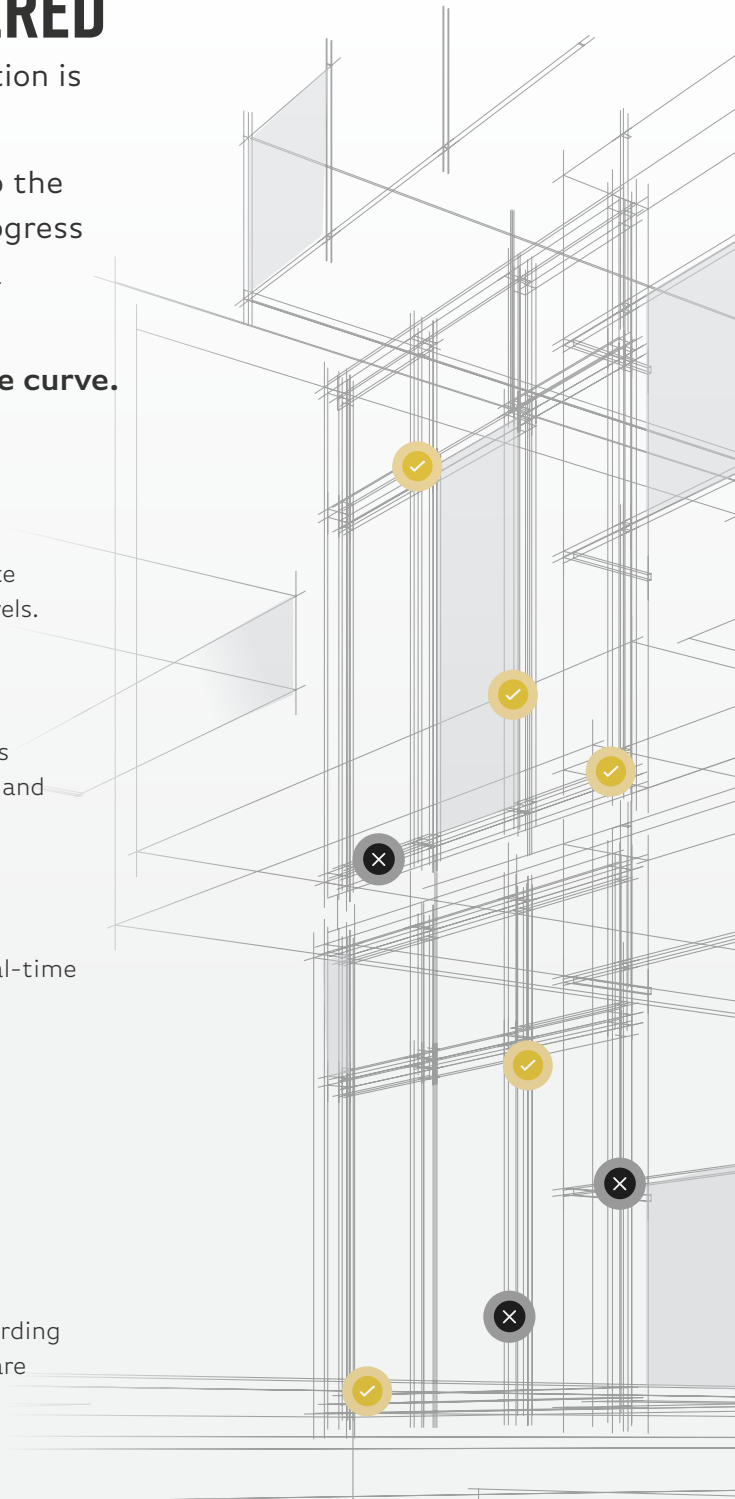
PROJECT & DATA MANAGEMENT

Advanced software and BIM solutions that create a single source of truth for all stakeholders.



RESOURCE MANAGEMENT

IoT reporting tools and automated employee onboarding and management systems that monitor every square centimeter on site.



“FINANCIAL AND STRATEGIC INVESTORS CONTINUE TO FUEL A RAPID EXPANSION OF THE CONSTRUCTION TECHNOLOGY INDUSTRY. THE PANDEMIC HAS ONLY SERVED TO PROVIDE ADDITIONAL URGENCY.”

MCKINSEY, RISE OF THE PLATFORM ERA: THE NEXT CHAPTER IN CONSTRUCTION TECHNOLOGY

5 TOUGH CONSTRUCTION CHALLENGES SOLVED

Let's break down how tech solves five tough construction challenges and makes everything from managing exteriors and interiors to tracking and troubleshooting more manageable.

The next time you're faced with a construction conundrum, one of these smart solutions might just spring to mind:

1 SUPERSTRUCTURE



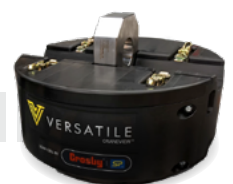
Mistakes, delays, or wasted materials at the superstructure stage can create enormous unforeseen costs – and, if left unchecked, create a chain reaction that holds up the rest of the project. Inefficient crane utilization and uncertainty around concrete curing times are two major cost drivers for project managers. Here's how companies are using technology to battle those challenges:

AI crane sensors

Cranes are used on 80% of construction projects that are valued at \$10m or more, but despite being a critical resource, they are often underutilized. **Versatile** is using its AI-powered sensors to provide project managers with a real-time picture of a crane's work rate, utilization, and efficiency. That means project managers can easily get a clear, detailed understanding of how one of their most important resources is being used and react to avoid bottlenecks and delays.

Advanced concrete sensors

How often do you find yourself losing time waiting for concrete to cure, or risking damage or wasted materials because you're uncertain whether your concrete has reached critical strength? **Converge** may have the solution. Its ConcreteDNA sensors give you real-time concrete curing data, curing milestone alerts, and analytics on the performance of your concrete materials, so you can more accurately predict when it's safe to move to the next stage of construction. Even better, ConcreteDNA can use AI to predict exactly when your concrete will be at critical strength, helping you plan project timelines more accurately and get the right people in the right place at the right time.



2 INTERIOR FIT-OUTS



Interior fit-outs are one of the most complex and delicate processes that a project manager has to oversee. Getting them done right means coordinating the placement of thousands of small, interconnected elements by many different subcontractors – and quickly spotting any mistakes that arise from this complexity. Here are a couple of ways in which technology from Buildots, Canvas, and Okibo is helping make the process smoother:

AI-enhanced virtual control center

Managing a construction site can be a huge challenge that requires complete visibility and control over tens of thousands of details. With **Buildots** capturing progress data is as easy as doing a site walk.

Buildots is the equivalent of a mission control room for construction sites. Bringing together AI and wearable hardware, Buildots automatically collects accurate progress data using 360-degree camera footage and creates fully digitized construction workflows. This provides project managers with the information needed to optimize processes, minimize delays, and avoid budget overruns. Easy integration, fast access, and a user-friendly interface make Buildots the perfect solution for any team looking to streamline its construction processes. +

Drywall finishing robots

Drywall finishing and plastering is one of the most time consuming tasks on site. The time taken for drying, sanding, reapplying plaster means subsequent activities are held up. But help is at hand. Construction robotics firms **Canvas** and **Okibo** have each developed drywall finishing robots that deliver a machine-finished level 5 application and reduce average finishing times from seven days to two, as well as minimizing health & safety risks to workers.



3 HEALTH & SAFETY



To keep people safe on site, project managers need to keep track of huge amounts of information. That means knowing the training, certifications, and qualifications needed by every subcontractor on site. Knowing with certainty that all protocols are being followed. And being informed in real time when an incident occurs. It's a lot to juggle, but two pieces of technology are helping project managers get the insight and understanding they need:

An app to track, monitor, and manage safety considerations

Every worker on a site is unique. Each one faces their own risks, must follow their own procedures, and has their own unique set of qualifications. Losing sight of any one of these elements could create a health & safety hazard – whether that's a worker taking an unnecessary risk, or someone using a piece of equipment that they're not certified to use. **Beti's app** is designed to address this, making it easy to keep your team safe and compliant by tracking their qualifications, equipment compliance, safety routines, safety events, and more. +

Real-time location & site condition sensors

When you want to make sure you have the real-time data you need to look after your workers, environment, and equipment, **Trusstor** is an excellent choice. This on-site command and control system works by connecting discreet personal tags, location beacons, and equipment locators. All of your precious resources are tracked and analyzed, while working methodology is constantly monitored and real-time alerts flag up unauthorized activities. For instance, calls and employee stress are instantly communicated via features like a distress button, and simple, accessible, and actionable daily and periodic safety reports are automatically generated for site managers. +



4 DATA & PROJECT MANAGEMENT



For any project or site manager, keeping a project running smoothly requires two things: visibility (so you can understand what's happening) and control (so you can shape what's happening and keep your project on track). With so many moving parts to consider, it's often difficult to achieve either of these things – and almost impossible to ensure that you have both. Here are a few clever ways technology helps PMs get the visibility and control they need:

Unifying project management software

From financials to quality, safety, tender management, and timeline tracking, keeping a project running smoothly means juggling a huge number of priorities – many of which are interconnected and interdependent. As a result, many companies are now turning to project management tools designed specifically for construction. Tools like **Procore** and **Fieldwire** bring all of your data, processes, and timelines into one place, so you can see how each part of your project is progressing, make fully informed decisions, and find the information you need faster.

Collaborative 3D BIM

BIM is already a powerful resource for project managers, but **3D Repo** is taking the technology one step further. 3D Repo breaks down silos between different areas of your project team with live collaboration tools. Its software allows users to manage 3D model revisions, highlight potential issues, and access project plans whenever and wherever they're needed. The result is easy access to information for everyone involved in the project – which means fewer misunderstandings, better communication, and a unified understanding of how your project is progressing.

5 RESOURCE MANAGEMENT



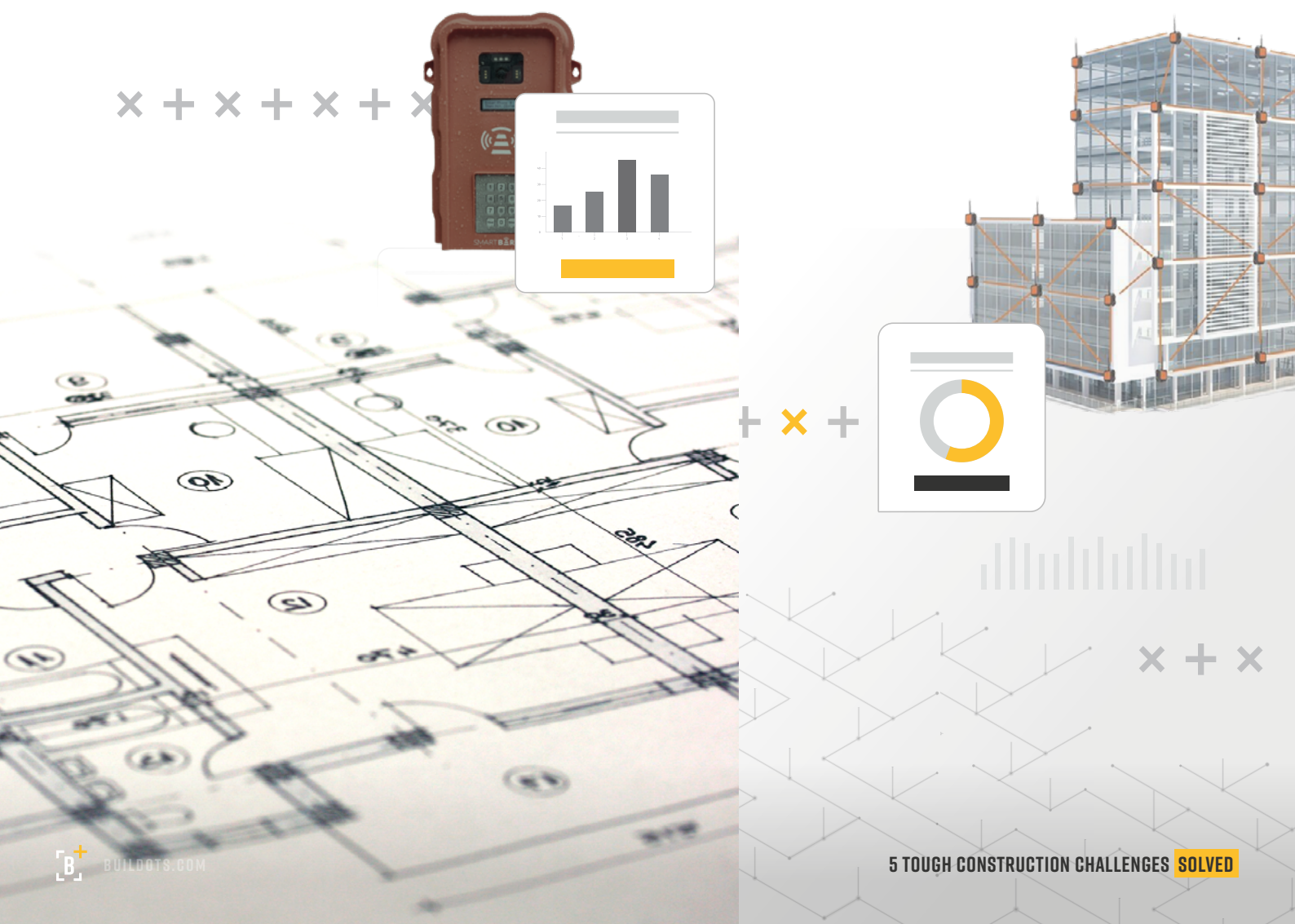
Managing teams and time efficiently requires a unique mix of practical know-how and people skills. Even the most experienced PM isn't all-seeing and all-knowing, but the right technology is the next best thing to a superpower. Here are some great examples:

Resource tracking and analytics

Effective allocation of your resources to the different activities on your project is a key factor in maximizing productivity and making the most of every day on site. It all starts with gaining full oversight throughout the day, so you can make sure everything is going according to plan. Products such as [WakeCap](#) provide such visibility, allowing you to track the location of labor, machinery and materials, so you can make sure your team is focused on the most critical tasks. +

Automated employee onboarding and management

When you have hundreds of workers on site, keeping track of incidents, safety certifications, and other health & safety data can become incredibly complex. [SmartBarrel](#) provides devices that automate data collection in the field and make it easy for managers to report incidents, manage employee documents and certifications, and make it super simple to keep track of employee safety, performance, and progress.



KEY TAKEAWAYS

Hopefully you've enjoyed our no-nonsense guide to the types of tech that are transforming construction. So, to recap, we've discussed how technology is helping:



Avoid mistakes with smart cranes & concrete sensors during superstructure phase



Regain control over the fit-out phase with a virtual control center platform



Easy tracking, monitoring, and management of vital health & safety information



Complete oversight of the information that project managers and construction teams need in one place



Smart timekeeping and reporting that makes resource management simple

We're here to help you build smarter.
WANT TO SEE THE BUILDDOTS PLATFORM IN ACTION?

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