

5 ways HP SitePrint can help transform your building operations





For an industry rooted in delivering change, construction has been surprisingly conservative about transforming itself.

Last year, however, the US \$1.2 trillion Infrastructure Investment and Jobs Act created a powerful new incentive: allocating a once-in-a-generation amount of funds for infrastructure projects that embrace construction technology.¹ This sent a clear message to construction leaders: now's the time to transform building operations.

This eBook explores 5 ways HP SitePrint can help transform building site operations:

- Delivering more efficient building layout
- Maximizing resources and growth
- Accelerating digital adoption on-site
- Making costs more predictable
- Building the future workforce

Transformation initiatives need to be accelerated, in part, because the construction industry's problems persist—growing larger and more inhibiting to construction leaders' abilities to maintain and manage growth. Current market dynamics suggest that 2023 will likely bring continued cost volatilities and talent pressures.² One industry spokesperson has commented that, in 2023, "the overall cost of building materials will continue to not just grow, but to do so at an astonishing rate."³ And 93% of US construction firms currently have open positions⁴ with 91% of firms still having trouble filling them.⁵

So, what does the technological transformation of the building site have to offer to mitigate these challenges? Well, not only might digital tools hold the power to attract the tech-savvy younger generations into a career in construction, but McKinsey recently predicted that introducing modern technology to construction could improve productivity by 14-15%, generating cost savings of 4-5%.⁶

But 'digital transformation' can appear to be a far-reaching, even nebulous, phrase for an industry already resistant to change. And construction leaders, in particular, are responsible for all aspects of the firm, from operations and P&L to more strategic business decisions, not simply fast-tracking digital transformation. Nevertheless, these same leaders have to look at transforming their building operations, even one digital tool at a time, in order to see the efficiency gains they need to maintain growth.

As a robotic solution for layout, HP SitePrint makes automated layout technology accessible and easy to help construction leaders digitally transform—scaling their business, by maximizing their current workforce and helping stabilize costs—so they can remain competitive. And although this new innovation is by no means a silver bullet to the problems facing the industry, this layout robot can start to embed automation in construction which will provide impactful and measurable gains for construction leaders and their companies.

More efficient building layout

Project inefficiencies are a massive problem in the construction industry. A staggering 9 out of 10 projects experience cost overruns⁷ and it's estimated that productivity changes could save the industry as much as \$1.63 trillion per year.⁸ Not only that but allowing inefficiencies to become commonplace threatens a firm's reputation and their ability to grow. For leaders in construction, finding a way to complete projects more efficiently is a top priority.

For many contractors, layout can account for up to 25% of a project's costs.⁹ This is, in part, due to the high labor cost caused by the shortage of skilled workforce—86% of firms raised the base pay for their workers last year¹⁰— but also due to inefficiencies and rework. Without expertise or the ability to minimize errors, delays arise which, in turn, negatively impact project costs.



How can HP SitePrint help?

HP SitePrint helps deliver more efficient building layouts, even with a shortage of skilled labor. Construction leaders can empower their teams to do more, without having to increase headcount. And obstacle avoidance and text printing capabilities help avoid errors and reworks. With these efficiencies gained, construction decision makers can get one step closer to meeting project owner expectations and maintaining growth for their organization.

"Layout experts are a scarce resource who add a lot of value in terms of planning and strategy, but often end up dedicating most of their time to manual execution. HP SitePrint helps us reduce schedules thanks to a much faster layout process, allowing senior operators to focus on other critical activities like quality control."

—ALBERT ZULPS, DIRECTOR OF EMERGING TECHNOLOGY, SKANSKA¹¹



Maximizing resources and growth

Currently, construction companies are struggling to get the most out of their resources and fuel growth. Construction leaders are faced with the problem of scaling resources to meet the demands of new projects—when labor, skills, and even materials are lacking.

According to a survey in the Gleeds' market report, 80% of contractors in the UK have said that they experienced issues with labor shortages.¹² In addition, 70% expect those shortages to continue in the future.¹³ Not only that, but the forecast for year-on-year price escalation in 2023 remains between 9% and 12%; inflation that'll further compound these difficulties.¹⁴

Michael Hardman, Vice President of construction company Turner & Townsend, recently commented: "When looking ahead into 2023, we are forecasting escalation year-on-year of 7%. By 2024, we will have seen three years of dramatic price escalation and if projects—and compounding effect—are true, we will see material prices approximately 25% to 28% higher than they would have been by equivalence in 2020.¹⁵ For construction leaders, finding a way to maximize resources and growth amidst these tumultuous times will be key to minimizing project cost volatility, meeting project owner expectations, and ensuring the profitability of their organizations.

How can HP SitePrint help?

HP SitePrint can improve the overall efficiency of layout professionals. It empowers a single operator to layout a full area with speed, and it allows teams to quickly add multiple robots, meaning you can scale resources over a project.

It also reduces the complexity of layout by printing on a variety of surfaces and different materials with a single solution. With an autonomous construction robot assisting your layout team, you can maximize their productivity, to deliver projects on-time and on-budget, and fuel growth even in challenging labor markets.

Accelerate digital adoption onsite

There's more pressure than ever for construction leaders to ensure profitability. One important aspect of this is making the technology decisions that can boost the financial wellbeing of their company. Do you invest in robotics in construction? Or in building information modeling? Or another type of future construction technology?

A recent article in *Construction Management and Economics* stated, "Businesses in the construction industry have, over recent years, seen unprecedented pressure to change due to digital technological advances. Considering that leadership is critical to organizational innovation's success, construction business leaders are key to driving digital transformation in their organizations."¹⁶ In essence, because of the compounding challenges within the industry, construction leaders need to start doubling up as digital leaders, as well; the same article defines this as "leaders with the ability to create a clear and meaningful vision for the digitalization process and the capability to execute strategies to actualize it." And with digital transformation comes opportunities.

How can HP SitePrint help?

Research reveals that construction's technology adoption can be slow because transformation initiatives often lose momentum due to the use case for a new piece of technology either not being immediately clear or not delivering instant and measurable benefits to the user. For construction leaders to change this, they should focus on digital tools that meet specific pain points¹⁸—such as HP SitePrint.

As soon as HP SitePrint is adopted on-site, its advantages will be immediately obvious to the layout professional. Their time will be freed-up to focus on other value-creating tasks thanks to the massive productivity boost it can deliver. Not to mention, the layout tool minimizes the effort exerted to complete projects. For construction leaders, that means workers won't become disillusioned with transformation efforts—helping these same leaders better manage and maintain the growth of their organization.



Predictable costs

As we've discussed, project cost volatility is a major challenge facing construction leaders and their companies. Amidst material, labor, and equipment price hikes, plus market uncertainty, managing and maintaining growth becomes harder and harder.

The extent of material price volatility is quite shocking. A combination of the pandemic, inflation, supply chain disruptions, and more has caused a ripple effect now severely impacting construction projects and firms. And these volatilities aren't limited to one or two materials, as the chart shows.

On the material price volatilities in construction, Rob Cantando, National Director of Strategic Supply Chain at Skanska, is resolute that the "big issue" is "markets going in different directions in terms of materials. Some are starting to recover and you've got other ones that aren't going to recover for a long time—and probably get even more challenging over the next year or two."¹⁹ For construction leaders, finding a way to ensure profitability amidst these uncertainties is key.

Material	Volatility	Price Index YOY % change	Lead times
Flat glass	Low	8.2%	Increased
Lumber and plywood	Low	-26.9%	Stabalizing
Aluminum mill shapes	Low	20.3%	Increased
Insulation materials	Low	16.0%	Increased
Plastic construction products	Moderate	27%	Increased
Steel mill products	Moderate	22.4%	Stabalizing
Concrete products	Moderate	13.5%	Increased
Gypsum products	High	18.9%	Increased
#2 Diesel fuel	High	111.1%	N/A
Copper and brass mill shapes	High	0%	Increased

How can HP SitePrint help?

Research already reveals that digital tools have the ability to stabilize costs, so construction leaders and companies can be supported to maintain and manage growth. In fact, 76% of Engineering & Construction decision makers are already putting more money into technology as a way of solving issues regarding cost and margin.²⁰

The power of HP SitePrint here is that by reducing the likelihood of error, and automating and accelerating the layout process, construction leaders can start to see a more stable and predictable

financial forecast from the layout process. And there's also predictability in the consistency of the layout that HP SitePrint provides. Often, subcontractors and contractors on-site complete layout in differing ways, with the lack of a unified approach and ensuing inconsistencies resulting in knock-on time and cost implications throughout the project. With HP SitePrint, these parties are united: creating a more harmonious operation on-site to drive even more cost stability.

Build your future workforce

Construction's labor shortage has been called the industry's "biggest fear".²¹ And for good reason: over 40% of the current US construction workforce is expected to retire over the next decade²² whilst only 8.7% of construction workers are 20-24 years old and 2.1% are under 20.²³ These labor shortages are driving up wages by up to 5-10%, increasing the total cost of projects.²⁴

But it's not all doom and gloom. Forbes comments that although "in almost no other industry is the gap between available workers and opportunity more pronounced than that of infrastructure", digital solutions have the power to improve efficiencies and collaboration—whilst appealing to a younger, tech-savvy generation who expect to be equipped with digital tools at work.²⁵



How can HP SitePrint help?

Like in other areas of construction projects, there's a cost to the shortage of layout professionals. Without expertise, more mistakes are made and, if layout isn't carried out in a timely fashion, other activities are delayed—which creates more cost.

HP SitePrint offers simple set-up and easy use, minimizing errors as a result and supporting construction leader's current workforce to boost productivity. But HP SitePrint is also a new and innovative tool for the construction industry: the type of digital tool that younger, tech-savvy workers will want to see being used in their chosen careers. And it's likely that the construction leaders and companies that attract the best new talent will be one step ahead of the competition with adopting digital tools like HP SitePrint.

Conclusion

Daniel Martinez, Vice President and General Manager of HP Large-Format Printing, recently commented that: "Technology adoption and increased digitization can help construction firms realize productivity gains. With HP SitePrint, we're making it faster and easier than ever for construction professionals to bring an idea to life on-site, while also reducing layout accuracy and reducing costs derived from reworks."²⁶

For construction leaders looking to minimize the challenges facing them and better equip themselves for managing and maintaining growth, HP SitePrint turns weeks of layout into days of layout—offering ways to stabilize costs, attract new talent, and meet project owner expectations. And, with HP's expertise, adoption and maintenance is easy: HP provides a model where supplies, repairs, and support are wrapped up together as a service, based on usage.

Learn more about HP SitePrint by visiting www.hp.com/siteprint



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