

HP SitePrint Helped Hoar Construction Reducing Layout Costs and Project Schedule

Highlights

3x faster Productivity
Accelerated layout execution to help keep the project on schedule.

18% Cost Reduction
Improved layout efficiency while reducing operational expenses.

Layout Accuracy of 1/8”
Consistent precision that keeps every layout on track.

Project Scope

Project:
New multilevel parking garage

Location:
Shannon Medical Center Extension in San Angelo, Texas.

Type of project:
MEP layout

Layout scope:
3,930 points (including text)

Project Size:
16,485 ft² printed floor area



The Challenge

To expand patient and staff capacities at Shannon Medical Center, Hoar Construction adopted the most accurate and efficient layout coordination solution on the market.

Hoar Construction's work involved cast-in-place concrete, where MEP crews essentially had one chance to set hanger and anchor inserts over nearly 4,000 points across 16,000+ ft². Nothing can grind construction to a halt like poor layout quality. Because mistakes would lead to costly and labor-intensive concrete penetrations, accuracy was paramount. Traditional layout methods involving manual work, are known for accuracy errors, slowing operations, and creating costly reworks.

For these reasons and more, choosing the most effective site printing method from the beginning was crucial.

The Solution

HP SitePrint now automates the vast majority of layout printing functions, leaving behind a 1:1 reproduction directly at job sites, and in record-shattering time. HP SitePrint facilitates facilitates fast, accurate, and detailed site marking, with the information contractors need to complete their work and the speed to help managers keep things running on schedule.

Its compact form also reduces floor space needs—even while achieving higher benchmarks in all the ways that count most:

- Fast and accurate printing
- Direct translation of CAD files to physical prints, free of interpretations
- Text printing capabilities
- Multiple ink colors, both permanent and erasable inks
- Advanced collision detection for autonomous function
- Quick and efficient setup and ink changeovers



"HP SitePrint has really sped up the operations of the physical layout on the ground."

Garrett Wheat
Project Manager

"We can provide a better quality project and a better product for our clients and the community. It's important for us at Hoar to stay on top of ever-changing technologies."

Garrett Wheat
Project Manager



The Results

By automating the layout process, Hoar Construction simultaneously met their MEP technicians' and stakeholders' needs for more efficient and reliable layouts completing layout 3 times faster compared to previous methods and reducing layout operational expenses by 18%. Comparing to traditional layout without Robotic Total Station guidance, HP SitePrint would have been 6 times faster and 79% cheaper.

At the heart of Hoar's success was the fact that a single technician could manage SitePrint and oversee progress almost entirely from a single pane of glass. HP SitePrint also alleviated enormous amounts of time costs, allowing Hoar technicians to focus on more specialized, value-adding tasks.

By utilizing HP SitePrint, Hoar Construction could print all MEP points with a text lable, exerting control over the quality and efficiency of MEP system installation. HP SitePrint also earned accolades for alleviating layout technicians' health and safety concerns, eliminating the need to kneel when marking points.

Total cost reductions of
$1,303
compared to RTS assisted layout

18%
cost reduction

Cut **8 days**
off the timeframe expected with a traditional RTS system

3
Times faster



"At some of these decks we have 3400 points that are getting laid out and if you think about it that's 3400 times someone would have to sit down and get back up and they dont have to do that anymore. Being able to take all that work off of our labor force... it's a no brainer."

Shaun Carollo
VDC Manager

Long-Term Impact

Hoar Construction didn't just save on time, labor, and expense. They also established the permanent means of doing so while dramatically increasing value for their clients. The new Shannon Medical Center structure achieved unquestioned safety and reliability, and Hoar set in motion major lasting improvements in business management and resource allocation methods.

From a pure business perspective, Hoar's success is also a shining example of far-ranging continuous improvement. After quickly mastering HP SitePrint's intuitive controls, Hoar Construction immediately became more strategically positioned in their marketplace. With HP SitePrint, they wield an undeniable competitive edge and eliminate one of the most needlessly time-consuming preconstruction tasks.

Whenever layout technicians can do their jobs more accurately and efficiently, the entire construction project improves. It also enables firms to scale their capacities almost instantly. By optimizing the performance benchmarks that count most, SitePrint takes HP's illustrious history in large-format AEC printing technology out into the field where it belongs.



"With projects like this, time is probably your biggest challenge. The time, scheduling, scope of work, and coordination—making sure all trades work together. When you have that, the job is more successful and productive."

Charlie Jackson
Assistant Superintendent

Comparative Analysis

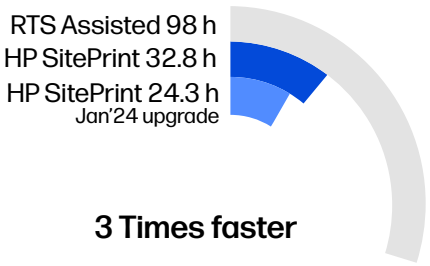




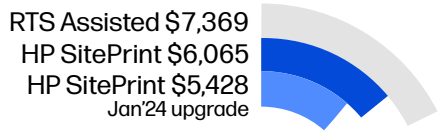
January'24 upgrade

	Diversified Interiors at UMC	Before HP SitePrint[1]	HP SitePrint[2]	HP SitePrint[3]
Job Data	Printed Floor Area (ft²)	16,485 ft²		16,485 ft²
	Points marked	3,930		3,930
Cost rates	Layout Crew Size	1	1	1
	Layout professional cost/hour	$75		$75
	SitePrint Support Usage Fee ($/ft²)	-	$0.2/ft²	$0.2/ft²
Time	Total Time (h)	98 h	32.8 h	24.3h
	Productivity (points/h)	40 p/h	120 p/h	162p/h
Total job cost	Labor Cost	$7,639	$2,460	$1,822
	SitePrint Support Usage Fee	-	$3,297	$3,297
	SitePrint D&A[4] (1 week)	-	$308	$308
	Total Cost	**$7,369**	**$6,065**	**$5,428**

In January 2024, HP unveiled a software upgrade designed to elevate productivity by optimizing printing speed and navigation efficiency. Extensive testing revealed that the deployment of the upgrade leads to a substantial average productivity increase in MEP applications compared to previous software versions. Using it, would have increased productivity 4x compared to traditional layout and a 26% reduction in operational expenses.



3 Times faster



18% cost reduction

To learn how HP SitePrint can take layout accuracy and efficiency to record heights, contact us today. An experienced HP SitePrint technician is standing by to discuss how our innovative layout coordination solutions can resolve your company's most pressing layout needs.

[1] Cost and time estimation is conducted utilizing industry averages prevalent in the region.

[2] Data in the SitePrint scenario is gathered through robot telemetry.

[3] HP SitePrint 2.0 increased productivity 35% compared to HP SitePrint 1.4.3 for MEP layouts. Testing was performed with sample CAD files, meeting average industry conditions in terms point density.

[4] The weekly cost associated with depreciation and amortization (D&A) has been computed based on a three-year amortization period.

Learn more at www.hp.com/siteprint

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