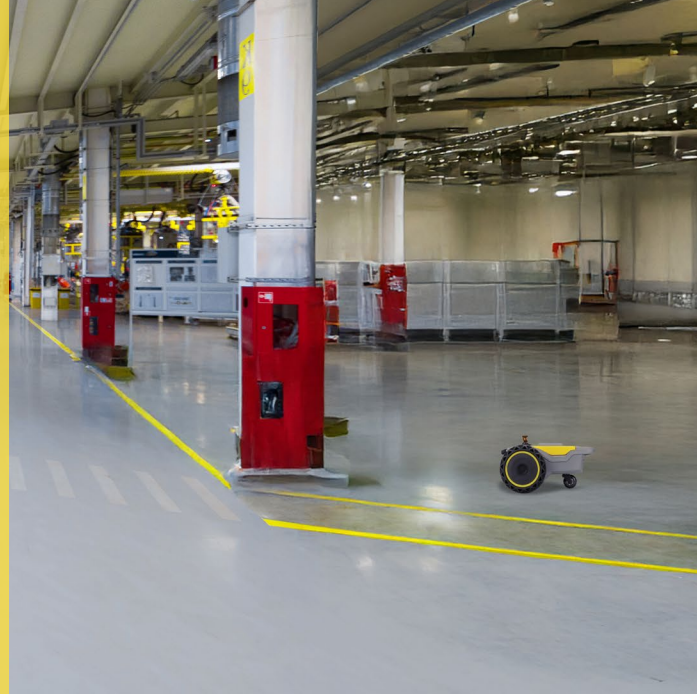




Greenhatch Group completed a car manufacturing plant layout in a third of the expected time



Car manufacturing facility

Project background

- Layout printing for assembly, picking, and packing equipment
- Machinery layout
- Accurately designate positions for 1.751 pieces of equipment within the manufacturing plant
- Project size: 2.563 m² of printed floor area



Jordan Knight, Associate Director Greenhatch Group Ltd

Highlights

48,8%
Cost reduction



compared to RTS
assisted layout

67,8%
Time reduction



compared to RTS
assisted layout

Challenge

A car manufacturing company was expanding their UK operations and beginning construction on a new facility. They approached Greenhatch Group requesting their marking out services, due to the company's 20+ years of specialised engineering expertise, including experience with robotic solutions and highly intricate geospatial surveys.

Thanks to their roots in providing precise geospatial services, Greenhatch group were no stranger to marking out with Robotic Total Stations (RTS) on large scale projects, often requiring ultra-high accuracy when marking out for specialist equipment.

For this project, Greenhatch were looking at 133 hours of work and over £8.000 of labour costs. Further, this method would still require excessive manual marking and even more effort to ensure installation teams knew precisely what each point meant.

Solution

Greenhatch was no stranger to layout technology. They knew total automation was possible, even if they hadn't found the right technology for it.

That's because HP SitePrint gave a single Greenhatch technician the ability to:

- Reduce time while improving accuracy
- Replace scattered points with fully formed lines to make the installation process easy
- Print clear and legible text alongside markings
- Monitor progress from a single cloud device
- Engage in numerous other value-adding tasks, given the site print robot's advanced collision and edge detection



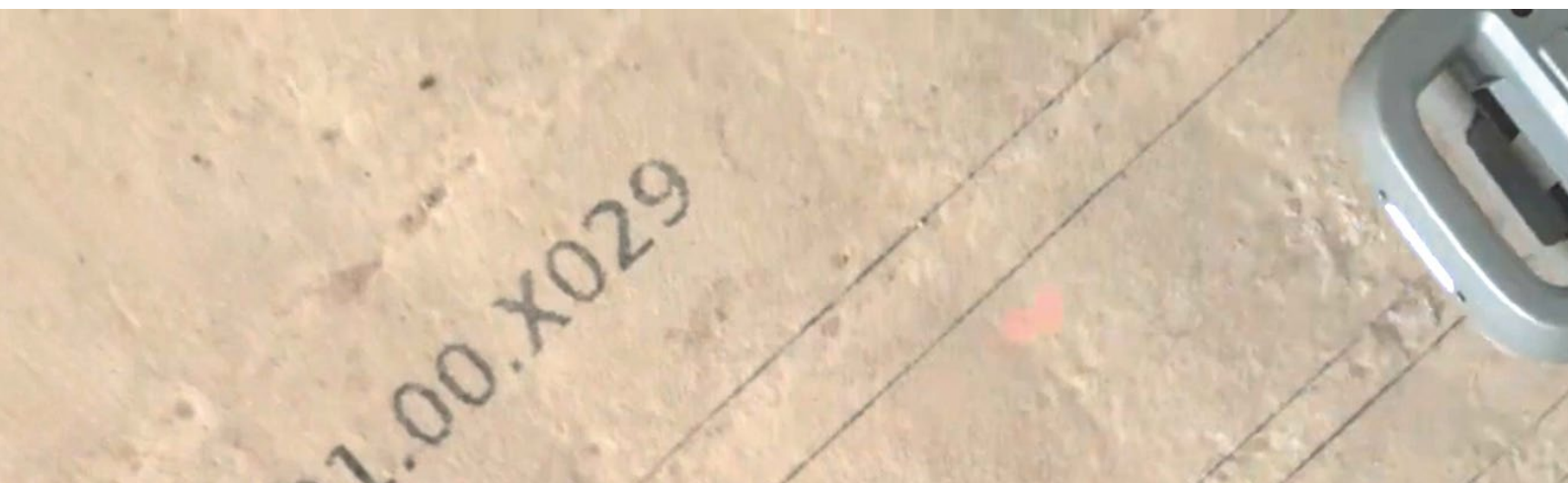
HP's entirely automated robot could draw in the machine's boundaries - utilizing the robot's ability to print highly complex geometries. This has improved the speed of installation and increased quality control for the installation technicians on site - and all in under 43 hours (3 times faster compared to traditional layout methods).

Greenhatch's RTS would send the printing instructions, based on carefully constructed CAD files, to the robot. Even at great distances, HP SitePrint achieved a 3 mm tolerance window for accuracy. That's an astonishing feat, and it proved essential to affordably and accurately covering approximately 2,500m² of printed area.

As Jordan Knight explained



We were able to complete over 1 month's work in under 8 days."



Results

Greenhatch Group was already known for reliable and efficient layout solutions, given decades spent refining specialised solutions for their clients. After choosing HP SitePrint, even they were amazed by the gains they achieved:



The accuracies that we've seen are incredible, and the speed of it as well. It's probably 10 times faster, but also the amount of detail that you can put down is really key." –Hayden Nash, Greenhatch Engineering Surveyor

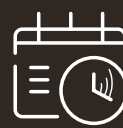
HP SitePrint produces a comprehensive CAD layout drawing on the site floor, outlining all boundaries for equipment placement in several colours, with complex geometries and text, rather than solely marking points in the corners.

Total cost reductions of
£3.915



48,8%
Cost reduction compared to RTS assisted layout

Time reduction
90 hours



67,8%
Time reduction

Long-Term Impact

Greenhatch is leading the change in the market place by implementing robotic layout methods. In addition to their own success, their client were able to complete the project well ahead of schedule. The information that HP SitePrint was able to print for them allowed the installation stakeholders to use less labour.

In this fast paced environment, raising profitability & productivity for both you and your clients is one of the surest ways to secure future contracts and foster long term relationships. Utilising HP SitePrint makes these results easily repeatable for almost any layout challenge.





Slashing our time on site and what we're able to physically put on the ground; it's a bit of a game changer for us." –Rob Ward, Greenhatch Engineering Surveyor

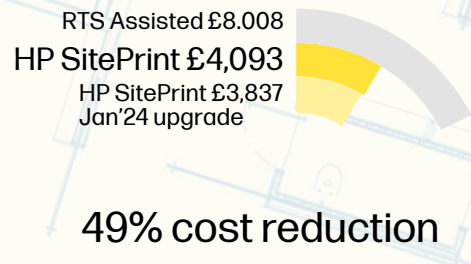
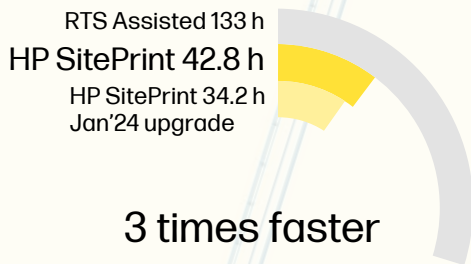


Comparative Analysis

For complex surveying and site layout challenges, precision is paramount. Leveraging the most accurate method is the surest way to secure more market share, especially if you do it more efficiently and consistently than the competition.

				January'24 upgrade
		Before HP SitePrint ¹	HP SitePrint ²	HP SitePrint ³
Greenhatch at car manufacturing facility		2.563 m ²		2.563 m ²
Job Data	Printed Floor Area (cm ²)	2.563 m ²		2.563 m ²
Cost rates	Layout Crew Size	2	1	1
	Layout professional cost/hour	£30		£30
	SitePrint Support Usage Fee (\$/cm ²)	-	£1/m ²	£1/m ²
	Total Time (h)	133 h	42,8 h	34.2 h
Total job cost	Labor Cost	£8.008	£1.284	£1,027
	SitePrint Support Usage Fee	-	£2.563	£2,563
	SitePrint D&A ⁴ (1 week)	-	£247	£247
	Total Cost	£8.008	£4.093	£3,837

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 industrial applications compared to previous software versions. Using it, would have increased productivity 4x compared to traditional layout and a 52% reduction in operational expenses.



Contact us

¹ Cost and time estimation is conducted utilising industry averages prevalent in the region
² Data in the SitePrint scenario is gathered through robot telemetry.
³ HP SitePrint 2.0 increased productivity 25% compared to HP SitePrint 1.4.3 for Industrial layouts. Testing was performed with sample CAD

files, meeting average industry conditions in terms of linear meter 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

