

Turner Innovation

TURNER CONDUCTS PILOT TO FIELD TEST AN ADVANCED MOBILITY ROBOT: SPOT

Turner conducts a pilot program to field test the capabilities of Boston Dynamics' Spot – a mobility robot that can safely traverse construction sites and capture vital project data.



Turner is testing Spot's ability to conduct routine site walks and automate tasks like site laser scanning and progress monitoring. Scan data captured by Spot enables Turner teams to efficiently track construction progress, conduct rapid QA/QC checks, and update as-built BIM models to provide clients with true digital twins of their facilities at turnover.

"Pairing advanced robotics with the latest reality capture technologies brings the future of construction to today's jobsites."

Jim Barrett, Vice President & Chief Innovation Officer.



ADVANCING ROBOTICS IN CONSTRUCTION



See Spot Run: Watch a short video to see how Turner is advancing robotics in construction.

ADVANCING ROBOTICS IN CONSTRUCTION

Spot is among the world's most advanced four-legged robots. Developed by Boston Dynamics (one of the most recognizable and innovative robotics companies in the world), Spot can traverse dynamic environments, avoid obstacles, climb stairs, and travel where wheeled robots cannot. The robot can be driven remotely or taught routes and actions to perform autonomous missions.

Spot augments Turner's workforce by automating time consuming and tedious jobsite documentation tasks. Typically Turner staff would have to repeatedly walk a jobsite to manually capture data on construction progress by photographing work-in-place or performing LiDAR / laser scans to capture as-built conditions on site. Spot can perform these jobsite documentation functions autonomously, freeing Turner staff to focus on higher-value tasks.

Data captured by Spot provides Turner with an accurate and consistent record of construction progress that enhances production and quality control workflows. Turner can also pair documentation data with innovative software solutions that compare the captured data to a project's BIM (building information model) for real-time production monitoring or to quickly identify installations out of tolerance from the coordinated BIM. Turner's Innovation team is also exploring the use of Spot for RFID asset management to facilitate better tracking and monitoring of construction materials and assets over the project life-cycle.

A VISION OF THE FUTURE

Pairing one of the most advanced mobile robots in the world with the latest reality capture technologies brings the future of automated construction workflows to the jobsite of today. "We are truly excited at the opportunity to unlock the potential of these innovations to the benefit of our project stakeholders," exclaims Jim Barrett, Vice President and Chief Innovation Officer.

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During testing, Spot was paired with the latest in continuously registering scanning technology. Where traditional LiDAR scanning involves setting up equipment in static locations, this cutting-edge tech allows Spot to scan spaces continuously while in motion.



Spot streamlines Turner's ability to perform laser scans and document as-built conditions.



Spot can be outfitted with a variety of technological integrations including the Leica BLK ARC depicted above. The BLK ARC is a laser scanner made for autonomous robots like Spot.