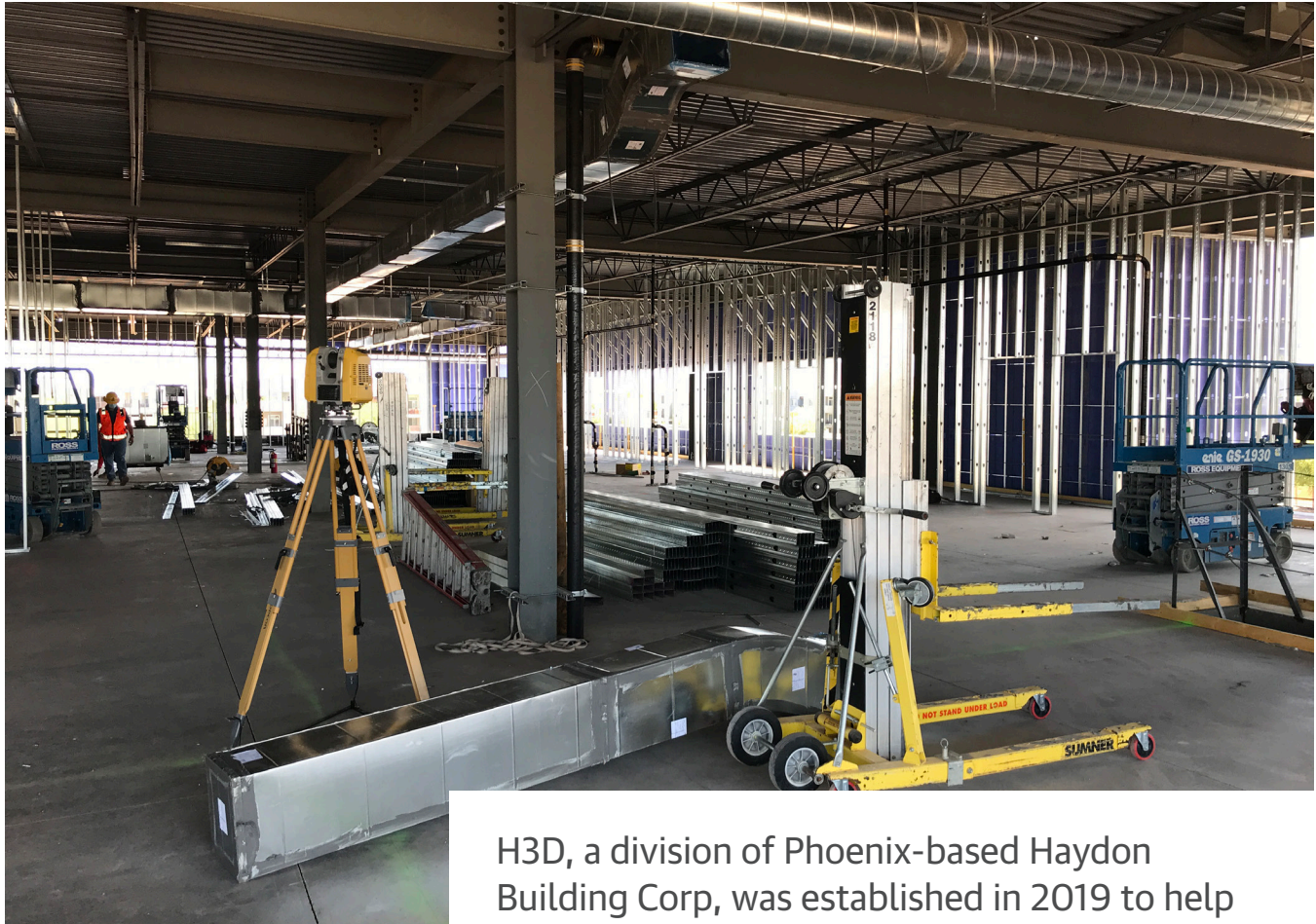




Paradigm Shift

Laser scanner helps this Phoenix-based commercial building and heavy civil general contractor bring BIM practices to the masses



H3D, a division of Phoenix-based Haydon Building Corp, was established in 2019 to help clients and trade partners lacking in-house virtual construction capabilities. Making that service available meant those entities did not have to hire a third-party service to help them.

Company

H3D/Haydon Building Corp
Phoenix, Arizona

Project

Tolleson Civic Center
Tolleson, Arizona

Topcon Products

GLS scanner

Topcon Dealer

Branco Equipment
Phoenix, Arizona

“On the building construction side, we model probably 30% of our building projects,” said Jason Young, the firm’s virtual construction director. “Ideally, we would like that effort to be supported from front to back by our tradespeople and subcontractors – this helps make that possible.”

The menu of services available to the mechanical, electrical and plumbing (MEP) trades who call upon H3D is extensive and can prove invaluable. It includes everything on the reality-capture side: laser scanning, total station work, and drone photography/photogrammetry. For BIM work, they offer both model coordination and 3D modeling.

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For renovations or improvement fit-outs, Young said they first scan all the existing conditions, then incorporate that scan data into the design models or provide it back to the design team to confirm that steel or existing systems are where they should be.

“On BIM projects, the scanner can be an integral part of the QC function,” said Young. “The scan is a powerful tool to verify that our trade partners have done their respective installations per the model. In many regards, our scanner is one of the most valuable pieces of equipment we own.”

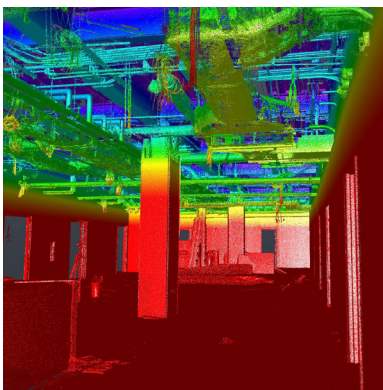
It’s not always easy to quantify the impact a newly-added solution has had on a company’s operation. But while a specific dollar amount cannot be pegged, Young is quick to say that the savings they’ve seen from the laser scanner so far have been substantial.

“The biggest benefits can be seen in the money saved avoiding costly re-work; for us that’s easily been in the hundreds of thousands of dollars,” he said.



On a recent project, while having no specific reason to doubt the veracity of the models, but wanting to verify various locations, H3D brought the GLS-2000 on site, scanned the critical areas and was surprised at what they found.

“There was steel already in place that wasn’t showing in the model,” said Young. “That would have caused major problems, particularly after having the ductwork fabricated. Conversely, we found ducts that were in the wrong place in the model. If we had placed all our trust in the model, our ductwork trade partner would have been looking at a substantial amount of re-work. The Topcon scanning solution, used as part of the model coordination, saved us, big-time.”



At a project to build the Tolleson (Ariz.) Civic Center, H3D’s BIM coordination skills were allowed to shine as they coordinated and prefabricated the openings of the precast walls to afford confidence in where the box-outs were placed for fire protection, or ductwork passing through those walls. Later, using the GLS laser scanner, H3D scanned the building’s interior and exterior and provided that scan data to the curtain wall and window trade partners.

“We need them to be confident in the openings they have to work with, as well as what their connections look like for the curtain walls tying into the pre-cast panels,” said Young. “It also helps them verify window opening sizes so they can get their framing prefabricated.”

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"The scanner has established itself as part of our workflow – and its value keeps making itself known every time we use it. We place a great deal of trust in what that instrument has done for us to this point, and I don't see things changing anytime soon."

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