

3D LASER SCANNING GIVES YOU THE COMPETITIVE EDGE YOU NEED

Capture essential data that makes your work easier and helps your clients better manage their buildings.



part of Hexagon



CONSTRUCTION DIVE

Custom content for Multivista by studioID



The time to have an industry advantage is now—and top construction companies are gaining this competitive edge by finding tools and strategies, like 3D scanning and analysis, that make their AEC and construction teams more efficient, keep their clients happier, grow revenue and win more work.

“Understanding what 3D scanning can offer with regard to building operations is a big differentiator,” says Russ Bollig, senior director of solutions at Multivista, a world leader in construction reality capture technologies. “Now more than ever, construction companies and contractors are investing in 3D laser scanning to make the construction process more efficient and to help owners manage their buildings more effectively.”

However, while many construction companies currently use scans to create virtual tours of their projects, the technology can be utilized much more effectively throughout the project lifecycle.



part of Hexagon

GENERATE PRECISE PLANS

A new project is on the horizon, and you need accurate plans and data for a successful kickoff.

If plans already exist, do you know how up-to-date they are? Do they contain embedded mistakes that could lead to problems in the field? If there are no plans, then the right information needs to be gathered to create some.

There are a few ways to get the information you need:

- Use a tape measure to manually measure, write down all measurements, and create drawings.
- Utilize a laser distance measure to capture measurements and create drawings.
- Operate 3D laser scanning to collect, measure, and document current conditions and create detailed 3D visualizations, otherwise called a digital twin.

“We have so many different types of projects going on,” says Chris Forrest, campus architect for the British Columbia Institute of Technology (BCIT).

“Everything from a small classroom to reconfiguring large sections of buildings across the college campus. If our records can’t be relied upon, then [our] consultants [have to] go and manually measure everything to create 2D floor plans they can use, which costs time and money.”

Using a tape measure is an option if you’re dealing with one room. However, for a large, complex project, it would take weeks or longer to get measurements with this method—and it would be very difficult to ensure precision.

“With manual measurements, most likely there will be mistakes,” says Mark King, 3D laser scanning product manager at Multivista. “If someone goes out to a room, tapes off the measurement from wall to wall, and writes it down, then no one will ever know exactly where that measurement was taken. But digital technology leaves a 3D fingerprint of everything—you know exactly when, where, and how that measurement was taken.”

The result: Accurate plans that reflect reality — not estimates or best guesses.



part of Hexagon

HOW THIS HELPS YOU:

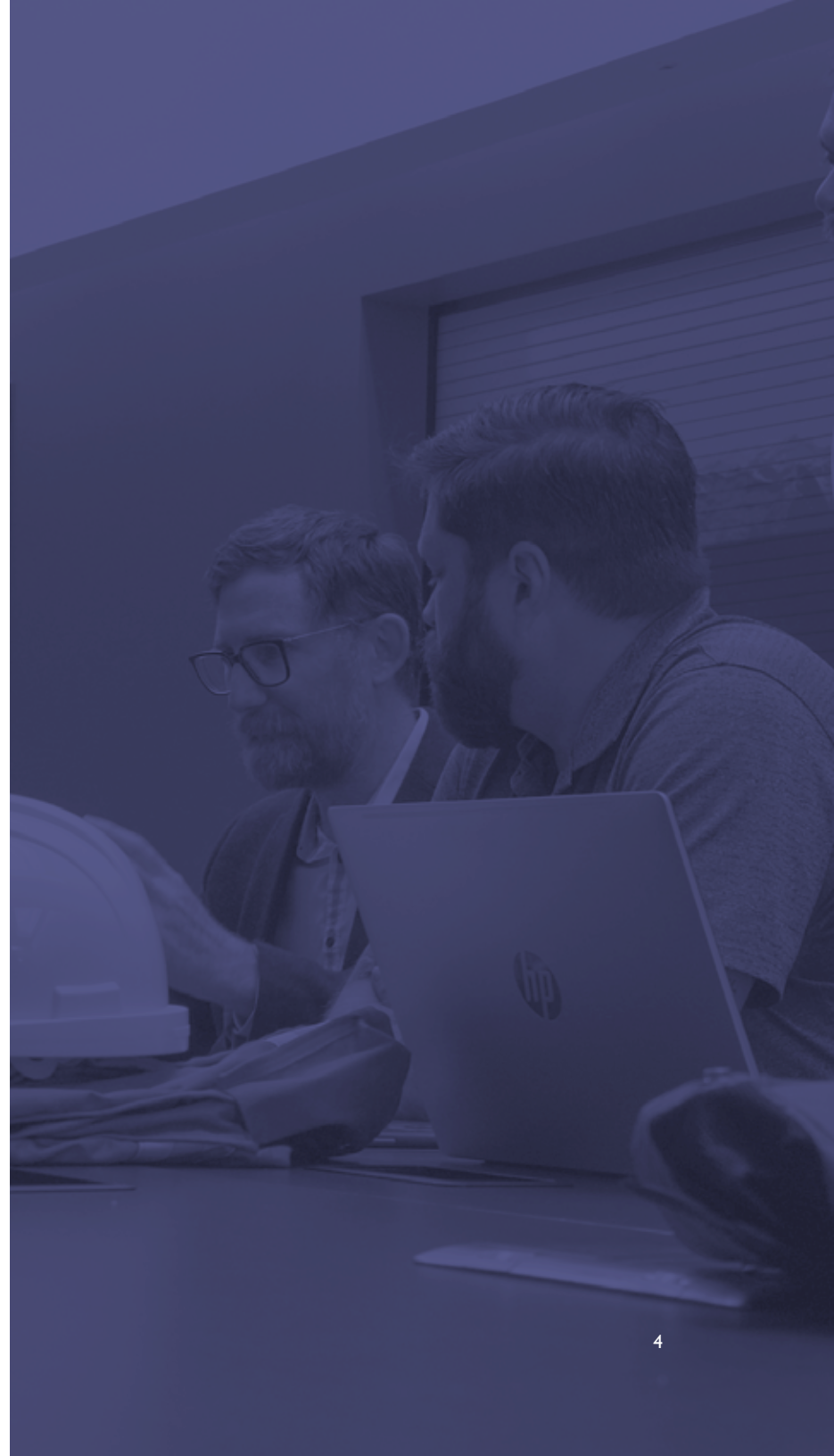
You can confidently create accurate bids and plans because you know your decisions are based on precise, up-to-date data.

HOW THIS HELPS YOUR CLIENT:

Speed of work correlates with an owner's ability to capture revenue. Bids and estimates won't require significant changes later, there will be fewer mistakes along the way, and their project will move forward faster.



part of Hexagon





ENSURE QUALITY CONTROL

Bollig remembers a retirement community project he was once involved with as a superintendent. The size and aggressive schedule of the project made it difficult to ensure that all of the work met quality standards prior to being covered up.

“As a general contractor, we had adequate field staff to manage the project, but we consistently had issues with quality control,” he explains. “We were operating as a construction manager so we did not have our own internal workforce. The subcontracting teams were good. However, due to labor shortages, we had workers coming and going who weren’t there for our first work-in-place reviews so quality control continued to be a challenge.”

After weighing the options, his team invested in 3D laser scanning to reduce risk by capturing pre-coverup scans of walls and ceilings, resolve existing quality-control issues, and identify new concerns proactively that weren’t previously on the radar.



part of Hexagon

HOW THIS HELPS YOU:

Track ongoing progress as subcontractors complete their work, enforce accountability, and make sure work is done correctly (verify orientation and levelness of structural members, for example, or the location of piping, ductwork and major equipment).

HOW THIS HELPS YOUR CLIENT:

Mistakes won't slow their project down. You build immediate trust when you show them you have their best interests in mind and can confirm that every project step is done correctly.



part of Hexagon

IMPROVE 360-DEGREE COMMUNICATION

When owners want to track project progress closely, it's simple to connect them to the information they need — and provide insight into work they wouldn't typically see, such as what's happening behind drywall or above a ceiling.

In addition to strengthening client communication, you can also provide this same level of access to others on the project team. They can use the scans to remotely “walk the jobsite” and see what's happening in precise detail.

“Our scans are stored in a portal that allows us to go into any building on campus, click onto the floor, and walk through the building as you do with Google Maps,” says Forrest. “It's like a street view but inside the building. And everything is also measurable so we can click on two points and gauge the distance between them. That is a huge benefit.”

BCIT also gives consultants access to the online portal, which helps projects move faster. “It saves so many site visits,” Forrest explains, “and helps them view things they would never capture in person. The feedback from consultants is that this is a phenomenal tool.”



part of Hexagon

HOW THIS HELPS YOU:

Provide the entire project team with tools to track progress and reduce the amount of time you spend communicating about reports and updates.

HOW THIS HELPS YOUR CLIENT:

They get direct insight into what's happening with their project so they can make sure it moves in alignment with budgets and schedules. In addition to that, decreased site visits reduce overall project emissions, while increased accuracy and transparency decreases destructive discovery, rework, and job site waste.



part of Hexagon



CREATE ACCURATE AS-BUILT RECORDS

Turning precise as-built records over to the owner is critical to support efficient operations and document changes that deviate from original plans — but many contractors struggle to capture these changes throughout the project, which leads to poor as-built records.

“When the design doesn’t reflect where the field-coordinated work which occurred, you need to alter prints to show what really happened,” explains Bollig. “I distinctly remember walking into a subcontractor’s trailer once to find someone using a red Crayon to mark up their plans and indicate where they did their work. There was no guarantee that the markups were correct because he was trying to remember what had been done a month ago by his entire team over the past month. There are much better options available!”

3D laser scanning captures progress imagery to document history and layers, so owners understand how their facility was built and what exists behind the walls, below the floor, and above the ceiling.

“It’s like having X-ray vision of what’s there — and what isn’t there,” explains King. “That way, owners and maintenance teams don’t have to struggle to find what they’re looking for later on.”

After completing a construction project that didn’t involve 3D laser scanning, a large hospital discovered water leaking into three operating rooms. It took three months to find the source of the problem and resolve it. “They told me that having just one picture showing what was behind the walls would’ve helped them find a solution much faster,” says Bollig. “An operating room out of commission cost them up to \$2,100 in lost revenue per hour.”



HOW THIS HELPS YOU:

You have a document that outlines exactly how the project was completed at each stage. In the future, you can refer to this information whenever you need to.

HOW THIS HELPS YOUR CLIENT:

Up-to-date plans make building operations and maintenance much more efficient. If renovation work occurs down the road, they can use these records to determine where infrastructure and systems are located.



part of Hexagon





REDUCE YOUR PRICING

To re-create floorplans before they bid work, a well-known architecture firm relied on traditional methods to capture the needed information. However, after years of working this way, they decided to rethink their approach.

Quick math revealed that using manual methods to capture measurements, create prints, and complete the fieldwork cost the company three to four times more than using 3D laser scanning.

“Not only does 3D scanning and modeling save money, but they also capture more work. If that firm had kept doing things manually to create the models, their prices would’ve had to go up. This is no different than a general contractor that needs an accurate model of an existing structure so they can create an accurate estimate for a renovation project,” explains Bollig.



part of Hexagon

HOW THIS HELPS YOU:

You can be more competitive with your pricing and be confident that you're relying on quality data to assign costs.

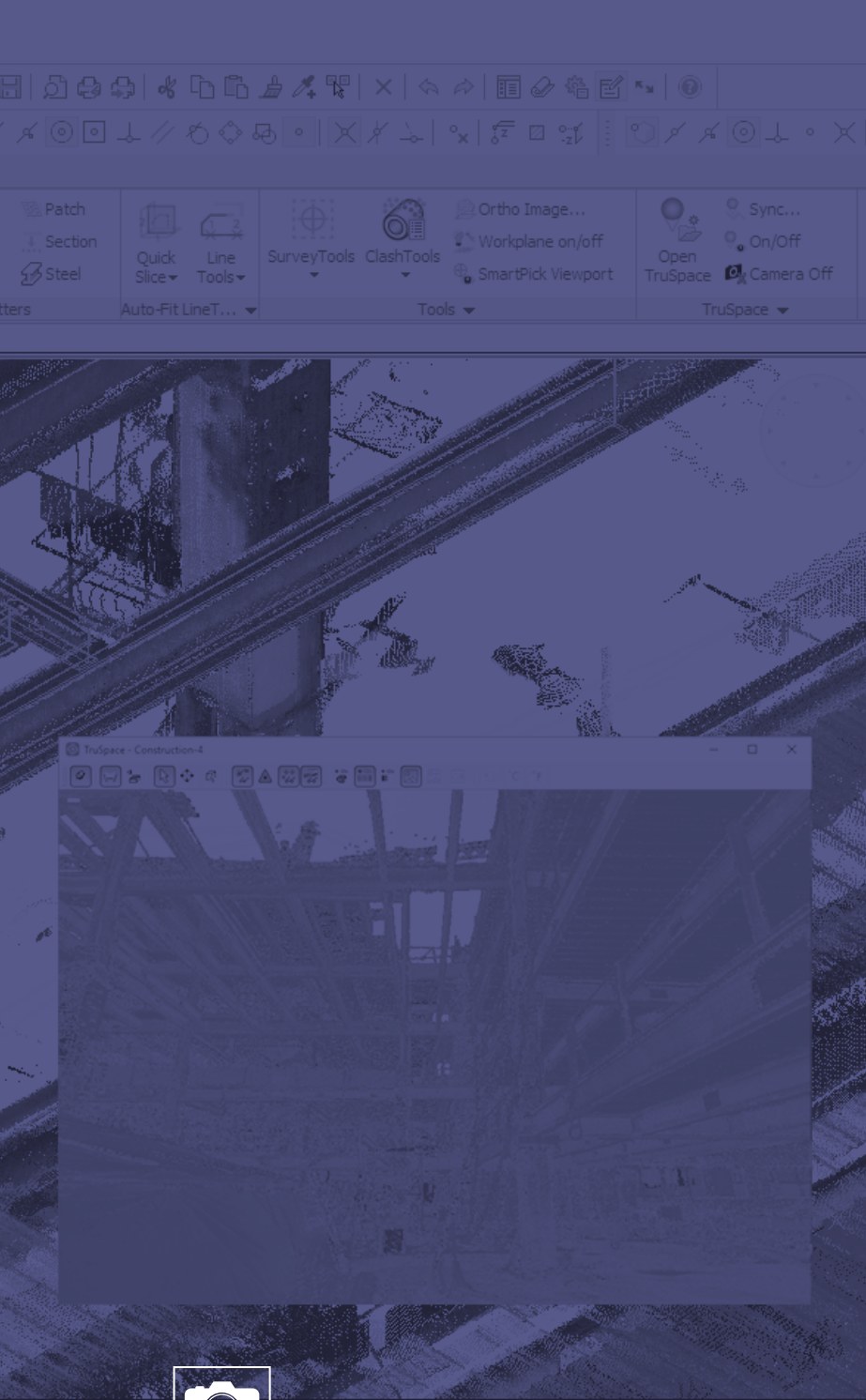
HOW THIS HELPS YOUR CLIENT:

They see lower overall project costs — and possibly an accelerated timeline as well, since weeks aren't wasted on manual measuring.



part of Hexagon





SUPPORT SPECIFIC REQUIREMENTS

Some specialty environments have unique requirements. In healthcare, for example, floor flatness and levelness are non-negotiables for the precision operation of medical equipment. Floor slope is critical to drainage in patient showers. Ceilings need extra structural support for heavy equipment.

Isolation room size must sync with HVAC systems to control airflow and prevent spreading contagious, airborne diseases.

3D laser scanning can make sure everything complies so the project can move forward.



part of Hexagon

HOW THIS HELPS YOU:

Meet the most precise requirements without worrying about rework (re-sloping or re-leveling a floor, relocating a system so it doesn't create disruptions, etc.).

HOW THIS HELPS YOUR CLIENT:

They have the assurance that you can meet their strict requirements — and have proof that you've done so.



part of Hexagon





REDUCE DESIGN CONFLICTS

During a recent conversation in an Associated General Contractors meeting, Bollig says a construction and architecture company mentioned that they used 3D laser scanning to identify nearly 24,000 design conflicts last year.

To catch these flaws, they scan a space and then work with an architect and engineering firm to compare the registered scan data with the original design model. “They model mechanical, electrical, plumbing and other infrastructure which all needs to fit together into sometimes very confined spaces. What would happen if those clashes weren’t found until fieldwork began? Proactively reviewing design conflicts before we find them in the field allows us time develop the best solution for the team while ensuring time and costs are also evaluated. Schedule and cost overruns are common place when we don’t take these simple proactive steps,” says Bollig.



part of Hexagon

HOW THIS HELPS YOU:

Spend less time on rework. When problems are found during the scanning, you can make design revisions instead of discovering and addressing them in the field.

HOW THIS HELPS YOUR CLIENT:

Their project moves much faster without questions and delays caused by design clashes.



part of Hexagon





BETTER SPACE REPORTING

For some organizations, capturing accurate square footage is a critical part of operations. In BCIT's case, for example, providing reports about campus space impacts the Ministry of Education funding they receive.

"Before laser scanning, we knew our information wasn't accurate, but we had to use it. Now we can provide better, more accurate information which translates to increased ministry funding opportunities," says Forrest. "It also helps us better understand space utilization: we know how much space we have and how many FTE students and staff are using it."

The same applies to U.S. schools, says King. Districts are reimbursed based on the amount of square footage they manage, and the number of students enrolled. "If they don't have accurate prints, they're losing potential dollars that could be used for education."



part of Hexagon

HOW THIS HELPS YOU:

It's a differentiator you can pass along to the owner.

HOW THIS HELPS YOUR CLIENT:

If it's a school or hospital, then they can report accurate data and, as a result, get more government funding.



part of Hexagon



A blue-tinted photograph of two men in an office setting. One man with glasses is pointing at a laptop screen while the other man looks on. A white hard hat sits on the desk in the foreground.

IMPROVE ASSET MANAGEMENT

Once a building is operational, asset management becomes key to anticipating costs, planning for maintenance and upgrades, and minimizing the total cost of ownership.

Data from 3D laser scans can reveal how much space is available for additional equipment or identify the location of infrastructure to make it easier to connect or relocate systems.

“Now we can allocate assets to the right rooms across campus,” says Forrest. “We know exactly where to find a piece of equipment or work on a certain system. This also smooths out the work-order process.”



part of Hexagon

HOW THIS HELPS YOU:

It's another benefit that sets you apart. Not many contractors or construction companies can offer tools that help owners improve asset management after the building is complete.

HOW THIS HELPS YOUR CLIENT:

They have the information they need to operate, maintain, and upgrade assets effectively and efficiently.



part of Hexagon



“AFTER THE BENEFITS WE’VE SEEN, WE PLAN TO HAVE ALL FUTURE PROJECTS DIGITALLY DOCUMENTED AND LASER SCANNED,” SAYS FORREST. “ALL OUR TEAMS — FINANCE, FACILITIES, CAMPUS DEVELOPMENT, ETC.—THEY ALL SEE THE VALUE OF CAPTURING INFORMATION FOR BOTH IN-PROGRESS AND COMPLETED CONSTRUCTION PROJECTS.”



part of Hexagon



part of Hexagon

MEET MULTIVISTA

Multivista is a leader in construction documentation services, offering a full suite of solutions on an intuitive cloud-based web platform, using cutting-edge visual technology to revolutionize how projects are managed before, during, and after construction.

We don't just capture data - we convert it into actionable deliverables. Whether your project requires scanning only or a combination of services, we're here to get you the field intelligence you need.

We do it all - scanning, registration, visualization, data preparation, data hosting, data transmission, Scan to Plan and Scan to BIM services.

With over 80 international markets served and outfitted with local, boots-on-the-ground support, Multivista has become a significant force in the construction technology industry.

Learn More

www.multivista.com

888-811-8477

info@multivista.com

REQUEST A QUOTE

studio / ID

BY INDUSTRY DIVE

studioID is Industry Dive's global content studio offering brands an ROI rich tool kit: Deep industry expertise, first-party audience insights, an editorial approach to brand storytelling, and targeted distribution capabilities. Our trusted in-house content marketers help brands power insights-fueled content programs that nurture prospects and customers from discovery through to purchase, connecting brand to demand.

LEARN MORE