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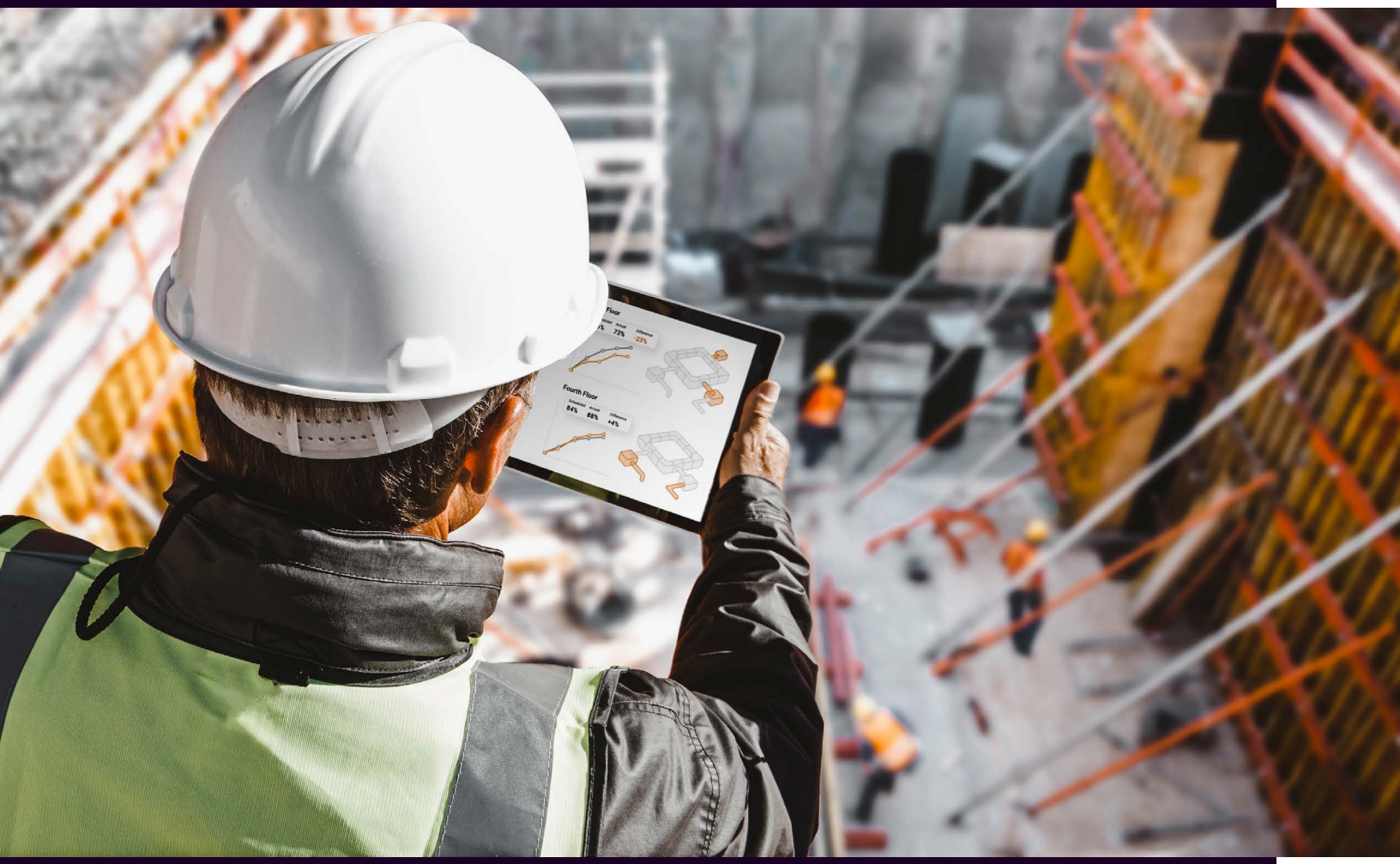

Case Study

How LCL and McKinstry used Avvir on Block 38

"One of the biggest benefits of using Avvir was the amount of time saved on overlay and comparison."

Ian Strawn
VDC project manager for McKinstry

About the Team

Lease Crutcher Lewis

Headquartered in Seattle, Lease Crutcher Lewis is a general contractor that has served the Pacific Northwest for 136 years. The billion-dollar company is 100% employee-owned.

The locally based company has deep roots in the community and develops relationships with its clients. That's why Lease Crutcher Lewis is a builder of choice, and ninety percent of its business comes from repeat customers. LCL takes pride in delivering construction services of exceptional value to its clients.

LCL takes on intricate projects and thrives on overcoming challenges. The firm's employees are highly skilled and are empowered to do their jobs. They are proud to deliver projects on time and on budget. Their reliability has enabled them to thrive. Plus, they continually innovate and look for the next advantage so they can bring more value to their clients.

McKinstry

McKinstry, a national leader in designing, constructing, operating, and maintaining high-performing buildings, dates back to 1934. Their platform of integrated services and capabilities enables them to be a single point of accountability across the entire building lifecycle. McKinstry focuses on people and outcomes to ensure the built environment serves owners, operators, and occupants alike.

No challenge is too big for McKinstry, and they are never satisfied. The company is compelled by its values to eliminate barriers to a better built environment.

And their clients? They care about long-term planning, saving energy, driving out waste, and having sophisticated facilities that require nothing but the best. That's why they trust McKinstry to be their trusted partner for the life of their buildings.

The Project

This project took place on just over an acre at 520 Westlake Avenue North Block 38, in Seattle's South Lake Union neighborhood, a dense urban area and hub for the biotech industry and other tech giants

The construction consisted of a 12-story building with over 320,000 square feet of office space. Known as a shifted tower, the building also includes retail space and 330 below-grade parking spaces.

The Challenge

LCL served as the general contractor for the project, while McKinstry's primary role was mechanical contractor. McKinstry also ran the BIM coordination effort for the entire project.

The building's superstructure was built by another general contractor. When LCL/McKinstry started the project, they found the as-built conditions for the shell and core didn't match the models.

> "We had point clouds that showed where pipes and conduit and other things were, but they didn't match the as-built models,"
>
> **Greg Smith**

LCL/McKinstry's tenant improvement models also needed to be checked against the as-built core and shell models. While coordinating the new models, the team realized some information wasn't correct.

Validating models on their own would have required an inordinate amount of time, and the project team had a deadline they were striving to meet. "We needed to find a solution to check for errors because we knew we might miss things and get in the field and find things were incorrect," says Smith.

Implementing Avvir

Because McKinstry served as the mechanical subcontractor on the project, they took the lead on reconciling the as-built core and shell and the TI models.

McKinstry obtained one scan per floor. After the scanning was complete, Avvir analyzed the data to find all the discrepancies between the as-built and the installed condition.

The team was striving to keep the project on schedule when they chose Avvir, so time was of the essence. When implementing new technology, it's essential to inspire users, and not leave them feeling uncertain and reluctant. To accommodate the McKinstry team, Avvir walked them through the process to ensure the rollout went smoothly.

As Avvir worked side by side with McKinstry on the initial floor, "We looked at the initial product offering that Avvir gave us, and we could see what the real product was going to be," says Ian Strawn, a VDC project manager for McKinstry. Strawn's role included managing the review process, cataloging all the information to BIM Track, and distributing the information to the rest of the coordination team.

> "It allowed us to start thinking through how we could use Avvir and how we could give the Avvir team feedback on exactly what we were looking for."
>
> **Ian Strawn**

The coordination between the two companies led to particularly useful reports for McKinstry.

Like Strawn, Smith found the Avvir reports very helpful and the key to the project. "Being able to go back through a PDF where people can look and can see the issue is very useful," he emphasizes.

"The display models," he adds, "are sophisticated, so it takes some time to interpret what is shown. This makes the reports that spell things out clearly even more critical."

After the initial implementation of any new technology, it is critical to maintain a close pulse on the value being derived. "The Avvir to LCL communication was excellent, very responsive, [Avvir was] always checking to make sure things were going okay," says Smith.

Time savings

Analyzing the scans to differentiate between the plans and reality was essential. The speed at which this necessary component was completed positively impacted the schedule. Avvir delivered weekly scan analysis for three floors for over roughly a month. That speed of delivery effectively meant that Avvir delivered each floor analysis faster than LCL/McKinstry could address the issues. This meant the project flowed smoothly with no downtime.

"One of the biggest benefits of using Avvir was the amount of time saved on overlay and comparison," says Strawn. "If we had been doing it on our own, amongst all our other daily tasks, we would have had to try to figure out how to get that overlay in, and then review it and come up with our own reports, our own information, to get out to the team."

Incorporating Avvir's visualization and reports into the project flow allowed the McKinstry team to focus on analyzing the information without first developing visuals. Avvir gave the team the tools and enabled them to focus on higher-level analysis, which helped ensure discrepancies were found.

And if McKinstry had created the visuals and reports on a floor-by-floor basis on its own? Strawn estimates that if the technology worked correctly (though it rarely does) it would take 1.5 to 2 days per floor to develop and analyze the scans.

> "By working with Avvir and having the materials they provided, I spent about two or three hours per floor and was focused on reviewing the information and getting it to my team."
>
> **Ian Strawn**

According to Smith, LCL also saw time savings, because it would have taken 10 hours per level to develop and analyze the scans without Avvir. Even more valuable than the time savings of developing and reviewing the scans/reports is the time savings accurate information can create. "If we miss one of the issues in the field, it could be days or weeks for a subcontractor to try and fix it," stresses Smith.

The team experienced this exact type of situation in the field. Ductwork had been manufactured and delivered to the site for installation. However, When LCL got to the site, they found electrical conduit on multiple floors that wasn't in the model. It did, however, show up in the point cloud. "If you're doing work based on the model, and the subcontractor gets out there trying to put in ductwork, many thousands of dollars are going to be needed to remanufacture the ductwork," Smith points out.

Such a misstep can easily throw off a project timeline, leading to trade-stacking. If the ductwork installers lose a week, the workers coming in behind them are also pushed back. Ultimately, the issue with the ductwork could have resulted in a significant delay.

Avvir helped the team avoid this sort of problem. "After things got rolling with Avvir, we got way ahead of the game," says Smith. "If we hadn't used Avvir, we wouldn't have been way ahead of the game, and it would have taken the whole team longer to do everything."

Precision and ease of use

Another way people are inspired to use new technology is through the realization that it's easy to use and quickly adds value. The team working on Block 38 quickly came to appreciate the value of Avvir.

"Avvir makes the information easy to utilize because the software is focused on what's important rather than being filled with clutter and extra stuff that's unnecessary," says Strawn. An experienced software user, he appreciated the lack of learning curve. "It was just pretty intuitive," he emphasizes. The simplicity and ease of use made Strawn confident that anyone on his team could successfully use Avvir without any advanced training.

Considering how much value the team gained from the software, the ease of use is even more impressive. The team looked at the overlays and the web portal and could clearly and quickly see the orange tone that indicates deviations between the scans and reality. “I could easily see items in the scan didn't have any of the black-orange or gray notation over them, which tells me that those items are installed and were never supposed to be there, or they were not in our original idea of what was in the space,” notes Strawn.

Conclusion

Avvir helped LCL and McKinstry successfully complete a project that easily could have turned into a nightmare due to misinformation. Having the correct information and knowing exactly where everything was situated rather than relying on flawed plans enabled the team to move forward on the project more quickly and smoothly.

“We look at certain metrics such as saving time and money but as far as innovative tools like Avvir, other metrics matter as well,” says Smith. “Did we learn something? Did the tool provide us something to think about our work differently?”

Greg Smith

Avvir checked the boxes of saving time and money. And the Lease Crutcher Lewis team learned something. The software was a key element in successfully completing Block 38.