



**ballymore.**

## CHALLENGE

Ballymore had to track more than 4,000 individual balconies throughout the construction lifecycle, from preconstruction to turnover. In addition to a tight schedule, they wanted to gather data incrementally to improve their processes going forward.

## SOLUTION

Ballymore turned to Bluebeam® Revu® to help them edit drawings, track construction progress and mitigate risk. Revu allowed them to coordinate and collaborate from field to office and vice versa in real time, without losing any information.

## BENEFITS

- Ballymore saved at least one day per week during installation due to their extensive use of Revu.
- They reduced snagging time by 20%, as well.

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Project Director  
Ballymore

Irish developer Ballymore Group is building two towers near London's Canary Wharf featuring wraparound balconies that create a vertical sky garden. The development is fittingly called Wardian London: a Wardian case is a glass box meant to house ferns or other plants, invented by British botanist, explorer and inventor Nathaniel Bagshaw Ward. In other ways, too, the project embodies Ward's spirit: the two towers, 55 and 50 stories, boldly remake the skyline of Canary Wharf, with all of the 764 apartments featuring balconies and private gardens. Incredibly, Ballymore will have installed about 4,000 balconies—40 per floor—when the towers open next year. This innovative design has called for new technology solutions such as Bluebeam Revu, which allows for real-time information to be shared instantaneously between the field and office, and has shaved one day per week off the installation schedule thanks to tracking and collaboration capabilities.

## Staying on top of the schedule

Mark Burnett, Ballymore's senior packages manager for Wardian London, has been in the building business for over three decades. He knows a bit about scheduling—and for a project as complicated and large as Wardian London, he knows what his team needs to accomplish each week, month and year, to reach the completion date on time. Revu, which allows users to track progress by commenting, marking up and logging activity within a PDF, helps keep Ballymore on schedule. "With Revu, we're able to break each element of the building down into individual parts," says Burnett. "You can check progress, take photos of things that are not built correctly, and record when elements are put in. So if it's not done to the right program, then you can look at it and say, 'Okay, we're two days behind. Let's think about how we can recover it.'" Without that level of detail, he adds, it's difficult if not impossible to know exactly when and where you're lagging.

Gibbs Burke and Clark Stirling who are senior facades construction managers, spend every day on the project. They oversee the progress of construction on the exterior—in this case, that means knowing where all 4,000 balconies are in terms of installment. "Revu helps tremendously," Burke and Stirling explain. "It allows us to track in real time exactly what's going on for any given balcony."

And the markup capabilities mean that if, for instance, the target installation number wasn't met on a certain day, Burke, Stirling and the Ballymore team will know why. This allows them to make adjustments over the life of a project. In addition, this data will be useful after turnover, as Ballymore can analyze data across projects to improve efficiency going forward. With such precise information, Ballymore knows if they fall behind and what they have to do to make up time. When the project is nearing completion, they utilize Revu for snagging: a process that used to take a day and a half, with Revu, now takes an hour. According to Burke and Stirling, snagging in Revu is incredibly easy: just a "simple point, click, take a picture, done." They can have a full report done and uploaded to Revu so that the office can see it in just 60 minutes, or the time it takes to do a walk through.



Burke recalls that when the trade contractor started on the site, he was impressed by one of Burke's status reports. When Burke told him it only took him five minutes to put together using Revu, the contractor was in disbelief. "I said, 'No, really, it took me five minutes. I walked out on the site, I took a photo, I came back, I did the report, it's done,'" Burke told him. "Teach me how to do that on Bluebeam," the contractor replied. Since then, Revu has spread like wildfire across the site. In fact, when Burke was offered the job at Ballymore, upon learning that they used Revu, he immediately accepted. The technology is that essential in his day-to-day processes.

Knowing that his team is using Revu gives Burnett comfort as well. "I know that my team is looking at the construction on a day-to-day basis, and I know that they will know if part of the building is not built on that day, so they can react to that." It allows any issues to be dealt with before they become large and intractable—and expensive—problems.

## Collaboration for efficiency

The mobile capabilities in Revu make collaboration between field and office seamless. Burke tracks Wardian's progress in Revu; Burnett, his line manager, can access the most up-to-date information from the office. "Some can just go straight to the collaborative software and look in Studio, see my drawing and markups, and they just know," say Burke and Stirling: Studio is a capability in Revu that allows for real-time collaboration from anywhere in the world. That means less time spent shuttling between locations, giving updates over the phone, or writing lengthy emails. All the information is right at everybody's fingertips. Burnett appreciates how Revu helps his staff in the field do their job more efficiently. He remembers the days when sketches would be made on whatever scrap of paper was on hand. "To go out now and electronically do it in a quarter of the time with a lot more accuracy, a lot more detail, it helps us immensely for time management of my guys out on site." It keeps him in the loop, too.

Terry Arnold, Wardian's project director, knows that collaboration is more than just between field and office: Bluebeam Studio allows for full collaboration across the design team, even before a project breaks ground. "You can be in different parts of the world or different parts of the country, and still review the drawing at the same time," he says. "That will generate cost savings not just for on-site, but consultant cost time as well."

One of the greatest design-phase challenges of any project, but especially one as large as Wardian, is to make sure documents and drawings are current. Even when architects are meticulous about outlining their changes, sometimes revisions can slip by unnoticed. Burke recalls a project where a design manager was spending hours comparing documents, trying to discern differences. When he showed her how to do that automatically in Revu, her eyes lit up "like a kid at Christmas." With the click of a button, Revu reduced the time it took to perform an incredibly important function from one day to one minute.

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Project Director  
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On the tail end of a project, the collaborative capabilities in Revu make it easier to hold contractors accountable. Everything is time stamped and logged. Metadata is securely stored. This gives Ballymore a "minute-by-minute record of the install works on-site that can't really be challenged," says Burnett. This record is distributed to contractors, and thus everybody is on the same page about what is, and is not, completed, and who should be held accountable. "It's a great tool for us to use."



When Wardian London is completed in 2020, it will be a new landmark in the Canary Wharf district of London and a feather in Ballymore's cap. The two towers will be the embodiment of London's distinctly 21st century architecture and serve as a model for future construction, where innovation and efficiency are embraced by the developers. Revu has played an important role in driving those innovations forward and improving efficiency. And besides boosting London's skyline, there's yet another benefit from using Revu: "Being efficient makes people happier," Arnold says. "We'll definitely be using Revu on the next project. And we're looking to roll it out across the whole of Ballymore."



## About Bluebeam

Bluebeam develops innovative technology solutions that set the standard in project efficiency and collaboration for architecture, engineering and construction professionals worldwide. Our award-winning PDF-based software, Bluebeam Revu, continues to serve as an industry-leading markup and collaboration solution that connects all projects and teams, increasing productivity while saving both time and money. Founded in Pasadena, California, Bluebeam has grown to include additional offices in the United States, Canada, United Kingdom, Denmark and Sweden.

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