Contract Administration for Toronto Water Projects Made Easy:

WSP Canada's Toronto Office Implements Automated Inspection from Builterra

by Angus W. Stocking, L.S.

"In 2015, WSP/MMM Group was contracted to administer the City of Toronto's CIPP water main rehabilitation program," says WSP Linear Infrastructure Manager Stewart Dickson, P.Eng., PMP.

"Under the program we have many job sites underway all season across the City. With multiple inspectors turning in multiple daily reports—we had at least eight inspectors working on this at any one time."

That many inspectors, and project sites, generated a lot of paperwork. "The City of Toronto initially asked us to fill out inspection forms in triplicate, the kind with carbon paper in between the copies," says Inspector Chris Singh. "They're tedious to fill out, especially because the last sheet would often be too faded to read. These forms also required physical signatures from contractors," he explains.

"We'd often try, and fail, to hunt them down at the end of day. When we finally did find them, we might have a backlog of 20 reports to dump on them at once, which didn't make anyone happy. These reports also had to be entered into digital forms to generate the progress summaries and payments. All of these factors made the process inefficient and slowed down payments."
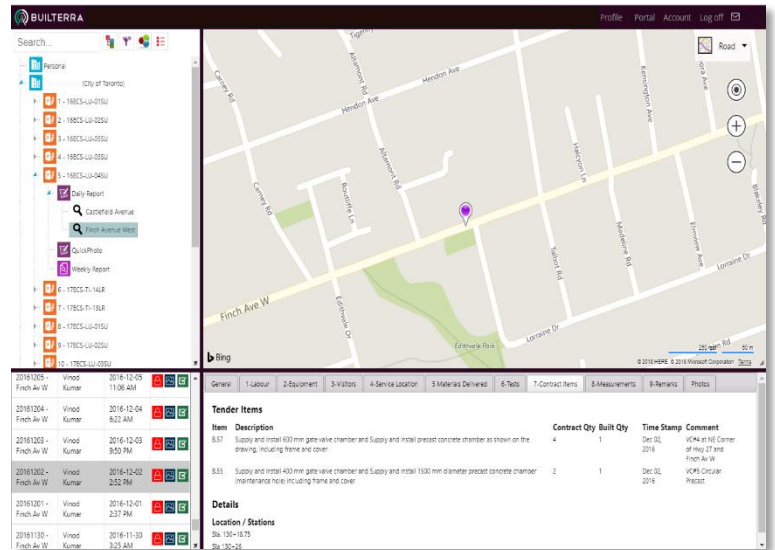

Figure 1- Builterra Web Portal showing Daily Progress Report inspection details including awarded contract items quantities for progress reporting
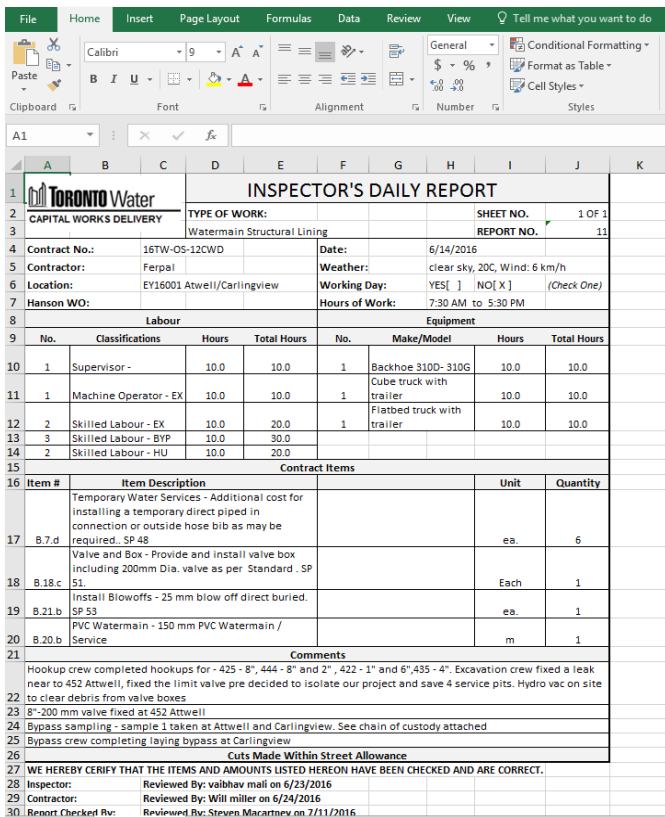

Figure 1- Builterra running on iPad showing Contract Items.

> ### *"It just seemed that there had to be a better way."*

Figure 3- Daily Report Exported from Builterra in Excel Format.

For the 2016 projects, Dickson made streamlining of inspection and reporting a priority — "It just seemed that there had to be a better way." And when he began to look around for solutions, he found that not only was there a better way... it was already being used by the Land Development Group.

The Land Development Group was already seeing good results when using **Builterra's tender tool** to automate bidding and quantities tracking, and Builterra offered another solution, a **mobile field inspection app**, which looked like it could have an immediate impact on the water main project by automating **inspection reporting** and issuance of **payment certificates**.
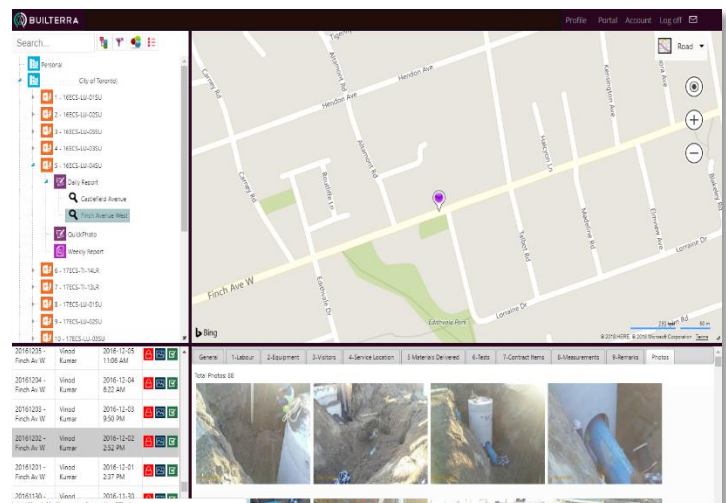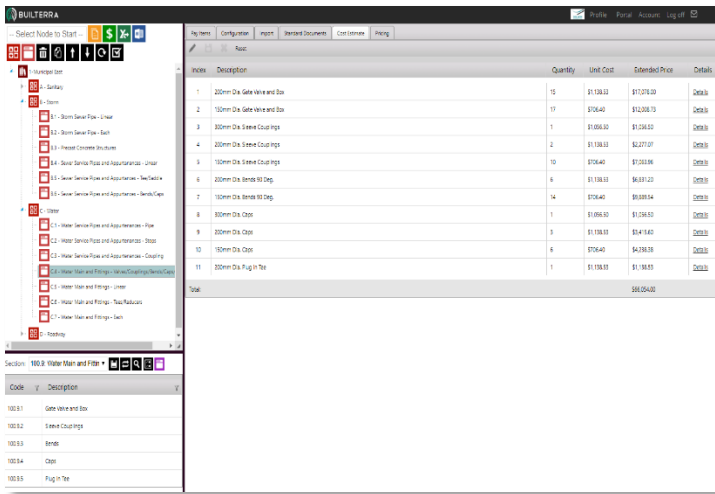
Implementing Automated Inspection Reporting

"The framework was there, and the timing was right for us," Dickson says. "With field work for the 2015 projects slowing down as winter came on, we had time to work with Builterra to customize **mobile inspection forms** to meet our needs, and to train our inspectors for the next season and figure out efficient workflows."

Builterra believes that 'tweaking' is always part of the process. "We know that owners and companies have very good reasons for the forms and workflows they've created, and it's not our aim to replace any of that," says Builterra co-founder Jeff Lyons. "We tailor the data collection and reporting solution - if required - so that everyone can work more efficiently and meet the demands of the project."

In this case, WSP inspectors jumped right in with ideas. "I'm tech savvy, and I'd been working on the project for a year," Singh says. "I attended a meeting discussing the digitization of the forms we were using, and I really thought **Builterra's inspection app** could work perfectly, so I jumped in and helped with that process."

Figure 4- Builterra Portal showing photos captured during Daily Report Inspection.

Figure 5 - Builterra dashboard showing awarded contract totals, inspected progress, payment approvals.

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Customization took time, but was straightforward. Lyons and his partner, Chris Stebbing, P.Eng., worked directly with Singh and others to translate the paper-based, triplicate forms into digital equivalents that were then built into a custom implementation of **Builterra's Tender mobile application**. After implementation and actual use in the field, Stebbing continued to work with WSP to improve and streamline interfaces.
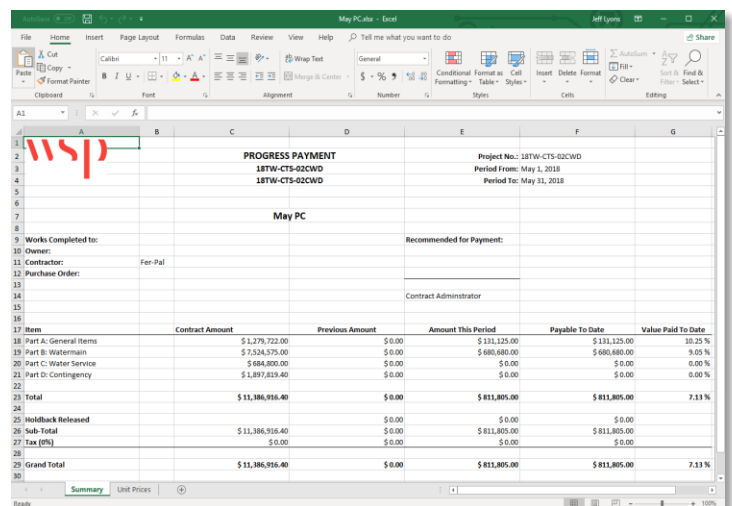
"Chris was great," Singh says. "We had some growing pains when we got started, particularly formatting issues, and he was always very quick to make the changes we needed."

Meanwhile, Builterra also implemented workflows that automated **report generation** and **signature routing**. **Progress summaries** are now generated automatically, freeing up an employee who had previously spent much of their time on this task, entering and checking data, and **inspection reports** and **payment certificates** are now emailed directly to contractors, whose review and approval is tracked automatically.

During the 2016 construction season, WSP inspectors used the **Builterra inspection app**, on iPads, to fill out reports quickly, and to take photos which were attached to reports, making them richer and more useful. These reports were easily routed to owners and contractors by the **Builterra platform** and reviews and approvals are tracked automatically. Progress summaries for contract administrators and owners are now produced with the push of a button, replacing hours of tedious data compilation from paper forms.

Figure 6- Progress Payment Certificate exported using Builterra to Excel format.

"It's actually a little hard to remember how much more time we used to spend on reports, and I'm really happy that we've reduced paper use and are working more sustainably," says Singh. "But honestly, I think there is potential to work smarter—as we devote more time to optimizing the **Builterra mobile inspection app** to meet our particular needs, I expect to see even more gains."

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Angus W. Stocking, L.S. is a licensed land surveyor who has been writing about infrastructure since 2002.
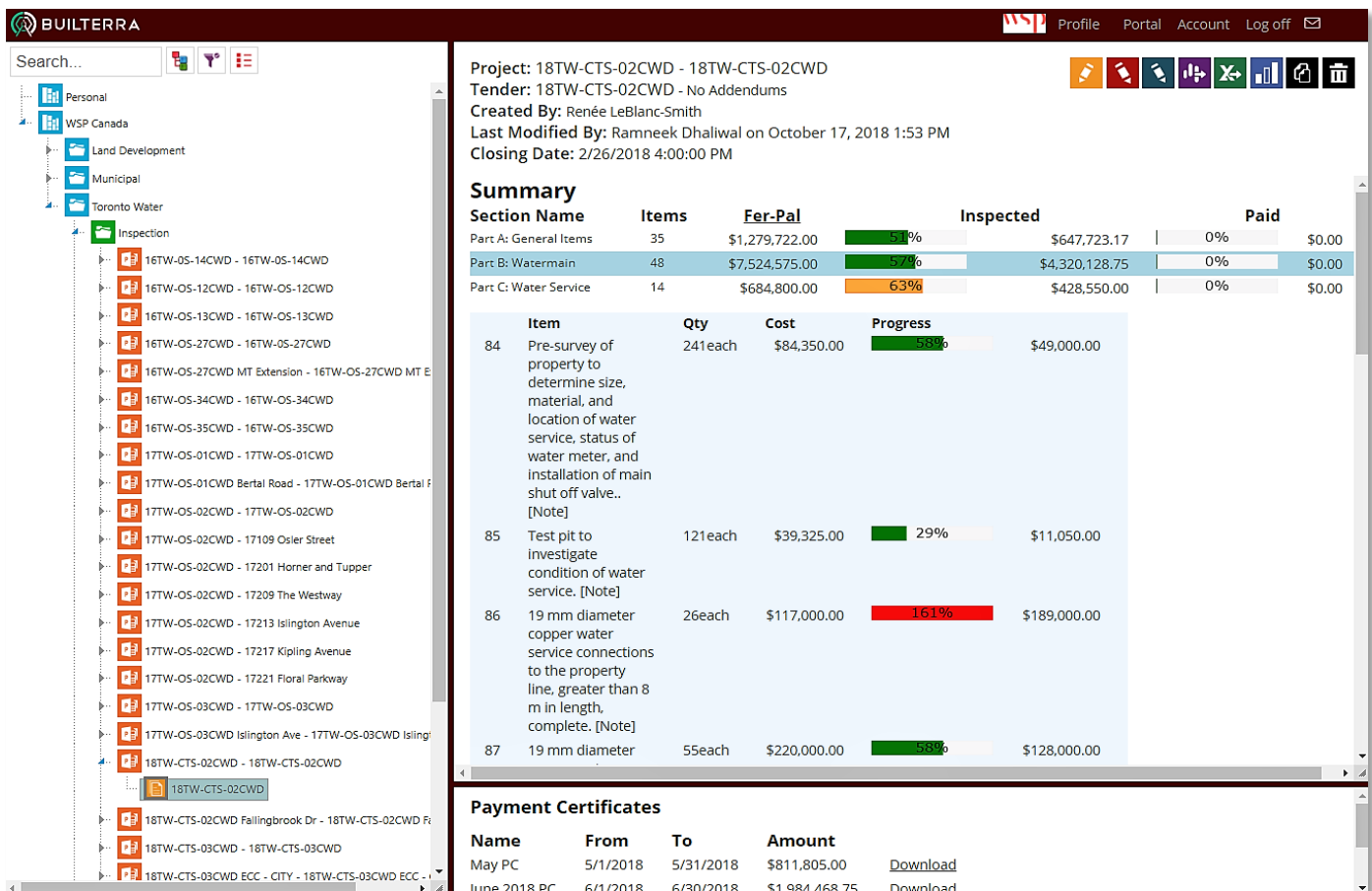

Figure 7 - Builterra showing Progress Payment Details for complete Contract, Section Group and Section Items Table.