# **Case Study**



### A single click... A 21st century workflow designed to tackle some very modern challenges

How the ECC Group tackled COVID head-on with a unique digital construction workflow designed to keep their largest projects on track, improve site productivity, cut contractor's unseen costs and reduce the impact of COVID – all through a single click on a URL.

Recognised as one of Ireland's foremost engineering companies, the award winning ECC Group operates out of the UK and Ireland and has established its reputation as a business that consistently delivers complex and demanding infrastructure projects. Current live examples include the construction of numerous data centres for one of the world's largest social media platforms, often up to 400m in length, along with other vast structures for pharmaceutical and life science companies.

With 2020 throwing up innumerable challenges, ECC Group CEO, John

McGoey, was intent on delivering an enhanced service for his clients that would keep their large infrastructure projects on track. Required to provide structural and layout information to the contractors on these projects, John was using 3D Laser Scanning as the best option for the fast collection of accurate point cloud information that would record every detail. The existing workflow would then see this scan data sent to the office based ECC BIM team where it would be processed in Trimble RealWorks software and then stored, ready to be retrieved when progress meetings etc were scheduled.

#### Customer: ECC Group

Project: Large infrastructure projects Solution:

Trimble TX8 and X7 laser scanners plus Trimble Cloud Engine software

However, with the potential delays that COVID could cause and the need for remote working, John felt that a fresh look at how he collected, processed and shared each project's survey data would bring enduring benefits to both existing and future contracts.

### Safe data sharing a priority

As a curious and committed supporter of technology and a long-term user of Trimble instruments, John contacted Trimble's UK and Irish distributor, KOREC, to talk through some possible approaches on how to get better use out of the data he was collecting. In particular, how he could

### The workflow

- 1. Scanning utilising Trimble TX8 and X7 3D Laser Scanners.
- 2. Registers and processes the pointclouds in Trimble RealWorks.
- 3. Uploads and shares the point cloud data via Trimble Cloud Engine (TCE) via URL links.
- 4. Publishes the scan data via URL links to the end user.
- 5. All stakeholders can view/ inspect the data via the URL within TCE.
- 6. Scan to Scan or Scan to Model inspections are done within TCE.



▲ ECC on site with the Trimble X7



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▲ The Trimble TX8...on wheels!

ensure that all the project's stakeholders - including the QC Team, Senior Management and Package Management - could have access to this rich and up to date information whilst avoiding site visits and overcoming the issue of files too big to email.

By better sharing the latest site data, John felt that it would vastly reduce the risk of delays and rework and also keep people fully informed, all from the safety of the office rather than on site which could result in all parties crowding around a paper plan or single screen.

## Transported with a simple click

Following a consultation with KOREC and Trimble, John felt that Trimble's Cloud Engine software (TCE) would be a perfect solution. The software creates a 'living' document of the scanned point cloud data, ideal for monitoring the construction process and detecting clashes etc in a format that could be easily understood by technical and non-technical stakeholders.

TCE allows each scan dataset to be shared as a simple URL link (identical to inserting a webpage link in an email) added as a note to a 2D drawing which is then shared with the client and contractors by email. From the client perspective, this allows them to view the 2D plans and additionally, via one simple click, to be transported into an interactive 3D model of the build, complete with imagery. Here, they can zoom, pan, check coordinates, tag elements, add notes and pdfs and or course view the scan, all whilst discussing the project plan with the ECC team. There is absolutely no requirement for the time-consuming process of trying to share or email a large file.

### **Clear benefits**

Following the implementation of the new workflow, John reports that the benefits have been diverse. For a start, as opposed to basic 2D plans, the software is making full use of the rich 3-dimensional point cloud data and shares it in a format that is both intuitive and quick to learn.

This has greatly increased client engagement and the overall understanding of a project's progression. As well as fostering trust between the parties, this increased engagement reduces misinterpretation and misunderstanding, as it allows the most realistic view possible of the project.

From a safety and site management perspective, this workflow reduces on-site personnel to the bare minimum with just one operative required to collect the 3D data and the accompanying imagery. Less bodies on site means less accidents, less person-toperson contact (vital at this time), and frees up staff for other, safer, more valuable office-based tasks.

Last but not least, the TCE software is free to use for all nominated stakeholders and the simple, intuitive layout ensures that very little (if any) training is required from the client side. This means that contractors can considerably reduce unseen costs such as travel. QA teams can be managing multiple global projects and therefore having access to this quality of data from wherever they may be significantly reduces unseen costs through remote inspections, QA and sign offs etc.

### Same day turnaround

With a highly effective workflow tried and tested, John further enhanced his scanning operations to increase efficiency. Already using Trimble's highest spec laser scanner, the TX8, which was perfect for long range scans, he supplemented it with the addition of a Trimble X7. With a schedule of up to 50 scans a day he ensured that the programme was planned at least a week in advance detailing scan density etc. Additionally, in order to speed up operations, the tripods were often placed on wheels for easy manoeuvring around the vast floor areas.

However, it is the functionality of the Trimble X7 that has had the most impact. The X7 automatically registers scans on site and the size of the data files are smaller and more manageable reducing processing time in the office. So much so that John can now offer clients a 'one day' service. The early morning scan team arrives on site and the data is processed with the URL link emailed to stakeholders by the close of play that day ensuring that all relevant parties have access to the most up to date data.

John is already looking at the next step in this new workflow recently supplying two sub-contractors with Trimble's XR10 HoloLens

System, a mixed reality

headset purpose-built to fit into an industry-standard hardhat.

This technology allows ECC or the subcontractors to bring models of their client's construction projects out of

the screen and onto the site so that they appear lifelike and can be moved and changed depending on how the user interacts with them. Great for visualisation, models are given context when overlaid onto the real world hugely assisting the on-site team. They can also be used for remote sessions and progress reporting – ideal for keeping people apart during COVID.

### Key benefits:

- 1. Safety reducing the impact of COVID on site.
- 2. Increased productivity inspections/area sign offs etc can be done remotely, cutting contractor's unseen costs such as travel.
- 3. Increased collaboration simple sharing of rich data with all stakeholders

4. Multiple uses – team meetings and presentations to show productivity on site, construction planning, progress reporting, early clash detection etc, ability to enter any scanned room remotely with a single click

# Contact us:

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

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