

CUSTOMER
Mercury
Engineering

PROJECT
European data
centre

SOLUTION
Trimble HoloLens XR10
Mixed Reality system



Mercury Engineering on site with the Trimble XR10

CASE STUDY

Adopting Mixed Reality - Three clear benefits underline how the Trimble XR10 is delivering for Mercury Engineering.

Time saved, a reduction in model errors and improved communication - a truly collaborative project has proved the perfect testing ground for Mercury Engineering and their Trimble XR10 mixed reality technology.

In recent years we have seen a number of construction businesses conduct initiatives designed to explore new digital technologies with a view to improving access to information and revolutionising how they work both on site and in the office. One company particularly recognised for this approach is Dublin based Mercury Engineering.

Mercury builds and manages complex engineering projects across a range of key sectors both at home in Ireland and abroad. Their focus is to work in sectors that enhance development in technology, wellbeing and the built environment.

Critical to Mercury's success is its ability to roll out the most up to date technologies across projects as part of its digital transformation strategy, Digital Edge. This strategy aims to ensure that Mercury's frontline people have access to the right technology, empowering them to deliver real value to the company's clients.

As part of this strategy, Mercury has become one of KOREC Ireland's earliest investors in Trimble's XR10 HoloLens 2 Mixed Reality systems.

Offering benefits such as time saved, a reduction in model errors, and improved communication with global teams, Mercury has had great success in trialling Trimble's XR10 technology on various live projects.

A live project – European data centre

Following the purchase of two Trimble XR10 systems in 2020, COVID restrictions meant that while Mercury had prepared training notes on their usage, the company was unable to test the systems on a live project until later in 2021.

The project selected is an enterprise data centre in Europe and includes the build of a 7,000 sqm facility, constructed over three floors.

Eleftherios Giotis, a Surveying Engineer on the project, states that the scale of the project, and the complexity of the job's MEP engineering provides an ideal testing ground for the XR10. With the whole design of the building stored in BIM, he was confident that the XR10 could provide significant improvements to the general quality checks he was undertaking outside, and more particularly, when inspecting openings by comparing the BIM model to the build environment.

Collaboration across the world!

Mercury's project is truly international. Whilst construction work is taking place in northern Europe, the client is a multinational company and Mercury's offices are located in Ireland. In addition, two key members of Mercury's BIM team are based in two different European locations.

XR10 for Mercury – Key Benefits

- Ability to communicate the mixed reality view through videos and photos, rather than email, for faster outcomes.
- Versatility across many tasks including clash detection, visualisation, measuring, creation of to do lists and for historical tracking of issues.
- Time saving on inspection work with faster detection and resolution of model errors
- Plenty of potential for MEP work as the project progresses.
- Great sound quality and visuals for easy communication with remote stakeholders.
- Supports the 'paperless site' strategy ensuring a single, common source of information.



Checking the MEP model



Easy scaling and positioning of the model using QR markers (left) and Comparing one of the as-built openings with the pipework design (right)

For Eleftherios, the ability to share information with these parties, through videos and images generated by the XR10, has been one of the greatest benefits. In particular, for all outside work, he is in regular communication with his BIM Manager based in London and his BIM Lead based in Poland. He reports that by the far the greatest benefit of the XR10 is the ease with which it allows him to spot any concerns he has with the model and then quickly and clearly communicate these with the remote members of the team.

Previously, if he detected a discrepancy with the model, he would check the work using a total station and email the results to the BIM team which would then download the data and superimpose it on the design for checking. Now, he reports that by using the XR10 generated videos and photographs he can better explain a problem and gain a same day response on most issues. Additionally, it would be possible for a remote team to view a live feed via Microsoft Teams if Eleftherios felt that this would be useful in the future.

The realities of Mixed Reality – a learning curve

For Eleftherios, the introduction of the XR10 has enabled him to explore many aspects of its functionality and also to better understand how to enable colleagues on other projects to get the most out of the system in the future:-

- Be prepared for the mixed reality experience – first time use can be strange!
- Appreciate that when working, a clean site, clear of obstructions, is vital for health and safety when walking around.
- Break down the BIM model for better handling. On this project the initial BIM model was broken down into seven different smaller models of which six were MEP.
- Placing and scaling the model can be best done using QR markers. For optimal use on this project, KOREC notified Mercury that QR markers placed 15-20m apart would address any positional drift.
- Push the technology and software to discover how the functionality can deliver even more, for example,

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Eleftherios Giotis,
Mercury Surveying Engineer

“ After 6 months in the field, the Trimble XR10 has delivered way beyond our expectations.”

Eleftherios Giotis,
Mercury Surveying Engineer



CONTACT US

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

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Eleftherios rates the building sequence option, transparent layers and the ability to freeze screens.

Future Plans

As the Mercury team moves into its sixth month of using the Trimble XR10 technology, Eleftherios has been delighted with the results which have far exceeded initial expectations. Future plans include using it for the more complex MEP work, sharing even more data remotely with the client and further adopting mixed reality on future projects.



About HoloLens and the Trimble XR10

HoloLens technology incorporates multiple sensors, advanced optics, and holographic processing that merges seamlessly with its environment. These holograms can then be used to display information, blend with the real world, or even simulate a virtual world. The Trimble XR10 system incorporates this technology into an industry approved hardhat that is fully compatible with its Trimble Connect cloud-based collaboration platform.

The end result is a wearable solution that allows for the visualisation of 3D designs, on site by the user and remotely by other team members. This approach encourages real-time collaboration and transparency among stakeholders to avoid errors and delays.

