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FROM THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION

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AR, VR, and MR Future Impacts on Construction

How many of you read this title and asked yourself, “What is AR, VR and MR?” Maybe you are already familiar with a couple of these abbreviations but aren’t sure how they apply to construction.

Let’s start with the basics and make sure we are familiar with the terms: **Augmented reality (AR)** adds digital elements to a live view, often by using the camera on a smartphone. Social media filters are one example of augmented reality, and the game “Pokémon Go” is one of the most successful examples of AR. **Virtual reality (VR)** implies a complete immersion experience that shuts out the physical world. Using VR devices such as HTC Vive, Oculus Rift or Google Cardboard, users can be transported into several real-world and imagined environments such as the middle of a squawking penguin colony or even the back of a dragon. In a **Mixed reality (MR)** experience, which combines elements of both AR and VR, real-world and digital objects interact. Microsoft’s HoloLens—one of the most notable early mixed reality apparatuses—is making big waves in numerous industries, including construction.

Mixed Reality in Construction

There are a number of solutions today in the construction space leveraging

the Microsoft HoloLens. Trimble has been working closely with Microsoft for years identifying workflows that improve productivity, decision-making and safety.

At the Mechanical Contractors Association of America's technology conference last fall, Trimble walked the audience through a live demonstration of how their XR-10 can be used to prefabricate MEP assemblies. VisualLive is being deployed by UA local 469 in Phoenix as a training tool to help apprentices visualize real-world conditions in a safe, controlled space in their JATC. The NECA Innovation team has started testing Spectar on the Trimble XR-10 to see how it can make everyday task like wire pulls more efficient.

Trimble XR-10

Mixed Reality Impact on Other Industries

The service industry has been a leading adopter of the Microsoft HoloLens. In a world where more than 12 million elevators transport over 1 billion people each day (a number that is constantly growing), it is imperative that elevator service innovation grows ahead of the pace. Using HoloLens, it has been found that elevators could dramatically improve response time, increase efficiency, raise elevator uptimes and speed up service interventions to ensure mobility equipment is always running. With the help of HoloLens, over 24,000 Thyssenkrupp elevator service engineers can now do their jobs safer and more efficiently by triaging service requests ahead of the visit and getting hands-free remote guidance when on site.

Check out video for yourself here.

The U.S. military is also embracing these technologies. After conducting more than 20,000 hours of testing, involving nearly 1,000 soldiers, marines and members of special operations forces, the US Army is almost ready for its new mixed reality headset to enter the field. The Integrated Visual Augmentation System, based on Microsoft's HoloLens mixed reality headset and the subject of a $479 million contract, will enter the field in the latter part of 2021, according to the U.S. Army.

US Army mixed reality headset to enter the field in 2021

Mark Dugdale 3 months ago

The $479 million mixed reality headset being developed for US Army soldiers will enter the field next year. More than 20,000 hours of testing have already been completed

Augmented reality, virtual reality & mixed reality are not futuristic technologies. These technologies are being deployed today and will begin to transform the way we design and construct buildings going forward. If you are interested in learning more about the HoloLens and its use in construction, check out the most recent NECA Innovation Spotlight webinar with Trimble, discussing the XR-10 below.

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