

Virtual Reality Prototype Supports Permitting by Allowing Decision Makers to Experience Project Plans



Project Info

Client
Confidential.

Location
Europe

Description

Companies in the energy sector often face difficulties and delays when seeking permitting approval for the construction of large infrastructure with potential to affect the environment.

Seeking approval for new project facilities poses a challenge when it comes to both the landscape and social aspects of the facility's location and visual impact. Photorealistic images and sketches are subjective and lack a "first-person perspective," leading to potential misinterpretation that results in project opposition and costly delays.

For the last two years, the MediaLab team at Golder has collaborated with select clients to develop a 360°, fully immersive, virtual reality (VR) solution to present project plans to decision makers. Working with clients, Golder has evolved this service concept, carrying out software architecture and development, and specifying the most suitable VR devices.

In one example, our team employed a newly developed, innovative VR prototype for a European energy client who had already experienced a one-and-a-half-year delay at the permitting stage of a transmission line upgrade. Current structures were experiencing bottlenecks and improvements were needed for more efficient delivery of services to the area. Asset security was a critical factor but concerns and questions over the changes, and the impact to the surrounding environment, were resulting in delays.

A moderator from Golder acted as a guide, using purpose-built sync software from a tablet, allowing for easy interaction with the person wearing the VR headset.

Golder personnel worked alongside our client's employees in a close partnership for more than three months on the VR solution. Cameras were taken into the field and a 360° scene, complete with sound, was recorded. Our client's engineering design materials were translated into photorealistic, immersive content that clearly depicted how the project facilities would modify the existing landscape. Older structures were removed from the scene and new structures put in place.

Instead of viewing traditional 2D and 3D models, sketches and pictures in an effort to imagine what changes would look like, decision makers were transported via a compelling and immersive VR experience. Users wore VR goggles to experience the sights and sounds of the proposal and virtually explored the changes to the space.

With no prior experience of VR, our client's Head of Engineering was able to experience the demonstration, with no need for training. A moderator from Golder acted as a guide, using purpose-built sync software from a tablet, allowing for easy interaction with the person wearing the VR headset.

The platform developed by Golder allows simultaneous collaboration with multiple users located anywhere in the world. After donning a VR headset, users can log in and virtually experience the site together, discussing areas of interest in real time, pointing to objects, and even making annotations for others to see. Software for the VR system also gives clients the ability to tailor the product to their own needs, company designs, and specifications.

The results from this proof-of-concept demonstration with our client have been positive. Golder has received buy-in to further develop the technology to experiment with augmented-reality (AR) capabilities. In addition, we have been tasked with incorporating the VR solution to support additional areas of our client's business, such as training, health and safety, and engineering design.

