

Xella brings BIM on the construction site using holographic lens

● Michael van Tendeloo, Projectleader BIM & Digital Transformation NWE, Xella Belgium

Xella takes the next step in digitizing the building process by introducing mixed reality on the construction site. The building materials manufacturer is giving workers access to the BIM model via a holographic lens and special software, allowing them to build more efficiently and faster. The innovation was put to the test recently in collaboration with the Vanhout construction company for the construction of a new care centre in Merelbeke, Belgium.

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Holographic lens technology enables real-time access to all the data from the BIM model on the construction site via the cloud. For that, construction workers are equipped with a helmet and built-in holographic lens. He can see a holographic representation of the wall or partition to be built. The existing, real environment is also visible to them. This type of Mixed Reality (MR) allows the construction workers to see exactly where and how the wall or partition needs to be erected.

Xella builds its own virtual models based on the models it receives from the contractor or architect. These are then linked to logistical information such as fitting piece numbers via a cloud environment. MR retrieves this information from the cloud and projects it onto the different glass layers of the lens. As a result, the user sees the reality augmented with 3D holograms. Here, a construction worker wearing the holographic lens can walk around the hologram while it remains in the right position and in the correct scale, and pass on instructions to the colleague working with him.

Reliable and efficient

What can we expect from this development? This technology will, among other things, allow to work paperless on the construction site, by projecting in the holographic lens information about the walls and instructions on how to erect them. The information comes from BIM library. Working with MR has many advantages. Digital information is much more reliable and accessible. This improves the efficiency of the building process, leading to fewer construction errors and consequently lower failure costs.

Eight years ago, Xella was already a trailblazer among suppliers in the construction industry when it began using building information modelling (BIM) and has kept investing in the digitization of the design and implementation phase of construction projects. BIM creates a whole range of possibilities with regard to digitization. In the implementation phase, Xella is already pioneering by bringing augmented and mixed reality and robotised manufacturing to the construction site. In the design phase, Xella is anticipating a switch from 3D to 5D designs and a broader application of virtual reality.

As a smart partner, Xella offers building solutions in autoclaved aerated concrete, lime-sandstone and mineral insulation panels. As a global market leader in its sector, Xella helps chain partners improve the sustainability, efficiency, quality and convenience of their building process. Xella achieves those goals by translating knowledge of the market and building regulations into innovative products and concepts with extensive services. This product and service portfolio is and will always be attuned to the partners' current and future needs and requirements. ●



Michael Van Tendeloo is responsible for taking BIM & collaborations to the next level with more suited processes, software, advanced information exchange and new developments. After finishing his education as a constructional engineer at the University of Antwerp, he started in sales as a project manager for Silka and Ytong panels.

During his training he also worked in the drawing office as well as the technical department. Due to the increasing demand, he offers BIM consulting in addition to his sales activities. At the beginning of 2018, he was appointed as project leader for BIM & digital transformation for NWE.

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Xella BE nv/sa
Kruibeeksesteenweg 24
2070 Burcht, Belgium

Nicole Wuyts, Marketing - Communications Manager
nicole.wuyts@xella.com
www.xella.com



[See here a video about mixed reality on the construction site \(not in English\)](#)

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