

BIM Planning and Viewing in 3D Stereo



The cooperation between Schneider Digital and Xeometric/ Elitecad optimally combines the strength of 3D planning capabilities and stereoscopic graphic output. Three-dimensional modelling and design with Elitecad can be viewed stereoscopically with the 3D PluraView monitor from Schneider Digital.

Schneider Digital has revolutionized stereoscopic graphic displays with the 3D

PluraView monitor product family and with Elitecad Architecture 15, Xeometric now maximizes these hardware capabilities. Together, this creates excellent 3D stereo experience for planners and architects working with architectural models and BIM applications.

3D planning and modelling is indispensable and has long been established in architecture, construction, for complex BIM models and mechanical CAD construction. Despite this, the planner or architect is mostly content with a two-dimensional representation on 'flat' computer screens and is happy with traditional, large-format 2D printouts. For better insight into spatial relationships, perspective views are created, models are rendered again and again, the design is checked from all sides and perhaps even interactively visualized, if a VR-glasses mode is already implemented. However, working in true three-dimensional mode is not the standard yet. Why is this?

The previous generation of stereo output devices, in combination with active or passive 3D glasses, were simply not well suited for longer work. Often the resolution left a lot to be desired, the frame rate and / or refresh rates were too low, the glasses were uncomfortable to wear, the stereo images were quite dark and active LCD glasses exhibited a persistent background flickering. In short, the "3D stereo sensation" was rather flickering, awkward and tiring.

VR Headsets / Glasses as an Alternative?

With the exception of Elitecad, very few CAD systems offer VR (Virtual Reality) visualization as an integrated viewing mode. If VR viewing is offered at all, users are often limited to just viewing without any other functionality, i.e. for any modifications, the user has to switch back to the monoscopic CAD environment. In case of outsourcing parts of the work, the dataset must be made available again after implementing changes. An important aspect of VR usage is the fact that the surrounding (office) environment is completely hidden during use. For a truly immersive experience, this is desirable and certainly impressive. As part of the overall modelling work tasks - possibly together with other colleagues in the office - it is more comfortable to be able to see also the normal environment. All the more, since VR headsets are relatively heavy and cover the face much like a scuba-diving mask. During VR use, many people feel unwell as the visual perception does not match the sense of equilibrium. At this point, 3D modelling on a desktop 3D-Stereo monitor comes back into the game again.

Ideal 3D / VR Symbiosis of CAD Software and Stereo Monitor

In Elitecad, 3D planning and simultaneous stereoscopic viewing is fully integrated and works perfectly with the [3D PluraView](#) monitor series from [Schneider Digital](#). The German manufacturer has been a full service solution provider for professional 4K, 3D and VR hardware for over 25 years, with a special focus on Geographic Information Systems, CAx and BIM / architecture. Following a detailed evaluation of their respective solutions, it quickly became clear for both companies: the seamless interaction between software and hardware provides an optimal 3D stereo experience for the user. This strategic cooperation has already been anchored in the latest version of Elitecad Architecture 15, as the optimal settings for the 3D PluraView stereo monitors are preconfigured in the software. This means that the use of this innovative hardware is supported as easily and efficiently as any other activity in Elitecad.

Stereoscopic Screen Output

The main benefit for users is the stereoscopic screen output. The software creates two images of a scene that are exactly at eye distance from each other. This is the basic requirement for spatial vision. The simplest variant for stereoscopic viewing are the red / green anaglyph glasses. Of course, stereoscopic dual-screen systems, such as the 3D PluraView products, provide an incomparably better experience.

Thanks to one screen display per eye, the absolutely flicker-free beam splitter technology delivers the full monitor resolution up to 4K / UHD and therefore very high stereo image sharpness with the highest level of detail. The optimal, double brightness and the highest color brilliance (up to 10 bit) enable the user to work comfortably and without fatigue. The new BlackTuner technology of the 3D PluraView (28" model) supports the user, for example, in reliably capturing objects even in dark image areas. A response time of just 1ms eliminates

"ghosting" and motion blurring. The precise, pixel-perfect image representation enables a truly spatial experience even in office daylight conditions, without blocking out the environment. This experience is additionally supported in Elitecad by correctly displaying cursors or markers at the correct 3D depth. All necessary plug-and-play stereo configurations for the 3D PluraView displays in Elitecad Architecture 15 are already set. For all users who want to go one step further in the direction of Virtual Reality, Schneider Digital also offers its 3D PluraView monitor in a VR version with integrated head tracking and object control by tracking sticks and spheres.



The symbiosis of 3D PluraView stereo monitors from Schneider Digital with the CAD software Elitecad from Xeometric is ideal for an optimal experience of three-dimensional planning and real 3D / VR model visualization for CAD and BIM.

Architectural Planning and 3D Modelling

The complete solution consisting of Elitecad software and 3D PluraView monitors is particularly useful in architectural planning and 3D modelling or BIM (Building Information Modeling), especially if combined with laser scanning and point cloud visualization. With Elitecad it is possible to consistently display the entire planning process stereoscopically. The new software version for architectural planning and building modelling simplifies day-to-day planning and offers efficiency and convenience in use. Not only because point clouds can be imported directly from laser scanners and visualized stereoscopically, but also because Xeometric, together with Schneider Digital, has implemented the 3D mouse pointer perfectly in Elitecad. Only if the cursor is able to intuitively reach every point, surface or edge in the (holographic) 3D space, the advantages of stereoscopic visualization are converted into an increase in workflow efficiency. Also in many other application areas, e.g. in mechanical construction and geodesy, users benefit from the combination of fast loading times for large amounts of data, efficient modelling and high-resolution three-dimensional, holographic 3D-Stereo graphics output of points, areas and textures.

<https://www.gim-international.com/content/news/bim-planning-and-viewing-in-3d-stereo>
