3D VISUALIZATION OF DESIGN MODELS

USING THE META QUEST OR MICROSOFT HOLOLENS

BIM HOLOVIEW

Step into your design before it is built

The AEC industry's most advanced 3D visualization tool

BIM Holoview on the Meta Quest or Microsoft HoloLens provides architects, engineers, construction professionals and property developers revolutionary mixed reality technology for viewing complex BIM and CAD models. Models can be presented table-top for demos and discussions, or within their intended environment as full fidelity 1:1 scale holographic images for accurate visual verification of design concepts, structural elements, services and fit-out plans.

- Provide clients the ultimate experience of what their proposed development will look like.
- Perfect the design in the context of its physical environment.
- Make design changes early and in real-time to avoid variations, mistakes, clashes and constructability issues.
- Provide contractors a full understanding of their works in relation to the complete project so they can facilitate efficient installation without rework.
- Perform accurate quality assurance and compliance checks.
- Visualize the design as a digital twin before, during and post-build.

Why mixed reality?

Whilst architects, designers and builders may have moved on from 2D paper plans, traditional VR/AR tools lack the capacity to fully convey the scope and feel of a project as a whole. 3D data in MR is considerably easier to interpret than flatscreen data, providing users an immediate and accurate understanding of the spatial relationships, distances and size of their design. Only through experiencing and interacting with the model in MR as and where it will be built, can the true sense of the design and its relationship to the physical environment be achieved.

BIM Holoview has been specifically developed using MR to provide the AEC industry the most accurate and realistic 3D visualization tool available. Both the Quest and HoloLens provide high resolution full colour imaging, are much more comfortable to wear than traditional VR/AR devices, are untethered, self-contained, precise and hands-free. The headsets are cost-effective and greatly extend the value of BIM and CAD systems.

FEATURES

File Types	Autodesk Navisworks® and Revit® files via plugins. We also offer a service to process other file types such as ArchiCAD, IFC, FBX and Obj.	
File Rendering	Meta Quest Support for on-device rendering File size 400MB	Microsoft HoloLens Support for on-device and Azure Remote Rendering File size 200MB (on-device) 2GB (remote rendering)
Accurate Model Placement	BIM Holoview solves the issue of model drift in mixed reality through World Locking and QR Code model alignment. This enables models to be consistently aligned to within 1cm (1/2 inch) over large distances, giving users confidence in the accuracy of their 3D model placement.	
Issue Management	If a problem is identified (either in the model or construction works) BIM Holoview can be used to raise an issue, mark the issue with a location and add information directly in the HoloLens. Issues can also be raised in Autodesk® BIM 360 projects to be included in overall construction project management.	
Utility Functions	• Change visibility of model components (show/hide/transparent/colour/highlight) • Measure both 3D model elements and real-world elements using virtual ruler • View model item property data • Model occlusion of real-world objects • Easy to use movement widget and VR style teleportation	

BIM 360 AUTODESK® BIM 360™ AUTODESK® REVIT® AUTODESK® NAVISWORKS® Microsoft Azure

BENEFITS

With BIM Holoview architects and designers can now accurately communicate the design long before a structure is built. Clients better understand spatial relationships by actually experiencing how the space will feel and function. Stakeholders can see how the development will fit into the surrounding physical environment. Design changes are easily made before construction begins, thereby avoiding costly variations and rework.

During construction, the project team can visualize the design as a digital twin onsite or remotely, collaboratively resolving design and construction issues. Improved understanding of the sequencing of technical installations reduces the potential for errors and directs construction of complex structures. Contractors have a full understanding of their works with 3D model overlay to an accuracy of ½inch/1cm which enables mistakes, clashes and constructability issues to be identified early thereby keeping projects on budget.

Building inspections and compliance checks are supported with accurate real time information and virtual measurement. Different fit-out plans can be trialled to ensure best use of space. Post construction, the ability to see through walls reduces inefficiencies in facilities management across the building's life.

Fundamentally, BIM Holoview empowers users to make design and construction decisions with greater certainty, and to identify and mitigate risks before costly mistakes occur. Understanding, communication and collaboration are enhanced. Clients and project teams have a more positive experience and ultimately, a better project result is achieved.

"There is no way I would build without checking my plans in BIM Holoview. When I viewed my design, I found I needed to make critical changes such as shifting the orientation, changing windows to better capture views, as well as enlarging some of the spaces."
Ian Dunbar, Queenstown NZ.

BIM HOLOVIEW

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TRY FOR FREE: 14-day full feature trial

FLEXIBLE SUBSCRIPTION PLANS: Monthly or yearly with 3-month minimum term, individual or business subscriptions

TECHNICAL SUPPORT: Complementary on-board training, remote support available when requested

UP-TO-DATE SOFTWARE: Regular software up-dates and support for latest Autodesk software

EXAMPLE USE CASES

BIM Holoview on the Meta Quest provides a very cost-effective solution, ideal for small architecture and building firms as well as large construction companies or production facilities. Stakeholders can experience what their building will look like anywhere, anytime without the traditional VR setup. Firms can have multiple headsets pre-loaded with models for use remotely and onsite.

Because the HoloLens is certified as protection glasses, and allows hands-free operation and easy movement within the physical environment, it is well suited for use onsite during and post-construction. BIM Holoview in combination with Dynamics 365 Remote Assist on the HoloLens 2 also enables remote stakeholders and teams to 'see through the eyes' of an onsite worker (wearing the HoloLens) for remote design, collaboration and precise project co-ordination.

House/hotel/commercial/hospital

Bringing a design to life in mixed reality, provides opportunities to garner stakeholder feedback in relation to proposed developments, and to identify and resolve potential design flaws, risks and issues before and during construction. A project may have an inspiring design, but its impact on the wider environment and how it will actually function when built, are critical.

For example, in the healthcare industry, BIM Holoview helps validate the constructability and usability of crucial specialty spaces by allowing all team members (designers, contractors and medical staff) to experience the design and make changes to optimize the layout of furniture, medical equipment, and technical installations such as electrical and HVAC. Multiple designs for surgeries and hospital wards can be trialled to ensure the best option is chosen to meet requirements.

Other examples of where BIM Holoview is being used include a commercial kitchen project where pre-fabrication planning and layout are important, fit-outs of office spaces and for reviewing design concepts for custom house builds.

Manufacturing/processing/factories/data centers

Equipment layout is critical to the development of an efficient production line. BIM Holoview allows designs to be accurately placed at 1:1 scale in the factory environment in which they are to be installed, so that the design will meet the requirements of the facility and installation is accurate.

BIM Holoview verifies operator space and functionality in car manufacturing plants, provides quality control during installation of equipment and ensures specifications for pre-fabricated components, such as for a new mine processing plant, are precise.

Airport/bridge/roading/public facilities

Because it improves comprehension of large-scale projects, firms use BIM Holoview to help market and tender for complex public works projects. During and post-build, engineering and construction team members are also using BIM Holoview to see parts of an asset which are very difficult to access or view otherwise (such as a dam face).

In the example of a new airport terminal, BIM Holoview allowed stakeholders to see the various stages of the development as construction progressed and to experience how the spaces would perform when busy with people.