



Virtual Reality (VR)

User manual

A step-by-step guide to installing a virtual reality system on a Windows PC





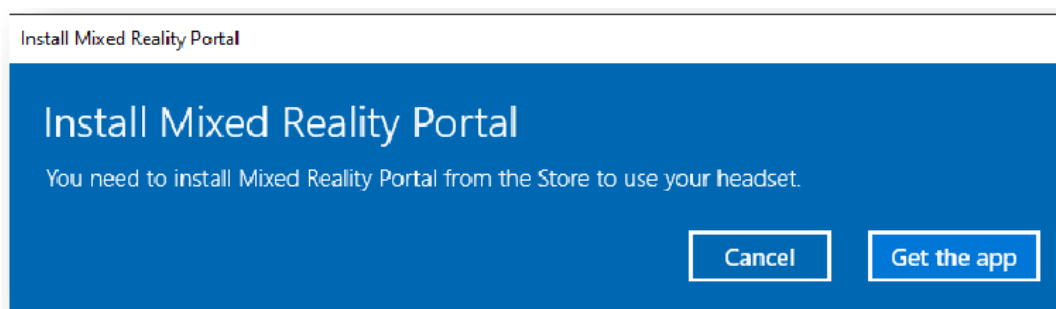
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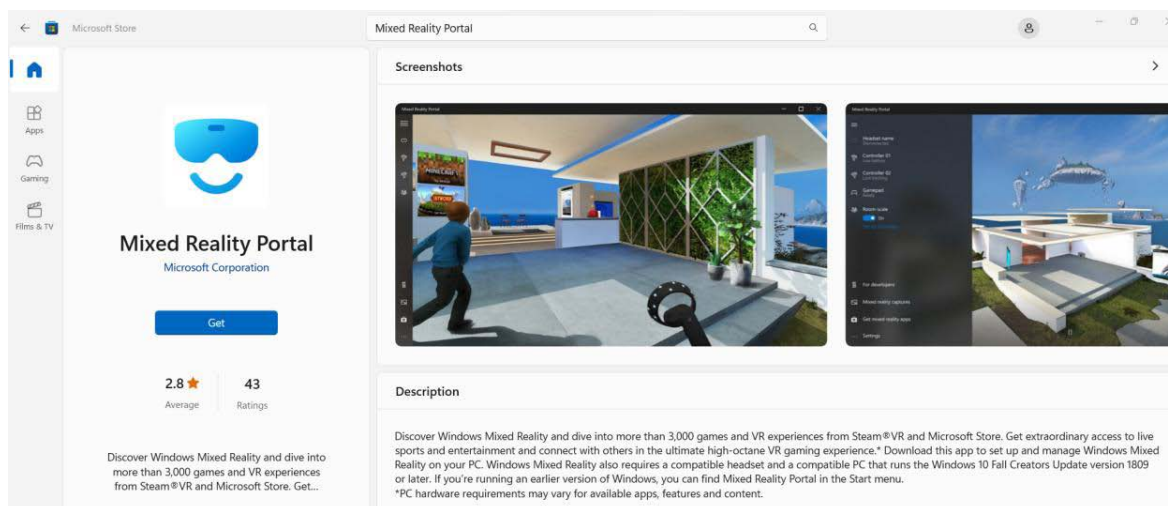


1 Installing and setting up the “Mixed Reality Portal”

After connecting the VR headset to the computer via USB 3.0 and HDMI, a screen will appear for installing the “Mixed Reality Portal” app, which manages Microsoft’s virtual environment.



Clicking on **Get the app** (*) redirects users to the Microsoft Store, where the “Mixed Reality Portal” app can be installed.

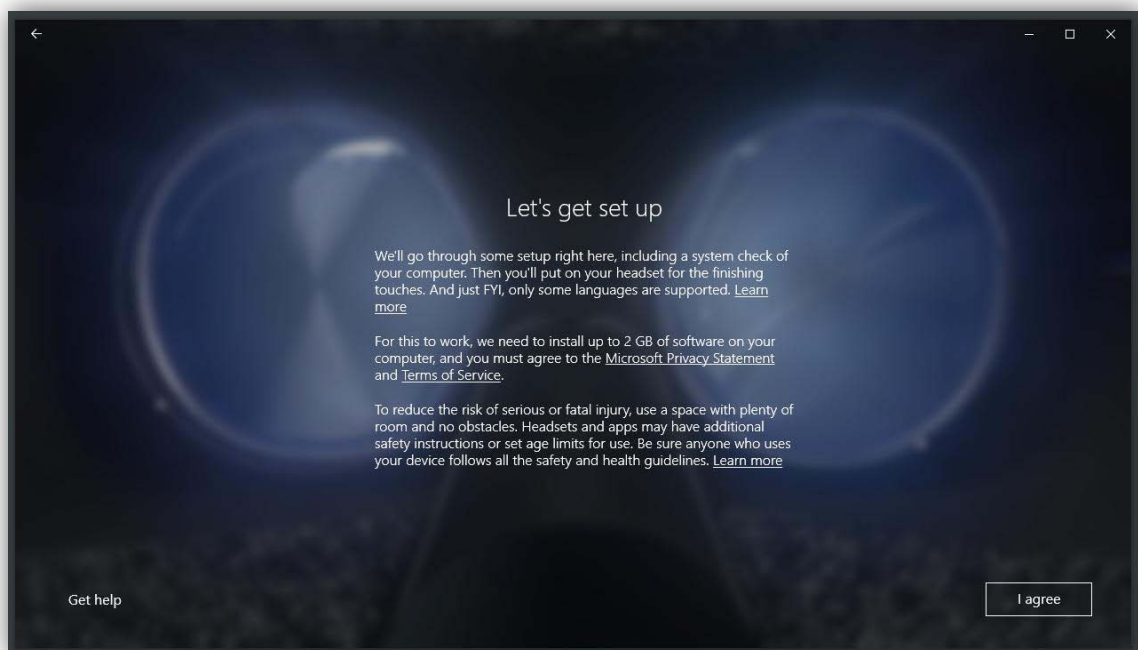


(*) Note: If the window prompting users to install “Mixed Reality Portal” and the **Get the app** option do not appear when connecting the device to the computer, users must go to the Microsoft Store directly from the PC desktop, search for the app and install it.



Once installed, open the app and the following screen will appear where users can set up Windows Mixed Reality.

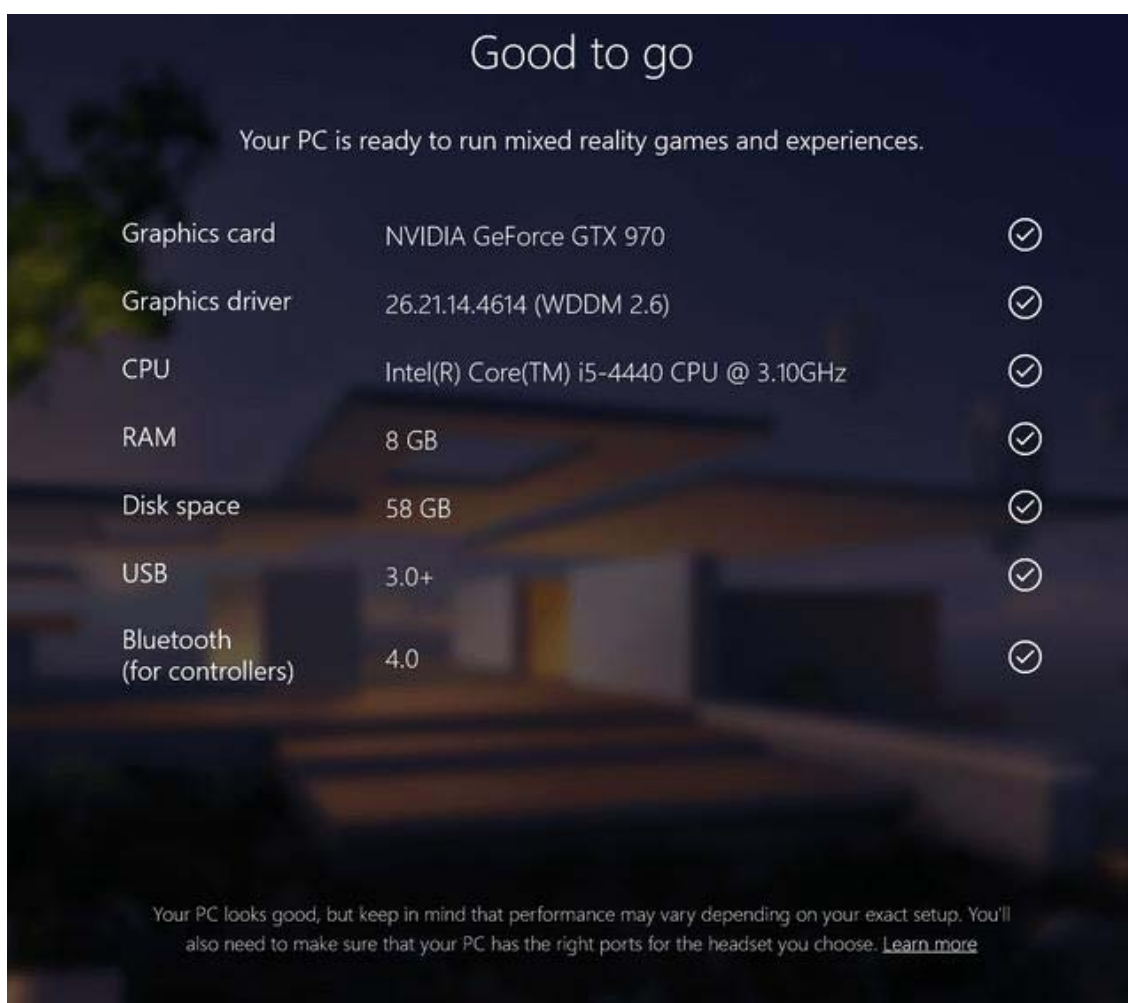
Please note that for an enhanced Windows Mixed Reality experience, users are advised to keep their PC connected and charged for the entire duration of the virtual reality experience.



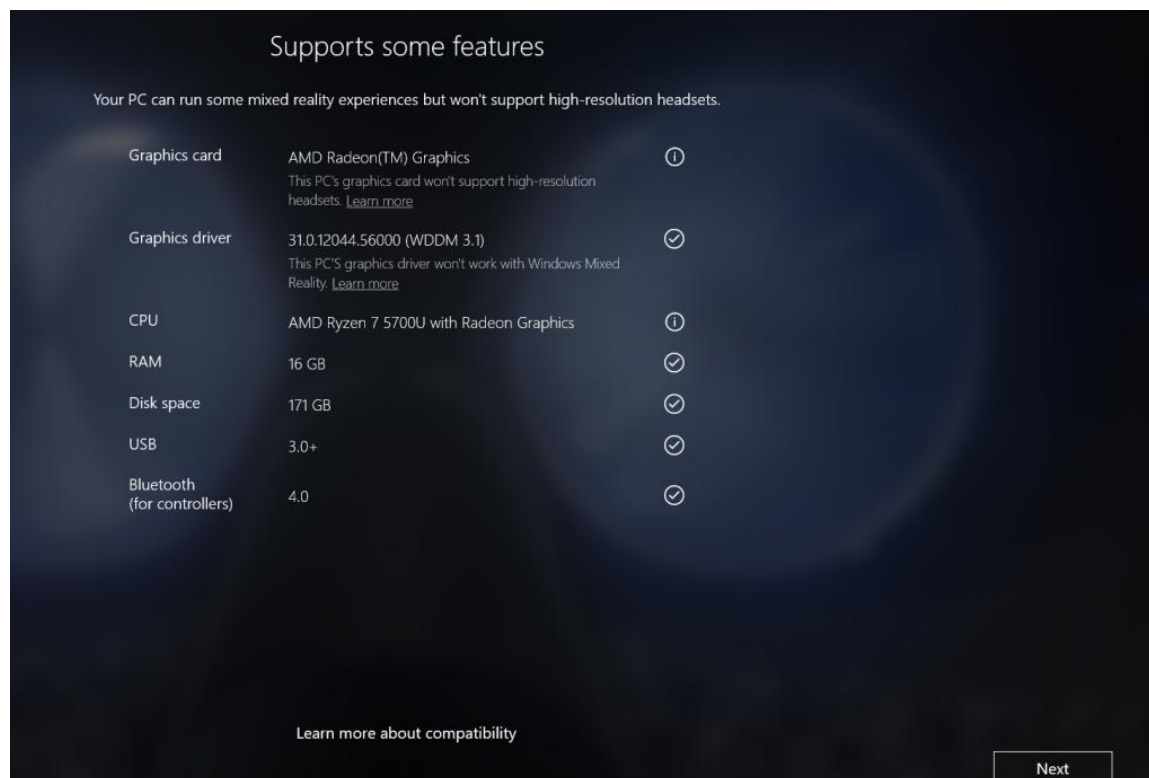


After accepting the app's terms and conditions, the first thing that will take place is a system check to ensure the system is compatible with Microsoft's virtual reality environment. To do this, the portal carries out a preliminary analysis of the computer hardware.

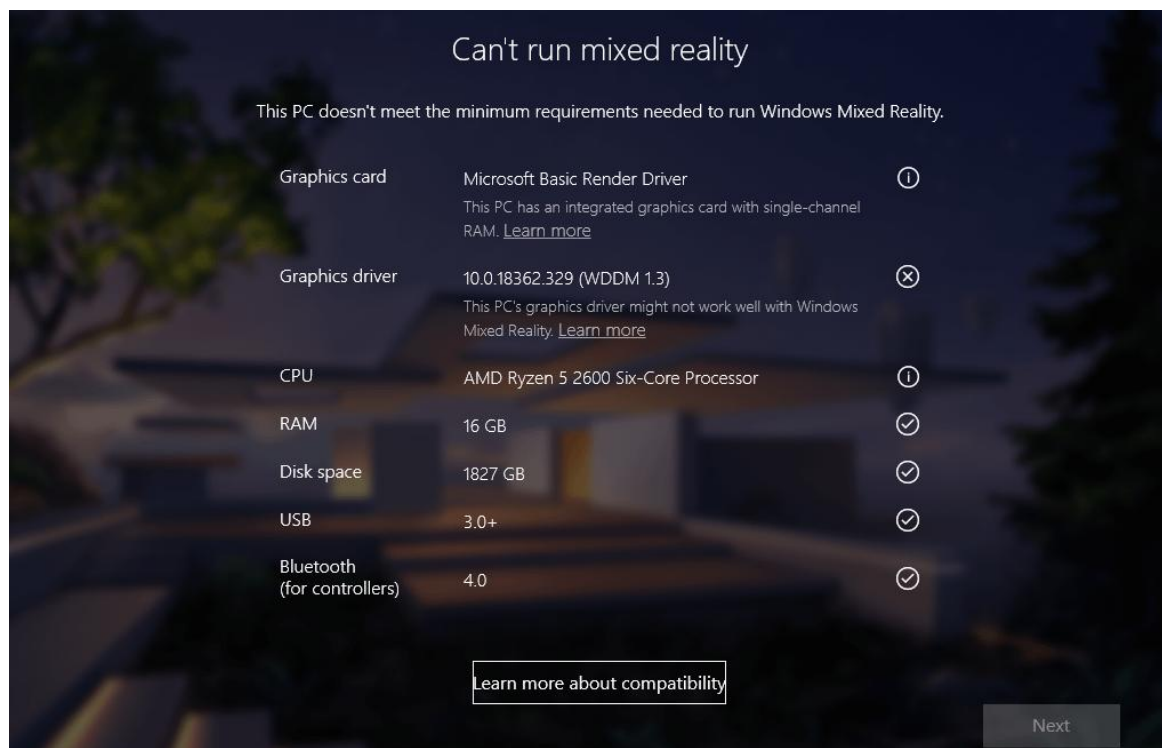
Ideally, the system will be fully compatible with the technology ("*Good to go*"). This occurs when all of the test points pass the test without any problems or warnings.



In cases where the computer is not 100% compatible with the technology ("*Supports some features*"), the system will work, but some errors may occur during use as the hardware does not meet all the requirements.

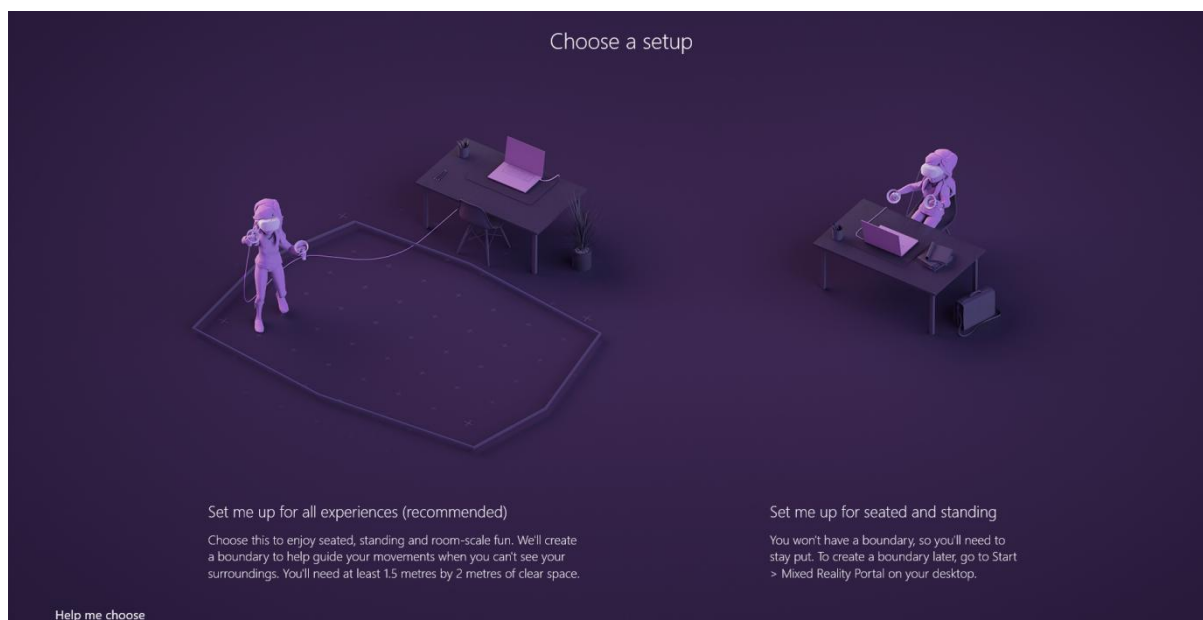


Finally, there may be cases where the computer is incompatible with the technology (“*Can’t run mixed reality*”), and, therefore, it will not be able to run any virtual reality apps.

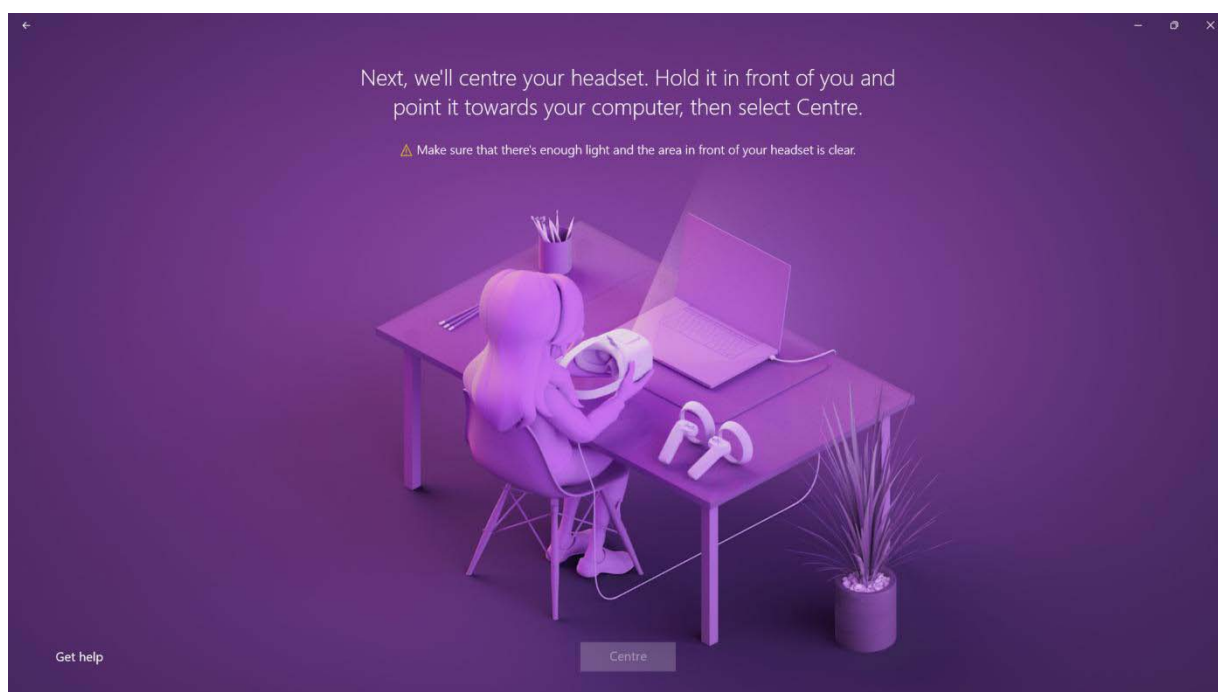




Once the hardware compatibility check has been completed, users can proceed to set up the virtual reality environment space and layout by clicking on the **Next** option located in the bottom right-hand corner.



Users should select the type of setup according to the position in which the device is to be used. To follow this example, clicking on the **Set me up for seated and standing** option allows users to stay in one place, either seated or standing.

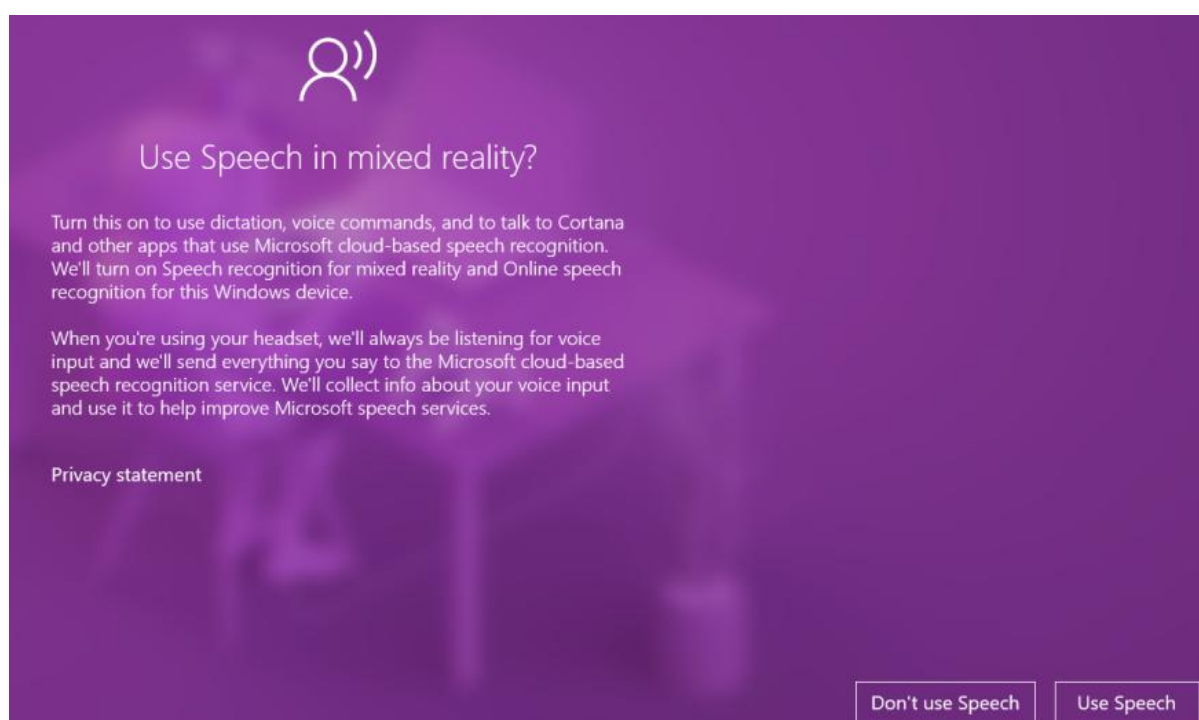




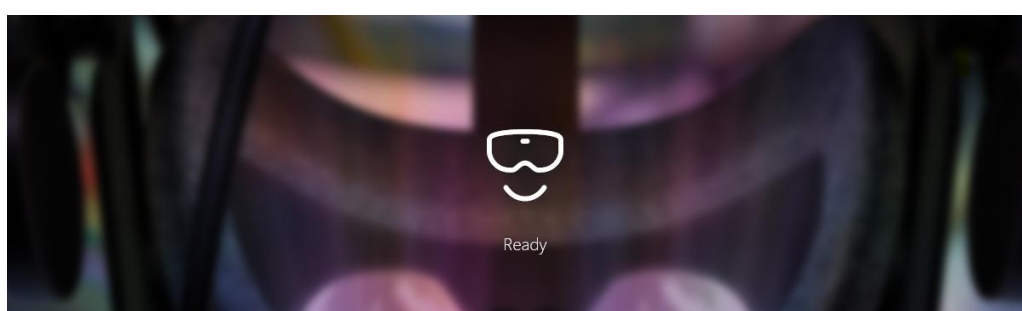
To use this setup, point the headset towards the screen and click on the **Centre** button so that the angle of the device can be calibrated correctly. If this process is not carried out correctly, users may see the virtual environment in a different angle to that at which the headset is worn.

For example, having the headset resting on a table at 0° and seeing the virtual reality environment tilted 90° to the right. If this problem occurs, it can be solved by recalibrating the headset from the **Settings** section in the mixed reality portal, which is located in the top left-hand corner of the app.

Additionally, the app will ask users if they want to use voice dictation. This feature does not need to be activated for the app covered by this manual. Users can select **Don't use speech**.



Once the installation and configuration process of the app has been completed, a screen will appear, indicating that the Mixed Reality Portal has been configured correctly.



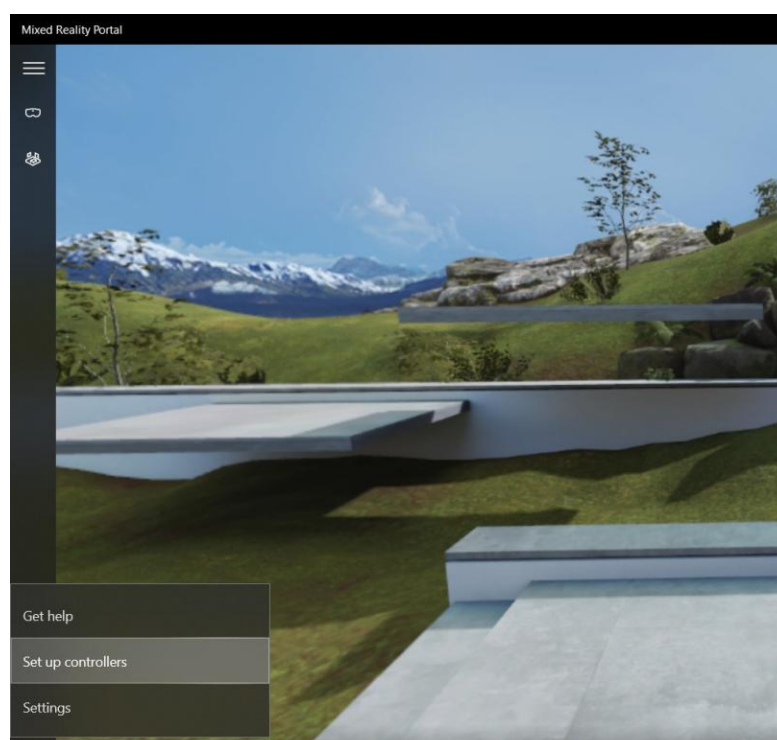


2 Setting up the controllers

Once the portal has been installed and set up, we can see that there is no Bluetooth® remote or controller linked to the app to be able to start interacting with the environment.



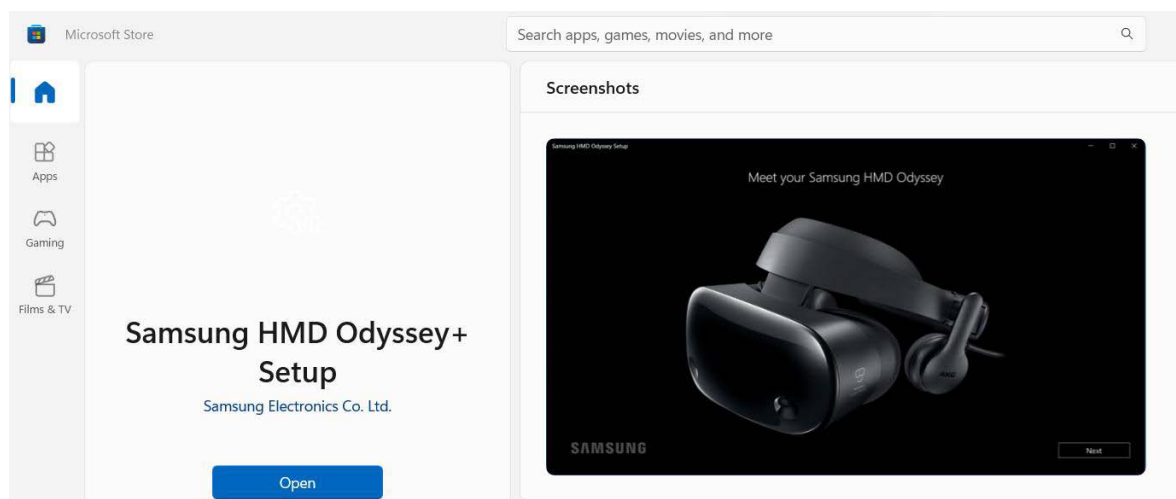
In order to set up a controller, go to the options at the bottom left-hand side of the app and select **Set up controllers**.





Depending on the type of virtual reality headset, users will be asked to download an app from the Microsoft Store or a different store in order to set up and link the controllers.

For the Samsung HMD Odyssey+ headset, the following app needs to be installed.



This app will show step-by-step instructions on how to pair the controllers with the mixed reality portal.

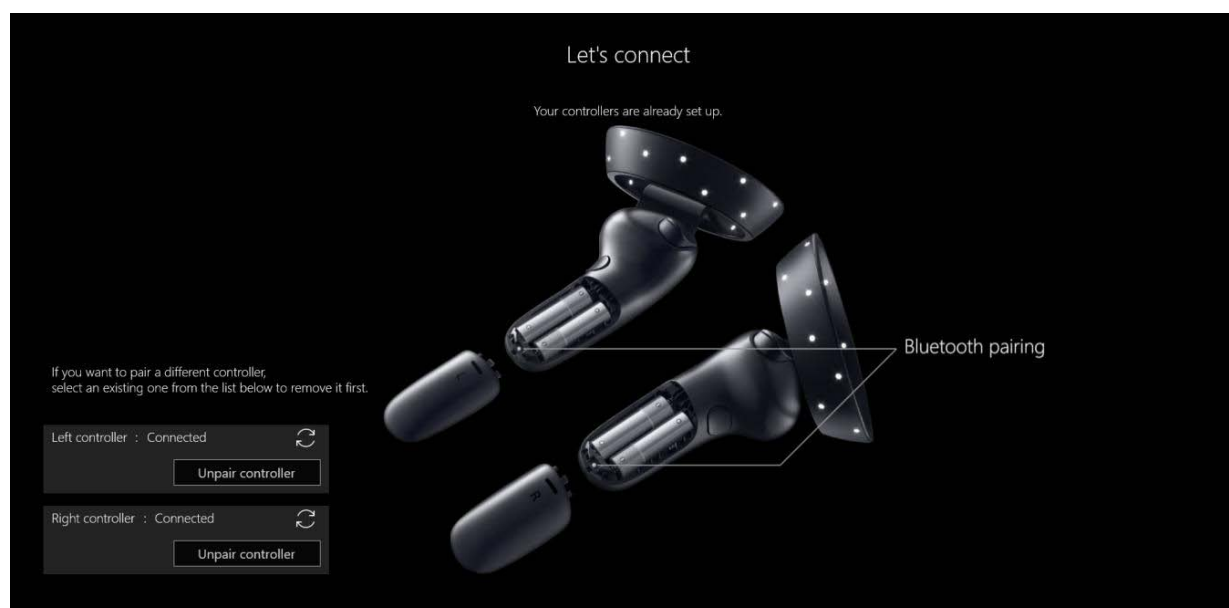


Once the controllers have been linked, click on **Next**. A screen will appear with an image which briefly outlines the features of the controllers and how they interact with the mixed reality portal.



On some devices, no specific app download is required, and the controllers will simply be paired to the PC via Bluetooth. Selecting **Set up controllers** in the Mixed Reality app will redirect you directly to the Bluetooth and Windows device settings for pairing.

Please note that to start pairing the controllers, if they are not detected by the app, the buttons in the battery compartment must be pressed to activate the Bluetooth as shown in the image below.



Once the pairing process has been successful, the controllers can be used for viewing and interacting with the mixed reality portal.



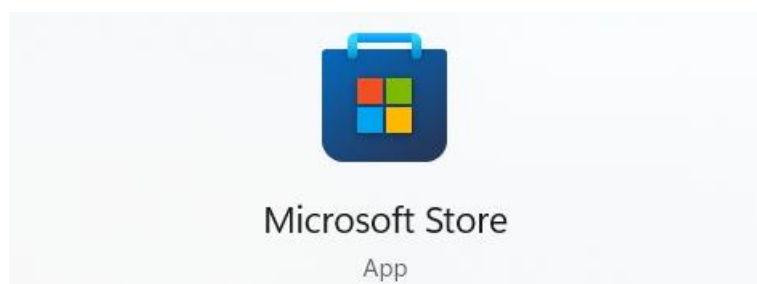
3 Installing BIMserver.center Virtual Reality

Once the entire setup process has been completed and the mixed reality portal is ready to start the virtual reality experience, users can then proceed to install the virtual reality project visualisation tool from the BIMserver.center platform.

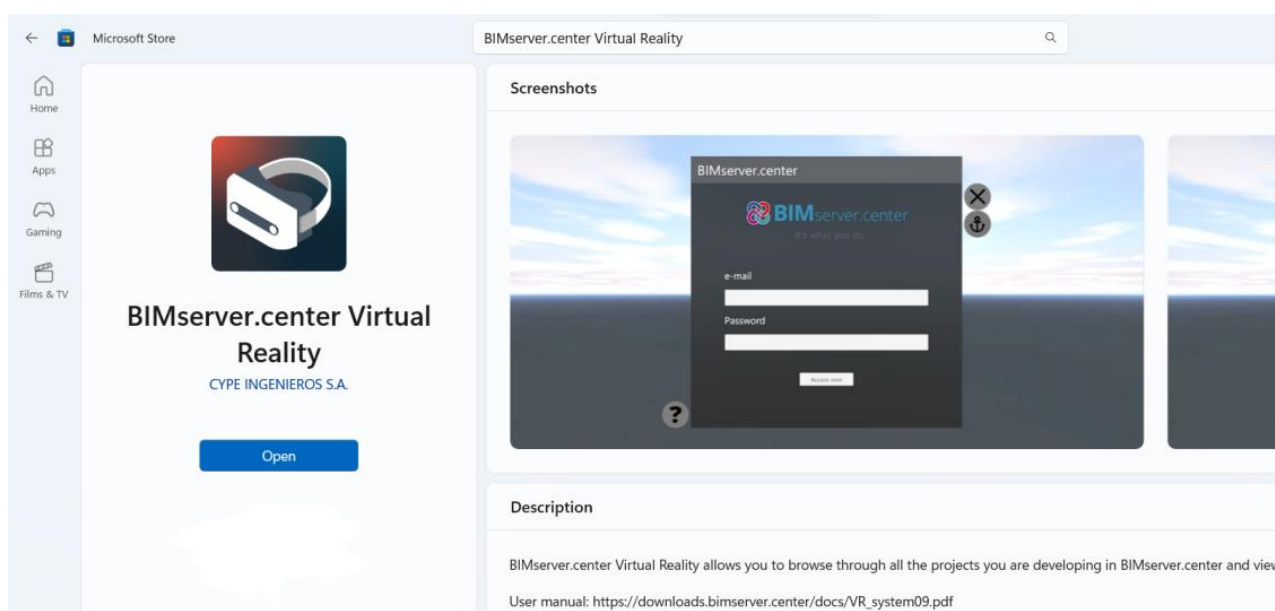
The installation can be carried out from the PC desktop or from the Windows Mixed Reality Portal in the virtual environment. There are two ways to carry out the installation in this manual. Desktop installation is recommended prior to the virtual reality experience.

3.1 Installing BIMserver.center Virtual Reality via desktop

To install the BIMserver.center Virtual Reality project visualisation app from the PC desktop, the first step is to access the Microsoft Store app, where you can search for the app and install it.



After locating and clicking on the app, its profile will be displayed, from where you can **Get** and **Install** the app.

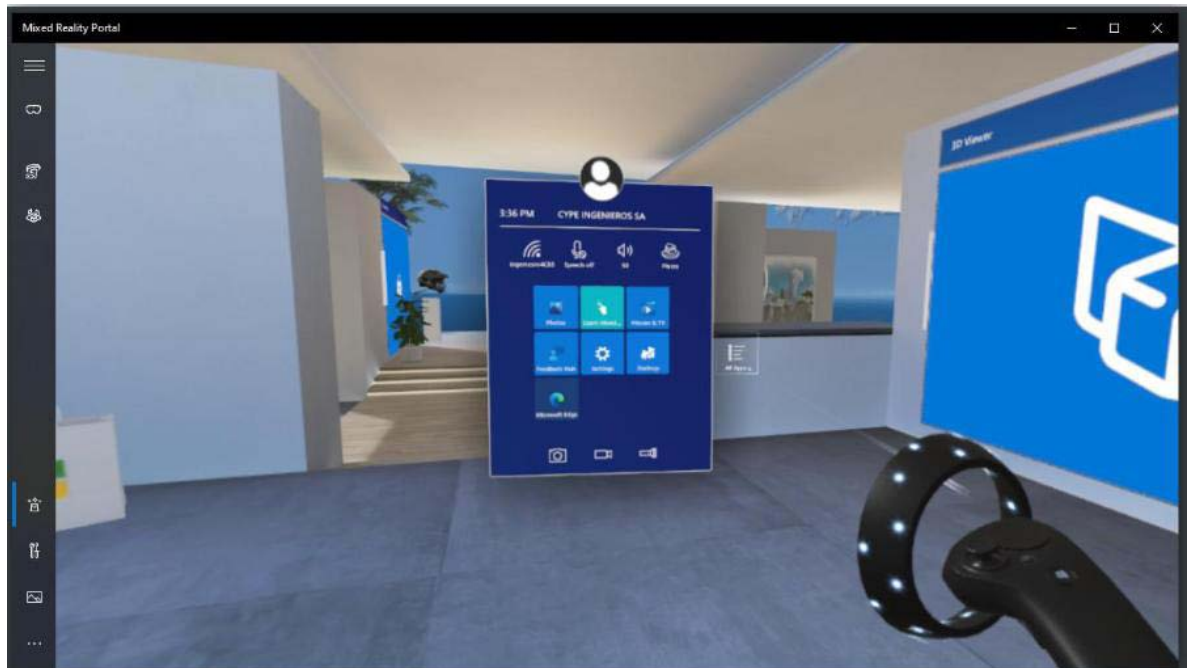


Once the installation has been completed, it can be launched with the **Start** button, which will take you to the following screen.

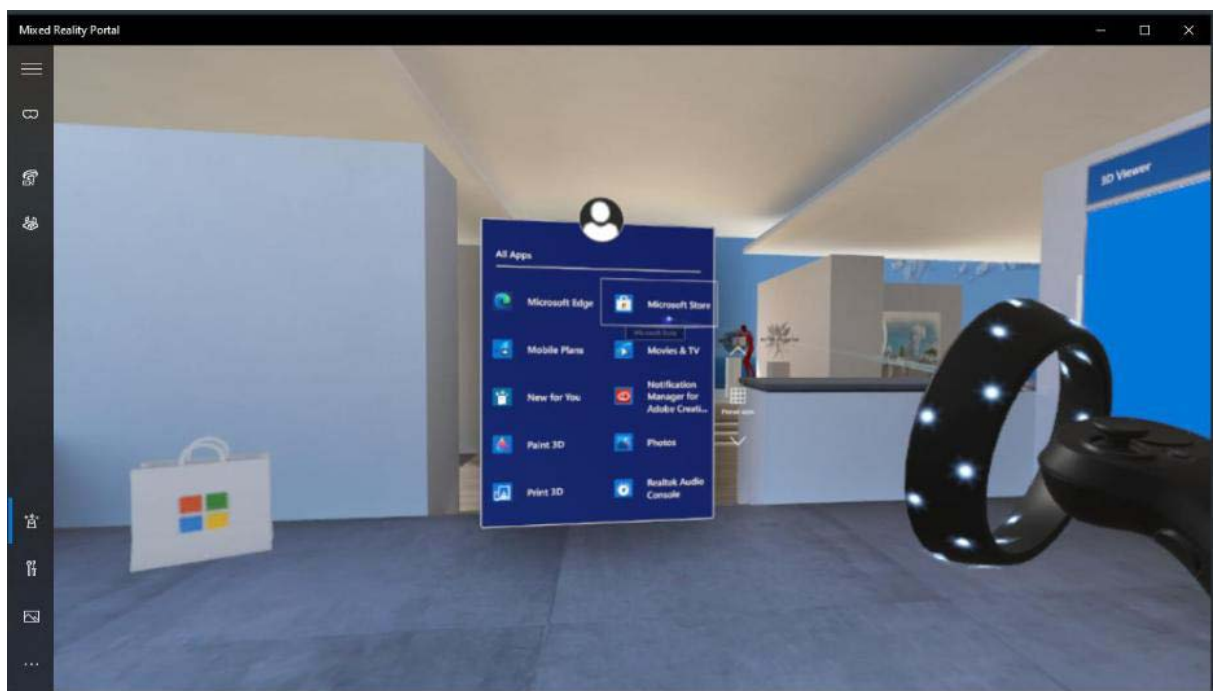




3.2 Installing via Windows Mixed Reality



To access the Windows menu, select the button bearing the Windows symbol on the front of the controller. When the menu appears, select the **All** option located on the right-hand side of the menu box using the rear trigger of the controller. This allows you to view all the apps installed in the portal.

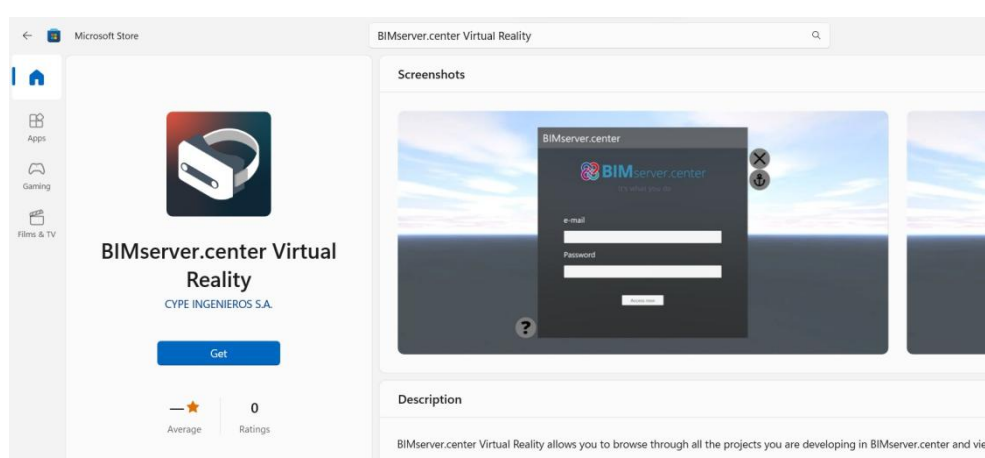




Using the rear trigger and the various options on the menu, you can browse the menu until you find the “Microsoft Store”, where the app can be installed.

By selecting the Microsoft Store app, users will be redirected to this desktop app, outside the virtual environment, where the steps listed in point 3.1 of this manual should be followed in order to install the BIMserver.center Virtual Reality app.

After locating and clicking on the app, its profile will be displayed, from where users can **Get** and **Install** the app.

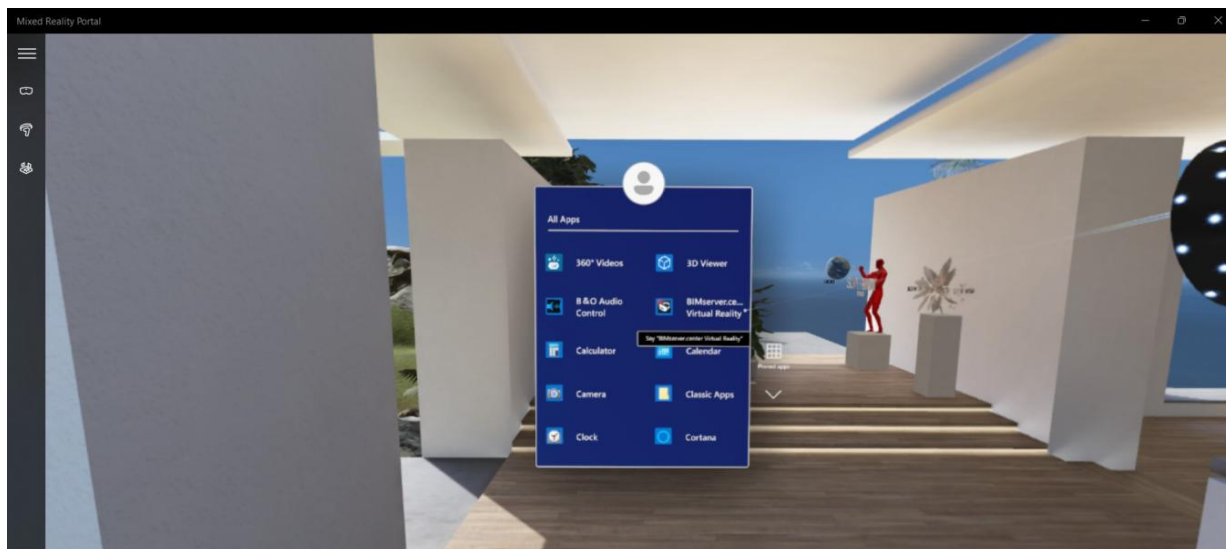


Once this has been completed, the app will be installed in your portal and the app icon will appear in the Mixed Reality Portal.





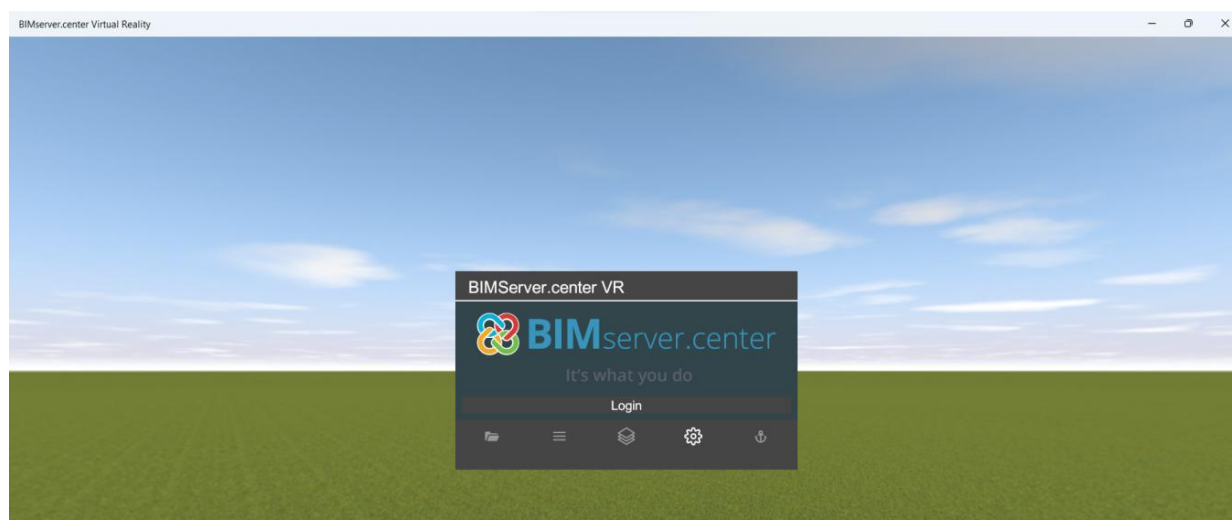
The BIMserver.center Virtual Reality app will also appear in the Windows menu as a shortcut for launching the app.



4 The BIMserver.center Virtual Reality App

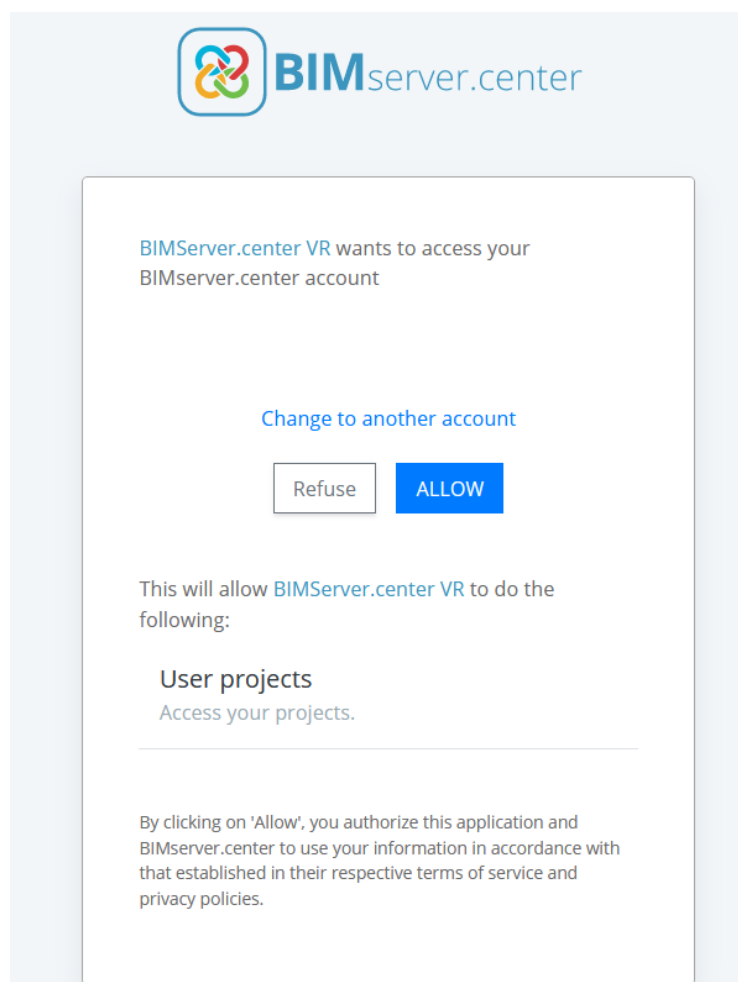
After installing the app, we will now see how it works. When the Windows Mixed Reality Portal app is open, BIMserver.center Virtual Reality is started from the PC desktop.

The first thing to appear is the **Login** panel to access the BIMserver.center platform where the users' projects are stored.

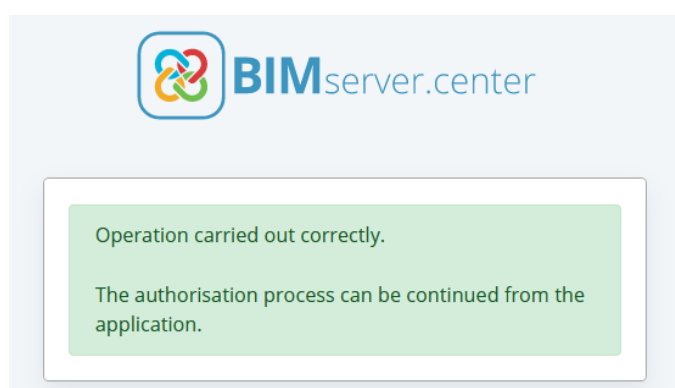




By selecting the **Login** option, the app will allow you to enter your username and password or redirect you to an account validation tab in the web browser where the user must be validated by selecting **Allow** on the screen shown below, or switch to another BIMserver.center user account.

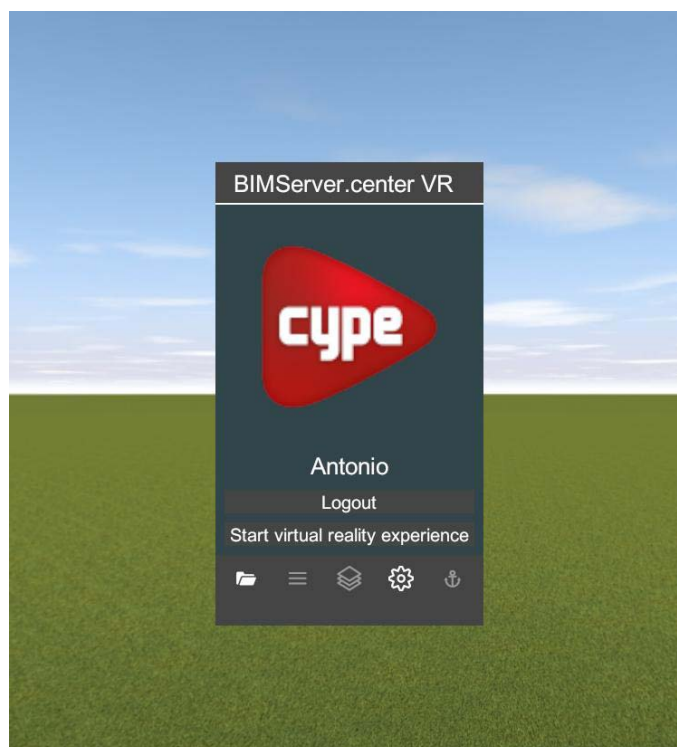


If the user data has been entered correctly, the following message will be displayed in the web browser tab.

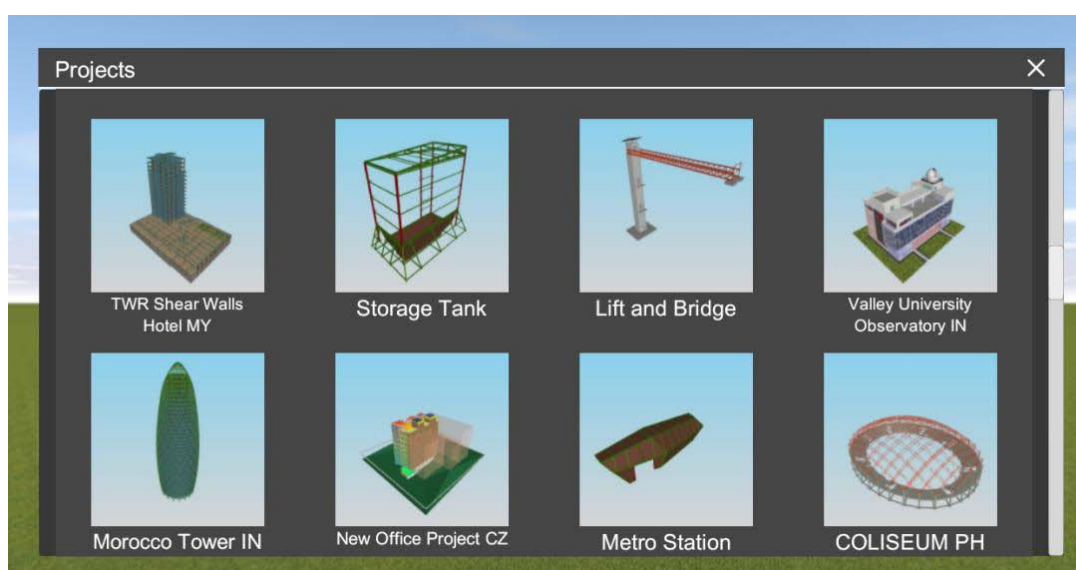




Once the message above confirms that access to the platform has been successful, the browser tab can be closed and the BIMserver.center Virtual Reality app can be opened again, where you can see that the user account has been accessed.



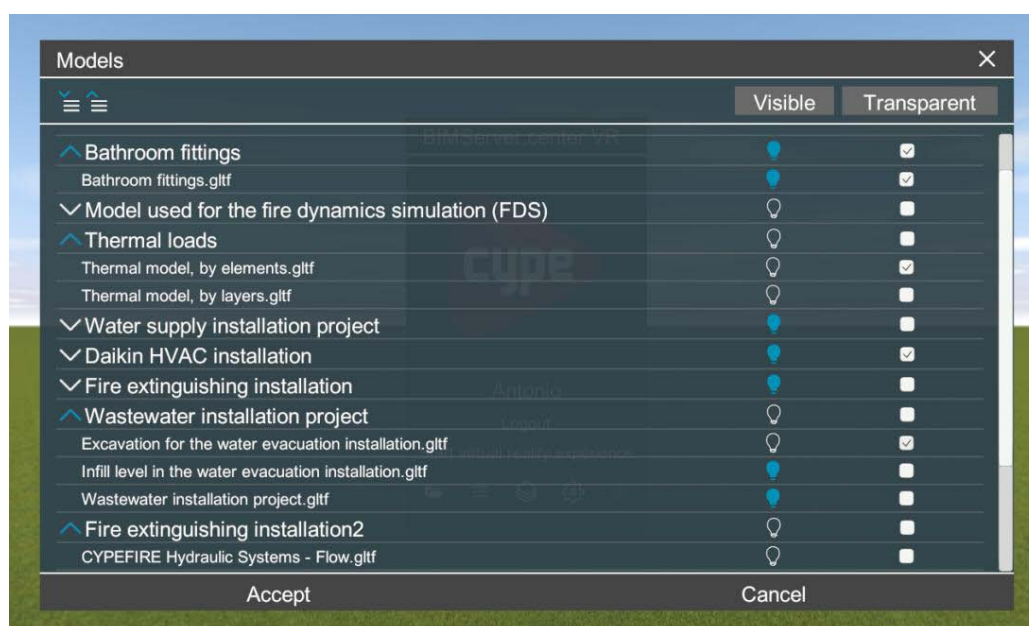
In the bottom left-hand corner of the menu, by selecting the **Projects** icon represented by a folder icon, you can view the different projects hosted in the user's BIMserver.center account and select the project you wish to view using the new virtual reality environment offered by the platform. Simply select one of them to load the model.



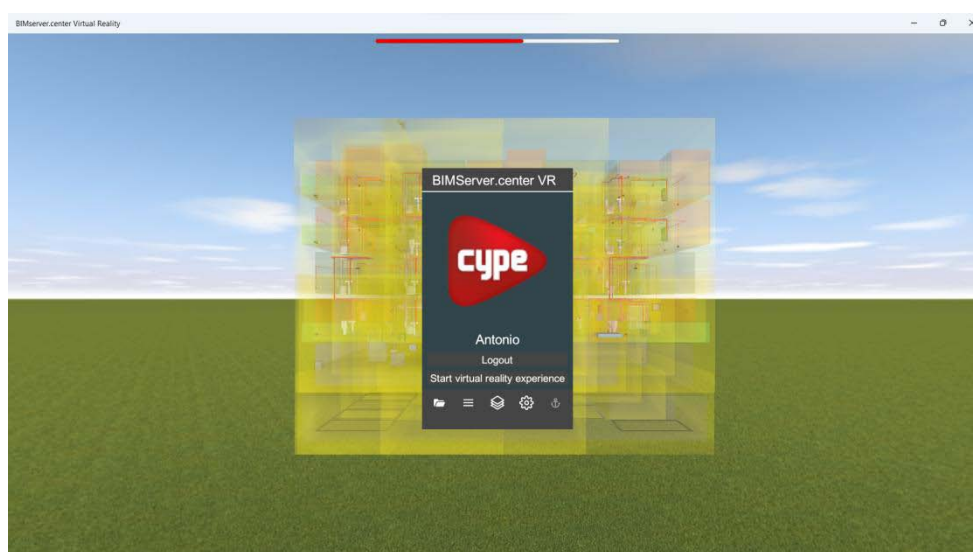


When the project is selected, a screen will appear where users can activate or deactivate the layers of the model or of the different disciplines that they wish to view, so that they can be loaded into the virtual reality environment. To carry out this process, simply select the layers using the **Visible** option represented by a blue light bulb. The option to apply transparency to the layers is also available.

In the top left-hand corner are the built-in options for displaying the layers to view the files contained in each contribution included in the project.



Once the layers to be displayed have been selected, click on **Accept** in the bottom bar of the layers menu. At this point, the project will start to be loaded into the environment and a progress bar will be displayed at the top.

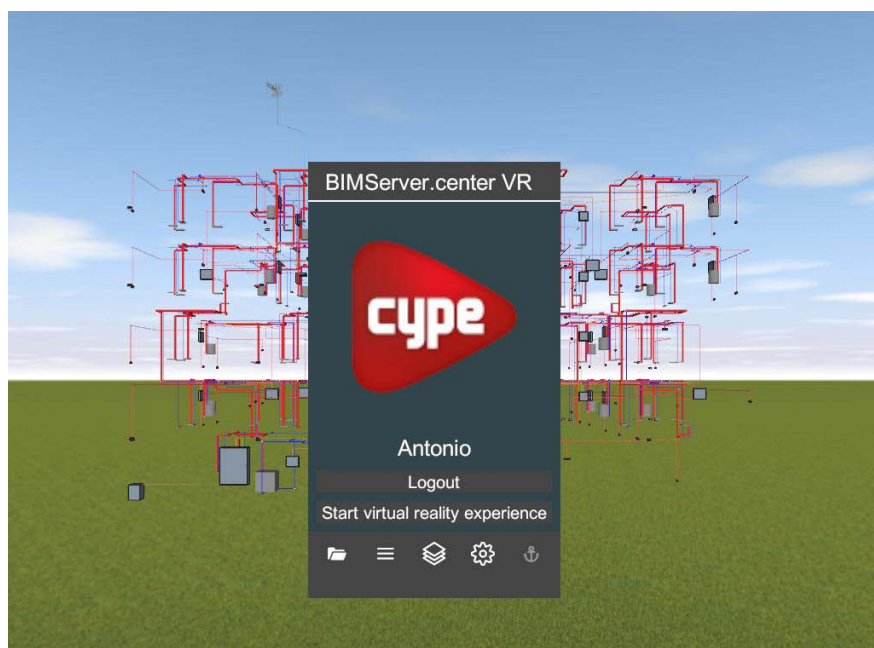




Once the progress bar has been completed, you will see the model loaded with the selected layers.



From this same screen, you can reconfigure the layers or categories to be displayed. The following image shows only certain installations in the project.



Animations or simulations can also be displayed if the model contains this type of contribution.

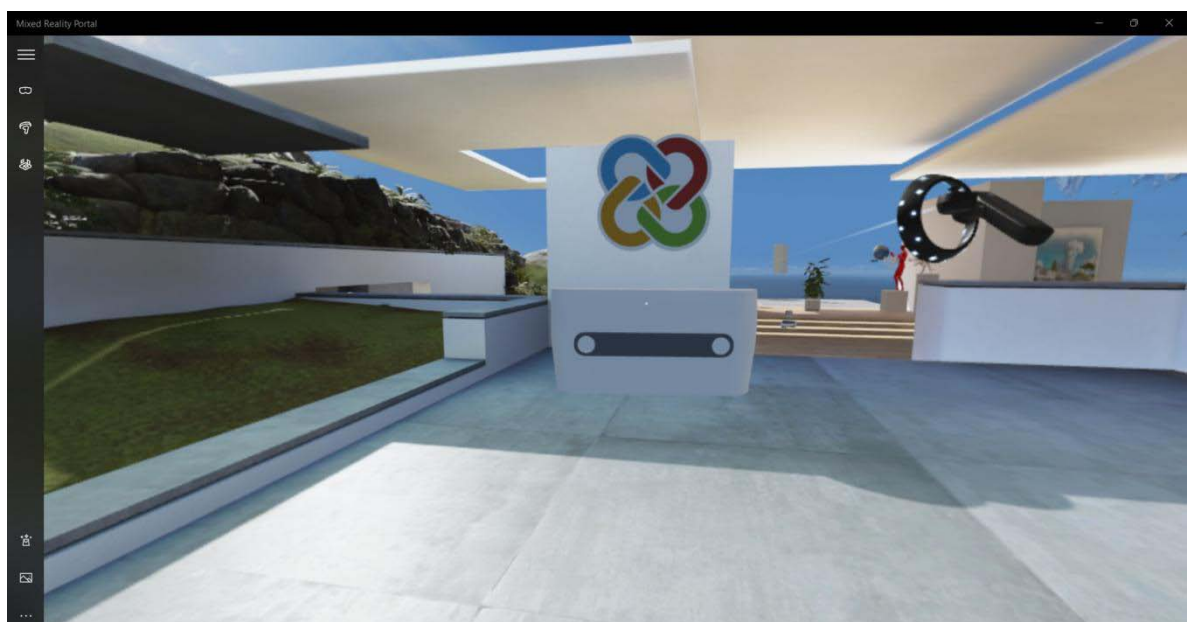


Finally, by selecting the **Settings** option, you can set the quality and language for the app, choosing from more than 10 available languages. You can also modify the memory available for loading projects.



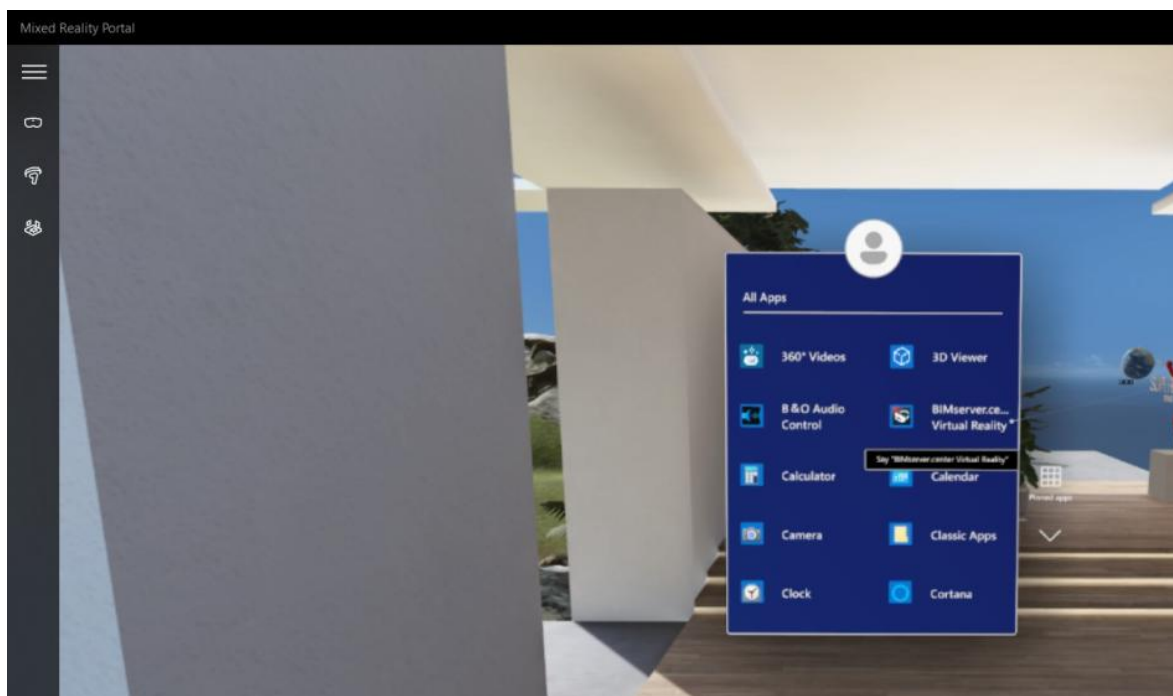
Once the different options have been examined, users can start the experience by selecting the **Start virtual reality experience** option, using the headset and the previously configured controllers.

The setup for the app can also be carried out from the Windows Mixed Reality Portal, by selecting the BIMserver.center Virtual Reality app in the virtual environment and following the same process as described above. To start this process, select the app icon as shown in the following image.





If the BIMserver.center Virtual Reality icon does not appear, select the app directly from the Windows Mixed Reality Portal app search, as shown in the following image.



Once the app has been opened and the **Start virtual reality experience** option has been selected, the BIMserver.center Virtual Reality app will open and the selected project can be viewed.

4.1 Tools

In the app's virtual reality environment, as well as being able to modify all the options mentioned above (projects, layers, configuration, etc.), users will have a series of tools at their disposal to interact with the model using the touch panel of the controllers.

These tools are presented below, using a model hosted on the BIMserver.center platform:

Element information

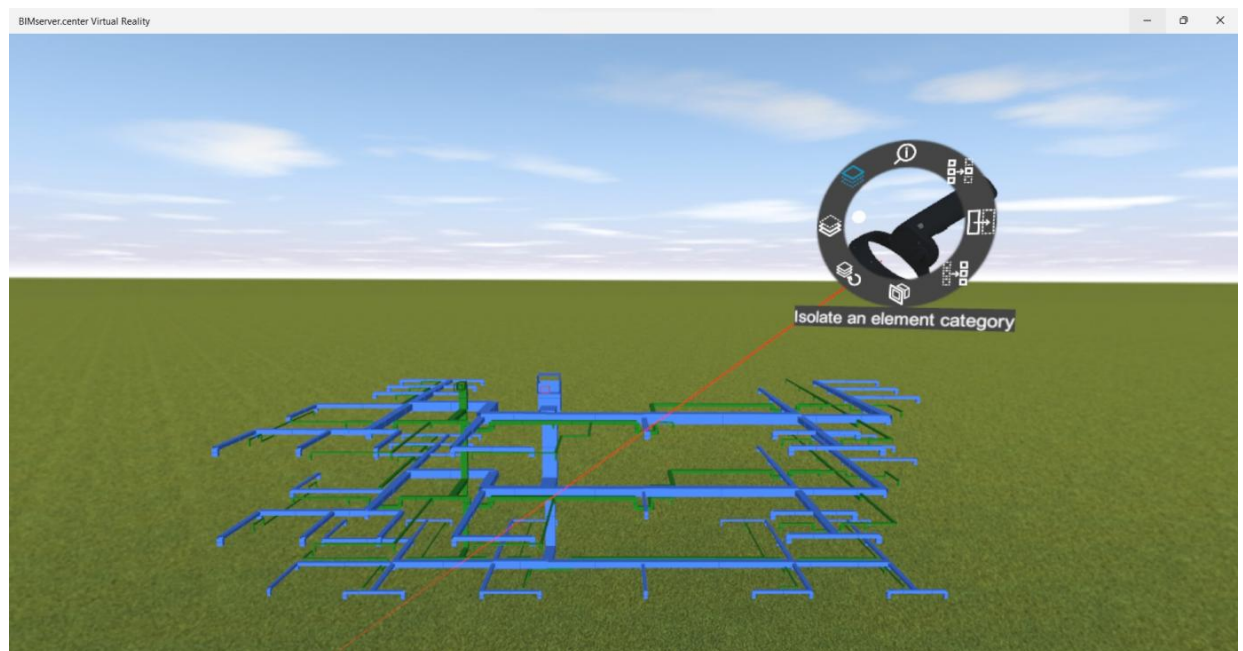
Selecting this option and then selecting any element of the model will display the information available for that element in the BIM project (dimensions, materials, entities, etc.)



The image shows the BIM information of a PV module from the project, using the tool described above.

Isolate an element category

This tool allows elements from the same category to be isolated.



The image shows the selection of a duct from the air-conditioning system, isolating this category of elements in the model.



Hide an element category

This tool allows elements of the same category to be hidden.

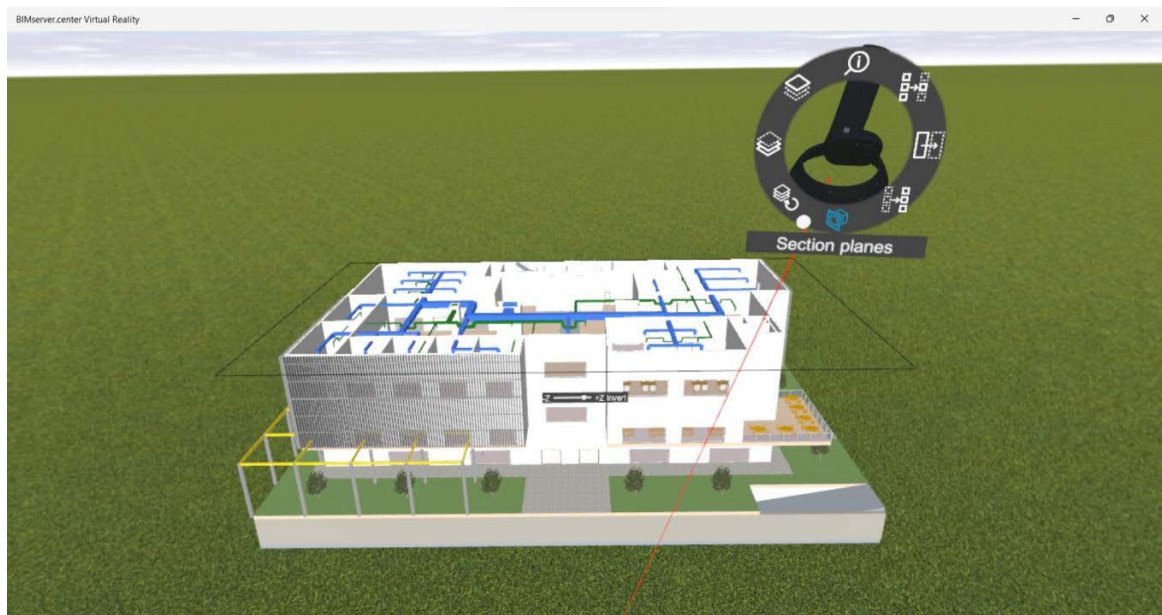


The image shows the selection of the external envelopes of the model (façade, louvres, etc.), hiding these element categories.

Select clipping planes

This tool can be used to generate clipping planes perpendicular to the X axis, Y axis or Z axis.

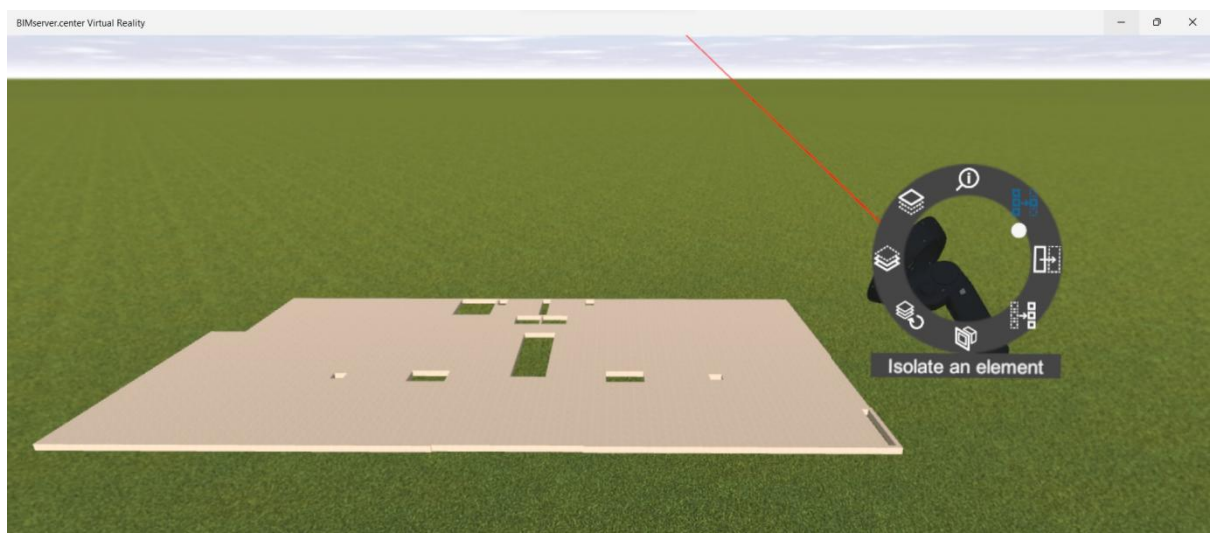




The images show the selection of the clipping plane perpendicular to the Z axis and the clipping plane itself.

Isolate an element

This tool allows the selected element to be isolated.



The image shows the selection of the floor slab from one of the floors in the project, isolating this element.



Hide an element

This tool allows the selected element to be hidden.



The image shows the selection of some elements (walls, PV modules, air handling units), thus hiding them.

Show hidden elements and categories

These tools allow elements and element categories that have been hidden to be displayed using the **Hide an element** and **Hide an element category** options.

Below are some images where these tools have been applied, showing the complete model by displaying the hidden elements/categories.





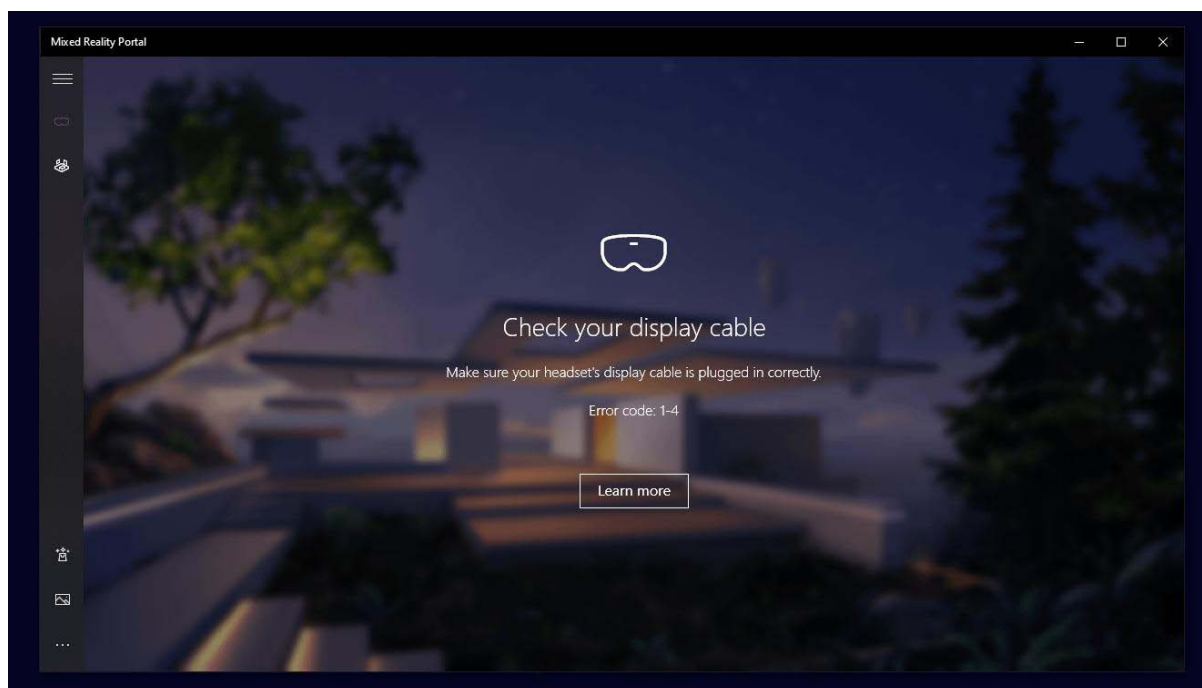
Finally, in order to end the virtual reality experience provided by the platform, the **Stop Virtual Reality Experience** option must be selected which will close the BIMserver.center Virtual Reality app and return users to the Windows Mixed Reality Portal interface.





5 Known issues

"I get an error asking me to check the display cable even though I have the USB cable in a USB 3.0 port and the HDMI cable plugged in."



If you see a screen with the following error, the system is trying to indicate that the USB cable is properly connected to a USB 3.0 port, but the HDMI cable is plugged into an HDMI port with no direct connection to the computer's graphics card, meaning the system will not work properly. In order to fix this problem, simply try removing the HDMI cable from its current port and plugging it into another one that you know has a direct connection to the computer's graphics card.

Should any other errors appear, please refer to the "Troubleshooting and Frequently Asked Questions" section of the Microsoft Mixed Reality Portal User Guide via the following link:

<https://learn.microsoft.com/en-us/windows/mixed-reality/enthusiast-guide/troubleshooting-windows-mixed-reality>